Lessons learned in post-crisis recovery monitoring:

Including 3rd Regional Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) Workshop, Bangkok, 2009

Tsunami Recovery Impact Assessment and Monitoring System - TRIAMS

World Health Organization

International Federation of Red Cross and Red Crescent Societies

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The third regional TRIAMS workshop was made possible through the support the American Red Cross.

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Lessons learned in post-crisis recovery monitoring:

Including 3rd Regional Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) Workshop, Bangkok, Thailand, 25 – 27 February 2009

Tsunami Recovery Impact Assessment and Monitoring System - TRIAMS

UNDP
World Health Organization
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Executive summary

The response to the 2004 Indian Ocean tsunami paired multi-country devastation with multi-country funding on an unprecedented scale. The availability of emergency aid and the attendant pressure to spend it undermined the role of recovery planning. At the same time, the multitude of development actors rendered normal coordination mechanisms unworkable. Many feared that in the chaos, funding would be misused and needs would go unmet.

The Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) initiative was designed to sidestep obstacles to planning and coordination by instead improving government monitoring of the overall recovery through focus on some key agreed recovery outcomes and outputs. Since 2006, Indonesia, Sri Lanka, Maldives and Thailand have been employing the TRIAMS approach to help manage the completion of recovery interventions and to assess results, while highlighting remaining gaps. They have been assisted by TRIAMS partners IFRC, WHO and UNDP, with additional support from UNICEF, who are each interested in learning from the TRIAMS experience to help build suitable recovery management tools that could be available for use in future emergencies.

In 2009, 50 stakeholders representing governments and agency partners met in a third regional TRIAMS workshop in order to identify and share lessons with one another and examine how the use of data has improved the quality of decision-making. This report explores the themes and specific lessons that have emerged during this initiative with implications for further application of TRIAMS in the affected countries and as an approach that could be used globally.

TRIAMS

The TRIAMS approach is meant to improve ongoing management and planning of recovery efforts, improve feedback to beneficiaries, partners and the public on the utilization of resources and the results and in the process test systems for future disaster recovery efforts. TRIAMS can be defined in terms of 5 attributes:

1. A multi-sectoral conceptual framework including vital needs, basic social services, infrastructure and livelihoods
2. Focus on a limited number of common, priority indicators to provide an evidence base for overview of the overall recovery effort
3. Orientation toward results for beneficiaries
4. Attention to equity in the recovery effort through use of more disaggregated (sub-district level) data
5. Country ownership and leadership

The methodologies promoted in TRIAMS include:

- Collection and compilation of indicator data, metadata and analysis in a database
- Use of thematic mapping to show geographic distribution and equity dimension of recovery assistance
- Use of existing routine and survey sources of quantitative data
- Use of beneficiary perspectives to triangulate and better understand how affected people view the quality and relevance of the recovery assistance.
- Incorporation of disaster risk reduction elements into the indicators

The process of establishing evidenced-based recovery monitoring systems can be simplified to 5 steps:

1. Agree on Indicators/framework
2. Collect and compile the data for the selected indicators
3. Analyze the data
4. Utilize the analysis
5. Institutionalize/mainstream into sustainable systems

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Country progress

In **Indonesia,** BRR, UNORC-IAS and local government have been using the TRIAMS approach to monitor recovery through use of a database called *AcehInfo*, and production of analytical reports called *TRIP* (tsunami recovery indicator package).

BRR highlighted use of TRIAMS indicators and analysis in solving problems in the interrelated areas of housing and IDPs. As a result, they were able to relocate IDPs more effectively from 2007. AcehInfo and TRIP reports have been the main data source for the Aceh Recovery Framework (ARF) and the Kabupaten/ Kota recovery forum (KRF) approaches to decentralized recovery management.. BRR's monitoring of wider infrastructure beyond housing and facilities enabled them to show remaining needs and successfully negotiate for donor funds.

The experience of BRR remains as an example of what can be accomplished with the appropriate level of commitment from partners and serious financial investment. For BRR, the main utility of TRIAMS was as a broad framework for representing recovery progress that is acceptable to international partners. Through AcehInfo and TRIP, TRIAMS evolved as one of several information management tools, including the RAND (Recovery Aceh and Nias Database) and a detailed database on housing. With the expiry of BRR's mandate in April 2009, and a sizable number of tsunami-funded recovery activities left to complete and sustain, the main challenge is ensuring that local government can consolidate progress in recovery management in a way that is most useful to their ongoing needs.

In **Maldives**, the Department of National Planning (DNP) has worked to collect, compile and analyze data relating to the tsunami recovery and has worked with the new National Disaster Management Center (NDMC) on monitoring tsunami recovery. Together, they established a monitoring system on recovery progress, identifying data sources and designing and using data collection forms for line ministries. DNP initiated a TRIAMS database as a component of the already established MaldivInfo database under the Statistics Division, which draws on the routine data collected by National Planning, as well as on previous surveys.

An analytical report carried out by DNP highlighted tsunami recovery progress in social sectors and housing, while highlighting critical remaining funding gaps in water and sanitation, as well as remaining work in restoring ports, jetties and harbors. It is hoped that the findings and document will serve both to better focus these remaining areas in the emerging national agenda as well as to negotiate with donors to help "finish the job."

Maldives partners highlight the utility of TRIAMS in tracking IDPs along with progress in housing. Figures were used by MPs to pressure government to give more emphasis on the housing repair and reconstruction and to raise funding and plan and budget for the remaining works. As in Thailand, the Maldives experience has underscored the difficulties faced by central agencies in obtaining data from various ministries, with the added logistical challenges unique to Maldives' dispersed geography in obtaining data.

With the closure of RADA in **Sri Lanka** by June 2007, there was a risk that remaining tsunami recovery work would lack proper coordination and that TRIAMS and other recovery monitoring lessons would be lost. At the same time, the end of 30 years of armed conflict in East and North of the country also meant pressing recovery needs even larger than those for the tsunami. Fortunately, methodologies and principles of recovery monitoring have continued to be applied, as in housing between UN-Habitat and Ministry of Nation Building and Estate Infrastructure Development (MNB & EID), as well as in a tsunami recovery beneficiary survey carried out with UN Resident Coordinator's Office and the research firm Centre for Policy Alternatives.

Current TRIAMS efforts have supported establishment of a database at national level rooted in housing—both tsunami and post-conflict—and initiation of a district-level recovery monitoring pilot programme led by the Batticaloa District Secretariat. The national-level database is meant to feed into a quarterly decision-making steering committee in Colombo, in which District, Provincial and Colombo-based stakeholders review data on housing-related progress. The Batticaloa pilot puts into action the plan set out in the 2007 TRIAMS meeting

to *strengthen sub-national data capacities with a focus on monitoring recovery and developmental activities.*

Sri Lanka represents the current demand and application of recovery monitoring lessons learned during tsunami recovery. The Sri Lanka experience argues for the primacy of housing in recovery monitoring, as the sector that receives the most funding with linkages to other beneficiary needs in livelihoods, social services and infrastructure. Sri Lanka's experience also suggest potential best practices, in the regular presentation of timely data in stakeholder decision-making forums and in their use of beneficiary opinions through beneficiary surveys and processing of complaints.

In Thailand, the Ministry of Interior's Department of Disaster Prevention and Mitigation (DDPM) has responsibility for monitoring and reporting on tsunami recovery. Following the 2007 TRIAMS meeting, DDPM negotiated an MOU with provincial governors to regularly supply and make use of data according to the TRIAMS framework. Since then, in partnership with the Ministry of Public Health and the Mahidol University Faculty of Tropical Medicine, they have compiled data from the 6 affected tsunami provinces though workshops in 2007, 2008 and 2009. The resulting data are compiled into analytical reports with broad and high-level distribution. The most recent report, while largely concerned with finances, provides quantitative evidence that the recovery operation has been completed effectively.

Under TRIAMS, DDPM is converting their tsunami database into a more robust platform, and organized trainings to build capacities of their staff at national and provincial level in data management, analysis and thematic mapping. By spreading these capacities to provincial offices, it is hoped that they will be able to manage emergency-related data better themselves and be a better partner to DDPM in the future.

In common with Maldives, Thailand's experience shows the challenge facing a single focal department in chasing data from multiple sources. For the same reasons, their experience makes the argument for focus on a reduced set of strategic indicators. Although Thailand does not consider itself to be a disaster-prone country, DDPM is involved in a broad range of public risks and can benefit from developing capacities in using data as evidence.

TRIAMS in perspective of other recovery monitoring initiatives

Relief and recovery needs for information are distinct. If a disaster is viewed as a deficit in development, the role of relief organizations is to minimize the extent of the deficit. Once the curve starts the climb back up, it can be called *accelerated development*. It is at this stage where TRIAMS approaches come into the picture.

As an example of systematic data use in recovery management, TRIAMS can be compared to other related initiatives, including the well-known Damage and Loss Assessment (DALA); the Post-Disaster Recovery Needs Assessment (PDNA); SUMA/LSS (humanitarian supply management system/logistics support system); the *Sahana* system developed in post-tsunami Sri Lanka; the Research and Information System for Earthquakes system in Pakistan (Rise-Pak); and the Fund for the Reconstruction and Social Development of the Coffee Belt (FOREC) developed after the 1999 Columbia earthquake.

All these initiatives face common challenges, including how to collect data and assure its quality; how to present data in a way that decision makers can use; questions about who owns the system and how it should be sustained. More fundamentally--except LSS, each system needed to be improvised and designed at the time of the disaster. The question then is how to make tested tools available to future emergencies to avoid re-inventing the wheel? As perhaps the most intensive investment in a recovery monitoring system to date, TRIAMS partners are obliged to agree what will remain for use in future disasters, once the initiative ends. In transitioning from tsunami recovery to development, TRIAMS countries face questions relating to sustainability: Which indicators need to be continued for routine development monitoring and which should be preserved as part of preparedness for the next crisis? In order to identify and preserve lessons from TRIAMS, it should be properly evaluated. Additionally, participants should document lessons learned and publish them in a didactic guideline to advise a future generation of disaster managers who may have to deal with a similar large-scale emergency.

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Assessing impacts

From its inception, TRIAMS has meant to serve both the analysis of outputs to monitor recovery progress and the need to assess outcomes and impacts. Looking at TRIAMS experiences across 5 key dimensions relating to humanitarian impact assessment yields the following observations:

Varying definitions of impact assessment – Multi-stakeholder impact assessment must take into account different understanding of humanitarian action and its impacts. The TRIAMS use of impact is consistent with the established definition: *The systematic analysis of the lasting or significant changes, positive or negative, intended or not, in people's lives brought about as a result the given action or a series of action* (Roche, 2000). However, TRIAMS partners acknowledged that such a systematic analysis across TRIAMS categories of vital needs, social services, infrastructure and livelihoods may not be possible, and that it is better to focus on assessments of *outcomes* through the TRIAMS outcome indicators and to look to individual project evaluations for attribution of *impacts*.

Diverse stakeholders and interests - The fundamental question to answer is who wants humanitarian impact assessment and why? Potential stakeholders should be brought together early to encourage ownership and reconcile competing interests. TRIAMS countries have highlighted the role of TRIAMS as a common system acceptable to donors that has helped to bring these different interests together. This has implications for agencies under the 'cluster approach,' in which impacts in a sector are the responsibility of clusters and cluster leads, rather than individual stakeholders.

Methodological challenges - Once impact is defined, what and where are the indicators, baselines and data evidence for assessing impact? Rather than use strictly quantitative or qualitative methods to obtain data, mixed methods are recommended. TRIAMS has promoted the use of qualitative beneficiary perspectives, as applied in Sri Lanka, to complement quantitative data collection. However, qualitative data is no substitute, and the focus must remain on obtaining reliable and objective measures of actual progress. An important prerequisite is some kind of M&E framework, which links inputs, outputs, outcomes and impacts. As a basic M&E framework, TRIAMS has helped promote that what recovery programmes deliver is evaluable and consistent with this results chain.

Collective interpretation and analysis that involves local actors and affected populations - In general, the more stakeholders are involved in the design, the more likely the results are to be used.

