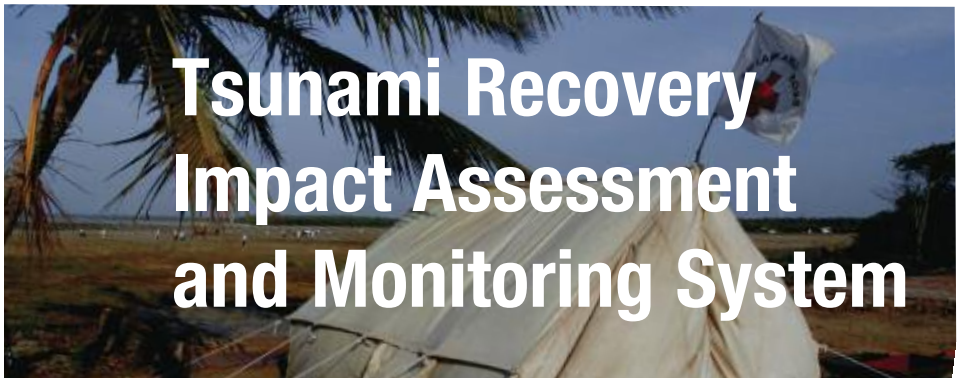
(TRIAMS) Workshop
Bangkok, 3–5 May 2006



Tsunami Recovery Impact Assessment and Monitoring System

United Nations

World Health Organization

International Federation of Red Cross and Red Crescent Societies

Cover photos: Daniel Cima/American Red Cross

Sida Swedish International Development Cooperation Agency

The Bangkok Workshop was made possible through the support of the Swedish International Development Cooperation Agency (SIDA).

2006
United Nations

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Abbreviations

BRR	Aceh and Nias Rehabilitation and Reconstruction Agency (Indonesia)
BPS	Bureau of Public Statistics (Indonesia)
CHA	Consortium of Humanitarian Agencies
DCS	Department of Census and Statistics (Sri Lanka)
DHS	Demographic Household Survey
FAO	Food and Agriculture Organization
GIS	Geographic Information Systems
IDP	Internally displaced person
IMCI	Integrated Management of Childhood Illnesses
MDG	Millennium Development Goal
M&E	Monitoring and evaluation
MICS	Multiple Indicator Cluster Survey
NGO	Non-governmental organization
NSO	National Statistical Office (Thailand)
NSSO	National Statistical Survey Organization (India)
OSE	United Nations Office of the Special Envoy for Tsunami Recovery
RADA	Reconstruction and Development Agency (Sri Lanka)
TEC	Tsunami Evaluation Coalition
TIAS	Tsunami Impact Assessment Survey
TRIAMS	Tsunami Recovery Impact Assessment and Monitoring System
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Development Fund for Women
UNEP	United Nations Environment Programme
VPA	Vulnerability and Poverty Assessment
WFP	World Food Programme
WHO	World Health Organization
WHODAS	World Health Organization Disability Assessment Schedule

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Executive summary

The Indian Ocean tsunami of 26 December 2004 was one of the worst natural disasters in recent history, with more than 275,000 individuals believed to have perished in the five most-affected countries. While the death toll was immense, it is easy enough to quantify. Harder to measure is the full impact of the tsunami on livelihoods, economic activity and individual well-being, particularly for the poorest and most vulnerable sections of the affected communities. Even less is known about the extent to which recovery efforts have adequately addressed the human and socio-economic losses generated by the tsunami.

Monitoring the progress of individual recovery projects cannot by itself identify the overall and sectoral rates of recovery for a community, a sub-district or a district. It was felt that a common system for tracking recovery efforts and assessing the impact of the overall response was needed to enable the government authorities to perform a gap analysis at sub-district and community levels. This would include identifying any pockets not covered by existing recovery programmes and addressing unmet needs, as well as preventing inequities being created by the allocation of tsunami-related resources.

The concept for a Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) was discussed and endorsed by the Global Consortium for Tsunami-Affected Countries at meetings in June and September 2005. The process was taken forward by the World Health Organization (WHO) and the International Federation of Red Cross and Red Crescent Societies, with the support of the United Nations Office of the Special Envoy for Tsunami Recovery (OSE) led by former US President Bill Clinton. Between mid-2005 and early 2006, the concept of TRIAMS was further fleshed out in consultation with the governments and their key implementing partners in the five most-affected countries – India, Indonesia, the Maldives, Sri Lanka and Thailand.

A workshop was held to refine the TRIAMS concept and achieve consensus among the countries concerned and other partners on the process to assess the impact of the response and monitor ongoing recovery efforts. The workshop took place from 3 to 5 May 2006 in Bangkok, Thailand. It was co-sponsored by the International Federation and WHO, with the support of the OSE, and attended by government representatives from the five tsunami-affected countries and key partners from United Nations agencies, National Red Cross and Red Crescent Societies and local non-governmental organizations. They included UN Resident Coordinators, the UN Office of the Recovery Coordinator, the United Nations Children's Fund, UNDP, the Care Society (Maldives), the Consortium of Humanitarian Agencies, the United Nations Development Fund for Women and the United Nations Environment Programme, among others. Technical advisers at the meeting included participants from the Swedish International Development Cooperation Agency, the Stockholm-based Karolinska Institute and individual consultants.

The purpose of the TRIAMS initiative is to assist governments, aid agencies and affected populations in assessing and monitoring the rate and direction of recovery over the next four to five years. The system is also designed to help governments, aid agencies and donors be accountable for the end results of their efforts. The core indicators discussed and agreed on by the workshop participants cover four key areas of recovery: vital needs, basic social services, infrastructure and livelihoods. The indicators will yield valuable information on a range of issues, from coverage of safe water supply and basic sanitation and the rate of housing reconstruction to the nutritional status of children and households' economic recovery.

In addition to agreeing on core, largely quantitative output and outcome indicators, the government delegations identified country-specific indicators that they felt were relevant to their particular situations. They also drew up preliminary country action plans for the implementation of TRIAMS, specifying the information sources and the frequency of data collection for both core and country-specific indicators. Government participants reiterated the need to use planned household surveys and existing routine information systems as much as possible in the TRIAMS process, but also highlighted gaps and areas where they would need specific support for additional data-collection processes. The plans include proposals for qualitative approaches to complement the analysis of the quantitative results. In addition, participants emphasized the need to regularly assess beneficiaries' perceptions of the ongoing recovery interventions.

The country delegations reaffirmed the importance of putting such a system as TRIAMS in place and acknowledged the challenge of attempting something that had not been done before on such a large scale. All agreed that TRIAMS should not be seen as an additional "project" but as an essential element of the whole recovery process, in which the two functions of monitoring of recovery interventions and assessing their impact are conducted in parallel. The ultimate aim of this process is to provide evidence of the changes effected by recovery interventions on beneficiaries' lives; it should regularly inform stakeholders of unmet needs and influence the re-planning process, so that resources still available can be directed where they are most needed. By following the proposed steps, governments and aid agencies can ensure that all tsunami-affected communities enjoy equitable access to the opportunities generated by the recovery process.

Four of the five countries said they would be in a position to provide a first report on the proposed set of core TRIAMS indicators before the end of 2006. The TRIAMS process is scheduled to run until 2010.

Now that consensus has been reached on the core elements of TRIAMS, the International Federation and WHO, with the support of the OSE, will work with countries to finalize detailed country action plans, identify technical assistance needs at the country as well as at the regional level and, with other stakeholders, mobilize the additional resources that will eventually be needed for the full implementation of TRIAMS.

1
Introduction

The Indian Ocean tsunami of 26 December 2004 was one of the worst natural disasters in recent history, with more than 275,000 individuals believed to have perished as a result in the five most-affected countries. The tsunami's impact on livelihoods, economic activity and individual well-being, particularly for the poorest and most vulnerable sections of the affected communities, is not yet fully unknown, although it appears to vary considerably across the affected districts, and even within these districts. Even less is known about the extent to which recovery efforts have addressed the human and socio-economic losses of the affected communities.

Governments and their partners are monitoring the progress of individual recovery projects, but this by itself cannot identify the overall and sectoral rates of recovery for a community, a sub-district or a district. A common system to monitor recovery interventions was felt to be needed to enable the peripheral government authorities to perform a gap analysis at sub-district and community levels. This would include identifying any pockets not covered by existing recovery programmes and addressing unmet needs, as well as preventing inequities from being created by the allocation of tsunami-related resources.

The Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) was developed to address this need. It has been elaborated in consultation with the five countries most affected by the tsunami – India, Indonesia, the Maldives, Sri Lanka and Thailand – and with partner international and local aid agencies. Its implementation will help to keep governments, donors, aid agencies, civil society and other stakeholders abreast of the progress of recovery efforts in the tsunami-affected areas and to enable them to make any necessary adjustments to assistance programmes based on the analysis of data collected. The core components of the TRIAMS process include: output and impact indicators across the primary sectors of recovery; both quantitative and qualitative data on beneficiary perspectives; and additional qualitative data to help explain findings of key output and outcome indicators.

2
Background to the TRIAMS process

At a meeting in New York on 22 September 2005, the Global Consortium for Tsunami-Affected Countries discussed the rationale for a recovery impact assessment and monitoring system, based on ideas previously put forward by the International Federation of Red Cross and Red Crescent Societies. The Global Consortium endorsed the concept and gave a mandate to the World Health Organization (WHO) and the International Federation to develop it with the support of the United Nations Office of the Special Envoy (OSE). Their task was to catalyse and harmonize the collective efforts of national agencies, ministries and international and national organizations to monitor tsunami recovery activities, and to assess the impact of what had been achieved so far in the tsunami-affected countries across all recovery sectors.

A draft concept paper, prepared by a consultant for the International Federation in consultation with the affected countries and international agencies, was distributed for comments and suggestions in October 2005. This first draft included a preliminary list of core indicators for possible adoption by the five countries concerned. As the majority of these indicators related to outcomes, their usefulness was limited mainly to assessing the impact of recovery interventions. Later on in the process, WHO, in consultation with the Karolinska Institute, added monitoring indicators to enhance the usefulness of the TRIAMS framework.

Governments and implementing partners in the tsunami-affected countries made a huge joint effort during the last quarter of 2005 to produce "one year after" country reports, consolidating relevant information on the response to the tsunami's destruction. The reports, issued in January 2006, largely contained information on input indicators made available by the governments of the affected countries and by the international community. Some information on the outputs of the recovery process were included, but there was almost no information on the outcomes of the recovery thus far in affected communities. Another important issue that emerged from this reporting effort was the tremendous amount of data produced by different programmes that had not been fully exploited to inform, guide and redefine the priorities of the recovery interventions.

The International Federation and WHO approached the countries concerned and the other partners in January 2006 through the OSE and the offices of the UN Resident Coordinators. A workshop on TRIAMS, bringing together all the tsunami-affected countries, was felt to be necessary, but only after a deeper involvement of the countries in the revision of the TRIAMS concept paper and in the preparation of the workshop.

A revised draft of the TRIAMS Concept Paper was distributed to all the partners on 14 March 2006. The main change related to the introduction of a matrix presenting both output and outcome indicators by four main areas of recovery (vital needs, basic social services, infrastructure and livelihoods). Comments and suggestions were consolidated and incorporated in the final version of the concept paper of 3 May, which became the key working document of the workshop (see Annex 4).

During this process and before the Bangkok workshop, some countries took important decisions that would create an enabling environment for the TRIAMS process. These included plans to modify national household surveys to enable reporting on some of the proposed indicators and, in the case of Sri Lanka, ensuring all national surveys included a stratification of the tsunami-affected population within the overall national household survey sampling process.

3
Workshop objectives and methodology

Overall aim of the TRIAMS workshop

Reach consensus among the five tsunami-affected countries and other partners on an impact assessment and monitoring process for tsunami recovery efforts, including strengthening regional and national mechanisms in order to better inform ongoing planning.

The overall aim of the TRIAMS workshop was to reach consensus among the five countries most affected by the tsunami (India, Indonesia, the Maldives, Sri Lanka and Thailand) and their partner agencies on an impact assessment and monitoring process for tsunami recovery efforts. The process would include strengthening regional and national mechanisms in order to better inform ongoing planning. The information collected through the process would enable adjustments to be made to assistance programmes. Unmet needs and existing inequalities could also be addressed more effectively.

The workshop's specific objectives were to:

- facilitate learning on tsunami recovery, planning, monitoring and evaluation;
- reach consensus on core impact assessment and recovery monitoring indicators;
- determine additional country-specific impact assessment and monitoring indicators;
- identify gaps in current data-collection and analysis efforts in relation to both core and country-specific indicators;
- begin to identify resource needs to address the gaps;
- develop regional and country action plans for the implementation of TRIAMS.

The three-day workshop consisted of plenary and working group sessions (for a full run-down of the agenda, see Annex 1). On the first day, the rationale for an impact assessment and monitoring system in the context of the recovery process was explained. Subsequently, government representatives from India, Indonesia, the Maldives, Sri Lanka and Thailand and the WHO representative in Myanmar gave presentations on the tsunami's impact in their respective countries and what had been accomplished so far in each sector of recovery. A synthesis of these presentations forms part of this report.

The second day of the workshop was devoted to technical discussions and consensus building on the core indicators. Participants divided up into four working groups to discuss the proposed core output and outcome indicators and to identify gaps in data availability for any of the core indicators. Each working group focused on a specific area of recovery: vital needs, basic social services, infrastructure and livelihoods. In order to facilitate cross-fertilization between countries, each working group was composed of at least one member from each of the five country delegations, along with representatives of the different international agencies and local partners present.

The plenary presentations on the results of each working group were followed by a second round of working groups. This time, they were organized by country so that each one could determine the relevance of the proposed core indicators to their national context and could consider the need for additional country-specific indicators, including procedures for and frequency of data collection and analysis.

The last day of the meeting began with a plenary session aimed at reaching a final consensus on the set of core indicators. A lively debate and negotiations between the participants ensued, during which some indicators were deleted, others reformulated and new ones inserted (see Section 8 for the final matrix of indicators). Following the plenary session, the country delegations worked again in groups to validate the proposed indicators and confirm the data sources and the methodology and frequency of data collection for each indicator. They also developed preliminary country action plans for the implementation of TRIAMS. The plans included initial estimates of the resources and technical support needed at country level to operationalize TRIAMS.

"On behalf of President Bill Clinton, I share the OSE expectations of the meeting that include the achievement of the following:

1 Each government should agree on a statement of principles to assess the social and economic implications of tsunami recovery.
2 Agreement on common indicators is needed, along with suitable country variations (as well as the identification of focal points for each country).
3 Identify and agree upon a regional/international coordination structure. This regional institution should provide subsequent support for TRIAMS implementation, assist in the overall reporting and enhance follow-up and coordination.
4 An initial synthesized report establishing baseline values, including some indications of progress to date and identifying where additional technical assistance is needed, should be available before the end of 2006."

Eric Schwartz, Deputy to the UN Special Envoy for Tsunami Recovery, President Bill Clinton

4
Participation and expectations

Seventy-seven people participated in the TRIAMS workshop. These included high-level government officials from five tsunami-affected countries (India, Indonesia, the Maldives, Sri Lanka and Thailand), as well as representatives of the OSE, the International Federation, UN agencies (among them, UNDP, UNICEF, UNIFEM, UNEP and WHO) and other international and national organizations.

The participants expressed their expectations of the workshop in a round-table session at the beginning of the first plenary session. These included:

- to share experiences and best practices on tsunami recovery across countries and to learn from each other;
- to agree on relevant common indicators as well as on country-specific indicators to inform the recovery planning process;
- to ensure that TRIAMS builds on existing information systems at the country level, whether they involve governments, aid agencies or other sources, so as to contribute to sustainability;
- to balance the mix of short-term and long-term indicators to support the correction of the course of action, taking into consideration the broader framework of the Millennium Development Goals (MDGs);
- to identify the type of support countries may need to implement the TRIAMS process;
- to see how disaster risk reduction could be included in the indicators and in TRIAMS.

5
Country presentations on the tsunami's impact and the response

Each country delegation gave a presentation on the impact of the tsunami on affected communities and the achievements of recovery efforts to date by area of recovery. The presentations were well received and revealed both the similarities and the differences in how each country had been affected by and had responded to the tsunami. A common problem noted was the dearth of information available on the situation before and immediately after the tsunami, whether in relation to a geographical area, specific sector or administrative level or in relation to a specific indicator. Some countries had information at regional level, others at district level, but none could produce indicators illustrating recovery interventions below the district level. Most of the data presented focused on output indicators.

"We are good at delivering goods and services after disaster, but we need to know more on how this affects people's lives… How are we looking at poverty, children's well-being, and health? We need to go further than the outputs… We need to know how beneficiaries feel."

Johan Schaar, Special Representative to the Secretary General, International Federation of Red Cross and Red Crescent Societies

In many cases, tsunami-affected populations were among the most vulnerable even before the disaster, making analysis of the impact and response more complex. Moreover, the inconsistency across countries in the availability of pre- and post-tsunami data was felt to be a further complicating factor in any future impact assessment. In some countries, baseline data are available. For instance, the Maldives had conducted a Poverty and Vulnerability Survey in 2004, which was repeated after the tsunami for comparison purposes; in this case, although results are still being analysed, some comparison will be possible in the near future. Similarly, just after the tsunami, Sri Lanka conducted a census of populations whose houses had been damaged or destroyed, which can be used as a reference point. However, this is not the case for all sectors nor for all countries. In general, data availability on pre- and post-tsunami situations will be an important issue for TRIAMS to address in determining the impact of recovery efforts. Some countries indicated that action is being or will be taken to try to correct this situation in the future, for example by setting up village reconstruction committees, by expanding the role of local government and by exchanging information with NGOs. Most countries acknowledged the need for better data to measure the impact of disasters.

Regarding the response to the tsunami, countries shared their different approaches as well as the limitations they had encountered. Governments had shown their commitment to being the drivers of the recovery process, taking leadership in coordinating the efforts of a multitude of actors. In most countries, the

lead role of government agencies or ministries in the recovery process had been formalized by specific legislation or directed by presidential decree. In some cases, such as in Indonesia, the reconstruction agency has an important but temporary mandate.

There follows a synthesis of the country presentations, broken down according to the four key areas of recovery – vital needs, basic social services, infrastructure and livelihoods – plus cross-cutting issues. Specific data provided by the country presentations on the tsunami impact and response in each area of recovery is laid out for ease of reference and comparison in a series of tables. Where the information in the tables has been complemented by data from other sources, the source has been indicated in a footnote.

In annex 6 a series of maps of the tsunami areas of the affected countries are presented, in order to visualize some of the most important indicators of the impact of tsunami and of the on going recovery efforts.

Vital needs

The tsunami's impact differs enormously from one country to another and, within each country, from one district or sub-district to another. There are significant variations in the number of recorded deaths and missing persons from one area to the next, but the overall level of destruction and economic loss is not necessarily proportional to the number of deaths. With respect to the number of people displaced or houses destroyed, Indonesia and Sri Lanka face similar recovery challenges. However, where the impact may have been similar, often it is the capacity to recover that varies greatly between neighbouring districts or sub-districts.

Vital needs, particularly for water, food and sanitation, require immediate responses, which also have to be maintained into the early part of the recovery phase. Making the shift from temporary emergency solutions to permanent solutions, such as housing, is the key challenge. There are few indicators to show whether this process is happening homogeneously across different districts or sub-districts.

"We are not going to stop (trying to monitor) even though it may be difficult to compare before and after tsunami situations. Core indicators from this workshop will be very important to help with this (monitoring and impact assessment)."

A workshop participant commenting on the lack of baseline data

The provision of housing (both temporary and permanent) still requires considerable effort and investment in several countries. Donor-driven housing construction has been found to be less efficient and cost-effective than when it is owner-driven. This is particularly evident in Sri Lanka. Presenters also stressed the need to ensure that minimum standards of quality and safety are met in housing reconstruction. Policy documents establishing such minimum standards have been developed in some countries, and efforts are being made to evaluate externally the reconstruction process against these standards. Several countries mentioned that the rising cost of reconstruction materials was a constraint. There was some discussion on how to address this phenomenon, including making contracts of limited duration with suppliers to avoid price increases, which had been found to provide some respite, at least for the period of the contract.

Tsunami impact: Vital needs

	Thailand	Maldives	India	Indonesia	Sri Lanka
Population affected	–	–	2.792 m	50% of the population of Aceh province (4)	–
Deaths	8,212 (including 2,448 tourists from 37 countries) (1)	82	12,405 (75% women and children) (3)	130,000	35,322 (including missing)
Missing	2,822	26	5,640 (3)	37,000	
Deaths + missing	11,034	108	18,045	167,000	35,322
Displaced	–	–	647,599 (3)	500,000	547,509
Injured	8,457	1,313	6,136	75,223	23,059
Orphaned	1,420 (2)	N/A	480 (3)	3,882 (5)	
Widowed	–	N/A	787 (3)	–	40,000 (including widowed, orphaned, disabled and otherwise affected)
Water supply damaged/destroyed	Yes	79 islands affected	Yes	Over 10,000 water sources destroyed	US$ 42m damage
Housing units destroyed/damaged	1,504	5,109 need to be built and 2,879 to be reconstructed	235,000	70,000 destroyed, 57,000 damaged Rp 276.4 bn (6)	98,000
Estimated value of damaged housing	US$ 21m	TBD	–	Rp 13.004 bn (6)	US$ 437m

(1) From http://www.tsunamispecialenvoy.org/printable/humantoll.asp
(2) From http://www.un.or.th/tsunami/documents/Sitreps/UNRC-Thailand_Field_Situation_Report_No.18-2005_09_09.pdf
(3) From http://www.tsunamispecialenvoy.org/printable/indiak.asp
(4) From http://www.fao.org/giews/English/shortnews/asiatsunami/o50114.shtml
(5) From Deputy Social Budaya, BRR
(6) From Indonesia: Preliminary Damage and Loss Assessment, The December 26, 2004 Natural Disaster

Tsunami response: Vital needs					
	Thailand	Maldives	India	Indonesia	Sri Lanka
Water/sanitation infrastructure	Clean-up operations in 66 facilities (3)	25 reverse osmosis plants donated	Repaired 3,500 teachers trained in safe water/sanitation (2)	Water systems repaired	–
Food delivered	2,311 tonnes (3)	–	–	–	–
Temporary houses – shelters or IDP camps	358	10,772	930 IDP camps besides 93,171 temporary shelters for 400,000 people (2)	452,000 (1)	86 transitional shelters to date
Permanent housing	3,907	2,879 to be reconstructed 5,215 to be repaired	160,926 houses to be rebuilt	32,200 houses rebuilt (4)	1/3 of damaged houses rebuilt
Land rights/titles	1,156 land rights cases resolved (2)	–	–	12,000 land rights cases resolved, 500,000 to be resolved (5)	–

(1) From http://www.tsunamispecialenvoy.org/printable/indonesiak.asp
(2) From http://www.tsunamispecialenvoy.org/printable/indiak.asp
(3) From http://www.tsunamispecialenvoy.org/printable/thailand.asp
(4) From PowerPoint presentation on Tsunami Impact: Joint initiative of OSE, International Federation & WHO
(5) From Housing and Settlements Deputy, BRR

Challenges regarding the availability of quality temporary shelter and the lack of satisfactory progress in permanent home construction were discussed at length. Another concern raised was the continuing presence of camp populations in some countries. Several participants felt there was an increased likelihood of aid dependency and that this risked prolonging the recovery period.

In order to address this challenge, the Governor of Aceh declared a "No More Tents by July 2006" initiative and created a task force comprising senior government officials to oversee it. (It was later reported that by the stated date, the task force had managed to reduce the number of people living in tents/camps by 95% by accelerating the construction of temporary shelters and permanent homes.)

Other discussions revolved around people's right to live where they want versus the government's desire to protect its citizens from the effects of future natural disasters. Such considerations have contributed to the modification of barrier zones along coastlines in some countries, to take account of people's cultural, familial and historical ties to the land.

Basic social services

Damage to health and education facilities caused by the tsunami impaired the adequate provision of these services in its aftermath. Moreover, in some countries the loss of human life included large numbers of health personnel, leading to a shortage that further hampered health-care delivery. Some countries pointed to the need to respond to mental health threats. Psychological assessment and counselling after the disaster have been part of recovery programmes in several countries. In Sri Lanka, the government had examined the prevalence of depression, alcohol use and suicide among the general population and took the opportunity to expand services dealing with these concerns after the tsunami.

Tsunami impact: Basic social services					
	Thailand	Maldives	India	Indonesia	Sri Lanka
Teachers killed	–	N/A	–	2,500	–
Schools damaged/destroyed	20%	Damage on 50 out of 199 inhabited islands	–	2,065 (Rp 1.030 bn) (a)	182
Schoolchildren affected	50,000	N/A	–	165,000	–
Health facilities damaged/destroyed	–	25 islands affected 41 health facilities damaged (2)	80 (3)	Total: 592 41 out of 51 regional health facilities with reproductive health services damaged (1)	97
Health personnel killed	–	N/A	–	High proportion of female health workers killed; 30% of midwives reported dead or missing (1)	–
Estimated value of damage	US$ 21m	Education: US$ 21.1m	–	Rp 15.578 bn (4)	Education: US$ 26m Health: US$ 60m

(1) From http://www.tsunamispecialenvoy.org/printable/indonesiak.asp
(2) From http://www.tsunamispecialenvoy.org/printable/maldives.asp
(3) From PowerPoint presentation on Tsunami Impact: Joint initiative of OSE, International Federation & WHO
(4) From Indonesia: Preliminary Damage and Loss Assessment, The December 26, 2004 Natural Disaster

Tsunami response: Basic social services

	Thailand	Maldives	India	Indonesia	Sri Lanka
Health infrastructure repaired/new	8 health centres rehabilitated or newly constructed (3)	1,988 rebuilt (4)	Reconstructed	132 health centres (temporary and permanent) rebuilt	22 health posts completed 66 under way
Medical equipment	Medical kits provided for 60,000 beneficiaries (3)	–	Surgical and medical kits provided (2)	Midwifery kits provided for 3,400 midwives, malaria testing kits and bed nets provided (1)	–
Health personnel training	–	–	1,543 health and community workers trained in IMCI (2)	46,096 health and community workers trained (5)	–
Immunization campaigns	Yes (3)	Yes, immunization coverage rates kept high	Yes (2)	National immunization carried out weekly	–
School construction	Yes (3)	Major repairs to 11 schools Minor repairs to 71 schools	Yes (2)	Yes (1) 40 kindergarten, 113 elementary schools, 12 junior high schools, 18 senior high schools, 2 universities repaired/rebuilt (5)	–
Teacher training	–	180 teacher trainers deployed for one month	–	Yes (1) 2,340 teachers (5)	–
Education kits	141,000 students in 800 schools benefited (3)	32,000 received school supplies 24,000 received recreation and school kits-in-a-box	70,000 children benefited (5)	129,202 schoolbooks delivered	–

(1) From http://www.tsunamispecialenvoy.org/printable/indonesiak.asp
(2) From http://www.tsunamispecialenvoy.org/printable/indiak.asp
(3) From http://www.tsunamispecialenvoy.org/printable/thailand.asp
(4) From PowerPoint presentation on Tsunami Impact: Joint initiative of OSE, International Federation & WHO
(5) From RAND Data Base: http://www.e-aceh-nias.org/

Infrastructure

In this area of recovery, problems were exacerbated by logistic issues and the inability to deal with increased infrastructure demands. Countries found themselves with limited human resources skilled in construction to be able to respond properly to immediate and long-term needs. These challenges have been addressed in different ways as they vary in nature from one country to another. The most evident implication of logistic problems is cost. This is particularly true for areas along Aceh's western and southern coasts, as well as in the Maldives, and has contributed to a significant budget shortfall.

Challenges unique to the Maldives include the need to transport materials to a large number of islands. The continued lack of communications on many islands, compounded by inaccessibility owing to the destruction of harbours and jetties, has also contributed to the high costs and has hampered the pace of the response and recovery efforts.

Tsunami impact: Infrastructure

	Thailand	Maldives	India	Indonesia	Sri Lanka
Roads damaged	–	53 out of 199 inhabited islands severely damaged, including harbours and jetties (2)	Extensive damage	3,000 km Rp 1.576 bn (4)	–
Bridges damaged/destroyed	–	N/A	–	Total: 2,676 bridges (1) and 1,500 minor bridges	–
Airports damaged/destroyed	–	Main international airport damaged	–	8 airports damaged Rp 17 bn (4)	–
Vehicles damaged/destroyed	–	–	–	30,000	–
Infrastructure damaged/destroyed	–	N/A	–	High proportion of female health workers killed; 30% of midwives reported dead or missing (1)	–
Electricity supply damaged/destroyed	–	Education: US$ 21.1m	–	Rp 15.578 bn (4)	–

(1) From http://www.tsunamispecialenvoy.org/printable/indonesiak.asp
(2) From http://www.tsunamispecialenvoy.org/printable/maldives.asp
(3) Department of Census and Statistics, Sri Lanka
(4) From Indonesia: Preliminary Damage and Loss Assessment, The December 26, 2004 Natural Disaster

Tsunami response: Infrastructure

	Thailand	Maldives	India	Indonesia	Sri Lanka
Roads repaired	–	N/A	Under way	490 km	–
School infrastructure	–	81 being rebuilt	Reconstructed	524 being built	7 completed 32 under way
Power infrastructure repaired	–	Under way		82% repaired (1)	–
Harbours/ports repaired/reconstructed	–	Under way but funding shortfall	Under way	5 under way	–

(1) From: www.esdm.go.id/beritalistrik.php?news_id=528

In Indonesia, the World Food Programme (WFP) and the Aceh and Nias Rehabilitation and Reconstruction Agency (BRR) collaborated to expedite much-needed supplies to Nias island. The WFP Shipping Service, supported by the Multi-Donor Trust Fund, enabled implementing agencies to bring supplies to the island, thereby reducing the island's isolation. The WFP initially provided this service free of charge but is now moving to a cost-recovery model.

Opportunities to "build back better" were shared. India, for example, has reconstructed cyclone-proof schools. Indonesia, meanwhile, is using reconstruction activities to strengthen local governance, implement anti-corruption strategies and install transparency tools such as e-procurement. Strengthening community leadership during the recovery process was also mentioned by many as a key factor in the sustainability and success of reconstruction efforts.

Livelihoods

Income-generating capacities were severely hit in almost every area affected by the tsunami. Not everyone affected by the tsunami has resumed their previous occupations; some have taken up new occupations whenever the support and/or the opportunity has been provided. In certain sectors, numerous professionals perished in the disaster (e.g. fishermen or local government workers). Participants shared the opportunities they had taken to improve the livelihood sector. These included changing agricultural production to more salt-resistant crops, biofencing, and mangrove planting in coastal areas to protect farmland as well as communities.

Tsunami impact: Livelihoods

	Thailand	Maldives	India	Indonesia	Sri Lanka
Unemployment caused by the tsunami	7,788 people unemployed (2)	–	–	In Aceh province, 600,000 people (25% of the population) lost their sole source of livelihood	–
Livestock perished	–	–	31,755	Livestock worth Rp 126 billion lost (a)	Livestock worth US$ 4m lost
Overall estimated economic loss	US$ 2.09bn	62% of GDP	US$ 435m (2)	US$ 394.4m in the productive sector (6)	150,000 lost livelihoods
Total estimated cost of damage	–	US$ 295m (4)	US$ 2.56bn (3)	US$ 4.5bn (1)	US$ 900m
Impact on GDP	–	GDP negative owing to tsunami	Deficit doubled to 25% (2)	97% of Aceh's GDP affected (6)	24,449 salinated
Crop area damaged	–	Many islands salinated US$ 6.46m in crop damage (7)	39,000 ha	Rp 13.095 bn (5,000–7,500 ha)	–
Fishery sector damaged/destroyed	US$ 44m 6,000 boats destroyed (5)	179 boats destroyed (5) (with fishing gear and equipment lost) Direct loss US$ 13.13m; indirect loss US$ 23.61m (7)	83,788 boats to be replaced	4,717 boats lost	75% fishing fleet damaged 54,100 boats destroyed (5)
Jetties and harbours damaged/destroyed	–	–	Main ports damaged	14 seaports damaged	–
Tourist infrastructure damaged/destroyed	–	–	–	–	53 hotels, 248 small hotels, 210 related enterprises damaged/destroyed

(1) From http://www.tsunamispecialenvoy.org/printable/indonesiak.asp
(2) From http://www.mv.undp.org/one_year_anniversary/COMM%20REPORT%20FINAL.pdf
(3) From http://www.tsunamispecialenvoy.org/printable/indiak.asp
(4) From http://www.tsunamispecialenvoy.org/printable/maldives.asp
(5) From PowerPoint presentation on Tsunami Impact: Joint initiative of OSE, International Federation & WHO
(6) From Indonesia: Preliminary Damage and Loss Assessment, The December 26, 2004 Natural Disaster
(7) From Maldives: One Year After the Tsunami

Tsunami response: Livelihoods

	Thailand	Maldives	India	Indonesia	Sri Lanka
Relief funds	To 151,718 survivors	Cash for work, small grants and micro-credit	Financial assistance provided	120,000 benefited	Yes
Land use plans	–	Under development for 11 islands	–	128 ha (3)	–
Desalination	–	Desalination plants provided to 33 islands	Yes	Yes (3 and 5)	–
Skills training	–	Package developed, with special emphasis on women	Yes	Yes (3)	7,000 workers
Fisheries	US$ 11m of support, 9,000 boats, 8,000 hatcheries provided (2)	Boats repaired and fishing gear, pumps, nets and other fishing equipment replaced	Rebuilt	6,580 ha of fish ponds rehabilitated (3)	–
Livestock (cattle, poultry, other) replaced	–	–	Yes	Yes (4)	–
Crops	Organic fertilizer and seed distributed (2)	Organic fertilizer, tools, seed and seedling distributed	Cropping patterns changed	Seed distributed (1) 589,053 kg seeds and fertilizer distributed (3)	–
Regained source of income	–	Asset replacement for entrepreneurs and SMEs, particularly women	–	–	70–85% of affected families provided with support

(1) From http://www.tsunamispecialenvoy.org/printable/indonesiak.asp
(2) From http://www.tsunamispecialenvoy.org/printable/thailand.asp
(3) From RAND Data Base : http://www.e-aceh-nias.org/
(4) From www.profauna.or.id/Indo/Pro-Fauna-selamatkan-500-Satwa-Korban_tsunami-di%20Aceh.html-61k
(5) From blueprint Lampiran 3 Peraturan Presiden RI No. 30/2005

"People will soon forget (the risk of future tsunamis); many have already forgotten."

Workshop participant

The National Professional Officer from the WHO Country Office in Myanmar, who attended the full meeting, gave a presentation on the country's experience of the tsunami and the health sector's response to it. The national organigram for disaster preparedness and response was shared, as well as the duties and responsibilities of the different sectors. The presentation underscored the importance of the immediate presence of the central authorities in the places hit by the disaster. Photos of affected people in Myanmar recalled the "human face" of the disaster, demonstrating the value of such graphical elements to illustrate data.

Tsunami impact in Myanmar

Deaths	61
Injured	43
Damaged houses	592
Villages affected	17
Population affected	3,205

Cross-cutting issues

Broad consensus was reached on the need to assess the tsunami's impact on the environment and to adopt some indicators to monitor the response to environmental damage as well the preparedness to recover from and prevent further damage, particularly to coastal ecosystems. Some countries had already started to collect data on the environmental impact of the tsunami, others resolved to do so.

Gender was also highlighted as an important cross-cutting issue. The gender aspect was taken into account in the development of the list of core and country-specific indicators, as well as in determining the data-collection mechanisms, allowing for the disaggregation of data by gender when appropriate. Other gender concerns raised included domestic violence, safety, and equity in aid. Governments expressed their commitment to ensuring that aid be provided equally to men and women. There was considerable discussion regarding the need to monitor land-titling processes and to disaggregate this data by gender. Of particular concern for some countries was the lack of an adequate legal framework allowing women, particularly widows and female heads of household, to own land. Indonesia's BRR has shown leadership in the promotion of gender issues and in the collection of gender-specific data. Moreover, nearly half of the Indonesian delegation at the Bangkok meeting was female and included representatives from a women's NGO in Banda Aceh.

Disaster preparedness and risk reduction were also identified as key cross-cutting elements. Thailand stated that the tsunami had been a wake-up call to improve disaster management and response at all levels, including the institution of effective early warning systems. The tsunami had prompted greater community awareness and risk perception, but sustaining a high level of awareness and therefore appropriate behaviour over a long period of time would be a challenge. Sri Lanka is developing a disaster database at the community level, which will include the type of disasters common in particular communities, their frequency and severity and other key information. It is expected that this will be used to influence the planning of the recovery process.

Tsunami response: Additional data

	Thailand	Maldives	India	Indonesia	Sri Lanka
Environmental restoration	Yes	Clearing of debris in progress on at least 92 islands	Coastal protection repaired, biofencing installed	Coastal and forest protection repaired, biofencing installed, mangroves planted (3)	Yes
Waste disposal	–	Waste-management sites constructed for 92 islands	Waste-management system created for 140 villages (1)	7–10 m m3 disposed of/treated (2)	–
Tourists repatriated	34,145	–	–	–	–
People evacuated	–	–	647,599	420,926 (2)	–
People rescued	–	–	28,734	–	–
Legislative changes	Yes	Yes	–	–	–
Recovery of lost documentation	–	–	–	Document recovery (2)	120,000 documents issued
Institutional changes	Yes	Yes	Yes	Yes	Yes
Local authorities' capacities enhanced	Yes	Yes	–	Yes (4)	Yes
Public awareness and education	Yes	Community participation programmes under way	–	Yes (4)	–
Disaster early warning systems in place	Yes	Under way	Under way	Yes, in progress (4)	–
National emergency/ response plans devised	Yes	Under way	–	Yes (4)	Yes

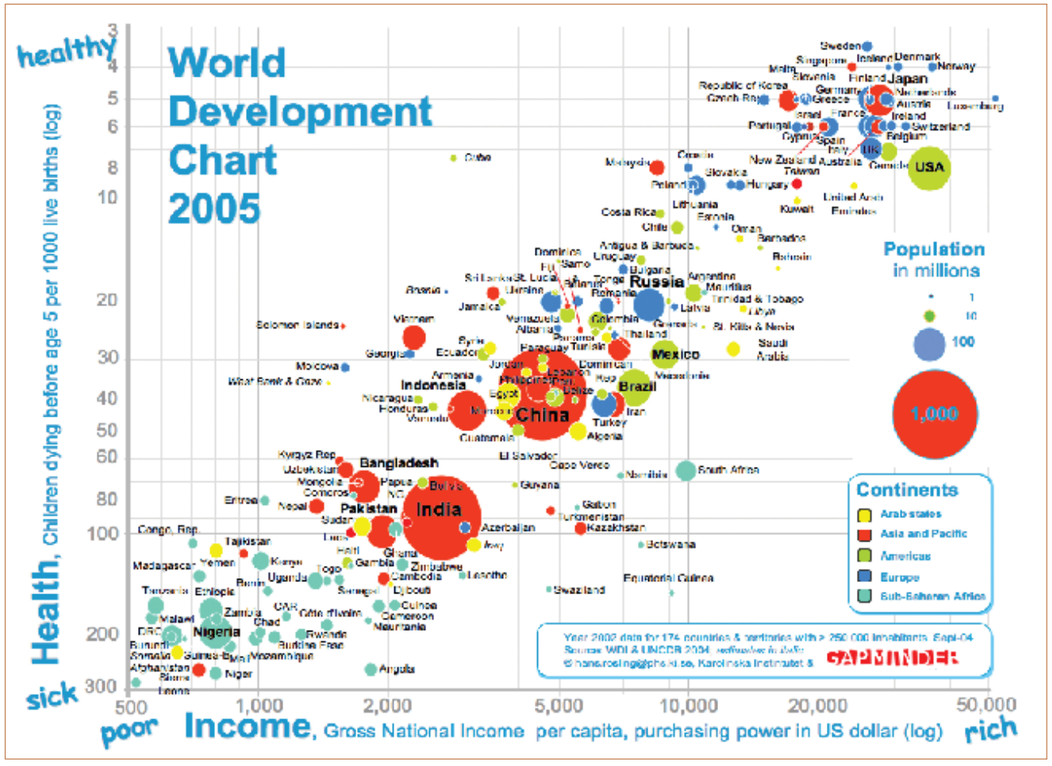
(1) From http://www.tsunamispecialenvoy.org/printable/indiak.asp
(2) From After Tsunami Rapid Environmental Assessment
(3) From RAND Data Base: http://www.e-aceh-nias.org/
(4) From blueprint Lampiran 3 Peraturan Presiden RI No. 30/2005

6

Development of a conceptual framework for monitoring the tsunami recovery

The development of a conceptual framework for the analysis of the impact of the tsunami and of the progress of recovery efforts in each area is considered a key element of the TRIAMS process. WHO requested the support of the Karolinska Institute in preparing a first draft of this conceptual framework, which was presented and discussed at the Bangkok workshop for consideration by the countries concerned as a tool to be improved and used in the implementation of the TRIAMS process.

The World Development Chart 2005 illustrates how under-five mortality rates vary according to Gross National Income (GNI) per capita. There is a linear relationship between GNI and under-five mortality, but with a quite impressive range of variations in the correlation of these two variables. For example, Cuba, with a modest per capita GNI, has been able to achieve a very low under-five mortality rate (the



same as the United States, which has a per capita GNI ten times higher). Meanwhile, Mexico, which has a per capita GNI three times that of Cuba, has an under-five mortality rate four times greater.

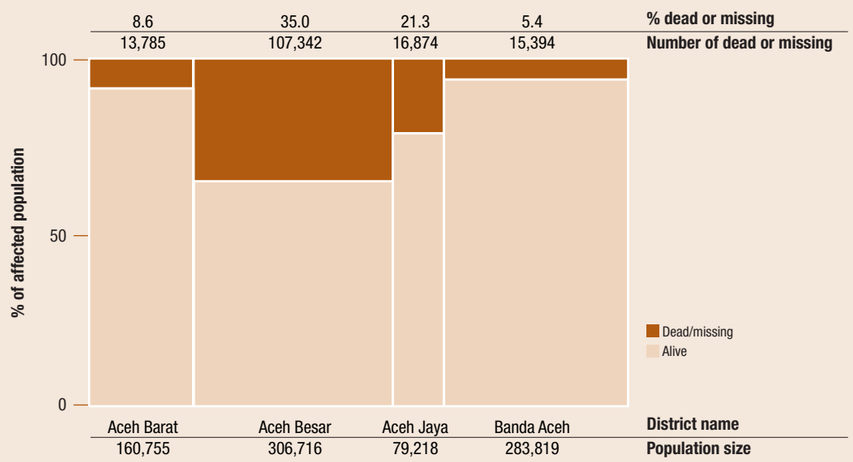
The arrows in this chart indicate the situation in the three of the five tsunami-affected countries for which data are available and have been analysed in the database linked to the chart. As can be seen, Sri Lanka has a relatively low under-five mortality compared with its GNI, suggesting that its health-care system has a good capacity in delivering health care.

With respect to the conceptual framework being developed for TRIAMS, the chart makes clear the importance of the last two key questions on equity identified in the concept paper (see Annex 4, § 6). When designing procedures for monitoring the recovery efforts and assessing the impact of what has been achieved so far, it is crucial to pay special attention to how the equity dimension has been taken into account in the allocation of resources, particularly in the social and health sectors, in the capacity to reach the poorest and the most needy sectors of the population and in correcting pre-tsunami inequalities.

Keeping this in mind, the purpose of the conceptual framework is to facilitate the analysis of data at the district and sub-district levels, using both absolute numbers and rates, in order to capture the variations and to allow for comparison across populations and geographical areas.

Figure 1 shows the pre-tsunami population of each of four selected districts in Aceh province, Indonesia, together with the number of people who died or are missing as a result of the tsunami, both in absolute numbers and as percentages. This graphic presentation may help to visualize the weight of each district. While absolute numbers are crucial to quantifying the devastating effects of the tsunami, they need to be complemented by rates, using the population figures as denominator, in order to capture the extent of the destruction.