Capacities and incentives for improved impact assessments - Are there capacities at the different levels to carry out quality impact assessment? What are the incentives for initiating impact assessment? What can donors do to create incentives and make impact assessment part of the system? With the data that has been collected as part of TRIAMS in each of the country, partners are responsible to ensure that the data are made available to any current or planned impact assessment work.

Post Disaster Needs Assessment (PDNA) and the Recovery Framework (RF)

The joint World Bank and UN-funded PDNA project, currently in development, is an integrated approach to multi-stakeholder needs assessment and recovery planning in post-disaster situations.

Disaster recovery should not be what remains from relief, but should be derived from an objective development plan developed at the very beginning of recovery operations. A recovery plan is a strategic plan, guiding all decisions that need to be made to coordinate the rebuilding of a geographical area after a disaster. The plan is a dynamic vision represented by a document that changes in response to an evolving understanding of the context and the impact of intended and unintended recovery interventions, which can be referred to as the Recovery Framework (RF)

The Recovery Framework is the capstone of the recovery planning process, anchored in a baseline that includes the pre-disaster development plan for the affected area. It describes the recovery vision, not just from an

output point of view, but rather with an outcome orientation to "quality of life" and the reduction of future vulnerability.

Assessments of the impact of a disaster on individual, household, community and national assets, coping mechanisms and recovery needs build the evidence base for and underpin the development and later evolution of the Recovery Framework. Assessments need to cover both the identification of human recovery needs and the valuation of damages and losses to support the mobilization of the necessary capital to finance the recovery process. PDNA seeks to integrate these perspectives in one assessment process.

Conclusions: Lessons in recovery monitoring

Based on TRIAMS experiences to date, including discussions during the 2009 meeting and its workgroup exercises, the following represent main lessons for recovery monitoring, using the 5 steps as a framework.

Lessons for Step 1: Agree on Indicators/framework

This step was carried out in TRIAMS largely through two regional workshops that brought country-level and donor stakeholders together to agree on and finalize indicators and a framework. That process and subsequent use of the framework has underscored these lessons:

- Ensure main stakeholders agree on the kinds of indicators to monitor. For TRIAMS, this meant facilitating inputs and agreement from participating countries and international agencies. While this process helps make sure the framework of indicators reflects what is important to everyone, it also risks producing more indicators than may be practical to use.
- Remember that making use of existing data collection systems limits the extent to which new or adapted indicators can be used.
- Aim to balance output and outcome level indicators to monitor actions under the control of stakeholders and the outcomes achieved. TRIAMS experience has been that output data is more available than outcome data. Other project coordination systems monitoring outputs have not combined external and domestically-funded projects to see the complete picture.
- Build data preparedness as part of disaster preparedness, agreeing on basic indicators and data sharing arrangements in advance of a crisis.
- For indicators, 'less is more.' Pick a limited number of strategic indicators that cover the multi-sectoral framework, get a system up and running, then make it more sophisticated if required.
- Be prepared to adequately fund data collection, analysis and utilization.
- Timeliness counts. Be ready and start monitoring early in the recovery. A recovery monitoring system can be most useful if it provides needed data, analysis, findings and recommendations as early as possible, when interest and demand is highest and working patterns among partners are being established. Where data arrangements have not yet been established, this argues for creation of necessary inter-ministerial and technical bodies to bring data providers and users together and agree on urgent steps.
- Basic indicators on population affected will be required along with the agreed indicators for tracking progress. Related to this is the issue of how to manage changing lists of beneficiaries, which proved problematic during the tsunami.
- Agreement on indicators can take up a lot of the available time and energy. Obviously, it is important to move beyond this step.

Lessons for Step 2: Collect and compile the data for the selected indicators

- The largest constraint encountered in implementing TRIAMS and other similar initiatives has been in obtaining quality data.
- Define the affected population carefully and use the same definition consistently.
- Aim to use the most geographically disaggregated data available.
- Use clear indicator definitions up front and quality control of data received to help ensure data quality.
- Local use of data helps ensure its veracity.
- Use local academic or private research firms to assist in data collection, if necessary.

- Adapt scheduled household surveys to collect necessary outcome data, adapting sample sizes and survey instruments accordingly and accelerating turnaround time for priority indicators.
- Look to existing routine data systems to get timely data at a sub-district level and concentrate on maintaining data validity and ensuring feedback of compiled data to the sub-districts.
- Priority data requirements for calculating TRIAMS indicators include:
  - Detailed electronic maps, standardized for use by multiple actors and systems.
  - Disaggregated damage figures to use as denominators for infrastructure and livelihoods.
  - Disaggregated population figures to use for denominators (1yr-olds, primary school-age, M, F, total)
  - Disaggregated pre-disaster baseline values for outcome indicators
  - Beneficiary registration for housing and livelihoods, etc.

Lessons for Step 3: Analyze the data

- Data obtained on indicators needs to be reviewed and compared with baselines/targets and key findings highlighted for attention and action. This should be done closely with decision makers and other intended users so that analysis focuses on users' most relevant questions.
- Ideally, technical capacity to interpret the data should be readily accessible to the recovery managing agencies and this should be coupled to an organizational culture that is open to critical, honest assessment.
- The use of research institutions for analysis has proven to be useful in TRIAMS, but is dependent on the relationship between the recovery management agency and the research institution.
- Beneficiary perspectives enrich quantitative analysis.

Lessons for Step 4: Utilize the analysis

TRIAMS assumes a model whereby a government agency leads in modifying recovery plans based on review of objective evidence. Unfortunately, the ideal of recovery planning that is continuously refined by a transparent review of performance indicators is thwarted by a host of obstacles, including constrained supply and demand for trustworthy evidence in decision-making. The experience of TRIAMS participants suggests the following incentives to improve the utilization of available analysis:

- Hitch monitoring frameworks to established multi-stakeholder forums and make the review of indicators a regular part of the agenda. Most tsunami countries established such forums, but disbanded them after a year or two and their role in decision making and revisiting plans was not strong enough.
- Improve presentation of data and analysis to be more informative and user friendly. Utilization needs to be facilitated. This can be aided by adapting products to stakeholders' needs, including Briefs, Presentations; Printed reports; Regular meetings/forums; Interactive databases; Websites; Dashboards; Thematic maps; Media/press conferences/press releases. Though long, analytical reports are the norm, often the time it takes to collect data, analyze and distribute reports is excessively long. This argues for collecting fewer indicators and depending more on shorter briefs and forums for data utilization.
- Open analysis to all stakeholders and the public by making a shared database available (on-line and using common media)
- Make government recovery plans more transparent.
- Increase stakeholder knowledge about indicators and data collection.

Lessons for step 5: Institutionalize/mainstream into sustainable systems

Making improvements in evidence-based recovery monitoring part of the regular way of working in a country entails incorporating the lessons outlined above at three related levels: in institutions, in policies and procedures and in capacities. While this applies to preparedness, some tsunami countries have already been responding to new crises. Moreover, the transition from recovery to development holds potential for improved evidence-based recovery monitoring to spill-over into improved evidence-based development monitoring linked to normal planning, budgeting and review cycles.

Beyond the country level, TRIAMS partners have emphasized that these lessons should also be institutionalization at a regional or even global level to improve how international agencies support post-crisis recovery.

Institutions

- Recovery coordination bodies like BRR and TAFREN/RADA need to properly hand over lessons and good practices to sustainable institutions before they shut down. Many of the roles and data-sharing arrangements established under inter-ministerial committees and task forces can be continued, if on a reduced scale or schedule. In particular, countries need to decide what the role of the national disaster management institutions should be and who will take care of the indicator data during non-disaster periods.
- International agencies have similar concerns in transitioning temporary coordination structures (e.g. UNORC and HICs). Agencies need to be ready to propose, promote and stand by consistent recovery monitoring approaches from an early stage. This can be easier if TRIAMS lessons have a regional or global long-term home.
- Recovery takes time, even when adequately funded. Implications for monitoring include delayed outcomes and impacts, as well as a longer-term commitment to arrangements to collect, analyse and utilize data beyond the initial stage when the disaster automatically gets highest priority.

Policies and procedures

- Disaster management laws and their attendant operational guidelines should specify roles for institutions, specifically on data preparedness pre-emergency and on provision of data to focal agencies during emergencies. Such arrangements could alternatively be enshrined in national statistics or information policies.

Capacities - A central tenet in TRIAMS has been utilizing available government capacities in all phases. At the same time, the tsunami recovery has stretched those capacities to the limit and pointed out weaknesses in the use of data. More fundamentally, the lack of manpower is cited as a basic constraint.

TRIAMS capacity-building activities have focused on technical assistance and low-cost, in-country trainings designed to build government counterpart knowledge of indicators and skills in managing and using indicator data in databases and GIS, and using evidence in decision making. Lessons on capacity from TRIAMS participants similarly focus on government human resource capacities:

- Make the most of available capacities through effective horizontal and vertical coordination.
- Leverage available manpower with use of local research institutions in collection and analysis of data for recovery management. All TRIAMS countries have done this to one degree or another.
- Decentralize the monitoring process to district level-to improve quality and distribute the workload-as well as to train the district staff. The localized nature of natural disasters makes local recovery management all the more important, yet as earlier TRIAMS meetings pointed out, local capacities may be seriously damaged by the disaster/crisis itself. As a minimum, central authorities should be careful to feedback compiled data and analysis to the local government institutions that have provided the data in the first place.
- Provide training in collaboration with higher education and public service training institutes.
- Multiply available capacity through use of technology, including satellite and other remote sensing.
- Include civil society and media in trainings on access and use of data to promote transparency and broad utilization.
- Capacity building is an ongoing need, requiring ongoing efforts.

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Introduction

Post disaster recovery represents both a humanitarian imperative and an opportunity for accelerated development. TRIAMS, the Tsunami Recovery Impact Assessment and Monitoring System initiative, arose out of the recognition that more than the tracking of projects and tsunami financial resources would be required in order for the tsunami recovery to "build back better." With this in mind, since 2006, four of the countries most affected by the tsunami: Indonesia, Sri Lanka, Maldives and Thailand have been employing the TRIAMS approach to help manage the completion of tsunami recovery interventions and to assess their results and highlight remaining gaps.

Recovery is not only a critical process in humanitarian efforts, but should start from the very beginning of humanitarian relief - Ola Almgren, UNDP

We should not be afraid to make mistakes, when we have no other reference. The important thing is not to make the same mistake twice. The key is always continuous improvement. - Eddy Purwanto, BRR