Figure 1:
Tsunami deaths and missing (percentages and absolute numbers)
in four selected districts in Aceh province, Indonesia



It can also be seen from Figure 1 that Aceh Barat and Aceh Jaya had similar death tolls, but the percentage of the total population of each district who died varies considerably, from 21.3% for Aceh Jaya to 8.6% for Aceh Barat. Such analysis needs to be taken into account in the planning of recovery efforts for each district – in setting up the targets and timing of interventions; in estimating the overall resilience of the affected communities; in choosing among different temporary solutions; in influencing crucial elements of quality; and in determining the speed of the recovery process.

Curiously, relatively few deaths were recorded in Banda Aceh. WHO and the Karolinska Institute tried to validate this data through those involved in its collection. It transpired that the figure for the number of deaths and missing persons in Banda Aceh district only represented missing persons, as the confirmed deaths were included in those of Aceh Besar district. This discrepancy highlights the importance of ensuring the reliability of data, despite the difficulty of collecting it in the immediate aftermath of a major natural disaster.

Figure 2:
Changes in population post-tsunami (deaths and migration)
in four selected districts of Aceh province, Indonesia

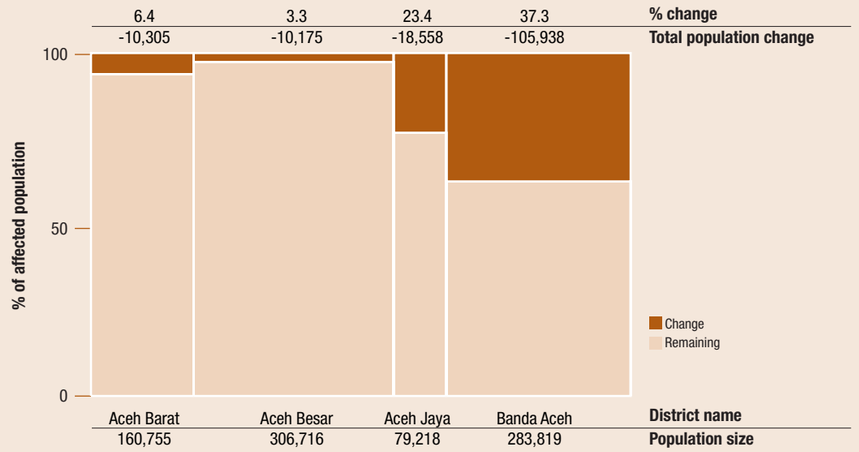


Figure 2 presents the variations in pre- and post-tsunami population sizes in the same four districts, based on the Podes data from 2003 and 2005. The significant difference in the population of Banda Aceh can be explained not only by migration but also by the fact that confirmed deaths were not recorded in the data for this district (see below).

Figure 3:
Percentage of public health facilities damaged or destroyed by the tsunami over total pre-tsunami population in four selected districts in Aceh province, Indonesia

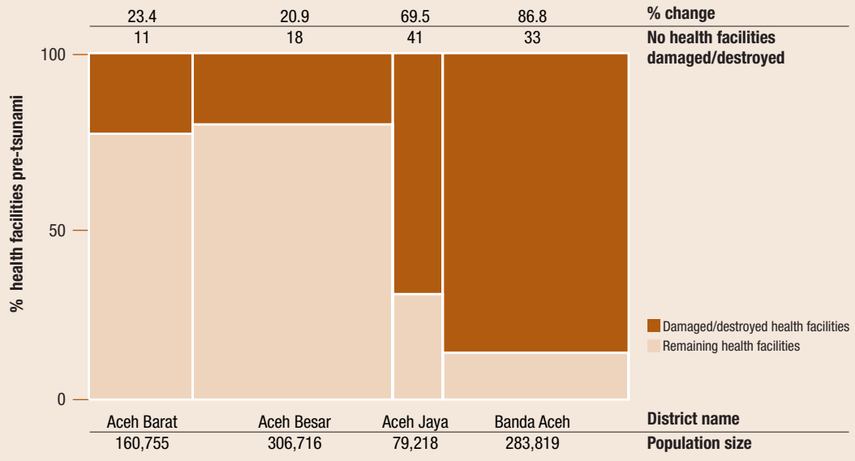


Figure 3 illustrates the destruction of public health facilities by the tsunami in the same four districts. The destruction per population was particularly severe in Banda Aceh, which has a mainly urban population. However, to make a complete analysis of the extent of destruction and of recovery needs, data on the private health system is also relevant. This would provide a more complete picture of access to health care during the recovery process and help in making the right decisions on the reconstruction of public health facilities. There is also a need to relocate some public and/or private health facilities in light of migration.

Pre-tsunami baseline data show a considerable variation in the number of public health facilities per district. In Aceh Jaya, for instance, one public health facility per 1,300 people was recorded, while Banda Aceh had only one public health facility per 7,500 people. This may be because there are likely to be many more private health facilities in an urban area than in a rural one, but further data and analysis are required.

Figure 4 presents the absolute number and the percentage of houses destroyed by the tsunami in the same four selected districts. The destruction was particularly severe in Aceh Jaya, with more than 50% of houses destroyed.

While in Figures 1, 2, 3 and 4, the conceptual model developed by the Karolinska Institute has been used to illustrate the impact of the tsunami at district level, in Figure 5 the same model is used to make the analysis at the sub-district level, within a selected district. Aceh Jaya was selected because it had the highest percentage of houses destroyed (see Figure 4). The pre-tsunami population in the six sub-districts of Aceh Jaya ranged from 4,650 to 15,339. The variable that was chosen illustrates the percentage of the population living in villages "severely affected" (destroyed) by the tsunami versus those "not affected".

Figure 4:
Number and percentage of houses destroyed by the tsunami in four selected districts of Aceh province, Indonesia

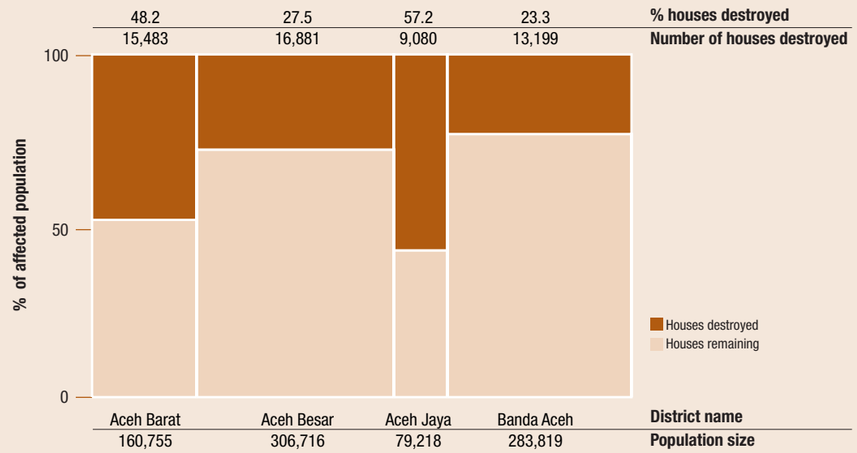
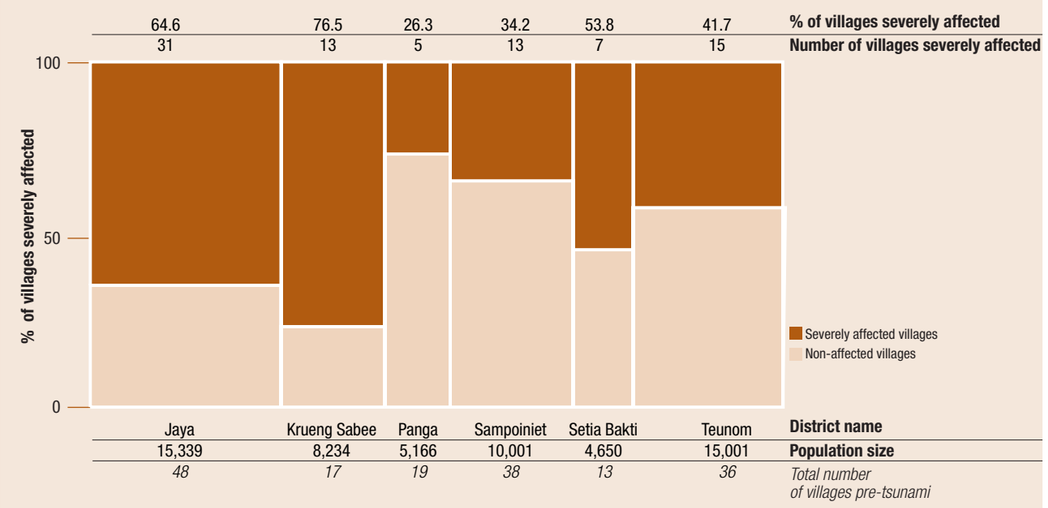


Figure 5:
Percentage of villages severely and not affected by the tsunami, by sub-district, in Aceh Jaya district



Data from other districts categorize villages as "moderately" and "slightly" affected. No explanation is available for the different terminology adopted across the districts. Data on village destruction is derived from the United Nations Information Management Service Podes 2005 data set.

There is a significant variation across the sub-districts of Aceh Jaya, ranging from 26% to 76% of villages "severely affected". The resilience of the affected communities may be very different. The strategy for the implementation of the different recovery interventions needs to be adapted accordingly.

Figure 6:

Location of Banda Aceh district in Aceh province

Population density before tsunami in Kuta Raja sub-district, by village/urban area

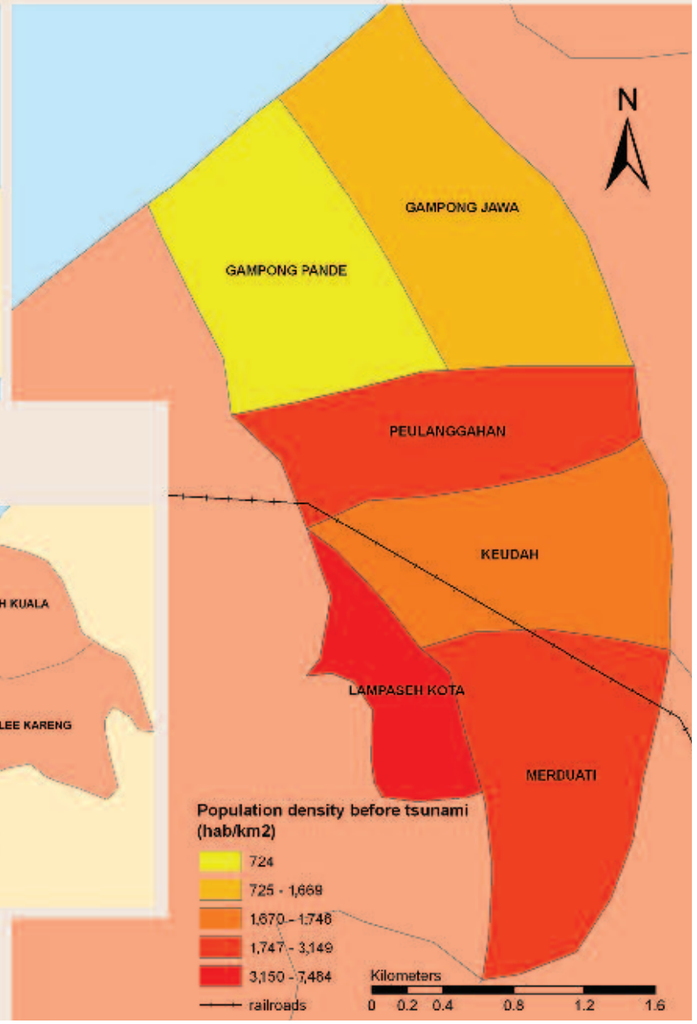
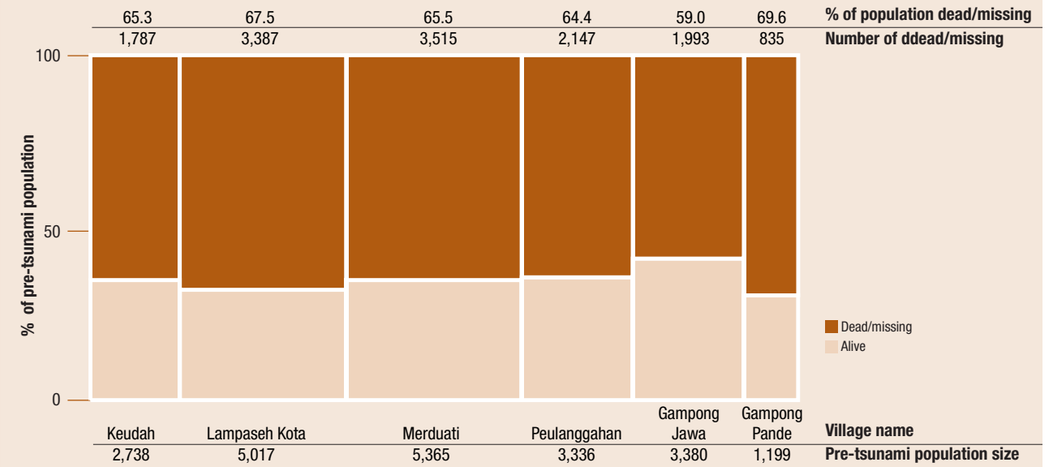


Figure 7 presents the impact of the tsunami in terms of mortality within one sub-district of Banda Aceh. The data were provided by the kecamatan (sub-district) office of Kutaraja. Interestingly, as the area of analysis is narrowed down, the effect of the tsunami becomes much more homogeneous, particularly in the worst-hit areas, as was the case in this urban sub-district. In all the six urban areas into which the sub-district is divided, less than 35% of the pre-tsunami population survived. Thus, a completely different pattern of deaths and missing persons emerges from the one shown at district level in Figure 1.

Figure 7:
Tsunami deaths and missing (percentages and absolute numbers) in the six urban areas of Kutaraja kecamatan (sub-district) of Banda Aceh



So far, the proposed conceptual framework has been used to illustrate the impact of the tsunami at the district and sub-district levels, correlating the different variables to the size of the denominator (e.g. number of deaths in relation to the size of the pre-tsunami population), presented both as absolute numbers and as rates. The same model can be used to illustrate the progress of the recovery process using selected indicators at any one time or over time.

The small map in Figure 8 shows the location of Bireuen district in Aceh province and the boundaries of its sub-districts, while the larger figure indicates the percentage of houses built or under construction, by total housing needs, by sub-district in Bireuen district.

Figure 8:

Percentage of houses built or under construction, by total housing needs, by sub-district in Bireuen district

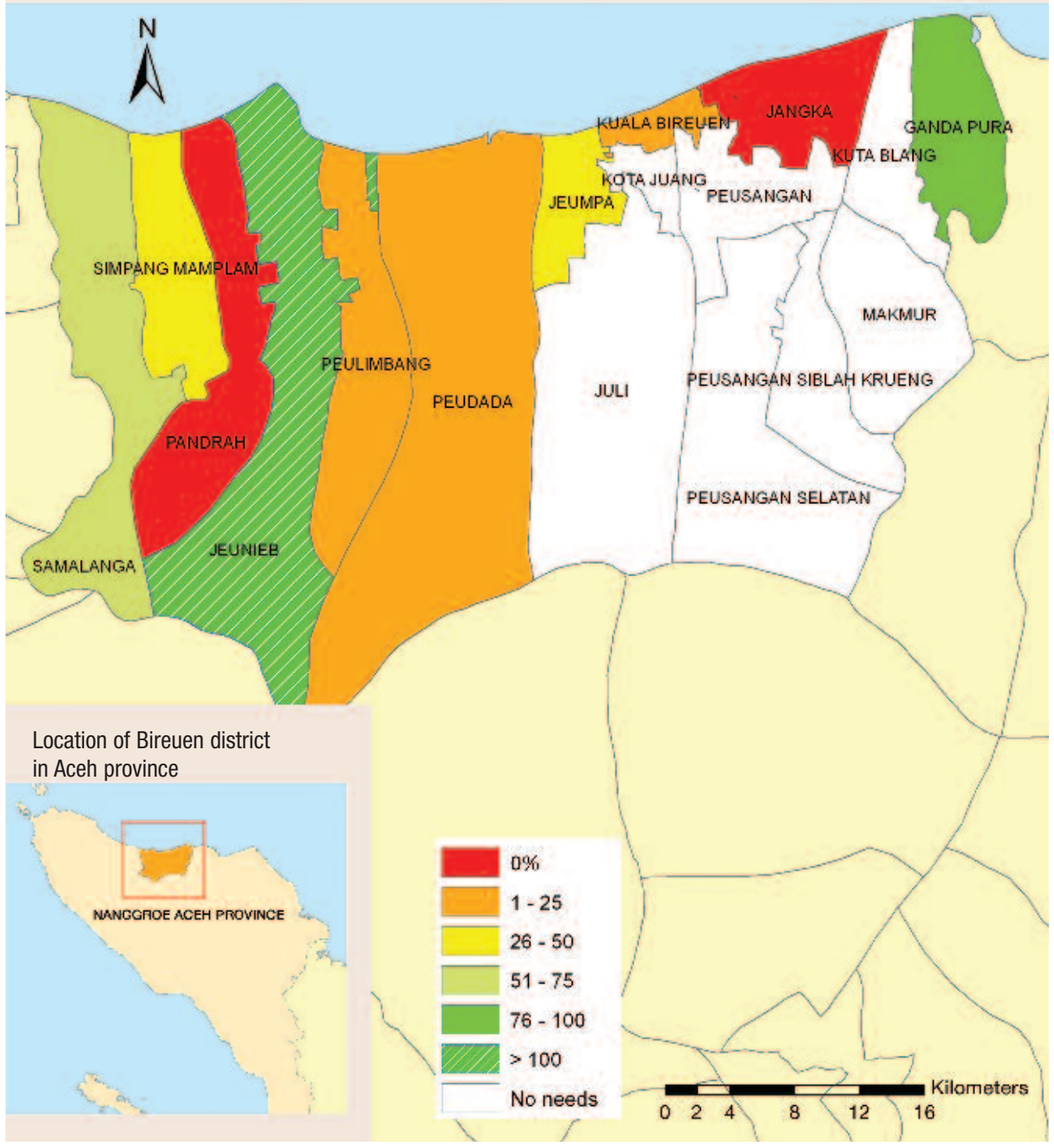
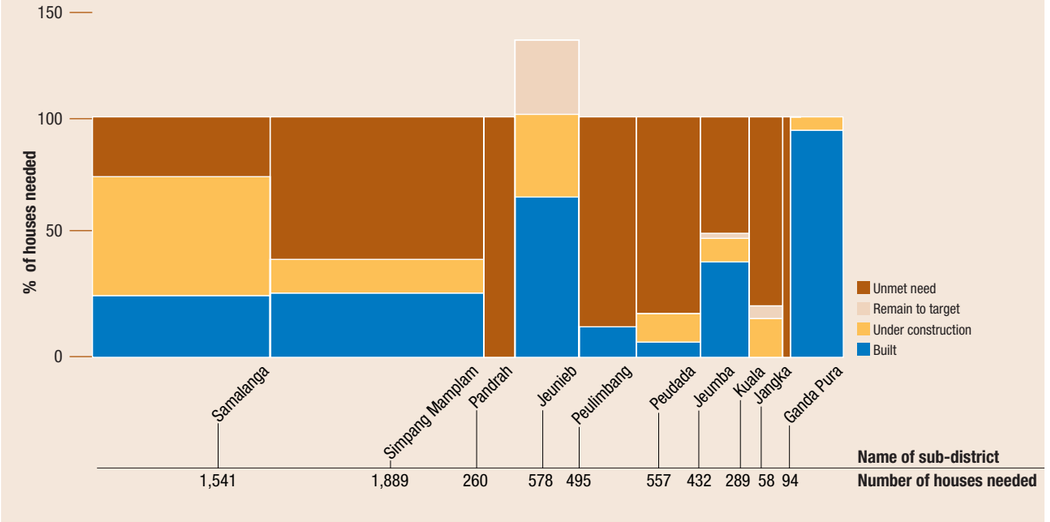


Figure 9 presents data on housing reconstruction in Bireuen district, by sub-district. Reconstruction of housing is shown as a percentage of houses completed, those under construction, those already targeted with available resources and those where the need remains to be covered. The area of each sub-district is based on the weight of housing need rather than on the sub-district population in order to better reflect the progress of reconstruction.

Figure 9:
Housing reconstruction in Bireuen district, by tsunami affected sub-district



The first and most striking finding in Figure 9 is the enormous difference in implementation rates across the sub-districts within the same district. Two sub-districts, Pandrah and Jangka, appear to show no activity in the housing sector, yet they are the ones with the smallest number of houses needed. A plausible reason for this is that most organizations engaged in the reconstruction cannot carry the overheads to provide housing in such small pockets. A new needs survey would have to be carried out to determine whether: (1) those villages are still in the same dire need; (2) the need has diminished because people have rebuilt their houses themselves; or (3) the need has diminished as people have left the villages. Samalanga sub-district, meanwhile, shows excellent progress, with more than 80% of the needed houses completed or under construction, but with no commitment from any quarter at present to cover the remaining 20%. Surprisingly, in Jeunieb sub-district, where 100% of houses have been completed or are under construction, organizations on the ground have allocated resources to build additional houses, exceeding the assessed needs by 25%.

While this specific example should be interpreted with caution, since the data on needs (Garansi survey, November 2005) and reconstruction (BRR survey, April 2006) were collected using different methods, the discrepancies reveal the necessity both of constantly verifying and reassessing the needs and of careful-

ly verifying the reporting system. The example also highlights the importance of having a system in place to monitor what the different organizations are doing and where, as well as the progress being made in each sub-district, keeping in mind that in several sub-districts more than one organization is working in the same sector, in particular on housing reconstruction.

It is also clear that the kecamatan (sub-district) government offices play a very important role. The capacities of these offices vary greatly, but where they are fully functioning and have good leadership and coordination capacities, it seems they really make a difference. In these cases, they can play a role in coordinating the work of different organizations, in ensuring that the needs in some sub-districts do not go uncovered and in readjusting the needs to the changing situation on the ground, taking into account the constant movement of populations.

The proposed conceptual framework should be applied to the set of core indicators adopted by the five tsunami-affected countries at the Bangkok workshop.