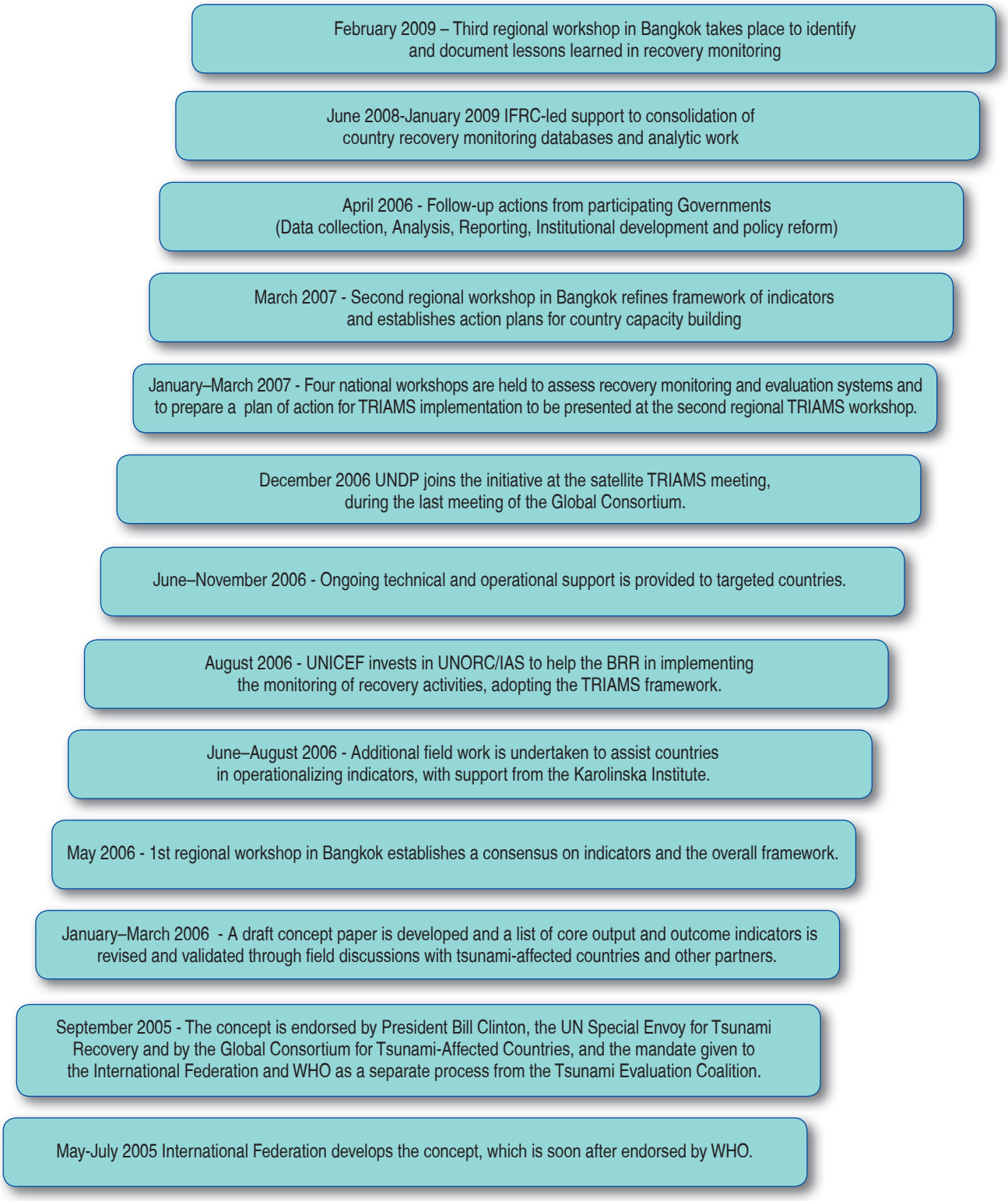
Partners IFRC, WHO and UNDP, with additional support from UNICEF, have been underwriting related activities and are interested in the TRIAMS experience to help build suitable recovery management tools that could be available in advance of future large-scale emergencies.

During 25-27 February, 2009, 50 TRIAMS stakeholders met in a third regional workshop in order to identify and share lessons with one another and examine how the use of data has improved the quality of decision making. This report explores the themes and specific lessons that emerged during and in response to the meeting, with implications for further application of TRIAMS in the affected countries and as an approach that could be used globally. Participants in the meeting set out 6 main objectives:

1. **Learn about utilization of TRIAMS and constraints encountered**
   - Understand how countries have used TRIAMS in assisting recovery efforts
   - Share good practices and learn new ones for ongoing implementation and to use in the future
   - Learn how to collect and incorporate data more easily into national systems
   - Learn what tools can best support data use
   - Share experiences in use of data specifically for purposes of impact assessment
2. **Learn about the contribution of TRIAMS**
   - Answer the "so what?" question – has use of TRIAMS made a difference?
   - Find out how TRIAMS has influenced decision-making
   - Learn about the outcomes/impacts of TRIAMS
3. **See how lessons should be mainstreamed in institutions, policies and procedures in the participating countries**
   - Share how to set up an MIS based on technology, capacity and various interests, and how to use data and improve the system as we go
4. **Clarify priority actions and opportunities for support in the immediate term**
   - Establish an action programme for future development and preparation for next disaster
5. **Start to document strategic lessons that can contribute to a recovery management toolkit**
   - Share with other countries how this platform can help
   - Make further efforts to monitor recovery from the very beginning of the process, including the relief phase
   - Contribute to humanitarian reform in how recovery is conducted, monitored, recorded and assessed

- Learn from the experiences in order to get things right in the future as well as influence future capacity development actions in the region
- Strengthen and integrate the TRIAMS approach into the humanitarian system
- See how experiences can support post-conflict recovery monitoring and identification of impact

Figure 1: TRIAMS milestones



TRIAMS explained

The Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) is an initiative that has defined, promoted and supported a common approach to monitoring recovery efforts and assessing their impacts in four countries affected by the 2004 Indian Ocean earthquake and tsunami – Indonesia, Sri Lanka, the Maldives and Thailand. The approach can be defined in terms of 5 attributes:

1. A multi-sectoral conceptual framework including vital needs, basic social services, infrastructure and livelihoods
2. Focus on a limited number of common, priority indicators to provide an evidence base for overview of the overall recovery effort
3. Orientation toward results for beneficiaries
4. Attention to equity in the recovery effort through use of more disaggregated (sub-district level) data
5. Country ownership and leadership

Its purpose is to assist recovery stakeholders - governments, donors, partners and beneficiaries - by informing

- Ongoing management and planning of recovery efforts
- Feedback to beneficiaries on progress and impact
- Donors, partners and the public on the utilization of resources and the results
- Monitoring and Evaluation systems for future disaster recovery efforts

The methodologies promoted in TRIAMS include:

- Collection and compilation of indicator data, metadata and analysis in a central database
- Use of thematic mapping to show geographic distribution and equity dimension of recovery assistance
- Use (and adaptation) of existing routine and survey sources of quantitative data
- Use of beneficiary perspectives to triangulate and better understand how affected people view the quality and relevance of the recovery assistance.
- Incorporation of disaster risk reduction elements into the indicators

The process of establishing evidenced-based recovery monitoring systems can be simplified to 5 steps:

1. Agree on Indicators/framework
2. Collect and compile the data for the selected indicators
3. Analyze the data
4. Utilize the analysis
5. Institutionalize/mainstream into sustainable systems

Finally, TRIAMS can also be explained by what it is not. It is not a software platform, nor is it about monitoring projects or finances. It is not a needs assessment tool.

6. **Continued improvement of the TRIAMS framework**
   - Identify challenges related to the utilization of the framework
   - Learn how to refine country indicators to ensure they help to monitor the situation and identify impacts

We still have to learn how to write down our experiences, either as good practices or bad practices ... that future recovery managers can use and draw on - Ola Almgren, UNDP

How can we capture the good experiences in a way that will make it easier for various national and international agencies to facilitate these types of management information systems in the future. - Margaret Stansberry, American Red Cross

To address these objectives, the meeting was organized along four lines:

1. Country delegations reported on their progress, with plenary discussion.
2. Participants formed working groups around common themes, to encourage cross-fertilization across countries and identify lessons.
3. Two outside experts helped facilitate from a perspective external to TRIAMS, including presentations on other similar recovery monitoring approaches in other countries and on impact assessment.
4. Country delegations regrouped to prioritize needed capacity- building support, presented and discussed in plenary.

The agenda is attached as annex 3.

Country progress

Examining how the use of TRIAMS has played out in different country circumstances is essential in order for countries to learn from one another and to try to develop tools that can work under different conditions. At the 2009 meeting, country delegations were asked to report on how they have been implementing TRIAMS and to highlight an example to illustrate how TRIAMS recovery information has been used. They were also asked to describe how lessons learned from tsunami recovery monitoring have been incorporated into regular national systems.

Indonesia

Utilization of recovery information

Previously, at the 2007 TRIAMS meeting, the Indonesian delegation highlighted the need to move beyond data collection toward "more analysis and the creation of a sustainable information management system" (Stansberry and Zagaria 2007)[1] that local government would ultimately be able to carry forward. They have been acting on this during the intervening period.

British Red Cross

For the past three years, the combination of BRR, UNORC-IAS and local government have been using the TRIAMS approach to monitor recovery through collection and compilation of a database called AcehInfo [2], and production of analytical reports called TRIP (tsunami recovery indicator package)[3]

The database has been distributed and over 100 government staff have participated in training in its use. Version 3 contains information on hundreds of indicators. In addition to routine data, such as health and education data, and regular survey data from the national statistical authority (BPS) the database also includes data from a Demographic and Health Survey (DHS), oversampled in Aceh so as to permit comparison of tsunami affected and non-affected areas at the district level.

Yoshi Shimizu / IFRC

The TRIP reports have been distributed in 2007, 2008 and 2009 to a wide range of stakeholders and the analysis of the indicators has been used in informing decision making.

1 p. 11
2 TRIP reports are available though the following link: http://www.unrco.or.id/aceh/
3 The AcehInfo database can be found at http://www.acehinfo.nad.go.id/

Figure 2: Indonesia-Number of IDP households

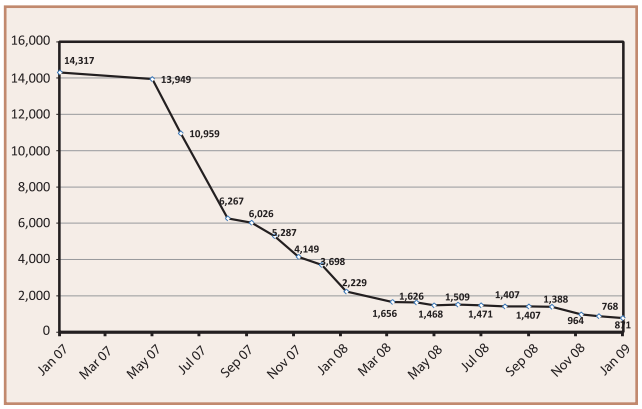
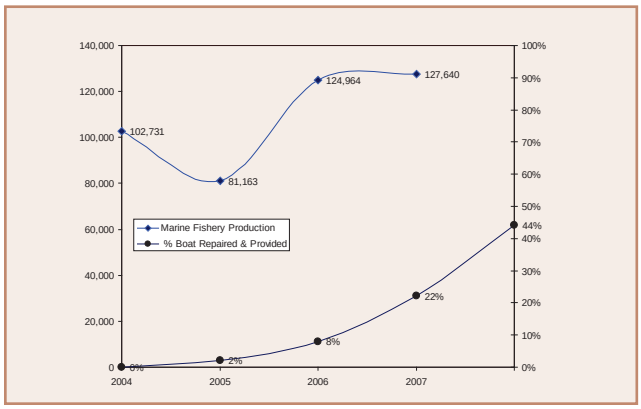


Figure 3: Indonesia: Repair of boats vs. marine fishery production



BRR found utility in the agreed TRIAMS indicators as a common language of indicators acceptable to external partners. BRR acknowledged that it needed additional indicators beyond the core set promoted by TRIAMS for its own monitoring. The "Blueprint" that emerged as the planning document for the recovery includes over 600 key performance indicators (KPI).