Table 1: Matrix of basic societal functions, by area of recovery, and the main recovery sectors as defined by the national recovery agencies of Indonesia (BRR) and Sri Lanka (RADA)

Basic societal functions	Area of recovery	BRR recovery sectors	RADA recovery sectors
1. Search and rescue 2. Water and sanitation 3. Food 4. Shelter and clothing 5. Medical 6. Security	**Vital needs**	Emergency response and relief Housing	Emergency response and relief Getting back home: from emergency shelter to permanent housing
1. Public health 2. Education	**Access to basic services**	Health and education Social, religious and cultural services	Health, education and protection
1. Public works and engineering 2. Energy supplies 3. Logistics and transport 4. Communications 5. Environment	**Rehabilitating and reconstructing infrastructure**	Infrastructure development	Upgrading national infrastructure
1. Economy	**Livelihoods**	Economic and business development	Restoring livelihoods

The draft Concept Paper presented for consideration at the TRIAMS workshop (see Annex 4) proposes a matrix in which a set of core indicators has been aggregated by area of recovery. These areas of recovery have been defined, starting with the full set of basic societal functions presented in the first column of Table 1.

Interestingly, only in Indonesia and Sri Lanka did the governments decide to set up ad hoc agencies to oversee and coordinate tsunami recovery efforts. In both countries, the new agencies are facing the challenge of changing their structure in order to decentralize certain critical functions in the second phase of the recovery. To do so, they need to build capacities quickly at the sub-district and district levels so that local authorities can drive and monitor recovery efforts. This seems to be the only way to meet the needs of local communities and to re-plan properly the use of the resources still available.

7

Working groups on recovery monitoring indicators

Working groups by area of recovery

"We were hit by the tsunami twice. Once when it hit our country. Second, because we were not entitled to aid."

"We were unlucky not to have been hit by the tsunami."

Some reactions from communities reported by workshop participants

Participants divided up into four working groups organized by area of recovery to review and revise the proposed core indicators. They produced an integrated matrix of output, outcome and cross-cutting indicators (see Table 2), which were then presented and discussed in the plenary. It was stressed that standard definitions and common methodologies for comparison across countries and over time should be agreed upon and incorporated into the detailed country action plans. (See Annex 2 for standard definitions of core indicators.)

The subject of equity came up in many of the discussions. While the issue is difficult to address and measure, it is key to successful recovery. Participants expressed their expectation that TRIAMS would support the measurement and analysis of equity dimensions during the recovery phase. Countries experiencing internal conflicts have struggled with the issue of equity between tsunami-affected and conflict-affected populations. Also, in some regions of some countries, it was the better-off who were often worse affected by the tsunami and therefore received more aid, while some impoverished populations living further inland were not affected and therefore not entitled to tsunami-related aid. This created tensions both between the populations and within aid agencies. Although the affected countries have decentralized recovery efforts to some extent, it was acknowledged that local authorities and communities need to be better informed in order to detect and respond to disparities that may affect equity and development results in the recovery process.

Requests for additional information and technical support to assess mental health status were voiced during the meeting, with specific reference to the WHODAS II tool presented on the second day.

Policy issues also surfaced regularly in the discussions, notably policies to address the needs of displaced populations, gender-based violence, and gender equity in the titling and ownership of land as well as in other recovery interventions. The legal, political and regulatory environment within which the recovery process occurs also needs to be monitored and analysed, given that the presence or absence of a favourable policy environment will affect recovery efforts at all levels.

Working groups on country- specific indicators and country action plans

Participants confirmed that suitable data-collection systems for many of the core indicators are already in place at the country level. However, in light of the asymmetry of data sources for each indicator between the countries and within sectors, some special surveys and other data-collection events will still be required. Given these disparities, specific support to individual countries in the implementation of TRIAMS needs to be considered, including the strengthening of impact assessment and monitoring capabilities and the creation of effective coordination mechanisms at the regional level.

"Meeting participants also recognized that many people are still in a very vulnerable situation and living in difficult circumstances. For example, Yayasan Flower Aceh, a women's organization from Indonesia, voiced concern about the many cases of violence against women in displaced communities."

News release, International Federation, 5 May 2006

Several countries confirmed that information at the sub-district level is already available but indicated the need for additional efforts to consolidate and analyse these data. A rough calculation of the additional financial and technical resources needed to fill specific gaps in data collection and analysis for both the core and country-specific indicators is included in the country action plans. Countries' financial and technical needs for the implementation of TRIAMS require greater specificity (as the workshop did not allow sufficient time). A more detailed and accurate estimate will need to be worked out at the country level after the workshop.

The issue of availability of quality data to facilitate decision-making regarding the use of financial resources was brought up in some groups, which looked at it from two perspectives. One of these was that a process of allocation and disbursement of financial resources triggered locally by quality data is needed. The other was that financial information, such as that provided by the UNDP-supported Donor Assistance Database (DAD) in some countries, linked with TRIAMS data, should help determine where and when reallocation of funding is needed to address identified gaps and ensure countries are building back better.

8

Outcomes of the TRIAMS workshop

TRIAMS core indicators

The core indicators – both outputs and outcomes – by area of recovery are set out in Table 2. The table represents the hard-earned results of both the sectoral working groups and country working groups. It also reflects the input of a range of stakeholders, beginning with meetings held in July 2005, and the many preparatory sessions leading up to the Bangkok workshop.

One could debate endlessly whether something is an output or an outcome. Indeed, many indicators have been moved back and forth across the columns over the past year. Other discussions revolved around the utility of some indicators, and whether they were actually indicators or inputs. This too could have been debated for much longer. Table 2 represents the input and views of the participants and must be respected as such. An external observer could perhaps find "smarter" indicators, but this is what users of TRIAMS agreed was what they wanted. A "smarter" indicator is not useful if it does not result in data meaningful to those who will make decisions based on the information.

Table 2: Matrix presenting selected indicators* by area of recovery and by type of indicator

Areas of recovery	Recovery **output** indicators	Recovery **outcome** indicators	
Vital needs	• % of population with access to water from an improved source, by administrative level • % of population without basic sanitation facilities, by administrative level • Household food consumption (24 hr recall) • Proportion of tsunami-affected population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses, by sub-district, by time period • Measles immunization coverage, by administrative level • # of titles to land issued, by economic status and by gender, by district	• % of children under 5 who are underweight • % of children under 5 who are wasted (moderate and severe) • % of children under 5 who are stunted (moderate and severe) • % of low birth weight newborns • % of children under 5 who have experienced a diarrhoea episode within the past 2 weeks	**Outcome indicators not linked to a specific area of recovery** • % of population with worse functioning (WHODAS II) • Infant mortality rate • % of population with poor quality of life • % of tsunami-affected communities consulted by implementing agencies, by district
Basic social services	• # of primary school children per school, by sub-district • # of primary school children per teacher, by sub-district • # of hospital beds per 10,000 population (inpatient & maternity), by sub-district/district • # of outpatient consultations per person per year, by administrative level • % of children of 12–23 months who are fully immunized against all antigens, by administrative level • # of health facilities with emergency obstetric care per 10,000 population, by sub-district/district • adequate antenatal coverage (at least 4 visits during a pregnancy), by sub-district • % of sub-districts covered by mobile psychological support workers, by district	• Net primary school enrolment ratio • Primary school drop-out rate • % of births attended by a skilled birth attendant	
Infrastructure	• # of km of repaired/new road, by type of road, by district • # of bridges repaired, by district • # of harbours/jetties rehabilitated by type, by district • % of destroyed/damaged schools rebuilt or rehabilitated by category, by sub-district • % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by sub-district • # of sq km of natural habitat restored, by type • # of km of coastal protection by type (biofencing, seawalls, quay walls, breakwaters) constructed/repaired, by district	• % of local administration offices fully functioning, by district	
Livelihoods	• # of sq km of land returned to crops, by district • % of tsunami-affected population who have received loans, by administrative level, by gender • % of tsunami-affected population enrolled in social protection programmes, by gender, by sub-district • # of people employed, by different sector, by district, by gender • % of damaged/destroyed boats repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district	• % of population living below national poverty line • Average household income, by administrative level and by gender • Labour force participation rate, by gender • % of households that have regained their pre-tsunami livelihoods, by gender, by district	

*see Annex 2 for definitions, page 64

Country-specific indicators

Table 3 presents the indicators that are specific to some countries. Some of these are already in use; others are planned to be introduced. Countries felt that it was important to keep these indicators within their national tsunami impact analyses.

Table 3: Country-specific indicators by area of recovery and type of indicator

Area of recovery	Recovery output indicators	Recovery outcome indicators	Indonesia	India	Maldives	Sri Lanka	Thailand
Vital needs	# of domestic violence cases		X		X		X
	% of children under 4 years receiving food supplements through Integrated Child Development Services			X			
	# of tsunami-affected people, per latrine in temporary camp sites				X		
Basic social services	# of community self-help groups by sub-district			X			X
	# of tonnes of tsunami waste recycled/removed		X			X	
		Proportion of environmental projects assessed	X				
	# of unaccompanied children who are institutionalized					X	X
	# of women's centres available in tsunami-affected districts					X	
		% of beneficiaries self-reporting improved access				X	
		Coverage of community psychiatric care					X
Infrastructures	# of airports repaired or new		X				
Livelihoods	# of ha of salinated land brought back to cultivation			X			X
	# of people receiving fishing gear, by gender				X		X
	# of hotel rooms available compared to pre-tsunami				X	X	X
	# of house gardens affected and regained				X		
	# of farmers receiving agricultural input, by gender where possible		X				X
	# of persons trained in different sectors, by gender where possible		X				X

Country action plans for TRIAMS implementation

The participating countries developed initial TRIAMS implementation plans. These action plans summarize:

- the indicators the country is planning to use and report on (core as well as country specific);
- data source and frequency of data collection for these indicators;
- specific actions and resources needed for the development and implementation of the monitoring system;
- additional qualitative ways to collect data to support more in-depth analysis;
- a designated focal point and reporting schedule for TRIAMS implementation in the country concerned.

The action plans developed in the workshop are work in progress and will continue to undergo further elaboration and clarification. Some of the country delegations said that their government decision-makers would have to validate the plan. The next step, therefore, is for the country delegations to finalize the action plans with the support of the agencies involved in the initiative. Simultaneously, a regional plan of action is to be developed based on the individual country plans.

Country action plan for India

The following represents the initial work produced by the joint Government of India and UN team during the Bangkok workshop. (Other countries subsequently updated their action plans in the months following the workshop and submitted them for inclusion in this report.) A few of the indicators, as noted below, have slight variations in the definitions. This will need to be taken into consideration when the regional analysis incorporating all five countries is conducted.

Indicators

The Indian delegation found that not all the core indicators were suited to every context for various reasons. It believed, therefore, that countries needed to have flexibility in selecting which indicators to use. Moreover, it had refined some of the terminology to fit in with the Indian government's own definitions.

Country indicator table: India

Vital needs output indicators	Source	Timing
1/ % of population with access to water from an improved source, by administrative level	Department of Water Supply (sub-district) **Indicator renamed*	Routine/annually
2/ % of population without basic sanitation facilities, by administrative level	Household survey, Department of Water Supply/Rural Development	Annually
3/ Household food consumption (24 hr recall)		
4/ Proportion of tsunami-affected population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses, by sub-district, by time period	Department of Urban Development (sub-district) **Indicator renamed*	Routine/annually
5/ Measles immunization coverage, by administrative level		
6/ # of titles to land given, by economic status and gender, by district		

Country indicator table: India

Vital needs outcome indicators	Source	Timing
7/ % of children under 5 who are underweight		
8/ % of children under 5 who are wasted (moderate and severe)	Department of Family Welfare/ Ministry of Health – Survey	Annually
9/ % of children under 5 who are stunted (moderate and severe)	Department of Family Welfare/ Ministry of Health – Survey	Annually
10/ % of low birth weight newborns	Department of Family Welfare/ Ministry of Health – Survey	Annually
11/ % of children under 5 who have experienced a diarrhoea episode in the past 2 weeks		
Access to basic services output indicators	**Source**	**Timing**
12/ # of primary school children per school, by sub-district		
13/ # of primary school children per teacher, by sub-district	Department of Education (for primary schools)	Annually
14/ # of hospital beds per 10,000 population (inpatient and maternity), by sub-district/district	Private, public/Ministry of Health Survey	Routine/annually
15/ # of outpatient consultations per person per year, by administrative level		
16/ % of children of 12–23 months who are fully immunized against all antigens, by administrative level	Department of Family Welfare	Quarterly
17/ # of health facilities with emergency obstetric care per 10,000 population, by sub-district/district	Private, public/Ministry of Health Survey	Routine/annually
18/ Adequate antenatal coverage (at least 4 visits during a pregnancy), by sub-district	Ministry of Health	Annually
19/ % of sub-district covered by mobile psychological support workers, by district	Institutional survey (NIMHANS) **Indicator renamed*	Annually
Access to basic services outcome indicators	**Source**	**Timing**
20/ Net primary school enrolment ratio	Department of Education	Annually
21/ Primary school drop-out rate	Department of Education **as output indicator*	Annually
22/ % of births attended by a skilled birth attendant	Ministry of Family Welfare	Annually
Infrastructure output indicators	**Source**	**Timing**
23/ # of km of repaired/new road by type of road, by district	Ministry of Surface Transport	Annually
24/ # of bridges repaired, by district	Ministry of Surface Transport	Annually
25/ # of harbours/ Jetties rehabilitated by type, by district	Ministry of Shipping/Fisheries	Annually
26/ % of destroyed/damaged schools rebuilt or rehabilitated, by category, by sub-district	Department of Education	Annually

Country indicator table: India

Infrastructure output indicators	Source	Timing
27/ % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by sub-district	Ministry of Health	Annually
28/ # of sq km of natural habitat restored, by type		
29/ # of km of costal protection constructed/repaired, by type (biofencing, sea walls, quay walls, breakwaters), by district	Biofencing: Ministry of Environment Stone walls: Department of Ocean Development	Annually
30/ % of local administration offices fully functioning, by district		
Livelihoods output indicators	**Source**	**Timing**
31/ # of sq km of land returned to crops		
32/ % of tsunami-affected population who have received loans		
33/ % of population of tsunami-affected districts who have received grants, by administrative level and by gender		
34/ % of tsunami-affected population enrolled in social protection programme, by gender		
35/ # of people employed by different sectors		
36/ % of damaged/destroyed boats repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district	Department of Fisheries **only mentioning fishing boats*	Annually
Livelihoods outcome indicators	**Source**	**Timing**
37/ % of population living below national poverty line	Ministry of Rural Development (available to sub-district level)	Annually
38/ Average household income, by administrative level and by gender	Department of Statistics	
39/ Labour force participation rate, by gender		
40/ % of households that have regained their pre-tsunami livelihoods, by gender, by district	** further definition in country-specific indicators*	
Cross-cutting indicators	**Source**	**Timing**
41/ % of tsunami-affected communities consulted by implementing agency, by district		
42/ infant mortality rate	Ministry of Health/NSSO	Annually
43/ % of population with poor quality of life		
44/ % of population with worse functioning (WHODAS II)	Ministry of Social Welfare/Ministry of Health Survey	
45/ % of population under stress or with poor well-being		

Country indicator table: **India**		
Country-specific indicators	**Source**	**Timing**
# of community self-help groups, by sub-district	Local government	Annually
# of ha of salinated land brought back to cultivation (%)	Ministry of Agriculture	Annually
% of affected population gainfully employed for at least 3 months, by gender for BPL	Department of Rural Development	Annually
% of children under 4 receiving food supplements through Integrated Child Development Services	Department of Social Welfare (sub-district)	Routine/annually

Resources and actions needed

- Constitution of sub-committee of the core group.
- Consensus on/approval of the indicators by the government authorities and identification of data sources.
- Development of methodology for data collection, collation and analysis.
- Identification of the lead agencies and their familiarization with data collection, collation and analysis.
- Development of reporting formats.
- Identification of the financial source.

Qualitative approaches

- Measuring beneficiary satisfaction (surveys/focus groups/semi-structured questionnaires).
- Impact assessment studies carried out in consultation with experts in the relevant fields.

Focal point and report availability

- Focal point to be confirmed (Planning Commission, most probably).
- First report to be available by March 2007 (estimate).

Country action plan for Indonesia

The large Indonesia delegation produced a detailed plan during the Bangkok workshop. Several in-country working group meetings were held following the workshop to discuss the action plan further with various stakeholders, including the newly created UN Information and Analysis Section (IAS) unit (formerly UNIMS). The IAS will play a significant role in supporting BRR in identifying, analysing and utilizing the data stemming from the TRIAMS process.

With financial support from WHO, the Karolinska Institute will also provide technical assistance to the IAS in 2006 to address outstanding database and analysis issues. At the time of the last update of the plan (July 2006), the Indonesia team had not yet determined the strategy for collecting the qualitative data that will include beneficiary perspectives. A mapping of proposed efforts by the various partners and stakeholders is scheduled for later in 2006 to determine availability of qualitative data and to inform plans to address any gaps.

Country indicator table: **Indonesia**		
Vital needs output indicators	**Source**	**Timing**
1/ % of population with access to water from an improved source, by administrative level	(i) BRR/Public Works (ii) BPS (SUSENAS) (distance 100 m)	Annually
2/ % of population without basic sanitation facilities, by administrative level	(i) BRR/Public Works (ii) BPS (SUSENAS) private vs. communal (male and female)	Annually
3/ Household food consumption (24 hr recall)	**further definition in country-specific indicators*	
4/ Proportion of tsunami-affected population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses, by sub-district, by time period	Dinas Social BRR/Dinas Perkim (tents) Dinsos, BRR Dinas Perkim (barracks, individual temporary shelter) Dinsos, BRR Dinas Perkim	Monthly
5/ Measles immunization coverage, by administrative level	BPS (SUSENAS) and Dinas Kesehatan	Annually
6/ # of titles to land given, by economic status and gender, by district	BPN (land agency) and Dinas Perkim **Indicator renamed*	Quarterly
Vital needs outcome indicators	**Source**	**Timing**
7/ % of children under 5 who are underweight	DHS/Surkesda surveys Dinas Kesehatan (health card)	Five-yearly Annually
8/ % of children under 5 who are wasted (moderate and severe)	DHS/Surkesda surveys Dinas Kesehatan (local health office) Routine information (health care)	Five-yearly Annually
9/ % of children under 5 who are stunted (moderate and severe)	DHS/Surkesda surveys Dinas Kesehatan (health card)	Five-yearly Annually
10/ % of low birth weight newborns	PHO (only for births attended by midwives, nurses, doctors) (<2.5kg)	Annually
11/ % of children under 5 who have experienced a diarrhoea episode in the past 2 weeks		
Access to basic services output indicators	**Source**	**Timing**
12/ # of primary school children per school, by sub-district	Dinas PK	Annually
13/ # of primary school children per teacher, by sub-district		
14/ # of hospital beds per 10,000 population (inpatient and maternity), by sub-district/district	Dinas and Hospital	Annually
15/ # of outpatient consultations per person per year, by administrative level	Dinas and Hospital	Annually
16/ % of children of 12–23 months who are fully immunized against all antigens, by administrative level	BPS SUSENAS DHS 2007	Annually
17/ # of health facilities with emergency obstetric care per 10,000 population, by sub-district/district	Dinas and Hospital	Quarterly
18/ Adequate antenatal coverage (at least 4 visits during a pregnancy), by sub-district	Dinas and Hospital	Annually
19/ % of sub-district covered by mobile psychological support workers, by district	Dinas and Hospital	Quarterly

Country indicator table: **Indonesia**

Access to basic services outcome indicators	Source	Timing
20/ Net primary school enrolment ratio	BPS/SUSENAS	Annually
21/ Primary school drop-out rate	Use enrolment rate Dinas, BPS	Annually
22/ % of births attended by a skilled birth attendant		
Infrastructure output indicators	**Source**	**Timing**
23/ # of km of repaired/new road by type of road, by district	BRR, Dinas Praswil	Quarterly
24/ # of bridges repaired, by district	BRR, Dinas Praswil	Quarterly
25/ # of harbours/ Jetties rehabilitated by type, by district	BRR, Dinas Praswil	Quarterly
26/ % of destroyed/damaged schools rebuilt or rehabilitated, by category, by sub-district	BRR, Dinas	Quarterly
27/ % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by sub-district	BRR, Dinas	Quarterly
28/ # of sq km of natural habitat restored, by type	BRR	Quarterly
29/ # of km of costal protection constructed/repaired, by type (biofencing, sea walls, quay walls, breakwaters), by district	BRR, Dinas SDA (water)	Quarterly
Infrastructure outcome indicators	**Source**	**Timing**
30/ % of local administration offices fully functioning, by district		
Livelihoods output indicators	**Source**	**Timing**
31/ # of sq km of land returned to crops	BRR, Dinas	TBD
32/ % of tsunami-affected population who have received loans	BRR, BI	
33/ % of population of tsunami-affected districts who have received grants, by administrative level and by gender	BRR	
34/ % of tsunami-affected population enrolled in social protection programme, by gender		
35/ # of people employed by different sectors	SUSENAS/Sukernas	
36/ % of damaged/destroyed boats repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district	BRR, Dinas	TBD
Livelihoods outcome indicators	**Source**	**Timing**
37/ % of population living below national poverty line	BPS	Annually
38/ Average household income, by administrative level and by gender	BPS	Annually
39/ Labour force participation rate, by gender	BPS Sukernas	Annually
40/ % of households that have regained their pre-tsunami livelihoods, by gender, by district		

Country indicator table: **Indonesia**

Cross-cutting indicators	Source	Timing
41/ % of tsunami-affected communities consulted by implementing agency, by district		
42/ infant mortality rate	BPS, SUSENAS DHS (SDKI)	Annually
43/ % of population with poor quality of life		
44/ % of population with worse functioning (WHODAS II)	Surkesda (regional health survey	TBD
45/ % of population under stress or with poor well-being		
Country-specific indicators	**Source**	**Timing**
% of population below minimum level of dietary energy consumption	BPS SUSENAS 2,100 calories as standard; ask food consumed in last week average per person per day	
# of domestic violence cases	SUSENAS Ask each household member of household whether experienced in last 3 month (to be confirmed)	BPS Annually (provincial level only)
% of children who have experienced a diarrhoea episode within the past 2 weeks	BPS SUSENAS	Three-yearly
# of airports repaired or new	BRR	Quarterly
# of tonnes of tsunami waste recycled/removed	BRR	Annually
Proportion of environmental projects assessed	Bappeldalda	Annually

Resources and actions needed

- Provide support for survey-based information including:
  - nationally designed sample surveys, the results of which focus on national and provincial comparability (the BRR in cooperation with relevant bureaus will enlarge the sample size for Aceh and Nias to enable collection of data at least at the district level);
  - nationally designed sample surveys, the results of which provide at least district-level data but do not incorporate the full range of variables (the BRR in cooperation with relevant bureaus will supplement the variables and questions as required).
- Encourage institutions (bureaus and other stakeholders) responsible for providing the routine data needed, to cover effectively the indicators required.
- Provide technical assistance to improve institutions' (bureaus' and other stakeholders') reporting and data-collection systems covering both surveys and routine data collection.
- Provide assistance and/or access to financial resources required for the nationally designed sample surveys, the results of which focus on national and provincial comparability (estimated cost for local staff's activities: Rp 4.5 billion or around US$ 500,000).
- Design and implement a process to consolidate all data sets, provide comparative analysis and improve data networking (improve existing BRR NAD-Nias database system/RAND database by adding budget information, and encourage all stakeholders to be active in reporting their progress to the database).

- Coordinate the establishment of regular stakeholder meetings, with the participation of civil society, women's groups, religious leaders and local government authorities.

Qualitative approaches

- The collection of quantitative recovery indicators will be supplemented with additional qualitative analysis, such as:
  - providing explanation and analysis across indicator results;
  - conducting "perception surveys" to assess satisfaction and community involvement in recovery;
  - onducting focus groups to provide contextual socio-economic explanations and impacts of indicators.
- Special attention will be paid to cross-cutting issues such as gender.

Focal point and report availability

- BRR will be the focal point for the action plan, as it is the organization mandated to coordinate the reconstruction and rehabilitation effort in Aceh-Nias.
- By the end of 2006, some indicators should be available (socio-economic survey to be done, possibly could be ready by December), however will need so see first how the reporting systems are working.

Country action plan for the Maldives

The Maldives action plan largely represents the work completed during the Bangkok workshop. Some additional updates were provided in August 2006 by the Ministry of Planning, Ministry of Health and UNDP. The Government of the Maldives has considerable information available to feed into the TRIAMS framework, including baseline data. In spite of good data availability, however, the Maldives faces two challenges. The frequency of some of the data is too limited to inform ongoing monitoring and impact assessment (data on several indicators will only be collected every five years).

Secondly, the government has noted that it has some capacity constraints when it comes to comprehensively analysing the data from the myriad sources. To help address the latter constraint, WHO and the International Federation will provide financial support in the later part of 2006 to augment the government's capacity to produce the level of analysis necessary for the TRIAMS framework.

During this time, the capacity strengths and challenges will be noted and options for increasing the frequency of some of the data collection will be identified. This will help inform the capacity-building action plan for the remaining years of the TRIAMS process.

Country indicator table: Maldives

Vital needs output indicators	Source	Timing
1/ % of population with access to water from an improved source, by administrative level	Census MICS	Five-yearly Five-yearly
2/ % of population without basic sanitation facilities, by administrative level	Census MICS	Five-yearly Five-yearly
3/ Household food consumption (24 hr recall)		
4/ Proportion of tsunami-affected population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses, by sub-district, by time period	MIPD (indicators separately for emergency/ temporary/permanent housing)	Quarterly
5/ Measles immunization coverage, by administrative level	Ministry of Health	Annually
6/ # of titles to land given, by economic status and gender, by district	MoAD	Annually
Vital needs outcome indicators	**Source**	**Timing**
7/ % of children under 5 who are underweight	MICS/Ministry of Health	Five-yearly
8/ % of children under 5 who are wasted (moderate and severe)	MICS/Ministry of Health	Five-yearly
9/ % of children under 5 who are stunted (moderate and severe)	MICS/Ministry of Health	Five-yearly
10/ % of low birth weight newborns	Ministry of Health	Annually
11/ % of children under 5 who have experienced a diarrhoea episode in the past 2 weeks	Ministry of Health	Annually
Access to basic services output indicators	**Source**	**Timing**
12/ # of primary school children per school, by sub-district	Ministry of Education **Indicator renamed*	Annually
13/ # of primary school children per teacher, by sub-district	Ministry of Education	Annually
14/ # of hospital beds per 10,000 population (inpatient and maternity), by sub-district/district	Ministry of Health	Annually
15/ # of outpatient consultations per person per year, by administrative level	Ministry of Health	Annually
16/ % of children of 12–23 months who are fully immunized against all antigens, by administrative level	Ministry of Health	Annually
17/ # of health facilities with emergency obstetric care per 10,000 population, by sub-district/district	Ministry of Health	Annually
18/ Adequate antenatal coverage (at least 4 visits during a pregnancy), by sub-district	Ministry of Health	Annually
19/ % of sub-district covered by mobile psychological support workers, by district	Ministry of Health	Quarterly

Country indicator table: Maldives

Access to basic services outcome indicators	Source	Timing
20/ Net primary school enrolment ratio	Ministry of Education	Annually
21/ Primary school drop-out rate	Ministry of Education	Annually
22/ % of births attended by a skilled birth attendant	Ministry of Health	Annually
Infrastructure output indicators	**Source**	**Timing**
23/ # of km of repaired/new road by type of road, by district		Not relevant for Maldives
24/ # of bridges repaired, by district		Not relevant for Maldives
25/ # of harbours/ Jetties rehabilitated by type, by district	MCPI	Quarterly
26/ % of destroyed/damaged schools rebuilt or rehabilitated, by category, by sub-district	Ministry of Education	Quarterly
27/ % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by sub-district	Ministry of Health	Quarterly
28/ # of sq km of natural habitat restored, by type		
29/ # of km of costal protection constructed/repaired, by type (biofencing, sea walls, quay walls, breakwaters), by district	MCPI	Quarterly
Infrastructure outcome indicators	**Source**	**Timing**
30/ % of local administration offices fully functioning, by district	MoAD	Quarterly
Livelihoods output indicators	**Source**	**Timing**
31/ # of sq km of land returned to crops	MFAMR	Annually
32/ % of tsunami-affected population who have received loans	MFAMR/MFAMR/MGF, BoM	Annually
33/ % of population of tsunami-affected districts who have received grants, by administrative level and by gender	MPND to determine sources	Annually
34/ % of tsunami-affected population enrolled in social protection programme, by gender	MIDP Unit	Annually
35/ # of people employed by different sectors	Census	Five-yearly
36/ % of damaged/destroyed boats repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district	MFAMR/MOT	Quarterly
Livelihoods outcome indicators	**Source**	**Timing**
37/ % of population living below national poverty line	VPA 2, TIAS	VPA 2 – 2004, TIAS – 2005
38/ Average household income, by administrative level and by gender	VPA 2/HIES	VPA 2 – 2005; HIES Q Five-yearly
39/ Labour force participation rate, by gender	Census	Five-yearly
40/ % of households that have regained their pre-tsunami livelihoods, by gender, by district	VPA 2, TIAS	VPA 2 – 2004, TIAS – 2005

Country indicator table: Maldives

Cross-cutting indicators	Source	Timing
41/ % of tsunami-affected communities consulted by implementing agency, by district	MPND to consult and determine sources and frequency	TBD
42/ infant mortality rate	Ministry of Health	Annually
43/ % of population with poor quality of life		Funding and TA needed beginning in 2007: consider adding to 07 DHS
44/ % of population with worse functioning (WHODAS II)	Ministry of Health	Funding and TA needed beginning in 2007: consider adding to 07 DHS
45/ % of population under stress or with poor well-being	TIAS	TIAS 2005: 2007 may come from DHS/WHO-DAS II
Country-specific indicators	**Source**	**Timing**
# of hotel rooms available compared to before the tsunami	MTCA	Quarterly
# of people per latrine (for tsunami-affected people living in temporary campsites, etc.)	MIPD	Annually
# of domestic violence cases	MGF	GBV Survey 2006
# of home gardeners affected and regained	MFAMR	Quarterly
% of the tsunami-affected population receiving micro-credit loans, by administrative level and by gender	MOAD/MOF/BOM	Annually
# of people receiving fishing gear, by gender	MFAMR	Quarterly
Contraceptive prevalence rate	Ministry of Health	Annually
Maternal mortality rate (ratio)	Ministry of Health	Annually
Out-of-pocket expenditure for health	Ministry of Health	DHS 2007
Additional tsunami indicators (specific to recovery efforts)		

Resources and actions needed

Action steps for 2006:

- Establish coordination among donor communities, the government and NGOs in data collection and monitoring and evaluation (August/September).
- Establish a monitoring system (TRIAMS) for tracking data on recovery progress.
- Map existing qualitative data among various partners (September/October).
- Integrate TRIAMS framework and indicators into Year-end Tsunami Report 2006: support provided by International Federation; WHO to assist in the data analysis and capacity building (September/October).
- Mapping of TIAS, VPA 2, census 2006 and other surveys.

Action steps and resource needs for 2007:

- Capacity-building activities:
  - conducting research;
  - data analysis;
  - developing appropriate monitoring and evaluation systems.
- Technical (personnel):
  - WHODAS II;
  - data analysis.
- Financial:
  - WHODAS II/Multiple Indicators Cluster Survey;
  - Nutritional Survey;
  - VPA 3;
  - Household Income Expenditure Survey;
  - special surveys to collect data that are not captured in routine information systems, censuses and the above surveys;
  - impact evaluation of tsunami recovery;

Other:

- To address other cross-cutting issues such as gender, sustainability, risk reduction, etc., the following actions would be needed:
  - special programmes aimed at women's empowerment (income generation, psychosocial support);
  - maintain standards in infrastructure development;
  - environmental impact assessment.

Qualitative approaches

- Incorporate other qualitative methods to explore quantitative results, such as:
  - surveys (WHODAS II);
  - focus group discussions;
  - monitoring visits – regional supervision, central-level visits.
- Assess beneficiary satisfaction and employ other measures to obtain beneficiary feedback:
  - Disaster Management Centre – IDP Committee;
  - community consultation;
  - identification of beneficiaries through islands' administration and CBO (IDC, IWDC, NGOs)
  - Working with Disaster Management Centre.
- Ensuring quality of outputs (e.g. housing, livelihoods):
  - housing standards;
  - Safe Island Concept;
  - land use plans;
  - environmental impact assessment for every infrastructure project;
  - provision of desalination plants and related training.

Focal point and report availability

- Focal point will be the Ministry of Planning and National Development (still under discussion). Contact person: Mr Ibrahim Naseem, Deputy Director of Ministry of Planning
- The data for most of the indicators (such as access to basic services, infrastructure and most of those pertaining to livelihoods) should be available by the end of the year.

Country action plan for Sri Lanka

The Government of Sri Lanka, through the Department of Census and Statistics (DCS), made significant, positive decisions early on in the TRIAMS process which have influenced and will continue to influence the availability of data on tsunami-affected populations. The most important step was the modification of the sampling design that will allow all national surveys, beginning in early 2006, to report on the tsunami-affected versus non-affected populations (grouping tsunami-affected populations as one strata). While this will not allow sub-district data analysis via the national surveys, the Government of Sri Lanka, through RADA, is simultaneously developing other local monitoring systems. These systems will build on the transitional results matrix and other key operational information on the four core RADA programmes (housing, livelihoods, social services and infrastructure) and will be captured in a district monitoring report.

The following represents the work of the Sri Lanka delegation during the Bangkok workshop and incorporates the results of subsequent meetings held in Sri Lanka under the leadership of the UN Deputy Resident Coordinator in partnership with RADA in June and July 2006.

Country indicator table: Sri Lanka

Vital needs output indicators	Source	Timing
1/ % of population with access to water from an improved source, by administrative level	DHS through DCS	Four-yearly Results available 2007
2/ % of population without basic sanitation facilities, by administrative level	DHS through DCS	Four-yearly Results available 2007
3/ Household food consumption (24 hr recall)	HIES through DCS UNICEF/WFP Nutritional survey	Four-yearly Ongoing
4/ Proportion of tsunami-affected population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses, by sub-district, by time period	TAP/RADA (temporary shelter) RADA (permanent housing)	Quarterly Quarterly, donor-driven housing
5/ Measles immunization coverage, by administrative level	Ministry of Health/WHO	Quarterly
6/ # of titles to land given, by economic status and gender, by district	**Different indicator RADA/DS*	Quarterly
Vital needs outcome indicators	**Source**	**Timing**
7/ % of children under 5 who are underweight	DHS-DCS UNICEF/WFP/Ministry of Health Nutritional surveys	Four-yearly Ongoing
8/ % of children under 5 who are wasted (moderate and severe)	DHS-DCS UNICEF/WFP/MOH Nutritional surveys	Four-yearly Ongoing
9/ % of children under 5 who are stunted (moderate and severe)	DHS-DCS UNICEF/WFP Nutritional surveys	Four-yearly Ongoing
10/ % of low birth weight newborns	DHS-DCS Ministry of Health	Four-yearly Quarterly
11/ % of children under 5 who have experienced a diarrhoea episode in the past 2 weeks	Household survey	Possible DHS

Country indicator table: **Sri Lanka**

Access to basic services output indicators	Source	Timing
12/ # of primary school children per school, by sub-district	Ministry of Education RIS	Annually
13/ # of primary school children per teacher, by sub-district	Ministry of Health/EFP/UNICEF (in relation to school feeding programme)	Quarterly
14/ # of hospital beds per 10,000 population (inpatient and maternity), by sub-district/district	Ministry of Health RIS	Annually
15/ # of outpatient consultations per person per year, by administrative level	Ministry of Health	Annually
16/ % of children of 12–23 months who are fully immunized against all antigens, by administrative level	Ministry of Health	Quarterly
17/ # of health facilities with emergency obstetric care per 10,000 population, by sub-district/district	Ministry of Health	Annually
18/ **Adequate** antenatal coverage (at least 4 visits during a pregnancy), by sub-district	Ministry of Health	Quarterly RIS
19/ % of sub-district covered by mobile psychological support workers, by district	Ministry of Health/WHO Ministry of Social Welfare Ministry of Education/UNICEF	Quarterly
Access to basic services outcome indicators	**Source**	**Timing**
20/ Net primary school enrolment ratio	Ministry of Education UNICEF	TBD
21/ Primary school drop-out rate	Ministry of Education RIS School census	Annually Q4 years
22/ % of births attended by a skilled birth attendant	Household survey	Q4 years See notes on appropriateness
Infrastructure output indicators	**Source**	**Timing**
23/ # of km of repaired/new road by type of road, by district	MoP, RDA	Q6 months
24/ # of bridges repaired, by district	RDA/Ministry of Highways	
25/ # of harbours/ Jetties rehabilitated by type, by district	Ministry of Ports MoF	TBD
26/ % of destroyed/damaged schools rebuilt or rehabilitated, by category, by sub-district	Ministry of Education/UNICEF	
27/ % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by sub-district	Ministry of Health/WHO	
28/ # sq km of natural habitat restored, by type	Ministry of Agriculture UNEP	
29/ # of km of costal protection constructed/repaired, by type (biofencing, sea walls, quay walls, breakwaters), by district	Ministry of Fisheries UNEP	

Country indicator table: **Sri Lanka**

Infrastructure outcome indicators	Source	Timing
30/ % of local administration offices fully functioning, by district		
Livelihoods output indicators	**Source**	**Timing**
31/ # of sq km of land returned to crops	Ministry of Agriculture FAO	*
32/ % of tsunami-affected population who have received loans	Central Bank, CHA	
33/ % of population of tsunami-affected districts who have received grants, by administrative level and by gender	RADA MOF/WB	
34/ % of tsunami-affected population enrolled in social protection programme, by gender		
35/ # of people employed by different sectors	HIES LFS Tsunami census 2005 *Indicator renamed	Four-yearly Done quarterly (Will have a national level "tsunami-affected population strata")
36/ % of damaged/destroyed boats repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district	Ministry of Fisheries/FAO	
Livelihoods outcome indicators	**Source**	**Timing**
37/ % of population living below national poverty line	HIES	Four-yearly
38/ Average household income, by administrative level and by gender	HIES	Four-yearly
39/ Labour force participation rate, by gender	Labour Force Survey	Quarterly
40/ % of households that have regained their pre-tsunami livelihoods, by gender, by district		
Cross-cutting indicators	**Source**	**Timing**
41/ % of tsunami-affected communities consulted by implementing agency, by district		
42/ infant mortality rate		
43/ % of population with poor quality of life		
44/ % of population with worse functioning (WHODAS II)	DCS/WHO– possibility with Labour Force Survey 2007	LFS 2007
45/ % of population under stress or with poor well-being		

Country indicator table: Sri Lanka		
Country-specific indicators	**Source**	**Timing**
% of children who have had diarrhoea within the past 2 weeks	DHS	Four-yearly
# of tonnes of tsunami waste recycled/removed	Coast Conservation/provincial level, Council Ministry	
% of population with access to potable water supply	DHS through DCS	Six-yearly
Land/house title ownership disaggregated by gender of affected population (land title deed issued)	RADA/DS NEW	Quarterly
# of unaccompanied/separated children who are institutionalized	ACPA	possibly UNICEF
# of women's centres available in tsunami-affected districts to address women's issues	MoWA NCW	TBD UNFPA and NGOs
% of beneficiaries self-reporting improved access	Qualitative surveys	Annually
# of hotel rooms available compared with before the tsunami	Ministry of Tourism	Annually

Resources and actions needed

- Organize a stakeholder meeting with the different ministries to obtain their input and buy-in.
- Develop a monthly reporting format for the indicators.
- Could make operational some of the indicators in a gender working group.
- Need to share existing reports and survey schedules (e.g. TEC, Price Waterhouse, SDC survey schedule, results of QOL survey in Trincomalee).
- Need to look at the option of incorporating WHODAS II in DCS.
- Revisit gender/sexual and gender-based violence module with appropriate authorities.
- Attempt to include mental health issues (pilot ongoing).
- Provide feedback to the Global Consortium.
- Financial resources needed would be an estimated US$1 million, particularly for additional surveys.

Qualitative approaches

- Conduct perception survey in order to provide good information on beneficiary expectations and satisfaction, attempting also to capture data on cross-cutting issues such as gender and the environment. The beneficiary perception survey is proposed to be conducted every six months.
- Organize focus groups (in national languages) e.g. Human Rights Commission study, phase 2.

Focal point and report availability

- Focal point will be RADA, in cooperation with UN Resident Coordinator's Office. A working group has already been established to work on TRIAMS.
- First report could be available already in September 2006 and thereafter on a quarterly basis.

Country action plan for Thailand

The Government of Thailand was also represented by a large delegation and included numerous UN and Red Cross partners. The following plan represents the results of the active group during the Bangkok meeting. Although the Department of Disaster Prevention and Mitigation (DDPM) devised updates to the plan during June and July 2006, they were not yet available for inclusion in this report.

Country indicator table: Thailand		
Vital needs output indicators	**Source**	**Timing**
1/ % of population with access to water from an improved source, by administrative level	Ministry of Health	Annually
2/ % of population without basic sanitation facilities, by administrative level	DPH Village level	Monthly
3/ Household food consumption (24 hr recall)		
4/ Proportion of tsunami-affected population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses, by sub-district, by time period	One-off survey repeated where/if required (for emergency and temporary shelter) Sub-district (TAO ?) (for permanent housing)	Quarterly
5/ Measles immunization coverage, by administrative level	PHO, Dept of Disease Control (DDC)	Quarterly
6/ # of titles to land given, by economic status and gender, by district	Provincial Land Office	Six-monthly
Vital needs outcome indicators	**Source**	**Timing**
7/ % of children under 5 who are underweight	PHO, Dept of Health Promotion	Quarterly at health centres
8/ % of children under 5 who are wasted (moderate and severe)		
9/ % of children under 5 who are stunted (moderate and severe)		
10/ % of low birth weight newborns	PHO, Dept of Health Promotion	Quarterly at health centres
11/ % of children under 5 who have experienced a diarrhoea episode in the past 2 weeks	PHO, MoPH	Annually
Access to basic services output indicators	**Source**	**Timing**
12/ # of primary school children per school, by sub-district		
13/ # of primary school children per teacher, by sub-district	Ministry of Education	Annually
14/ # of hospital beds per 10,000 population (inpatient and maternity), by sub-district/district	MoPH	Annually
15/ # of outpatient consultations per person per year, by administrative level	MoPH	Annually
16/ % of children of 12–23 months who are fully immunized against all antigens, by administrative level	PHO	Annually

Country indicator table: **Thailand**

Access to basic services output indicators	Source	Timing
17/ # of health facilities with emergency obstetric care per 10,000 population, by sub-district/district	MoPH, PHO	Annually
18/ **Adequate** antenatal coverage (at least 4 visits during a pregnancy), by sub-district	PHO (?)	
19/ % of sub-district covered by mobile psychological support workers, by district	Dept of Mental Health	Annually
Access to basic services outcome indicators	**Source**	**Timing**
20/ Net primary school enrolment ratio	Ministry of Education	Annually
21/ Primary school drop-out rate	Ministry of Education	Annually
22/ % of births attended by a skilled birth attendant		
Infrastructure output indicators	**Source**	**Timing**
23/ # of km of repaired/new road by type of road, by district		
24/ # of bridges repaired, by district		
25/ # of harbours/ Jetties rehabilitated by type, by district		
26/ % of destroyed/damaged schools rebuilt or rehabilitated, by category, by sub-district		
27/ % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by sub-district		
28/ # sq km of natural habitat restored, by type	Ministry of Natural Resources and Environment, NGO (IUCN)	Special survey
29/ # of km of costal protection constructed/repaired, by type (biofencing, sea walls, quay walls, breakwaters), by district		
Infrastructure outcome indicators	**Source**	**Timing**
30/ % of local administration offices fully functioning, by district		
Livelihoods output indicators	**Source**	**Timing**
31/ # of sq km of land returned to crops		
32/ % of tsunami-affected population who have received loans	SME Bank, SME Authority, Ministry of Finance	Annually
33/ % of population of tsunami-affected districts who have received grants, by administrative level and by gender	Office of Prime Minister, DDPM provincial office	Annually
34/ % of tsunami-affected population enrolled in social protection programme, by gender	Social Security Dept	Annually
35/ # of people employed by different sectors		
36/ % of damaged/destroyed boats repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district		

Country indicator table: **Thailand**

Livelihoods output indicators	Source	Timing
37/ % of population living below national poverty line	Bureau of Statistics	Annually
38/ Average household income, by administrative level and gender	Bureau of Statistics	Annually
39/ Labour force participation rate, by gender	Ministry of Labour	Annually
40/ % of households that have regained their pre-tsunami livelihoods, by gender, by district	Special survey by NGOs	
Cross-cutting indicators	**Source**	**Timing**
41/ % of tsunami-affected communities consulted by implementing agency, by district		
42/ infant mortality rate	PHO, MOPH	Annually
43/ % of population with poor quality of life		
44/ % of population with worse functioning (WHODAS II)	WHO Thailand	
45/ % of population under stress or with poor well-being		
Country-specific indicators	**Source**	**Timing**
# of domestic violence cases		Special survey needed
% of children who have had diarrhoea within the past 2 weeks	Dept of disease control, village level, PHO	Quarterly
# of unaccompanied/separated children who are institutionalized	Dept of Social Welfare and Development and The Thai Red Cross Society	Six month
# of community self-help groups, by sub-district	MOI	Annually
Coverage of community psychiatric care	Dept of Mental Health	Annually
% of ha of salinated land brought back to cultivation	Agriculture, Ministry, DMR	Survey
# of farmers receiving agricultural inputs, by gender	Vichakarn Kaset Dept	Annually
# of persons trained in different sectors, by gender	Dept of Labour Employment Dept	Annually
# of hotel rooms available compared with before the tsunami	TAT Hotel Association	Annually
# of people receiving fishing gear, by gender	Dept of Fisheries	Annually

Resources and actions needed

- Most of the data for the indicators can be collected through routine information systems, but for some, special surveys would be required (about 25% of indicators not readily available).
- Before finalizing a more detailed plan, there is a need to seek further agreement from decision-makers in the ministries and to remind them that this is a priority.