Figure 4: Indonesia: Households without basic sanitation

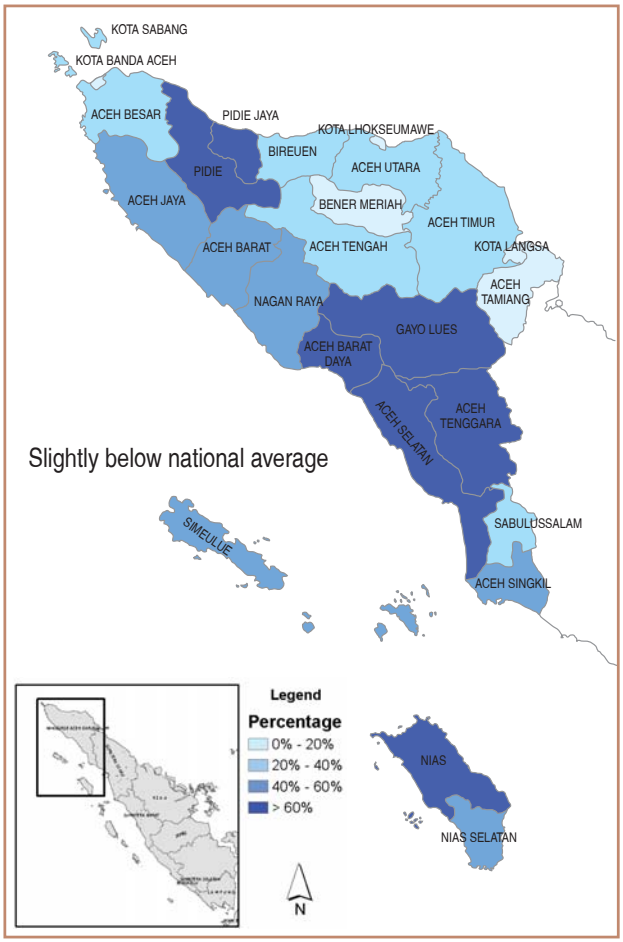
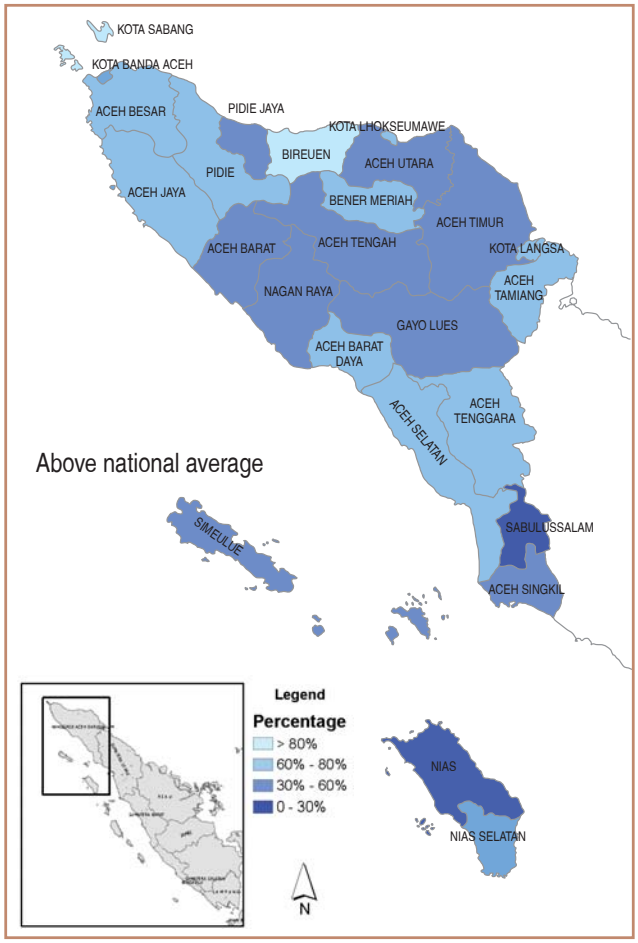


Figure 5: Indonesia: Households with improved water sources



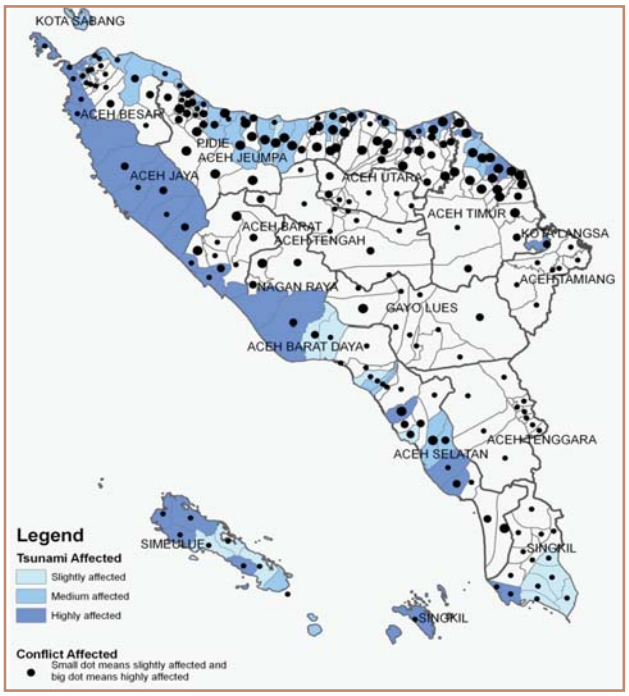
BRR highlighted use of TRIAMS indicators and analysis in solving problems in the interrelated areas of housing and IDPs. In tackling the problem of a large number of remaining IDPs during 2006, BRR conducted a census on barracks and individual IDPs at the end of 2006 and developed a system to continuously monitor the process. Based on the census, they found significant number of renters, without house or land of their own. BRR change the policy for renters by providing housing and land, instead of only cash. As a result, they were able to relocate IDPs more effectively from 2007 until the present.

BRR indicated that AcehInfo and TRIP report have been the main source of data for the Aceh Recovery Framework (ARF)—a strategic roadmap for navigating the multitude of issues and actors in Aceh's advancing recovery process, as well as a results-focused coordination and monitoring structure led by provincial government.

Data and analysis in AcehInfo and TRIP reports have also served as the main source of data for the (district level) Kabupaten/Kota recovery forum (KRF) data profiles. These are meant to serve as a key reference tool for District administrators, planners and partners in managing recovery activities in the district. These indicators are being used to measure and monitor progress of the development and recovery effort in the Kota/district. Furthermore, this data informs policy, strategy and suggests course corrections when required.

From the 2007 TRIAMS meeting, one of the questions was 'are we building in places that don't need these houses?' We were very critical of ourselves. From that discussion, this came about: A course correction—moving plans to other places where housing was more needed. - Satya Tripathi UN Recovery Coordinator

Figure 6: Indonesia – Overlap of conflict and tsunami-affected sub-district



BRR also mentioned the monitoring of infrastructure beyond housing and facilities enabled BRR to present data on remaining needs and successfully negotiate for matching funds from donors, which had previously been reluctant to fund the sector.

Institutionalization/mainstreaming into regular national systems

The Indonesia delegation reported that TRIAMS impacted on the Revised Blueprint for Aceh reconstruction (Presidential Decree No. 47/2008). Law no 24 on Disaster Management has recently been enacted. The law establishes a new national authority for disaster management, as well as the obligations of local government. It should be noted that guidelines and related policies represent further opportunity to set clear institutional arrangements for data preparedness, collection, analysis and dissemination of data following emergencies. BRR also mentioned AcehInfo as a possible model for duplication in other provinces.

Conclusions

The experience of BRR and UNORC in implementing TRIAMS remains as an example of what can be accomplished with the appropriate level of commitment from partners and serious financial investment in data collection and management.

Clearly, for BRR, the main utility of TRIAMS was as a framework for representing the broad spectrum of recovery progress in a way that is acceptable to external donors and international supporters. Through AcehInfo and TRIP, TRIAMS evolved as one of several information management tools, which also included the RAND (Recovery Aceh and Nias Database) for coordinating externally financed projects, another system for Indonesia–funded projects and the detailed database on housing.

With the expiry of BRR's mandate in April 2009, and a sizable number of tsunami-funded recovery activities left to complete and sustain, the main challenge is ensuring that local government can consolidate progress in recovery management in a way that is most useful to their ongoing needs. This will require care in handover of the AcehInfo database from BRR and UNORC to local government. The 2009 TRIAMS meeting provided an opportunity for the appropriate local government officials, BRR and UN to reach agreement and lay the groundwork for how this can best be accomplished.

Ashley Jackson/American Red Cross

Wilda Angraenni/American Red Cross

Maldives

Utilization of recovery information

The Department of National Planning has worked to collect, compile and analyze data relating to the tsunami recovery and has worked with the new National Disaster Management Center (NDMC) on monitoring tsunami recovery. With the election of a new government in November, 2009, the Ministry of Planning no longer exists and the Department of National Planning has been absorbed under the Ministry of Finance and Treasury. Roles and responsibilities continue to evolve as part of widespread government reform.

The Maldives delegation reported on their progress since their involvement in TRIAMS, including:

- Establishment of a coordinating mechanism among government, NGOs and the donor community for monitoring and evaluation, that included working with UNDP on a DAD (Development Assistance Database) to coordinate externally funded tsunami projects, and working with UNICEF on piloting detailed situation monitoring in 6 atolls known as IMPACT.

- Establishment of a monitoring system for tracking data on recovery progress, including identifying a focal point in National Planning, identifying sources for TRIAMS data and designing and using data collection forms to line ministries.

- Initiation in 2008 of a central database of TRIAMS data as a component to the already established MaldivInfo database under the Statistics Division of the Department of National Planning. This builds on UNICEF -supported work in building national capacities to create and maintain the MaldivInfo database of socio economic indicators. The database draws on available routine data collected by National Planning, as well as from previous surveys, including the 2005 Tsunami Impact Assessment Survey (TIAS), the 2004 Vulnerability and Poverty Assessment (VPA-2) which provides pre-tsunami baseline data, and the more limited data from the 2006 Census.

Unfortunately, since 2006, no follow-up survey on tsunami affected communities had been carried out, leaving a gap in knowledge about tsunami communities and leaving mainly data collected through routine reporting systems to tell the story of recovery progress. The 2009 Demographic and Health Survey (DHS) will address part of this need, and TRIAMS partners in the Maldives Ministry of Health, along with IFRC and WHO made sure to include a way to differentiate households affected by the tsunami, in order to examine their well being. While regular reports were still being issued from National Planning, coverage and periodicity were too spotty to provide an up-to-date overview.

Department of National Planning reported finalizing a 4-year report begun late 2008. The report provided an opportunity to re-activate their sources for data and to analyze progress and identify remaining gaps.

Joe Lowry/IFRC

IFRC

The report highlighted progress in social sectors, particularly health and education. Achievements in housing were noted, along with a more realistic schedule of completion of the remaining projects, and therefore the ultimate relocation of the remaining groups of IDPs. Importantly, the report underscores critical remaining funding gaps in recovery of water and sanitation, as well as remaining work in restoring ports, jetties and harbors that were damaged or destroyed by the tsunami. It is hoped that the findings and document will serve both to better focus these remaining areas in the emerging national agenda as well as to negotiate with donors to help “finish the job.”

The Maldives delegation highlighted the utility of TRIAMS in tracking IDPs along with progress in the housing repair and reconstruction sector in that it lead to a monthly reporting system on IDPs and housing repair. These figures were used:

- By MPs to pressure government to give more emphasis on the housing repair and reconstruction;
- To raise funding for the remaining works;
- In preparing a budget and development plan.

Figure 7: Maldives - Number of IDPs by type of temporary accommodation

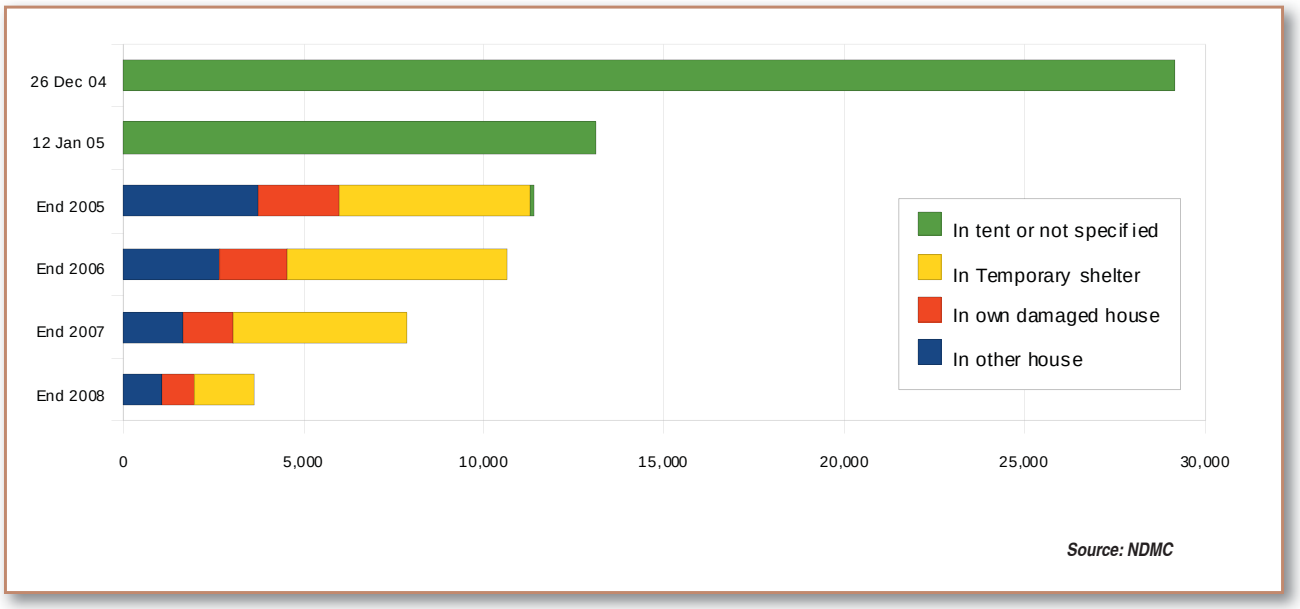


Figure 8: Maldives - Housing progress – percent of repairs & reconstruction completed