- Since Thailand doesn't have a special body tasked with overseeing the tsunami response and recovery such as there is in Indonesia and Sri Lanka, it is more difficult to coordinate the data collection. There is a need to establish a data-collection mechanism (DDPM), in which sub-districts and different administrative offices would play an important role (e.g. for shelter).
- In terms of resources, Thailand cannot accept financial support, but technical assistance and capacity building would be needed
- Technical assistance will be needed especially for cross-cutting surveys (DDPM resources are limited).

Qualitative approaches

- Plan to do a qualitative study on beneficiary satisfaction.

Focal point and report availability

- DDPM will be the focal point but will still consult with the decision-makers in the government.
- Could probably report on about 60% of the indicators by the end of the year.

TRIAMS workshop joint statement

TRIAMS workshop outcomes

A common framework of impact monitoring indicators was agreed upon.

Draft country action plans were produced to move ahead with TRIAMS implementation.

Four out of five countries agreed to have TRIAMS data before the end of 2006.

The workshop objectives were largely achieved. At the end of the workshop, participants issued a joint statement. In it, they emphasized that the purpose of TRIAMS is to allow governments, agencies and the affected populations to monitor the rate and direction of recovery, enabling them to adjust and adapt recovery programmes if unintended effects are identified and to enhance accountability. Government representatives agreed on a final set of core indicators applicable to all five countries and identified indicators specific to the individual countries. They also drafted initial country work plans which will include both quantitative and qualitative data and incorporate cross-cutting issues such as gender and the environment. It was also agreed that there was a need for additional indicators and methods to monitor and measure country-specific recovery issues.

Participants resolved to continue to develop their country action plans for the implementation of TRIAMS with the assistance of WHO, other UN agencies and the International Federation. They also underlined the usefulness of establishing an initiative to support and promote TRIAMS through the sharing of information and good practices and compiling and synthesizing findings from individual countries on a regular basis. Although additional steps are needed to identify information gaps and determine ways to address them, including the necessary human, financial and technical resources, a first round of TRIAMS results are expected by the end of the year. The results will be made available to the general public.

9
Workshop constraints and caveats

At the end of each day, participants filled in a questionnaire on their satisfaction with the different sessions of that day. The comments and suggestions that came out of this questionnaire, synthesized below, can be useful in providing the rationale for additional work that needs to be done after the workshop.

"When we come up with the impact monitoring information, what will we define as successful? How do we rate the data?, What is a good result? … These are questions that we need to try to address during the workshop."

TRIAMS workshop participant

Time management

It was felt that an additional half-day would have been useful to finalize the outcomes of the workshop and plan the next steps. More time would have also enabled more group discussion on the implementation of TRIAMS, particularly at the regional level. In addition, it would have allowed participants greater opportunity to critique the numerous presentations (facilitating discussion and additional lessons "to be learned"). Barring an additional day, several participants noted that the facilitators could have made better use of the allotted time, including starting on time, limiting break periods and having worksheets for subsequent sessions ready on time. The last point presented a challenge for the facilitators, since they only had the break periods to consolidate the good work of participants and then use the results to inform the next session.

Technical expertise

Technical expertise in some areas was limited. The importance of disaster mitigation and risk reduction indicators was raised by numerous participants on the first day. However, the workshop lacked sufficient technical expertise in this area, and therefore suitable indicators to help measure progress were not discussed in detail during the working group sessions. It was agreed that such expertise would be sought after the workshop, and potential indicators for disaster mitigation and risk reduction would be discussed on a country-by-country basis.

Resolution of issues

Given the complexity, scope and scale of the tsunami recovery, not all issues raised were adequately addressed during the workshop. While participants agreed that the core indicators as proposed by the group reflected their priority issues, some issues that required further exploration were not adequately covered. One such issue was that of people living in rented accommodation (or in semi-permanent housing) before the disaster occurred, who, according to some participants, had largely not benefited sufficiently from the recovery operations. While it is an as yet unresolved policy issue, it is important that it be included when monitoring recovery rates of the differently affected populations. However, given the limited time and other priorities, no direct indicators capturing the recovery of this sub-population were reflected in the final core matrix. This may be captured in the qualitative section of the country action plans, or perhaps potential indicators could be examined on a country-by-country basis.

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TRIAMS implementation and next steps

Five countries (India, Indonesia, the Maldives, Sri Lanka and Thailand) agreed to implement TRIAMS both as a basis for assessing the impact of the tsunami response and as a means of monitoring ongoing recovery rates. In addition to country-level implementation, TRIAMS will support a small regional team to assist in the overall regional analysis, as well as to help manage targeted technical support to each country.

A common theme identified across countries was the high level of data already available, much of it collected through routine information systems. However, a mechanism that will help to pull all the data together for analysis within each country still needs to be developed, particularly since much of the data are currently collected via various ministries and departments. This is especially true for those countries that do not have a specific reconstruction/recovery agency in charge of the response. Also, specialized surveys or modification of existing surveys will be needed to collect some of the data for the core indicators. For a few countries, TRIAMS implementation will require increased frequency of some household surveys, as they are currently carried out too infrequently to provide meaningful data for the TRIAMS process. This will likely require additional resources, both financial and technical. Four out of the five countries present said that they could report on many of the indicators by the end of 2006. The OSE confirmed that President Clinton could help promote the findings of the TRIAMS workshop in his end of mission report in December.

Next steps for WHO and the International Federation

In order to continue to support the TRIAMS process, during the reminder 2006, the International Federation and WHO commit to:

- secure partner commitments to facilitate regional analysis of TRIAMS data as described earlier;
- visit each country as needed to assist in the finalization of country action plans and:
  - identify additional country-specific indicators that are deemed important, such as those related to disaster risk reduction;
  - with the lead government agency, facilitate a TRIAMS planning process to clearly identify the roles, inputs and commitments of various partners during the five-year period;
  - work with the lead government agency to determine resource and technical needs.
- mobilize resources to help meet the countries' resource gaps identified in the country action plans; to do this:
  - convene donor and stakeholder meetings;
- with other stakeholders, work to secure and place appropriate regional personnel;
- continue to keep the OSE informed of progress and seek its support in highlighting key issues of concern to the affected countries that emerge from the TRIAMS process.

TRIAMS has the ambitious aim of harmonizing data collection and data analysis across the five tsunami-affected countries. It is very much a work in progress. Some of the new indicators identified during the Bangkok workshop still need some thinking and innovative solutions to be adopted in the routine work. These include such indicators as "% of tsunami-affected communities consulted by implementing agencies, by district", as well the need to introduce standardized methods to document and grasp useful indications from the beneficiaries' perspective.

It is hoped that the momentum is now there for a collective push by all governmental and non-governmental partners to meet the challenge of "building back better" in the areas devastated by the tsunami.

Annex 1

TRIAMS workshop agenda

TRIAMS workshop agenda, 3–5 May 2006

Day 1: Wednesday 3 May

Time	Activity	Responsible	Notes
8:00 – 8:30	Registration and networking		Coffee and tea will be served
8:30 – 8:45	Welcome to the meeting Welcome by local organizer, Mahidol University	Facilitator: Eric Weiss Assoc. Prof. Dr. Pratap Singhasivanon, Dean of the Faculty of Tropical Medicine	
8:45 – 9:15	Opening remarks by the three co-sponsoring agencies	Eric Schwartz, Office of the Special Envoy Johan Schaar, IFRC Daniel Lopez Acuna, WHO	
9:15 – 9:45	Participant introductions	Head of each delegation and expectations	Head of delegation introduces self and team, gives 1-2 expectations of meeting and 1 thing team will do to ensure successful meeting
9:45 – 10:00	Administrative issues and housekeeping	Facilitator & Mahidol University	
10:00 - 10:30	Rationale of TRIAMS in the context of a complex recovery process: Key questions and objectives	Nevio Zagaria,WHO Margaret Stansberry, IFRC	See the final draft of the TRIAMS Concept Paper
10:30 – 11:00	COFFEE BREAK		
11:00 – 13:00	Impact of the tsunami on local communities followed by discussion	Plenary country presentations (15 minutes each)	All country delegations: Present the impact of the tsunami on basic societal functions in the affected districts
13:00 – 14:00	LUNCH BREAK		
14:00 – 16:00	The response to the tsunami: accomplishments by sector of the recovery (vital needs, basic social services, infrastructure, livelihoods)	Plenary panel presentation (20 minutes for each country)	All country delegations: Present the accomplishments by sector of recovery
16:00 – 16:30	COFFEE BREAK		
16:30 – 17.30	Continuation of the discussion	Plenary	
17:30	Complete participant satisfaction forms and adjourn		

Day 2: Thursday 4 May

Time	Activity	Responsible	Notes
8:30 – 9:00	Recap of Day 1, Review of Day 2 Agenda and administrative issues		
9:00 – 9:30	Presentation of proposed TRIAMS core indicators and possible data collection and management	Nevio Zagaria,WHO Margaret Stansberry, IFRC Johan von Schreeb, Karolinska Institute	See TRIAMS Concept Paper and handout on revised indicators matrix
9:30 - 10:00	Discussion	Plenary	
10:00 – 10:30	COFFEE BREAK		
10:30 - 13:00	Four working groups by area of recovery: 1. Vital needs 2. Basic social services 3. Infrastructure 4. Livelihoods	Each working group should have at least one representative from each country (Groups can self-select)	*Questions to be addressed:* 1 Key recommendations on proposed core monitoring, outcome and impact indicators 2 Identification of existing gaps in data availability (per core indicators) 3 Identify challenges in data collection, analysis and use Each group will be assigned a facilitator
13:00 – 14:00	LUNCH		
14:00 – 15:30	Presentations of the four working groups and discussion	Plenary	
15:30 – 16:00	COFFEE BREAK		
16:00 – 16:15	Introduction to the Second Working Group session on country-specific indicators	Plenary	
16:15 – 18:00	Five working groups, one for each tsunami-affected country	Working groups by country delegation	*Each group:* 1 Verify core indicators presented by previous working groups 2 Identify country-specific recovery monitoring and impact assessment indicators 3 Determine measurement methods and data-collection, handling and analysis procedures 4 Estimate resources or support needed
18:00	Complete Day 2 participant satisfaction forms and Adjourn		
18:30	Sponsored Boat Reception		Transportation to reception leaves hotel promptly at 18:30

Day 3: Friday, 5 May

Time	Activity	Responsible	Notes
8:30 – 9:00	Recap of Day 2, Review of Day 3 Agenda	Plenary	
9:00 – 10:30	Country presentations and discussion	Plenary	Country presentations on specific monitoring and impact assessment indicators, proposed measurement methods and resource needs estimates (technical and financial)
10:30 – 11:00	COFFEE BREAK		
11:00 – 13:00	Working groups for each of the tsunami-affected countries on developing a TRIAMS Plan of Action	Working Group by Country	Each country delegation to devise plan of action per handout recommendations
13:00 – 14:00	LUNCH BREAK		
14:00 – 15:30	Presentations of the TRIAMS plan of action per each country and discussion	Plenary	
15:30 – 16:00	COFFEE BREAK		
16:00 - 18:00	Discussion of Next Steps and Implementation Plans	Plenary	
18:00	Complete participant satisfaction forms and meeting adjourned	Plenary	

Annex 2

TRIAMS indicator definitions

TRIAMS matrix: Indicator's definitions of areas of recovery

Vital needs

Indicator	Definition	References	Remarks
Household food consumption (24 hr recall)	Percentage of households consuming the minimum daily food requirements.	http://www.fantaproject.org/downloads/pdfs/foodcons.pdf Measuring Household Food Consumption, A Technical Guide http://www.fao.org/faostat/foodsecurity/FSSDMetadata_en.htm FAO Food Balance Sheets http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/008/af286e/af286e00.htm Measuring Food Security Using Respondents' Perception of Food Consumption Adequacy	**Food consumption** refers to the amount of food available for human consumption as estimated by the FAO Food Balance Sheets. **Food intake** measures the amount of food actually consumed at the individual or household level. **Food intake surveys** are relatively rare, as they are much more costly. Instead, **food consumption** is usually measured indirectly through household surveys using a 24 hour recall methodology.
Population with access to water from an improved source, by administrative level	Percentage of the population with safe drinking water available in the home.	WHO and UNICEF, Water Supply and Sanitation Collaborative Council, Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York (pp. 77– 78) http://millenniumindicators.un.org/unsd/mispa/mi_dict_xrxx.aspx?def_code=248	**"Improved" water** supply technologies are: household connection, public standpipe, borehole, protected dug well, protected spring, rainwater collection. **"Not improved"** are: unprotected well, unprotected spring, vendor-provided water, bottled water (based on concerns about the quantity of supplied water, not the water quality), tanker truck-provided water. It is assumed that if the user has access to an "improved source" then such source would be likely to provide 20 litres per capita per day at a distance of no more than 1,000 metres. This hypothesis is being tested through National Health Surveys which are being conducted by WHO in 70 countries. (Communication of 25 March 2003 from the WHO Water, Sanitation and Health Programme)
Population without basic sanitation facilities, by administrative level	Percentage of the population without basic excreta-disposal facilities.	WHO and UNICEF, Water Supply and Sanitation Collaborative Council, Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York (pp. 77–78) http://millenniumindicators.un.org/unsd/mispa/mi_dict_xrxx.aspx?def_code=305 WHO, The World Health Report 1996 http://w3.whosea.org/ehp/indicators.htm	The recommended indicator refers to **"improved" sanitation** technologies which are: connection to a public sewer, connection to septic system, pour-flush latrine, simple pit latrine, ventilated improved pit latrine. The excreta disposal system is considered adequate if it is private or shared (but not public) and if it hygienically separates human excreta from human contact. **"Not improved"** are: service or bucket latrines (where excreta are manually removed), public latrines, latrines with an open pit.

TRIAMS matrix: Indicator's definitions of areas of recovery

Vital needs

Indicator	Definition	References	Remarks
Percentage of children under 5 who are wasted (moderate and severe)	Proportion of children under five with weight less than that of two standard deviations below the median of the reference population.	http://www.fao.org/faostat/foodsecurity/FSSDMetadata_en.htm Food Security Statistics –Metadata FAO http://millenniumindicators.un.org/unsd/mispa/Metadatajn30.pdf	Low weight for height, or wasting, indicates in most cases a recent and severe process of weight loss, often associated with acute starvation or severe disease.
Percentage of children under 5 who are stunted (moderate and severe)	Proportion of children under five with height or stature less than that of two standard deviations below the median of the reference population.	http://www.fao.org/faostat/foodsecurity/FSSDMetadata_en.htm Food Security Statistics – Metadata FAO http://millenniumindicators.un.org/unsd/mispa/Metadatajn30.pdf	Low height for age, or stunting, measures the cumulative deficient growth associated with long-term factors, including chronic insufficient daily protein intake.
Percentage of children under 5 who are underweight	Percentage of children under five whose weight for age is less than minus two standard deviations from the median for the international reference population aged 0–59 months.	"Physical status: the use and interpretation of anthropometry", WHO Technical Report Series No. 854 http://millenniumindicators.un.org/unsd/mispa/mi_dict_xrxx.aspx?def_code=437 http://www.fao.org/faostat/foodsecurity/FSSDMetadata_en.htm Food Security Statistics – Metadata FAO http://millenniumindicators.un.org/unsd/mispa/Metadatajn30.pdf	Moderately or severely underweight is below minus two standard deviations from median weight for age of reference population; severe is below minus three standard deviations from median weight for age of reference population. The under-five underweight prevalence is an internationally recognized public health indicator for monitoring nutritional status and health in populations. At the national level, data are generally available from national household surveys, including Demographic and Health Surveys, Multiple Indicator Cluster Surveys and national nutritional surveys.
Percentage of low birth weight newborns	Number of liveborn babies with birth weight less than 2500 grams as a percentage of the total number of liveborn babies weighed.	http://www.who.int/reproductive-health/publications/rhr_01_19/RHR_01_19_Annex3p3.en.html WHO, Reproductive health indicators for global monitoring	Weight measurement should be taken preferably within the first hours of life, before significant postnatal weight loss has occurred. Despite major problems with reliable data collection, this indicator has multiple potential: as a measure of newborn health status and chance of survival and as a proxy measure of maternal health.

TRIAMS matrix: Indicator's definitions of areas of recovery

Basic social services

Indicator	Definition	References	Remarks
Number of hospital beds per 10,000 population (inpatient and maternity), by sub-district	Ratio of total number of hospital beds available in a specific geographical area to the total population, expressed per 10,000 population (includes inpatient and maternity beds).	http://www.who.int/hac/techguidance/tools/disrupted_sectors/module_09/en/index9.html Annex 9: Why and how to build a database of health facilities	For the purpose of analysis of the health network's main patterns, in most cases it is convenient to conceive it as a continuous and evolving spectrum of increasing functions and complexity (from the smallest health post to the national hospital), whereby no obvious, clear-cut levels are discernible. Population ratios give a measure of the gaps opening in the sector, once different services are considered. To look at the health sector as a network of health facilities (rather than as a set of programmes) is particularly meaningful from a redistributive perspective.
Percentage of sub-districts covered by outreach psychological support by community workers	Number of sub-districts where community health workers provide psychological support, over the total number of sub-district in that district.		ADD
Number of health facilities with emergency obstetric care per 10,000 population by sub-district	Ratio of total number of facilities that provide emergency obstetric care in a specific geographical area to the total population, expressed per 10,000 population by the lowest administrative level.	http://www.who.int/reproductive-health/publications/rhr_01_19/RHR_01_19_Annex3p3.en.html	Needs standard definition of what constitutes basic emergency obstetric care. Basic emergency obstetric care should include parenteral antibiotics, oxytocics, and sedatives for eclampsia and the manual removal of placenta and retained products.
Percentage of children of 12–23 months who are fully immunized against all antigens, by administrative level	The percentage of the eligible population who have been immunized according to national immunization policies, by administrative level.		The definition includes three components: (i) the proportion of children immunized against diphtheria, pertussis, tetanus, measles, poliomyelitis, tuberculosis and hepatitis B before their first birthday; (ii) the proportion of children immunized against yellow fever in affected countries of Africa; and (iii) the proportion of women of child-bearing age immunized against tetanus.
Percentage of children under 5 who have experienced a diarrhoea episode within the past 2 weeks	Proportion of children who had diarrhoea at any time in the two-week period prior to the survey.	http://www.paho.org/English/AD/DPC/CD/imci-indicators-7-01.pdf List of priority indicators for IMCI at health facility level	The period prevalence of diarrhoea is calculated by the number of children who had diarrhoea at any time in the two-week period prior to the survey, and as a denominator, the number of children surveyed.