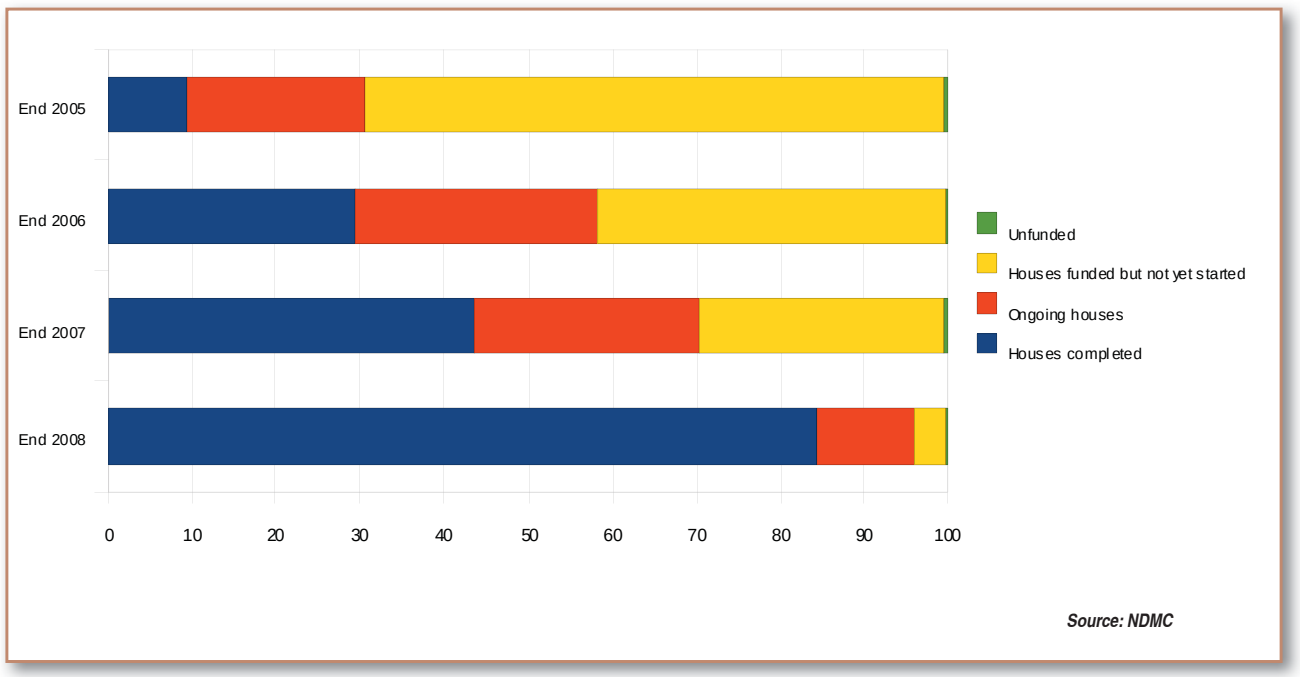


Figure 9: Maldives - Number of children per primary school, 2003 - 2007

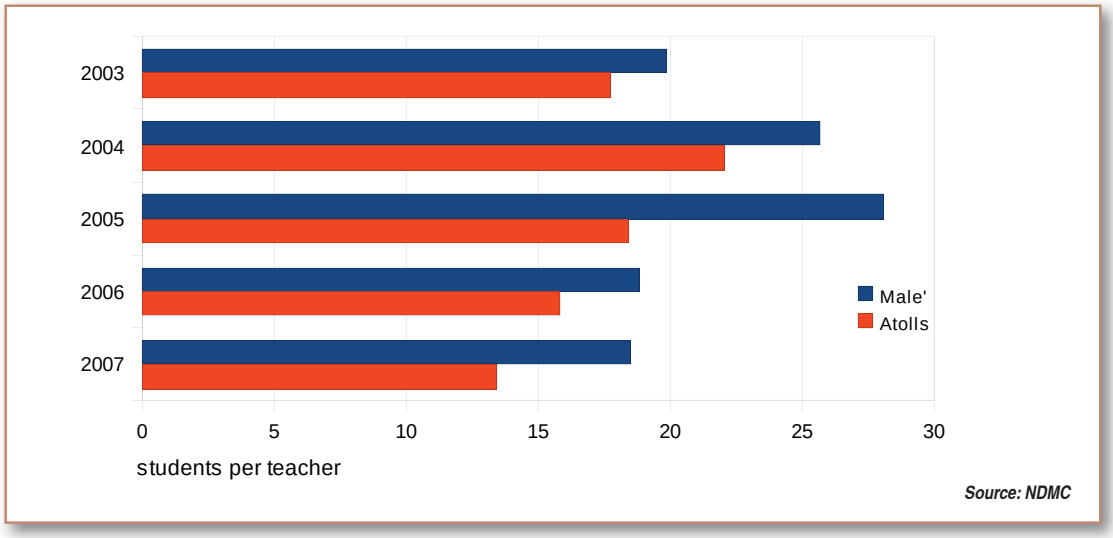


Figure 10: Maldives - Hospital beds per 10,000 population, 2000 - 2007

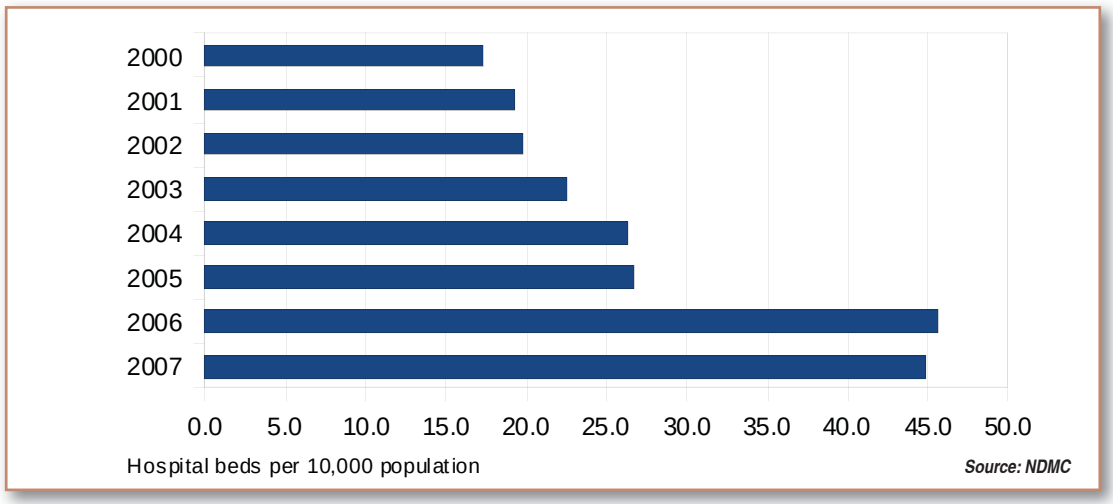
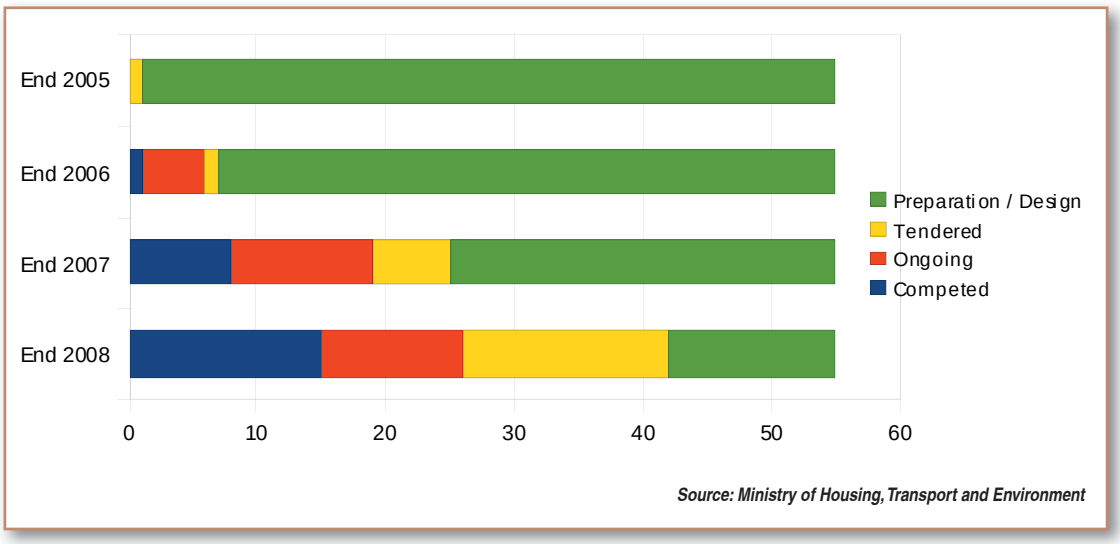


Figure 11: Maldives - Harbour reconstruction project progress



Institutionalization/mainstreaming into regular national systems

The delegation from Maldives reported the following examples of how TRIAMS had been institutionalized:

- Streamlined TRIAMS indicators were incorporated into national planning process and the resulting monitoring and evaluation plan for the 7th National Development Plan.
- Some TRIAMS indicators have been incorporated into data collection mechanisms and activities
- Disaster Management Act has been drafted and is currently undergoing final review prior to being tabled at the parliament
- National Disaster Management Plans were being developed by relevant government ministries

IFRC

British Red Cross

Conclusions

Similar to Aceh, Maldives institutions responsible for recovery management and disaster preparedness are undergoing transformation, which pose challenges in the short term in building on prior progress, but which might present opportunities for institutionalizing better information management and evidence based decision making in the longer term. As in Thailand, the Maldives experience has underscored the difficulties faced by central agencies in obtaining data from various ministries, with the added logistical challenges unique to Maldives' dispersed geography in obtaining decentralized data.

Sri Lanka

Utilization of recovery information

With the closure of RADA by June 2007, there was a risk that remaining tsunami recovery work would lack proper coordination and that lessons in recovery monitoring acquired through participation in TRIAMS and other initiatives would be lost.

An income and expenditure survey carried out in end-2005 showed higher overall income in tsunami-affected areas. On this basis, no further follow-up to the excellent 2005 baseline census of tsunami-affected areas was planned. The unit in the Department of Census and Statistics concerned with this was transformed from tsunami monitoring to working on the 2006/7 Demographic and Health Survey (DHS), but the DHS analysis did not look separately at tsunami-affected households.

Following the 2007 regional TRIAMS meeting, methodologies and principles of recovery monitoring nevertheless continued to be applied in Sri Lanka, including:

- Use of data in monitoring and adjusting progress in the housing sector jointly between UN-Habitat and Ministry of Nation Building and Estate Infrastructure Development (MNB & EID)
- A tsunami recovery beneficiary survey carried out with UN Resident Coordinator's Office and the research organization Centre for Policy Alternatives.

By 2008, the prospect of an end of 30 years of armed conflict in East and North of the country also meant the reality of recovery needs similar to, but larger than those for the tsunami.

Some of RADA's functions of managing the ongoing recovery effort fell to the MNB & EID, which now leads the effort to improve recovery monitoring in Sri Lanka, both for the completion of the tsunami recovery and the post-conflict recovery.