TRIAMS matrix: Indicator's definitions of areas of recovery

Basic social services

Indicator	Definition	References	Remarks
Percentage of births attended by a skilled birth attendant	Number of births attended by skilled personnel (doctors, nurses or midwives) expressed as a percentage of deliveries (or births if those are the only data available) in the same period of time.	WHO, Reproductive health indicators for global monitoring; Report of the second interagency meeting 2001, WHO/RHR/01.19. Geneva, 2001 (Annex 3) http://millenniumindicators.un.org/unsd/mispa/mi_dict_xrxx.aspx?def_code=464 WHO, Implementation of Strategies for Health for All by the Year 2000, Third Monitoring of Progress, Common Framework http://w3.whosea.org/ehp/indicators.htm http://www.who.int/reproductive-health/publications/rhr_01_19/RHR_01_19_Annex3p3.en.html WHO, Reproductive health indicators for global monitoring http://millenniumindicators.un.org/unsd/mispa/Metadatajn30.pdf	Refers exclusively to people with midwifery skills (for example, doctors, midwives, nurses) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose or refer obstetric complications. Traditional birth attendants, even if they have received a short training course, are not to be included.
Net primary school enrolment ratio	Ratio of the number of children of official school age (as defined by the national education system) who are enrolled in primary school to the total population of children of official school age.	http://millenniumindicators.un.org/unsd/mispa/Metadatajn30.pdf UNESCO, World Education Report 1995 http://w3.whosea.org/ehp/indicators.ht	The indicator is calculated as the number of enrolled students within the appropriate age cohort according to school records as reported to ministries of education, divided by the number of children of primary school age.
Primary school drop-out rate	Drop-out rate by grade. Percentage of pupils or students who drop out from a given grade in a given school year.	http://portal.unesco.org/education/en/ev.php-URL_ID=43385&URL_DO=DO_TOPIC&URL_SECTION=201.html UNESCO, Education for all, global monitoring report	It is the difference between 100% and the sum of the promotion and repetition rates.
Adequate antenatal care coverage, by sub-district	Percentage of women attended, *at least four times* during pregnancy, by skilled health personnel for reasons relating to pregnancy, by the lowest administrative level.	http://www9.who.int/familyhealth/reproductiveindicators/definitionofindicators.asp#4 WHO, Reproductive health indicators database	The WHO recommended indicator (antenatal care coverage) is the percentage of women attended, at least once during pregnancy, by skilled health personnel for reasons relating to pregnancy. Skilled health personnel refers to a doctor (specialist or non-specialist) and/or people with midwifery skills who can manage normal deliveries and diagnose or refer obstetric complications. Both trained and untrained traditional birth attendants are excluded.
Measles immunization coverage, by administrative level	Percentage of infants reaching their first birthday fully immunized against measles (one dose), by administrative level.	WHO, Implementation of Strategies for Health for All by the Year 2000, Third Monitoring of Progress, Common Framework http://w3.whosea.org/ehp/indicators.htm	

TRIAMS matrix: Indicator's definitions of areas of recovery

Infrastructure

Indicator	Definition	References	Remarks
Harbours/jetties rehabilitated by type, by district	Number of harbours and jetties, by type, damaged by the tsunami that have been rehabilitated in each administrative level.		
Kilometres of repaired/new roads, by type of road, by district	Total kilometres of roads repaired or new after the tsunami, by type of road, by administrative level.		
Numbers of bridges repaired by district	Number of bridges damaged by the tsunami that have been repaired, by administrative level.		
Percentage of destroyed/ damaged health facilities rebuilt or rehabilitated, by category, by sub-district	Health facilities damaged/destroyed by the tsunami that have been rebuilt or rehabilitated in each administrative level, by type of facility		
Percentage of schools rebuilt or rehabilitated, by category, by sub-district	Schools damaged by the tsunami rebuilt or rehabilitated, by category and by administrative level.		
Percentage of damaged/destroyed boats repaired/ replaced, by use, by district	Boats damaged/destroyed by the tsunami, by type of use of the boats (fishing, tourism, ferrying or other income-generating activity) that have been repaired or replaced, by administrative level.		
Number of hectares of land brought back to crops, by district	Hectares of agricultural land rehabilitated over the total of land destroyed.		

Livelihoods

Number of titles to land given, by economic status, by gender, by district	Ownership of the land demonstrated by title, given to the population affected by the tsunami, by economic status and by gender of the owner, by administrative level.		
Average household income, by administrative level and by gender	The total income for all households in an area divided by the number of households in that area, by gender and for all administrative levels.	http://www4.worldbank.org/afr/poverty/measuring/Indicators/definitions_en.htm World Bank, Standardized welfare indicators http://www.gnocdc.org/tertiary/definition.cfm?ldCode=HHAvgInc&SourceCode=SF300b	Household is defined as a group of related or unrelated people, who live in a dwelling unit or its equivalent, eat from the same pot, and share common housekeeping arrangements. The median household income is commonly used to provide data about smaller geographic areas. The median is the middle number present in a set of data when the incomes of all households are arranged in an order from highest to lowest (if number of values in a set is even, the average between the two middle values is used). This is considered by many statisticians to be a better indicator than the average household income as it is not dramatically affected by unusually high or low values.

TRIAMS matrix: Indicator's definitions of areas of recovery

Livelihoods

Indicator	Definition	References	Remarks
Labour force participation rate, by gender	The proportion of the population aged 15–64 which supplies labour to produce goods and services during a given period, by gender.	http://www4.worldbank.org/afr/poverty/measuring/Indicators/definitions_en.htm World Bank, Standardized welfare indicators2 International Labour Office, Key Indicators of the Labour Market 2001–2002, Geneva, 2002 International Labour Office, Yearbook of Labour Statistics, Geneva, annual	The labour force population includes currently employed people and job seekers. The labour force participation rate is an overall indicator of the level of market activity and its breakdown by sex and age group and gives a profile of the distribution of the economically active population within a country.
Population living below the national poverty line	A standard indicator using the proportion of people living on below $1 a day as the percentage of the population with average consumption expenditures less than $1.08 a day measured in 1993 prices converted using purchasing power parity (PPP) rates.	http://millenniumindicators.un.org/unsd/mispa/Metadatajn30.pdf Shaochua Chen and Martin Ravallion, "How did the World's Poorest Fare in the 1990s?" Working Paper No. 2409, World Bank, Washington, D.C., also in Review of Income and Wealth, September 2001 (pp. 1–5) http://millenniumindicators.un.org/unsd/mispa/mi_dict_xrxx.aspx?def_code=42	Need to clarify what is considered the national poverty line per country. For the standard indicator, the $1.08 a day standard was chosen to be equal to the median of the lowest ten poverty lines among a set of low-income countries. The indicator allows for comparing and aggregating progress across countries in reducing the number of people living under extreme poverty and for monitoring trends at the global level. The World Bank regularly estimates poverty based on the one dollar a day poverty line. Estimates are based on incomes or consumption levels derived from household surveys. Household budget or income surveys are undertaken at different intervals in different countries. In developing countries they typically take place every three to five years.

Cross cutting indicators

Percentage of population with worse functioning (WHODAS II)	% with a score 2 SDs below the population mean or significantly different from a control population mean (where data is available).	http://www.who.int/icidh/whodas/index.html	WHODAS II is an ICF based functioning assessment instrument developed by the WHO. It provides summary measure of functioning and disability in the following six domains: • Understanding and communicating with the world (cognition) • Moving and getting around (mobility) • Self care (attending to one's hygiene, dressing, eating and staying alone) • Getting along with people (interpersonal interactions) • Life activities (domestic responsibilities, leisure, and work) • Participation in society (joining in community activities)
Percentage of population with poor quality of life	% with a score 2 SDs below the population mean or significantly different from a control population mean (where data is available)	http://www.who.int/evidence/assessment-instruments/qol/ql11.htm	WHO QoL is based on a short version of the WHO Quality of Life Instrument which measure the subjective appraisal of the persons health status in five domains.
Percentage of population under stress or with poor well-being	% with a score 2 SDs below the population mean or significantly different from a control population mean (where data is available).		The measure is based on existing instruments and have been used in surveys carried out by the WHO

Annex 3

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Annex 4

Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) Concept Paper

Prepared jointly by the World Health Organization
and the International Federation of Red Cross and Red Crescent Societies
Final draft, 3 May 2006

I. Background

1. The Indian Ocean tsunami struck several countries at once on 26 December 2004. It was one of the worst natural disasters in recent history, with more than 275,000 individuals believed to have perished. The economic loss from the tsunami was also considerable, and the overall cost of the recovery efforts is estimated at approximately US$10 billion. Mortality due to the tsunami was concentrated in the first few days of the disaster, and crude mortality rates among the populations displaced by the tsunami were lower than expected in the eight weeks following the event. Purely relief activities were concentrated in the first weeks, and by January 2005 early recovery efforts had started progressively to drive the overall response of governments and international agencies.

2. There has been a massive outpouring of private and public relief and reconstruction assistance in the tsunami's aftermath. Official and private pledges reached US$13.6 billion, well above the US$10 billion initially estimated for the reconstruction. Little is known about the magnitude and nature of the tsunami's impact on livelihoods, economic activity and individual well-being, particularly for the poorest and most vulnerable sections of the affected communities. However, it seems to vary considerably even within the affected districts. Even less is known about the extent to which recovery efforts have addressed the human and socio-economic losses of the affected communities.

3. Governments and their partners are monitoring the progress of the implementation of tsunami recovery projects. However, individual project-level monitoring by itself cannot identify the rate of recovery for a country as a whole, nor a region, nor a district.

II. Rationale

4. At two meetings of the Global Consortium for Tsunami-Affected Countries (United Nations, New York, 3 June and 22 September 2005) participants agreed on the importance of a common system for tracking the recovery efforts and assessing the impact of the overall response. Such a system would: 1) enable donors, governments, implementing agencies and beneficiaries to see results more clearly; and 2) help lessen the data-collection burdens placed on implementing agencies, governments and recipients of aid. As members of the Global Consortium, the World Health Organization (WHO) and the International Federation of Red Cross and Red Crescent Societies, with support from the UN Office of the Special Envoy (OSE), are leading the collective effort to put a common Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) in place.

5. Global Consortium members and other interested agencies are also involved in the Tsunami Evaluation Coalition (TEC). TEC is a multi-sector learning and accountability initiative constituted in February 2005 to: 1) promote sector-wide learning through comprehensive evaluations in five key areas of the tsunami response (coordination, needs assessment, local capacities, funding, and linking relief, rehabilitation and development); and 2) develop procedures for the future establishment of a multi-sector, multi-agency mechanism to coordinate evaluation functions. To support sector-wide learning, TEC commissioned and recently completed the evaluations in the above five key areas. TEC and TRIAMS are complementary processes. Whereas TEC is examining lessons to be learned, TRIAMS will put in place a system to monitor the ongoing tsunami recovery efforts and will make periodic assessments of the impact of recovery activities over the next five years. TEC and TRIAMS will continue to coordinate in the future as the TRIAMS system is rolled out. It is envisaged that the future work of TEC will provide complementary qualitative input to TRIAMS, ensuring beneficiaries' voices are heard and the rationale for recovery interventions scrutinized.

III. Key questions, aim and objectives

6. TRIAMS will address the following **key questions**:
   a) To what extent are baseline data available for the four main areas in which tsunami recovery efforts can be grouped (vital needs, basic social services, infrastructure and livelihoods)?
   b) To what extent have the losses and disruption in those areas been redressed?
   c) Are the recovery interventions targeting the poorest populations/communities?
   d) Are the recovery interventions effectively addressing some of the pre-existing inequalities (building back better versus building back)?
   e) Have the recovery interventions generated new inequalities within the countries and within the affected districts?

The answers to these questions can provide the critical information necessary for the identification of existing gaps, and provide the rationale for the readjustment of the ongoing recovery efforts.

7. **The overall aim of the TRIAMS process will be to ensure that governments, donors, NGOs, civil society and other stakeholders are adequately informed on the progress of the recovery efforts in tsunami-affected areas, so that adjustments can be made to assistance programmes in order to address unmet needs and existing inequalities.**

This concept paper proposes a framework for TRIAMS, with an initial implementation timeframe of 2006–2010. The countries covered by the proposed process are: India, Indonesia, the Maldives, Sri Lanka and Thailand.

8. The TRIAMS process will have the following main objectives:
   a) to answer the five key questions enunciated in § 6;
   b) to contribute to the setting up – at the national and sub-national levels – of a systematic information base and tracking system that will enable the monitoring and evaluation (M&E) of tsunami recovery efforts (**rehabilitation as well as reconstruction**) in the five specified countries, and the assessment of their impact;
   c) to enhance the capacities of government, UN and non-governmental agencies in collecting, analysing and using the monitoring data.

IV. Data collection, monitoring and reporting

9. The TRIAMS framework comprises four key areas which were disrupted by the tsunami and where recovery programmes are concentrated:
   - Vital needs, such as water and sanitation, food and shelter;
   - Access to basic services, such as health care and education;
   - Infrastructure, such as roads, transport and electricity;
   - Livelihoods and economic security.

10. Table 1 presents a matrix in which output and outcome recovery indicators are grouped by the four key areas of recovery listed above. Tables 2 and 3 show the same indicators divided up according to the methodology used for the data collection. In Table 2 are the indicators that have to be collected through household surveys (the majority of these indicators were identified as "core indicators" during the consultations with the five most-affected countries and aid agencies between June and September 2005). In Table 3 are the indicators which would regularly be captured through routine information systems. These indicators are not exhaustive, as each country will need to add the indicators that are specific to their own recovery efforts.

11. The main challenge is to ensure that systematic and standardized data collection, management and analysis take place at peripheral level, and that the results are used to adjust and plan new recovery programmes. The breakdown of data and indicators to the smallest administrative units within the affected districts is mandatory in order to address the key questions listed in § 6, and in particular the ones concerning inequalities.

Table 1: Selected indicators by area of recovery and by type of indicator[1]

Area of recovery	Recovery **output** indicators	Recovery **outcome** indicators	
Vital needs	• % of population with access to water from an improved source, by administrative level • % of population without basic sanitation facilities, by administrative level • % of tsunami-affected population receiving food aid, by administrative level • Household food consumption (24 hr recall) • % of tsunami-affected population with damaged house living in emergency shelter, by administrative level • % of tsunami-affected population with damaged houses living in temporary shelter, by administrative level • % of tsunami-affected population with damaged houses living in new or repaired permanent shelter, by administrative level	• % of children under 5 who are wasted (moderate and severe) • % of children under 5 who are stunted (moderate and severe) • % of low birth weight newborns • % of increase of tsunami-affected population with damaged houses living in permanent houses, by administrative level	
Basic social services	• # of hospital beds available at district level for acute mental illnesses • % of sub-district covered by outreach psychological support by community workers • # of health facilities with emergency obstetric care, by population, by administrative level • # of outpatient consultations per person per year, by administrative level • **%** of children of 12–23 months who are fully immunized against all antigens, by administrative level • Net primary school enrolment ratio • Primary school drop-out rate • Antenatal care coverage, by administrative level • Measles immunization coverage, by administrative level	• % of children under 5 who have experienced a diarrhoea episode within the past 2 weeks • % of births attended by a skilled birth attendant • Literacy rate	• **Crude mortality rate** • **Under-5 mortality rate** • **Life expectancy at birth** • **% of population with worse functioning (WHODAS II)** • **% of population with poor quality of life** • **% of population under stress or with poor well-being**
Infrastructure	• # of km of roads and # of bridges repaired, by administrative level • # of harbours rehabilitated, by administrative level • % of destroyed/damaged schools rebuilt or rehabilitated, by category, by administrative level • % of destroyed/damaged health facilities rebuilt or rehabilitated, by category, by administrative level	• % of local administration offices fully functioning, by district	
Livelihoods	• # of damaged/destroyed fishing boats repaired/replaced by administration level • # of sq km of land returned to crops • Employment by economic activity, by gender and by age (including self-employment and employment in the informal economy) • Labour force participation rate	• % of population living below national poverty line • Average household income, by administrative level	

[1] Two additional dimensions are critical, but country specific: these are the quality of specific interventions (e.g. housing), and beneficiaries' satisfaction (see § 22) . The two combined, captured through both qualitative and quantitative methods, in addition to the quantitative indicators contained in the matrix, will provide a comprehensive view of the recovery process and achievements. During the meeting, these two dimensions will be discussed and common approaches vetted and adopted. Cross-cutting issues such as sustainability and gender do not have to be captured by individual indicators in the above matrix, but need to be discussed at the Bangkok workshop.

Table 2: Core indicators to be collected through household surveys

Indicator number	Core indicators
1	% of children under 5 who are wasted (moderate and severe)
2	% of children under 5 who are stunted (moderate and severe)
3	% of population with access to water from an improved source, by administrative level
4	% of population without basic sanitation facilities, by administrative level
5	Household food consumption (24 hr recall)
6	% of children under 5 who have experienced a diarrhoea episode within the past 2 weeks
7	% of children of 12–23 months who are fully immunized against all antigens, by administrative level
8	% of births attended by a skilled birth attendant
9	Net primary school enrolment ratio
10	Primary school drop-out rate
11	Average household income, by administrative level
12	% of population living below national poverty line
13	Labour force participation rate
14	Employment by economic activity, by gender and by age (including self-employment and employment in the informal economy)
15	Degree of mental, physical and social functioning (WHODAS II: 12 questions version)
16	% of population with poor quality of life
17	% of population under stress or with poor well-being
18	Literacy rate
19	Crude mortality rate
20	Under-5 mortality rate
21	Life expectancy at birth

12. Adoption of the core indicators calls for adherence to the standardized definitions for the numerators and denominators of all these indicators, in order to guarantee cross-country comparability (see matrix of TRIAMS Indicator Definitions in Annex 2). Wherever variability occurs, it will be noted or adjusted when possible. Each indicator will also be listed according to the source of data (routine information systems or household surveys) and the frequency of their collection in each country.

Table 3: Core indicators to be monitored through routine information systems

Indicator number	Core indicators
1	% of low birth weight newborns (< 2,500 g.)
2	# of hospital beds available at district level for acute mental illnesses
3	% of sub-district covered by outreach psychological support by community workers
4	# of health facilities with emergency obstetric care, by population, by administrative level
5	# of outpatient consultations per person per year, by administrative level
6	Antenatal care coverage, by administrative level
7	Measles immunization coverage, by administrative level
8	# of harbours rehabilitated, by administrative level
9	# of km of roads and # of bridges repaired, by administrative level
10	% of health facilities rebuilt or rehabilitated by category, by administrative level
11	% of schools rebuilt or rehabilitated, by category, by administrative level
12	# of damaged/destroyed fishing boats repaired/replaced, by administrative level
13	# of sq km of land returned to crops
14	% of local administration offices fully functioning, by district
15	% of tsunami-affected population with damaged houses living in emergency shelter, by administrative level
16	% of tsunami-affected population with damaged houses living in temporary shelter, by administrative level
17	% of tsunami-affected population with damaged houses living in new or rebuilt permanent shelter, by administrative level
18	% of tsunami-affected population receiving food aid, by administrative level
19	% of increase of tsunami-affected population with damaged houses living in permanent houses, by administrative level

13. Data on recovery impact assessment indicators collected through multi-purpose household surveys will enable a households' receipt of public assistance or improvement in a household's living conditions to be related to other aspects of household behaviour. For instance, a multi-purpose survey that obtains information on child health and nutrition, adult and youth employment, household socio-economic characteristics and living conditions, as well as on household receipt of tsunami assistance – all from the same household – would make it possible to explore whether it is the poorest and most vulnerable sections of the affected population who are benefiting from tsunami recovery efforts, or whether it is the better-off affected households and those living closer to population centres and roads that are receiving most of the assistance.

14. The study design and the sampling methodology of the national household surveys need to be revisited to allow this level of analysis in the tsunami-affected districts.

15. As already discussed with the five countries concerned, the implementation of TRIAMS envisages the use of existing routine information systems, complemented by data from already planned national or sub-national household surveys. The production of timely and quality information requires specific support for data collection and analysis at peripheral level and substantial improvement in coordination among agencies leading the recovery efforts and line ministries leading the specific recovery sectors. In addition, data flows related to recovery interventions generated for time-limited as well as long-term periods from international agencies and NGOs have to be included in the TRIAMS process. Needs in terms of technical assistance, training and additional limited funds for operating expenses with respect to TRIAMS implementation still have to be identified and quantified. All TRIAMS implementing partners will have to discuss and agree on a cost-sharing approach.

16. **Sample size and representativeness of surveys.** There is one problem with the use of existing household surveys that will need to be resolved, namely the inability of these surveys to provide representative statistics for the tsunami-affected population within the geographical/administrative areas that have been hit by the tsunami in each of the countries. Many surveys, e.g. socio-economic and labour force surveys, are representative at the national and provincial/state levels, but not at lower levels (e.g. district or sub-district). Since the tsunami affected relatively limited geographical areas in all of the countries (with the exception of the Maldives), there would not be enough observations from the existing surveys to calculate representative statistics for the affected regions. This would call for over-sampling of the affected regions and a consequent increase in the overall sample size of the surveys. The precise details of how the over-sampling will be conducted will depend, in part, on the overall study design and the sampling method adopted. This will need to be discussed and finalized with the survey organizations in the affected countries. In addition, the sampling methods used for pre-tsunami household surveys (which may provide baseline data for certain indicators) need to be taken into account in the new sampling design.

17. Household survey data in all the countries covered by this proposal are collected by the Department of Statistics, which is typically under the Ministry of Planning. The department is known by different names in each of the countries – e.g. National Statistical Office (NSO) in Thailand, Bureau of Public Statistics (BPS) in Indonesia, Department of Census and Statistics (DCS) in Sri Lanka and the National Statistical Survey Organization (NSSO) in India. Again, these organizations will continue to be responsible for data collection under the TRIAMS process, with support from relevant UN, international and non-governmental organizations and local partners.

18. **Frequency of data collection.** Given the importance of monitoring to facilitate the planning of tsunami recovery interventions, it is important that it is done on a regular basis. For most of the output indicators (unlike less sensitive outcome indicators requiring household surveys), monitoring could technically be on an annual basis, through routine service reporting or facility surveys. Yet, many of the affected countries conduct their socio-economic or demographic household surveys at much less frequent intervals. For instance, India's National Statistical Survey rounds, which have a larger sample size and yield more reliable data, are conducted only once every five years. Sri Lanka's Household Income and Expenditure Survey (HIES) is also typically fielded every four to five years (the last two were in 1995–96 and 2002). Thailand's socio-economic survey is conducted every two years. There is no regular schedule that has yet been established for the HIES in the Maldives, since the 2003–04 HIES was the first nationwide household survey ever to be conducted in the Maldives. Of the five countries, only Indonesia conducts a socio-economic survey (SUSENAS) every year.

19. All the five countries have a regular system for administrative data collection. Data on school enrolments are collected and consolidated annually, while those on health outputs (e.g. immunizations) are collected from each health facility, usually on a monthly basis, and consolidated at district level. The major problem with these data relates to timeliness. In many of the countries, administrative statistics are released publicly more than a year (sometimes, two or three years) after their reference date.

20. **Data analysing, reporting and release.** Although the time lag between data collection and data processing has shortened over the years, it still takes inordinately long for survey data to be available for processing in virtually all of the five countries. By the time summary data tables are published and reported, it can often be as long as two to three years after the original date of data collection. It is useful to note that several countries in Africa as well as Asia (e.g. Pakistan), with technical assistance from the World Bank and other donors, have added Core Welfare Indicators Questionnaires (CWIQs) to their complement of household surveys to provide data on a number of MDG and poverty indicators. These are short surveys, with a fixed core and rotating modules (on different topics, such as health, education, access to basic services, etc.) that are administered to a large sample (thereby providing representative statistics at the sub-national level) using simple data-collection protocols. Since these surveys employ new data-collection and validation technologies, such as improved methods of field data entry and automatic data consistency checks during data entry, they often require significant software and hardware upgrades and staff training.