The Sri Lankan delegation reported specific TRIAMS-related progress in:

- Initiation of programme of cooperation on TRIAMS with MNB & EID
- Collection of Housing Reconstruction Data based on monthly data from District Secretariats;
- Collection of data on rehabilitation of Health Facilities, through the Ministry of Health
- Collection of data on decommissioning of transitional shelters;
- Establishment of an initial database at national level rooted in housing--both tsunami and post-conflict--in conjunction with the North East Housing Unit (NEHRU);
- Initiation of district-level recovery monitoring pilot programme lead by the Batticaloa District Secretariat;

Figure 12: Sri Lanka - Housing

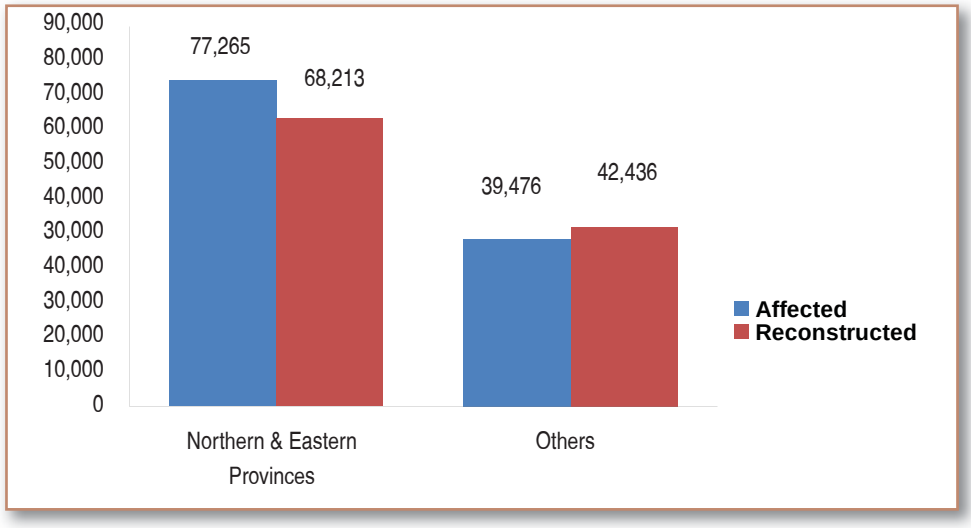


Figure 13: Sri Lanka - Health facilities

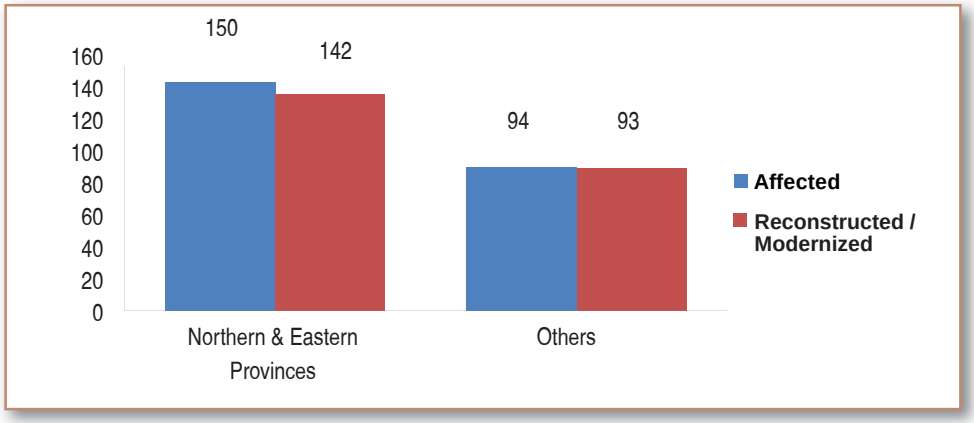
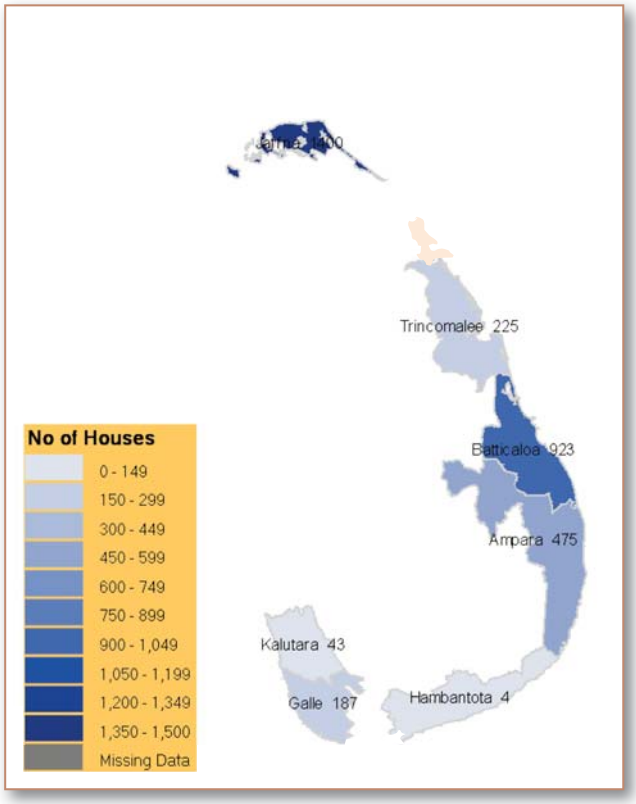


Figure 14: Sri Lanka -Tsunami – Owner Driven Housing Programs: Requirement of Housing needs - 2008



* Information of Matara District is not available.

Source: Ministry of Nation Building & EID

The mention of the overriding constraint of conflict in Sri Lanka should not be treated as a footnote…There are many other countries where natural disaster prone areas are also at risk to escalation of conflict and therefore conflict is a strategic risk to the successful achievement of recovery. - Sanny Jegillos, UNDP

The national-level database is meant to feed into a quarterly decision-making steering committee in Colombo, in which District, Provincial and Colombo-based stakeholders review data on housing-related progress. The database was initiated through a technical assistance and training activity in December, 2008. The Batticaloa pilot was initiated in partnership with UNDP and an initial workshop took place in November, 2008 in Batticaloa help to establish feasibility.

TRIAMS has promoted the use of beneficiary perspectives as a people-focused complement to the quantitative data coming from routine systems and surveys in a way consistent with the idea of "triangulation". Of the four TRIAMS countries, this has best been applied in Sri Lanka, where beneficiary surveys conducted in 2007 and in 2008 have raised important issues focusing on livelihoods.

Specifically, beneficiaries felt that while housing conditions have improved, about a quarter reported their biggest livelihoods obstacle was new housing located too far from peoples' previous livelihoods—mainly fisherman forced further from the sea due to buffer zone restrictions. Many said they would simply move, and the delegation reported evidence of households selling their new house to move back to their old areas. Another major obstacle was loss of livelihood assets. Some 40% of respondents reported receiving no livelihood assistance.

Yoshi Shimizu / IFRC

IFRC

Though this underscores the challenges of balancing risk reduction and economic imperatives, it points to the need for greater attention to livelihoods and social networks in planning housing reconstruction and the researchers argue that future programs should link livelihoods with housing. This research has fed into the debate, government policies have attempted to respond with policies about buffer zone restrictions being modified (see below).

Institutionalization/mainstreaming into regular national systems

The Sri Lanka delegation attributed the following examples in relation to the country's participation in TRIAMS: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- Policy in housing shifted to make ownership documents in both husband and wife's names, rather than the previous practice of only registering ownership to the husband.
- Buffer Zone revision -- in some cases, alternative arrangements were made for households moved too far from their normal livelihood activities.
- Modification of original 'house-for-a-house' policy to also provide houses for tenants and extended families for some 2,000 families.
- Special arrangements were made for those families that were unable to purchase suitable land within a reasonable distance of their livelihoods, with government grants.
- The delegation also looked forward to the scaling up of efforts currently underway, including the recovery monitoring systems under development in Batticaloa to be mainstreamed to other recovery districts and the national recovery monitoring systems currently in development.

Conclusions

Sri Lanka represents the immediate post-tsunami application of principles of recovery monitoring learned through its experiences in the tsunami including TRIAMS. That much less funding is likely to be available for post-conflict recovery may make the need for effective recovery monitoring all the more important. The Sri Lanka experience argues for the primacy of housing in recovery monitoring, because it is where the lion's share of funding goes, and because of its obvious linkages to livelihoods, social services and infrastructure. Sri Lanka's experience also suggest potential best practices, in commitment to the regular presentation of timely data in stakeholder decision making forums (e.g. the steering committee for housing projects in Colombo) and in their use of an external research firm to carry out beneficiary surveys and in the regular collection of complaints in housing.

Thailand

Utilization of recovery information

The Ministry of Interior's Department of Disaster Prevention and Mitigation (DDPM) has responsibility for monitoring and reporting on tsunami recovery and has served as the focal point for TRIAMS.

Following the 2007 TRIAMS meeting, DDPM negotiated an MOU with provincial governors to regularly supply and make use of data according to the TRIAMS framework. Since then, in partnership with the Ministry of Public Health and the Mahidol University Faculty of Tropical Medicine, they have compiled data from the 6 affected tsunami provinces though workshops in 2007 and in 2008. The resulting data are compiled into analytical reports that are submitted to the leadership of the Ministry as well as to the Prime Minister's Office. The reports are also the provincial offices. The most recent report, while largely concerned with finances, serves largely to provide quantitative evidence that the recovery operation has been completed effectively.

Under TRIAMS, DDPM took steps to convert their tsunami database into a more robust platform, and organized training to build capacities of their staff at national and provincial level in data management, analysis and thematic mapping. By spreading these capacities to provincial offices, it is hoped that they will be able to manage emergency related data themselves, and provided it more easily to DDPM in the future.

Yoshi Shimizu / IFRC

The Provincial Public Health Office, Phuket highlighted a pilot project initiated as part of TRIAMS designed to assess and strengthen sector and community emergency preparedness and disaster risk reduction in the tsunami-affected province. Data were in line with TRIAMS categories of Vital needs (people), (basic social services), infrastructure (property) and livelihoods.

The presentation concluded that most indicators showed improvement, although there remain gaps in the EMS system. Furthermore, the Medical Emergency Law (2008) was enacted for the improvement of medical facilities across the country. The current budgeting system was also noted as being good in disaster response, but was lacking in support for disaster preparedness. The Thai delegation noted too that they expected to find more indicators on preparedness (compound indicators in non-medical sectors), including coordination between the various sectors and indicators specifically related to the recovery period.