21. An important objective of the TRIAMS process would be to ensure that reported routine service data and household survey data in all the affected countries are released to the public in good time. However, most important is that the national and sub-national levels produce and use the analysis and outcomes of the TRIAMS data in a timely fashion. This may facilitate and improve the decision-making process in dynamic situations, in which the speed of the usual planning cycle has been accelerated. The governments need to come up with a data-sharing policy that would be consistently applied across all government agencies. Key data tables could be posted to each government's respective Department of Statistics website shortly after data collection is complete, and unit record data could be made available to researchers and research organizations for a modest fee within a period of three months after the data are cleaned and available in machine-readable format.

22. **Beneficiaries' perspective and satisfaction:** During the consultations conducted in preparation for the TRIAMS meeting in Bangkok, several stakeholders reaffirmed the need to obtain feedback more regularly and reliably from beneficiaries on their satisfaction with the results of the recovery interventions and to solicit their input on unmet needs and future projects. The need to better inform the tsunami-affected communities on the progress of the recovery and to involve them more in the formulation or readjustment of recovery plans has also been highlighted. Beneficiary satisfaction and perceptions of key issues could be measured via both quantitative (i.e. household surveys) and qualitative (i.e. focus groups, key informant interviews, etc.) methods annually or biannually across all countries. A research study similar to the UNDP Early Warning Reports could be conducted on a representative sample of households in tsunami-affected areas to capture a broader swathe of opinions on the recovery process and detect changing perceptions of inequities and other emerging challenges. Typically, the UNDP Early Warning Reports examine constituent confidence in key institutions and humanitarian actors and gauge opinions on the perceived prevalence of country-specific challenges such as poverty, unemployment, corruption, potential for ethnic conflict, access to social services and the quality of response of international actors. While some indicators on beneficiary opinions could be the same across the TRIAMS countries (i.e. overall beneficiary satisfaction using a mutually agreed scale), others would be developed based on the particular issues facing a country. The same instrument would then be applied regularly up to 2010, providing stakeholders (governments, beneficiaries, donors and implementing partners) with trend data on beneficiary perceptions.

Qualitative component: While beneficiary satisfaction and perceptions will be measured in part through quantitative methods, it is recommended that a further qualitative component be included in the TRIAMS process. The indicators listed in the matrix are quantitative in nature and will provide values or numbers of things; they will tell stakeholders the "what", but not the "why". To truly understand the impact of the tsunami response and to be able to adjust programme plans per recovery data, stakeholders will need to have insight as to why things are progressing in a certain direction. For example, the TRIAMS matrix will show how many houses have been built and the percentage of homes occupied, but it won't reveal why there might be a low occupancy rate. And indeed, the reasons could vary considerably across districts or within the same districts. As the quantitative data is produced and unanticipated findings identified or problems noted, qualitative methods, such as focus groups with beneficiaries (using various participatory tools) should be employed to investigate the challenges. The results (i.e. analysed data vetted with various stakeholders) would then be immediately fed back to programme planners and implementers, and changes in project design made as needed. The frequency and scope of the qualitative methods would depend on the scale and type of the challenges noted, and should be handled at sub-national level to address specific problems during the implementation of some recovery activities.

V. Capacity enhancement in monitoring and evaluation

23. There is the need to strengthen data collection, analysis and reporting in the selected countries, particularly at the peripheral levels of administration, in order to have a reliable and complete monitoring and evaluation system in place in tsunami-affected areas.

24. An important element of the TRIAMS process will be the strengthening of local capacities in data collection and analysis in order to identify individuals, households and communities that require specific recovery interventions and to adjust the use of available resources accordingly.

25. The effort to enhance local capacities in data analysis and use of the related key indicators should be influenced by the following questions: A) How do you improve the reliability of key monitoring indicators from routine information systems? B) How do you strengthen the peripheral capacity to make use of key indicators to identify gaps/inequalities and improve priority setting and the consequent allocation of resources within the district/province? C) How can the national authorities facilitate this process?

26. A good M&E system will provide useful guidance to policy-makers on targeting and priority setting. In view of competing demands for limited resources, governments need to target the most underserved communities and villages in a country and the neediest population groups within these communities. Analysis of M&E data can help identify the poorest regions and groups that are receiving inadequate assistance from rehabilitation efforts. The Geographic Information Systems (GIS) is a powerful tool for mapping such underserved populations. Strengthening the peripheral capacity in targeting analysis and GIS-based mapping would be an important element of the TRIAMS process.

VI. Support activities

27. The following are areas of possible institutional support that may be considered within the TRIAMS framework by the selected countries:

1) **In-country awareness-building workshops** to increase awareness of M&E among central, provincial and district officials in each of the selected countries.
2) **A launch workshop that produces a detailed inventory of the various data sources for all the sectors involved in the tsunami recovery in each of the five countries –** namely household surveys conducted by the respective Department of Statistics, the management information systems of the various line ministries, and the Census – in order to determine how information from these sources could be shared in a timely way across the different sectors and used to monitor tsunami recovery efforts on an ongoing basis. Agencies in charge of producing and collecting statistics and data, such as the planning departments of the various line ministries, the Planning Commission and the Department of Census and Statistics, as well as data-users – namely academic researchers, NGOs and external donors – would attend this workshop. In addition, international experts on M&E would be invited to discuss the gaps in current data sources as well as ways in which current data sets in the country could be improved. The discussion would address specific issues such as: Which data sets are most appropriate for monitoring the progress of tsunami rehabilitation efforts? How reliable are these data sources? Could the existing household surveys and management information systems be expanded to include additional tsunami-related content? How can the sampling design and sampling frame of existing household surveys be amended so that they can yield representative statistics for the tsunami-affected communities? How can the timeliness of data be improved so that the lag between data collection on the one hand and data reporting and data release on the other hand is significantly reduced?
3) The launch workshop would merely initiate the partnership between TRIAMS and local governments to improve monitoring mechanisms on a sustained basis. Much additional work will need to be accomplished over the remaining term of the process. The workshop will identify gaps in data as well as in analytical capacity in the countries. These gaps will then need to be filled with a variety of inputs and technical assistance defined in national plans of action. A subsequent step will be to see, among the national authorities and the international agencies, how the needs can be covered.
4) The following are possible areas of support:
   - Consultancies from national and/or international experts in statistical survey methods, questionnaire design and M&E analysis.
   - Short-term in-country training courses for staff of the central, provincial and district statistical offices, the Office of the Census, and other data-collection agencies within line ministries (e.g. health, education, forestry, agriculture, etc.). The training would cover topics such as sampling methodology, new field-based data entry and validation methods, M&E analysis, statistical analysis and GIS mapping techniques. Such courses are routinely offered by multilateral agencies such as the World Bank Institute (the training wing of the World Bank), but they can be customized for the individual countries.

VII. Implementation and coordination arrangements

28. **Government leadership.** Because of the cross-sectoral nature of the tsunami recovery efforts at country level, and of the TRIAMS process as well, the leading governmental agency for the recovery should also lead and coordinate all the TRIAMS-related activities both within the government and with the international agencies and local and international NGOs. Each country should organize itself to manage the TRIAMS process as it sees fit.

29. Management of TRIAMS could be governed by one or two committees in each country as described below. Again, it is up to each country to decide on the most effective arrangements:
   a) an interministerial steering committee on tsunami M&E, which will be a policy-level group, and
   b) a technical task force, which will be in charge of the process.

30. The interministerial steering committee could be composed of senior officials – either ministers or secretaries – from different sectoral ministries as well as from the Ministry of Planning, Ministry of Finance and the central statistical office. A steering committee would help ensure that the findings of the process feed into the government's planning process, annual budget and investment programme.

31. The technical task force could be responsible for all technical matters, such as the redesign of existing surveys, deployment of new surveys as needed, the content and nature of staff training programmes and the terms of reference for international consultants and experts. It would liaise with universities, independent researchers and international and non-governmental agencies in all the countries so as to understand and address their information needs.

32. The intersectoral and interministerial nature of the TRIAMS process cannot be overemphasized. Unless the line ministries are fully involved in the collection and redesign of the information base, it is unlikely that they will use this information meaningfully to formulate and adjust their policies and programmes. It will, therefore, be imperative to work out a mechanism for integrating solidly the line ministries in this important activity (the composition of the task force can be a way to address this concern).

33. An International Senior Policy Adviser, co-funded by the International Federation and WHO, will be appointed to advise and support TRIAMS implementation in the five countries. The Senior Policy Adviser will be based in a central location that is in close proximity to all five countries and will be expected to travel frequently to all the countries. He or she will have overall responsibility for liaising with each of the governments as well as the Global Consortium partners. In addition, he or she will have the specific responsibility of setting up the institutional coordination arrangements for the interministerial steering committees and the technical task forces in all five countries.

34. National ownership of the TRIAMS process is key. Full-time, dedicated staff from the leading governmental agency are needed as secretariat members of the TRIAMS national task forces, in order to coordinate and support the work of the multiplicity of actors that are forming the backbone of TRIAMS.

35. Each government will have the prime responsibility of ensuring that appropriate interagency coordination takes place at the national level.

VIII. Timetable

36. The TRIAMS process will be implemented during the period 2006–2010. An extension of this period in some countries can be envisaged, but at a later stage, according to the speed and coverage of the tsunami recovery process.

Annex 5
Glossary

Source
The majority of definitions are from OECD/DAC Glossary of Key Terms in Evaluation and Results-based Management 2002

Impacts
Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.

Outcome
The likely or achieved short-term and medium-term effects of an intervention's outputs.
Related terms: results, outputs, impacts, effect.

Outputs
The products, capital goods and services which result from a development intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.

Effectiveness
The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance.
Note: Also used as an aggregate measure of (or judgement about) the merit or worth of an activity, i.e. the extent to which an intervention has attained, or is expected to attain, its major relevant objectives efficiently in a sustainable fashion and with a positive institutional development impact.
Related term: efficacy.

Efficiency
A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.

Indicator
Quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor.

Monitoring
A continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds.
Related term: performance monitoring, indicator.

Performance
The degree to which a development intervention or a development partner operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans.

Performance indicator
A variable that allows the verification of changes in the development intervention, or shows results relative to what was planned.
Related terms: performance monitoring, performance measurement.

Recovery
Recovery focuses on how best to restore the capacity of the government and communities to rebuild and recover from crisis and to prevent relapses. In so doing, recovery seeks not only to catalyse sustainable development activities but also to build upon earlier humanitarian programmes to ensure that their inputs become assets for development. (UNDP, 2001)

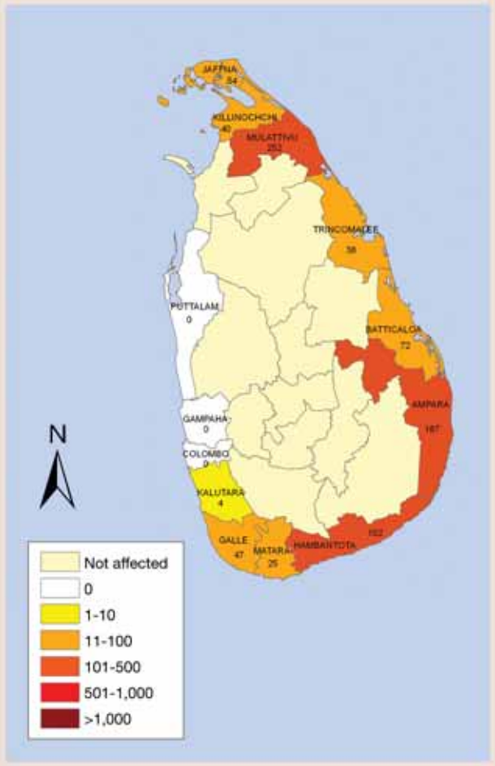
Results
The output, outcome or impact (intended or unintended, positive and/or negative) of a development intervention.
Related terms: outcome, effect, impacts.

Annex 6
Maps

Map 1:
Impact of tsunami in Indonesia and Sri Lanka: number of death or missing people due to tsunami per 10,000 population per district

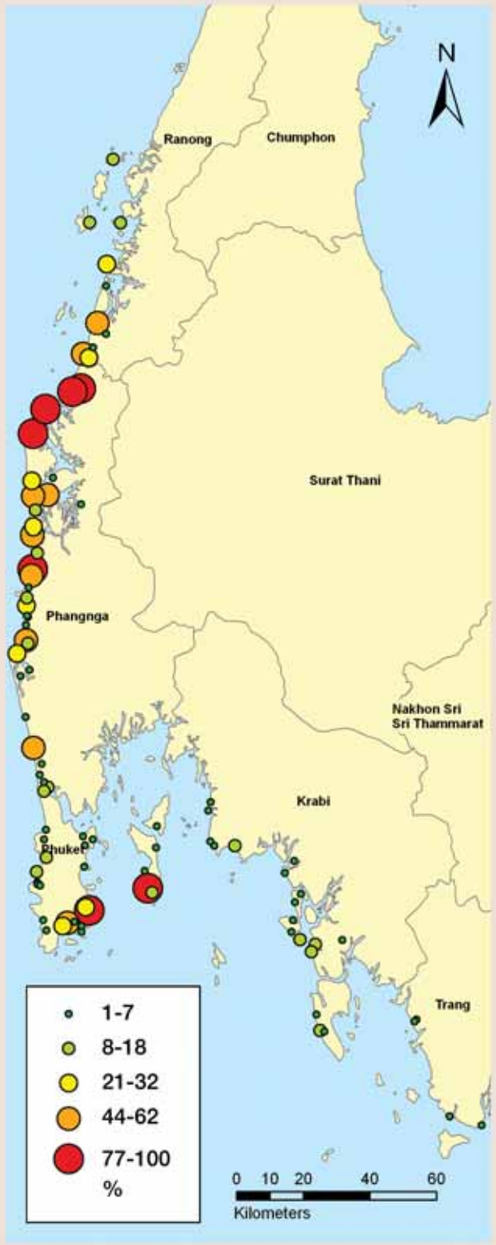
Indonesia – Banda Aceh province

Sri Lanka

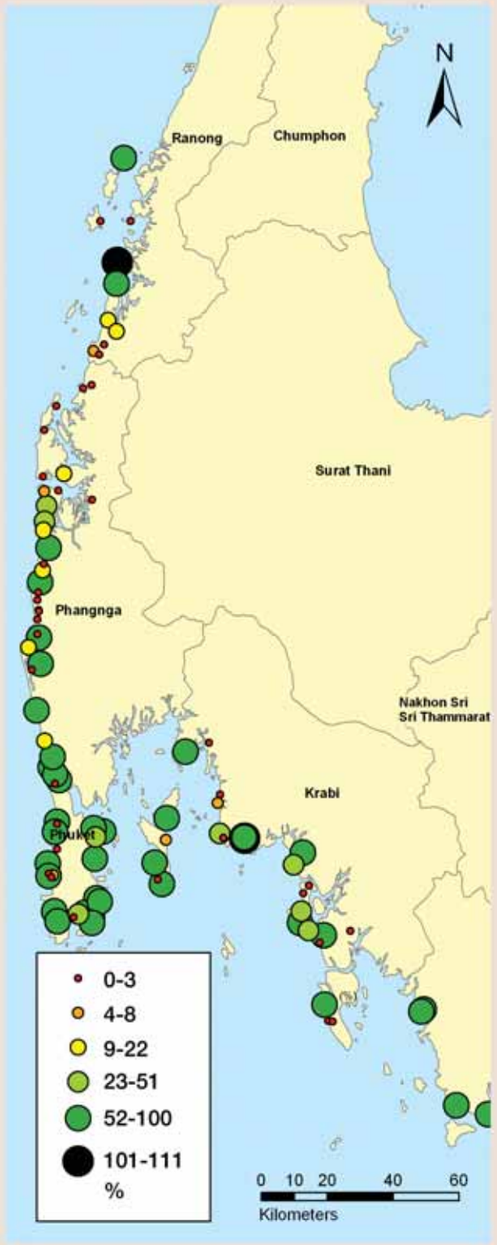


Map 2:
Thailand: vital needs

Percentage of houses destroyed*
*number of houses destroyed/ number of houses before tsunami

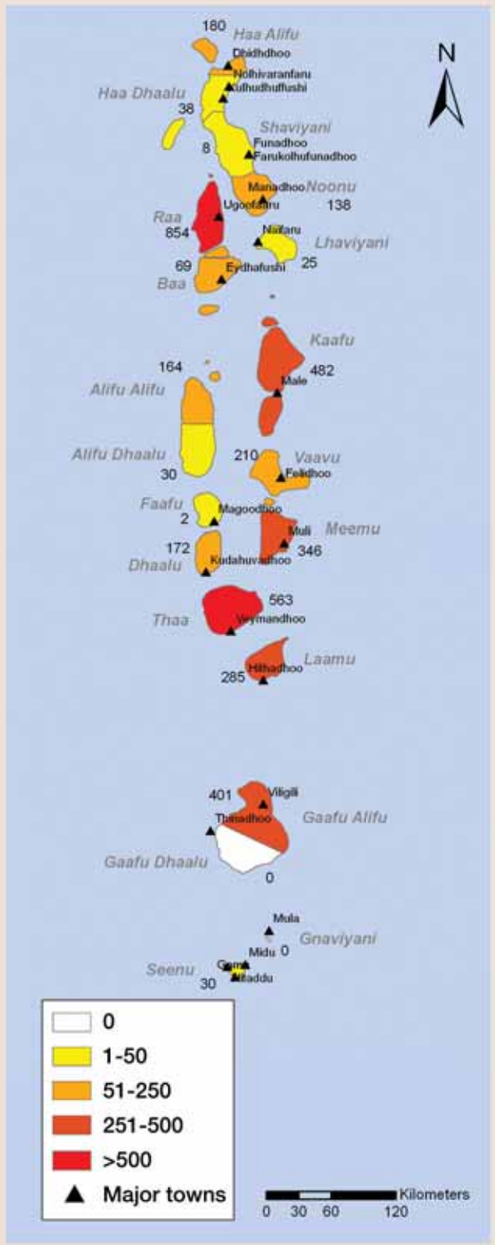


Percentage of houses repaired/rebuilt**
**number of houses rebuilt + number of houses repaired/number of house destroyed

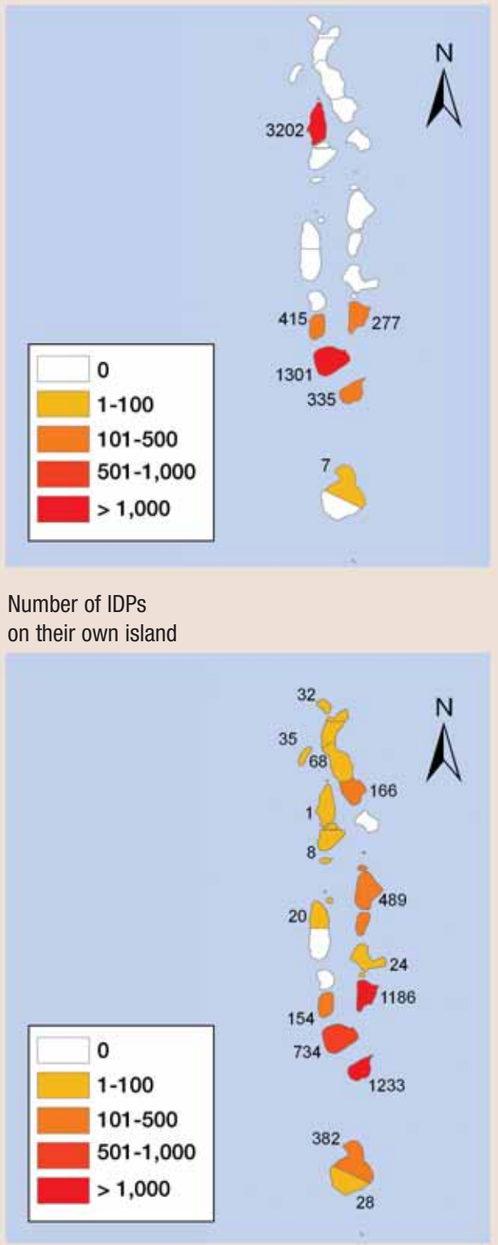


Map 3:
Maldives: shelters and internally displaced persons (IDPs)

Number of buildings damaged



Number of IDPs on another island



Number of IDPs on their own island

Map 4:
Indonesia: infrastructures

Kilometers of roads damaged/destroyed/rebuilt

Arterial bridges destroyed/rebuilt

Map 5:
Indonesia: livelihoods

Number of fishing vessels lost or damaged/replaced

Percentage of agricultural land rehabilitated

Number of beneficiaries in agriculture

Distibution in agriculture

The Fundamental Principles of the International Red Cross and Red Crescent Movement

Humanity
The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and to ensure respect for the human being. It promotes mutual understanding, friendship, cooperation and lasting peace amongst all peoples.

Impartiality
It makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavours to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

Neutrality
In order to enjoy the confidence of all, the Movement may not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.

Independence
The Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.

Voluntary Service
It is a voluntary relief movement not prompted in any manner by desire for gain.

Unity
There can be only one Red Cross or Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

Universality
The International Red Cross and Red Crescent Movement, in which all societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

Tsunami Recovery Impact Assessment and Monitoring System

TRIAMS workshop final joint statement

The workshop objectives were largely achieved. At the end of the workshop, participants issued a joint statement. In it, they emphasized that the purpose of TRIAMS is to allow governments, agencies and the affected populations to monitor the rate and direction of recovery, enabling them to adjust and adapt recovery programmes if unintended effects are identified and to enhance accountability. Government representatives agreed on a final set of core indicators applicable to all five countries and identified indicators specific to the individual countries. They also drafted initial country work plans which will include both quantitative and qualitative data and incorporate cross-cutting issues such as gender and the environment. It was also agreed that there was a need for additional indicators and methods to monitor and measure country-specific recovery issues.

TRIAMS workshop outcomes

A common framework of impact monitoring indicators was agreed upon.

Draft country action plans were produced to move ahead with TRIAMS implementation.

Four out of five countries agreed to have TRIAMS data before the end of 2006.

Participants resolved to continue to develop their country action plans for the implementation of TRIAMS with the assistance of WHO, other UN agencies and the International Federation. They also underlined the usefulness of establishing an initiative to support and promote TRIAMS through the sharing of information and good practices and compiling and synthesizing findings from individual countries on a regular basis. Although additional steps are needed to identify information gaps and determine ways to address them, including the necessary human, financial and technical resources, a first round of TRIAMS results are expected by the end of the year. The results will be made available to the general public.

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United Nations

World Health Organization

International Federation of Red Cross and Red Crescent Societies