Figure 15: Thailand – Percentage of children under 5 who are underweight

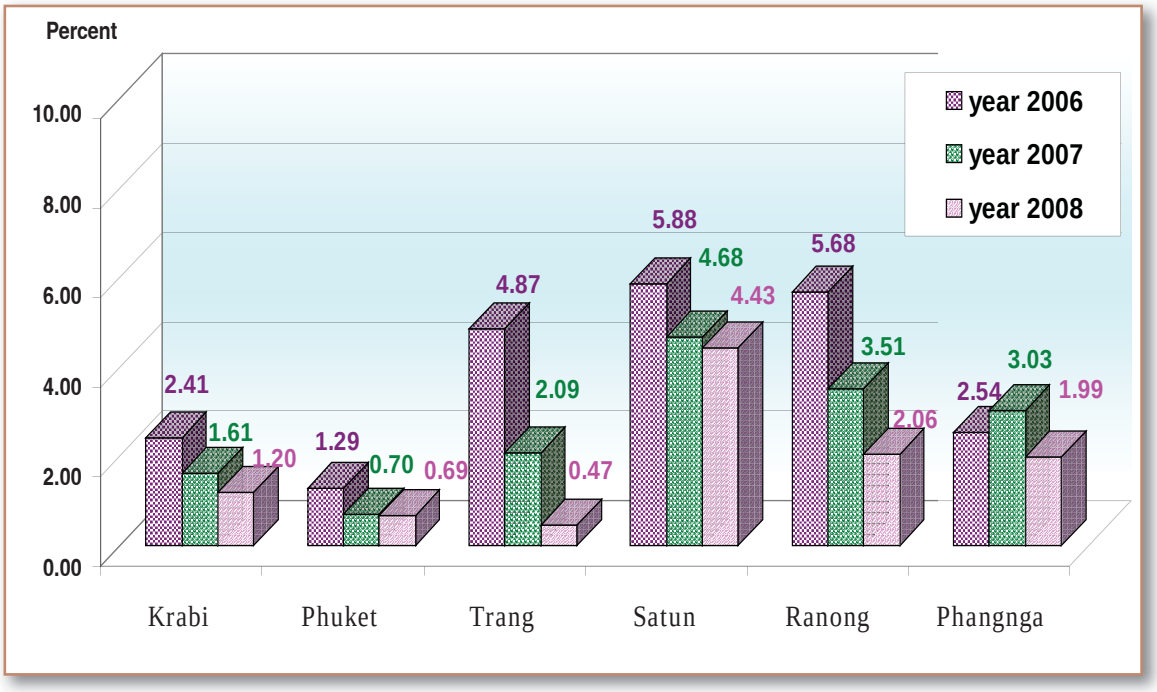


Figure 16: Thailand - Percentage of children under 5 who are underweight

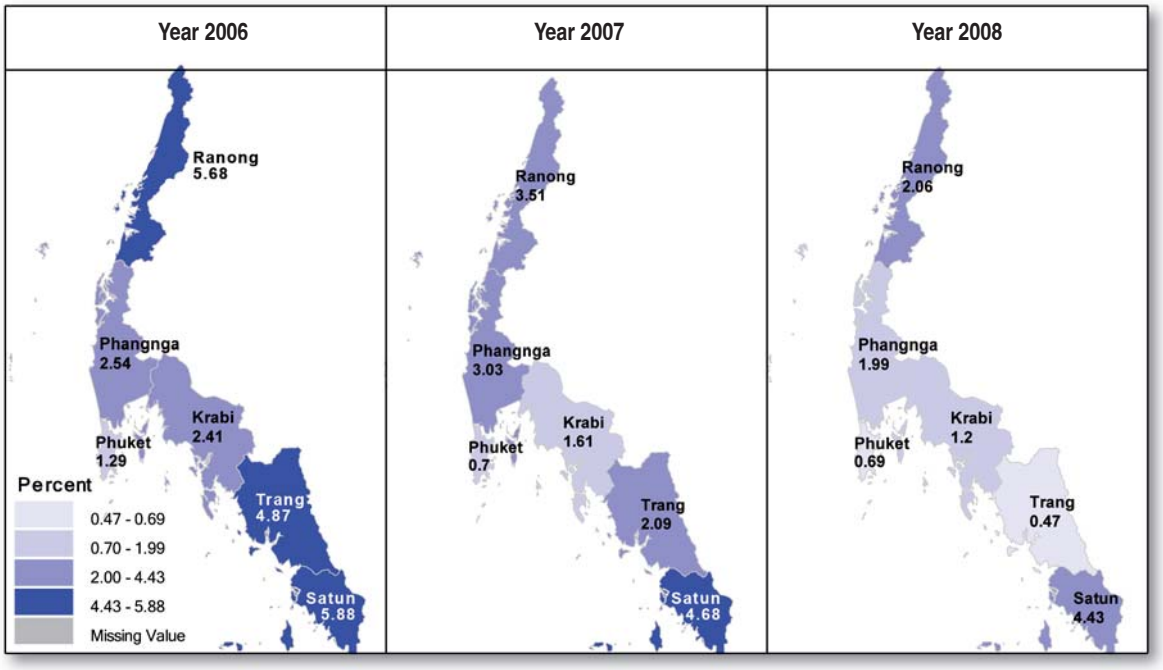


Figure 17: Thailand – Percentage of hotel rooms available compared with before the tsunami

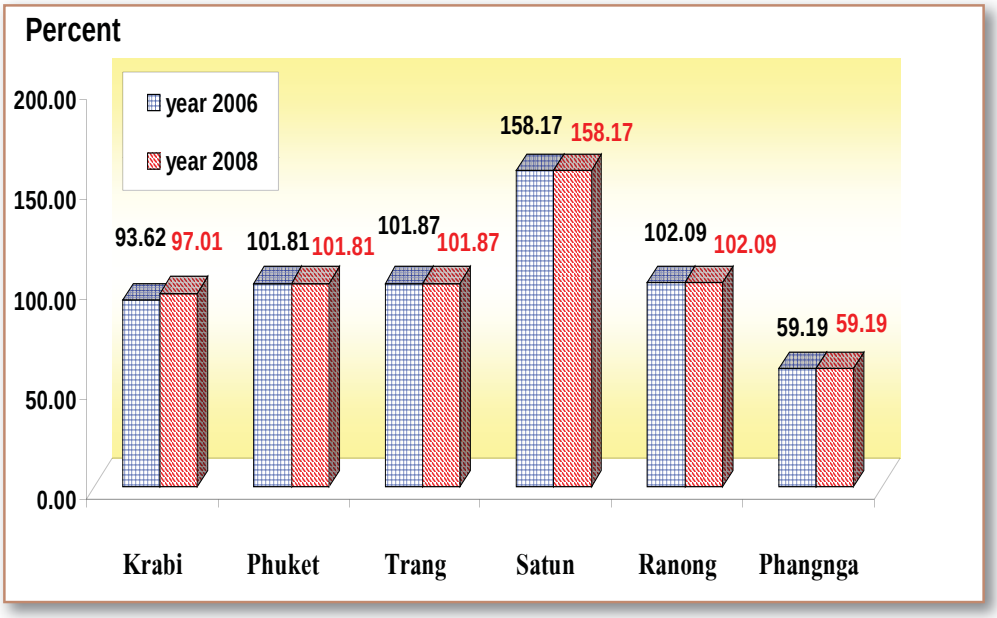
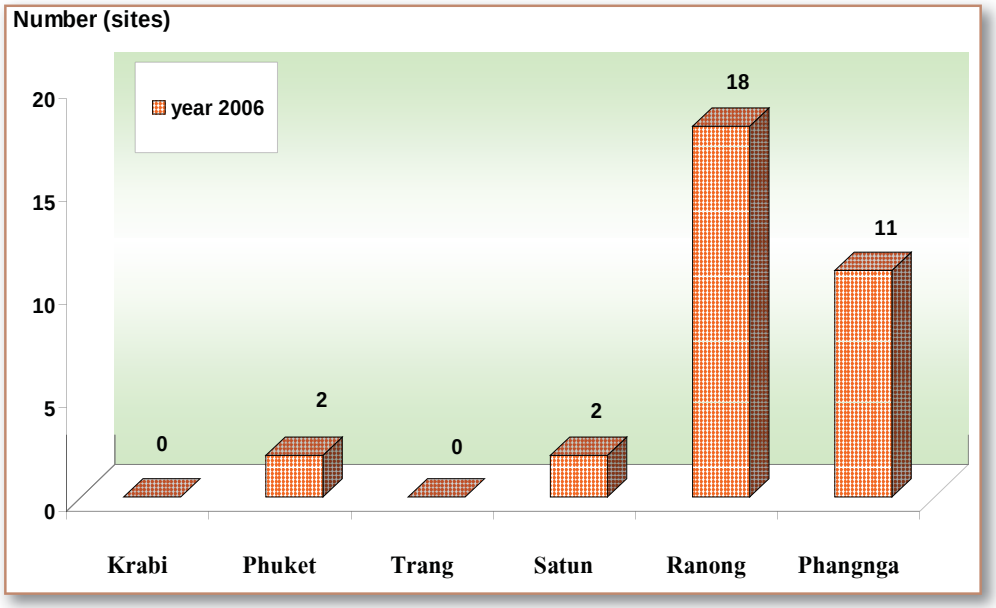


Figure 18: Thailand – Number of bridges repaired



Conclusions

In common with Maldives, Thailand's experience shows the challenge facing a single focal department in chasing data from multiple sources. Despite solid measures to set up arrangements to obtain data, gaps remain. For the same reasons, their experience makes the argument for a reduced set of strategic indicators.

Although Thailand does not consider itself to be a disaster prone country, DDPM is involved in a broad range of public risks, ranging from smaller scale flooding and mudslides to road safety, that can benefit from developing capacities in collecting, managing and reporting data as evidence.

TRIAMS in perspective of other recovery monitoring initiatives[4]

Definitions

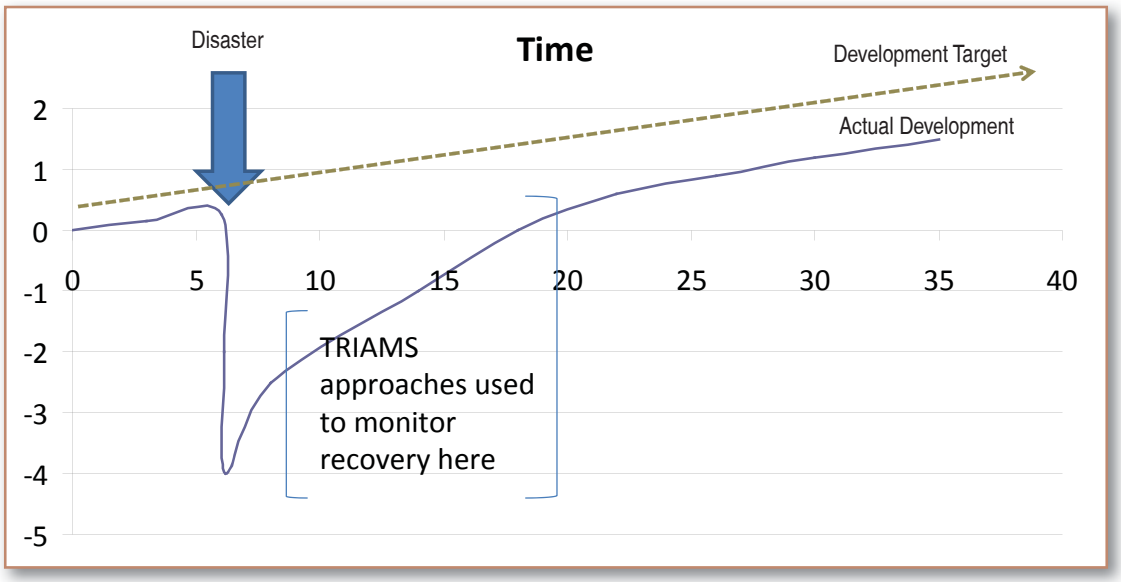
Definitions of Relief, Recovery and Reconstruction are open to different interpretations, and any discussion can benefit by laying out definitions at the outset.

Relief defines itself by the "life saving" and urgent nature of the activities. Speed is critically important and is used to justify shortcuts taken. Costs are often irrelevant and considered for the short-term, without respect to leaving funding for post-relief activities. Unrestrained costs are exacerbated by the fact that standards of assistance (e.g. SPHERE) may be unrealistic and unsustainable. As its principal advantage, relief rides the top of the wave of public opinion solidarity, empowering it with funds and making it resistant to change.

The World Bank and the ISDR define *recovery* and *reconstruction* as the same package, to restore and /or improve on pre-disaster living conditions. Improving living conditions is also the domain of *development*. The difference is speed. Recovery takes place over years, rather than decades. Recovery is supposed to take a 5-10 year view, and to be locally owned. The key issue is the inevitable overlap and clash of two different mentalities and cultures at the time of recovery: the humanitarian relief culture and the development one.

"Early recovery" is a grey area without a precise definition. It is neither humanitarian assistance, nor development, and is therefore claimed by both the humanitarian and development/financial institutions. It can arise as a consequence of a well-funded relief assistance and a slow moving reconstruction process.

Figure 19: Disaster versus development



If a disaster is viewed, not in terms of casualties, but as a deficit in development, or reduction in the quality of life as depicted in figure 11, the role of relief organizations can be seen as minimizing the extent of the drop. Once the curve starts the climb back up, it can be seen in terms of *accelerated development*. It is at this stage where TRIAMS approaches come into play.

4 Based on TRIAMS 2009 meeting presentation by Claude de Ville de Goyet. See also de Ville de Goyet, C. 2008.

The role of information and data systems in the relief and recovery phases

Relief needs: During the relief phase, the focus of information management is agency-led rapid assessments (e.g. UNDAC[5], FACT[6], DART[7] and many other specific assessments), resulting in a multiplicity of rapid assessment teams in the field at the same time.

When we talk about the accelerated development phase, we talk about where TRIAMS comes into the picture. - Claude de Ville de Goyet

The TEC evaluation on assessments (de Ville de Goyet and Morinière 2006), found that rapid assessments were viewed within agencies, but not shared with other agencies. Moreover, it found that initial assessments were rarely used or considered relevant to planning initial interventions, leading to the conclusion that it is practically impossible to collect comprehensive data in such an urgent time frame.

Recovery needs:

Damage and Loss Assessment

The established methodology for assessing recovery needs is the Damage and Loss Assessment (DALA). The DALA, as developed and practiced for the last 30 years by the UN Economic Commission for Latin America and the Caribbean (ECLAC) summarizes the effect of disasters in terms of one indicator: the dollar value of replacement. However, it does not calculate simply the depreciated value or replacement value of the original assets, but rather the estimated costs of meeting the actual needs served by those assets. In this way, it promotes a development function.

The main confusion is that losses and damage are not necessarily needs. Another problem is that compared to infrastructure, damages to social and community life are not really valued. As a result, social sectors are shortchanged by the DALA.

In all the projects—Rise-Pak and others—we have the same problem: quality and flow of data. - Claude de Ville de Goyet

Post Disaster Recovery Needs Assessment (PDNA)

PDNA is the product of the IASC Cluster Working Group on Early Recovery (CWGER), which aimed to provide a set of guidelines and tools to countries based on the ECLAC methodology. However, as such, it represents the views of IASC donors, with insufficient input from disaster-prone countries in its design and implementation.

Systematic information management during recovery

There are many different kinds of systems with different objectives and constituencies (owners), each with their own demands for data entry and reporting. Systems cluster around three uses: Financial management; other specialized management; and impact or effectiveness monitoring.

Financial management systems focus on tracking the money and coordinating donors, implementers and their projects and programmes. Systems promoted and used for recovery include:

- Development Assistance Database (DAD) Numerous countries
- Aid Management Platform (AMP) Ethiopia, Bolivia
- Aid Management Information System (AMIS)
- Country Development of Cambodia (CDC)
- Bulgaria Development Cooperation Information System (DCIS)

5 United Nations Disaster Assessment and Coordination
6 IFRC Field Assessment and Coordination Teams
7 US Disaster Assistance Response Team

Such systems promote transparency and provide a good overview of existing projects. However, they do not provide information on relevance, effectiveness or impacts of these projects. Moreover, such systems normally concentrate on externally financed activities, to the exclusion of work carried out under national programmes and budgets, which account for much of the results.

As an example of a tracking system specialized for supply and logistics, **SUMA/LSS** (humanitarian supply management system--later logistics support system) was initially developed in the aftermath the 1976 Guatemala earthquake that killed 23,000 people.

What is common to all these systems? All of them had to be improvised—designed at the time of the disaster. We keep reinventing the wheel. - Claude de Ville de Goyet

It represents a special case in that it is owned by the countries themselves, as part of their disaster preparedness. The role of international agencies is mainly limited to providing technical assistance. Decisions about when and how to collect data and whether to share it are the prerogative of the national disaster management agency. One observed outcome of this strong national ownership has been reduced enthusiasm by UN and NGO partners, who may be unaccustomed to sharing information about their supplies.

The **Sahana** system developed in Sri Lanka in the aftermath of the tsunami represents a unique case in that was created by volunteers, focusing on an information system platform developed with open source software. The software platform was meant to be capable of encompassing all phases of a disaster response, from missing persons to coordination to situation reporting to linking supplies and equipment. In practice, it focused on emergency management rather than recovery, and tracked resources rather than monitored outcomes.

How to design a system to make sure that something will survive, so that for the next emergency in 3-5 years, you will start with a system that has already been debugged in the tsunami. - Claude de Ville de Goyet

Although its use in Sri Lanka was limited, it represents an ambitious and home-grown attempt to integrate multiple information needs across a single platform.

The Research and Information System for Earthquakes system in Pakistan (**Rise-Pak**) represented a joint initiative of universities with World Bank support. It aimed to provide village-level information on gaps between needs and response. Lack of data was the main problem and interest and support declined as relief gave way to recovery.

The 1999 Colombia earthquake claimed 1,185 lives. The government response is cited as a best practice and some elements invite comparison with the TRIAMS approach. The government created the autonomous Fund for the Reconstruction and Social Development of the Coffee Belt (FOREC). In a highly decentralized management approach, the affected area was divided into three zones based on needs assessments, which were delegated to NGOs contracted to formulate and execute action plans for their respective zones.

Similar to the current situation in Maldives, the then-new government provided an opportunity for reconstruction of the affected area to be included as a chapter in the National Development Plan, with the following rubrics: Housing and equipment; Area and public services restoration; Strengthening of the social structure; Economic reactivation, Environmental recovery and Public policies.

You have placed an investment intellectually, politically, financially which would be a pity to let go to waste. - Claude de Ville de Goyet

Like Thailand, Colombia is a middle income country. While the main area of interest was in the decentralized delegation to local NGOs, the recovery is also considered a success in terms of the monitoring of the recovery and the indicators used and is probably the second most studied and most successful effort after TRIAMS. Evaluations underlined the difficulty in monitoring social and livelihood indicators. Nothing like the system of monitoring grievances or assessing beneficiary satisfaction as took place in Sri Lanka was tried for available to FOREC.

Common constraints encountered

The forgoing initiatives faced common challenges:

- How to collect data and assure its quality? (for example, how to treat non responses and erroneous reports of 100% coverage)
- How to present data in a way that politicians and other decision makers can use?
- Who owns it?
- How to sustain it?

We have seen that in many cases the systems function artificially under "intensive care." Once assistance is removed, they die, to be reinvented for the next disaster. The most basic constraint then, is that, except LSS, each system needed to be improvised and designed at the time of the disaster. The question then is how to make tested tools available to future emergencies to avoid re-inventing the wheel?

Conclusions and recommendations

TRIAMS must represent the most intensive investment in a recovery monitoring system to date. This obliges TRIAMS partners to sit and agree what will remain for use in future disasters, once the initiative ends.

Disaster should be viewed as a setback in development. Recovery is therefore a development process, albeit one of *accelerated* development. Because of this distinction, recovery requires specialized tools to manage it. However, the indicators themselves in most instances will be the same as for development, but will be collected and analyzed more frequently, with more pressure to observe expected change.

To take the example of epidemiological surveillance, where control of communicable diseases is an acute concern in the emergency and recovery periods. Indicators for monitoring and methods for controlling are the same before and after a disaster. However, the intensity and frequency of data collection are increased in recovery. In this way, emergency surveillance can be seen as stepped up routine surveillance.

In transitioning from recovery to development, TRIAMS partners face questions relating to sustainability in the four participating countries: Which indicators, if any, need to be continued for routine development monitoring at national level? What should be preserved as part of preparedness for the next crisis?

In order to identify and preserve lessons from TRIAMS, it should be properly evaluated. Additionally, participants should document lessons learned and publish them in a didactic guideline format with the help of a university or research institution —not just to highlight achievements —but to advise a future generation of disaster managers who may have to deal with a similar large-scale emergency.

Assessing impacts[8]

From its inception, TRIAMS has meant to serve both the analysis of outputs to monitor recovery progress and the need to assess outcomes and impacts. With the bulk of tsunami recovery operations completed, focus turns from monitoring and coordinating outputs to assessing outcomes and broader impacts. At the same time, it is only now, with recovery programmes sufficiently advanced, that countries have data that can permit assessment of tsunami recovery outcomes.

Globally, the demand for humanitarian impact assessment is growing, in response to expansion and professionalization of the humanitarian sector, and the perception of increasing vulnerability from a combination of natural causes and conflict.

The recent ALNAP[9] review of humanitarian impact assessment (which includes TRIAMS as a case study) proposes a 5-way conceptual framework for examining key issues in humanitarian impact assessment:

- Varying definitions of impact assessment
- Diverse stakeholders and interests
- Methodological challenges, including indicators, attribution, baselines, monitoring, etc.
- Collective interpretation and analysis that involves local actors and affected populations
- Capacities and incentives for improved impact assessments

Definitions of impact assessment

The standard linear progression connecting inputs to outputs to outcomes and broader impacts is taken for granted in humanitarian programming, as in development programming. However, in the real world, impact is often complex and lacking in clear sequence. Instead, it can be iterative, and unintended and delayed impacts can be more valuable than intended impacts. Some impacts can be very difficult to judge, as results are only manifest over long periods of time. Just as important is the difficulty of attribution of impacts to particular programmes, projects, activities, institutions, etc., where contribution may be a better fit. In keeping with a conception of recovery as accelerated development, recovery impacts are expected to occur at a faster rate.

A proposed definition for impact assessment is: *the systematic analysis of the lasting or significant changes, positive or negative, intended or not, in people's lives brought about as a result the given action or a series of actions*[10]

> *"What could be done so that from henceforth, any impact assessment…uses TRIAMS data and capacities?"* - Mihir R. Bhatt, AIDMI

While TRIAMS has always been consistent with this definition, partners acknowledged that such a systematic analysis across TRIAMS categories of vital needs, social services, infrastructure and livelihoods may not be possible, and that it is better to focus on assessments of *outcomes* through the TRIAMS outcome indicators and to look to individual project evaluations for attribution of *impacts*.

8 Based on TRIAMS 2009 meeting presentation by Mihir R. Bhatt, Honorary Director, All India Disaster Mitigation Institute. The presentation discussed the framework introduced in: Proudlock and Ramalingam 2009

9 Active Learning Network for Accountability and Performance in Humanitarian Action

10 Adapted from Roche (2000)

Diverse stakeholders and interests

The fundamental question to answer is who wants humanitarian impact assessment and why?

Potential stakeholders such as government and international humanitarian partners, media and military should be brought together at an early stage so as to encourage ownership and use of findings, as well as to sort out differing perceptions and interests in the impact assessment. Sometimes conflicting interests are irreconcilable. Participants from Sri Lanka and Indonesia highlighted the role of TRIAMS as a common system acceptable to donors that has helped to bring these different interests together. This has implications for agencies under the 'cluster approach,' in which impacts in a sector are the responsibility of clusters and cluster leads, rather than individual stakeholders.

Methodological challenges

Once impact is defined, what and where are the indicators, baselines and data evidence for assessing impact? Common problems include weak or non-existent baseline data, unavailability of data, and monitoring systems that are limited to process, output-level data. In humanitarian situations, assessing impact is made more difficult by the absence of a control group. A common theme brought up by TRIAMS implementers is that some sectors are more problematic than others, with livelihood data being particularly difficult to obtain.

Quantitative or Qualitative?

Rather than use strictly quantitative or qualitative methods to obtain data, mixed methods are recommended and indeed overwhelmingly applied in humanitarian impact assessment.

TRIAMS has promoted the use of qualitative beneficiary perspectives, as applied in Sri Lanka, to complement the quantitative data collection relating to the TRIAMS indicator framework. However, qualitative data is no substitute, and the focus must remain on obtaining reliable and objective measures of actual progress, rather than subjective perceived progress. An important prerequisite is some kind of M&E framework, which links inputs, outputs, outcomes and impacts. As a basic M&E framework, TRIAMS has helped promote that what recovery programmes deliver is evaluable and consistent with this results chain.

> *For disaster management, there is a dearth of research. We don't know if what we do works. If we knew, it would be fine to just measure outputs.*
> *- Michael Cohen, American Red Cross*

Indonesia underscored the sometimes unreasonable demands by affected populations for more and more assistance and risks of complaints when these demands are not met. This can be seen as normal human behavior and is particularly evident in housing, which constitutes private goods.

On the other hand, those involved in beneficiary surveys in Sri Lanka stressed that there were critical issues – such as usability of housing and proximity to livelihoods, quality of teaching/learning in schools and functioning of health facilities—which were possible to get through beneficiary surveys and which might be missed with quantitative output and outcome indicators. Most countries were collecting quantitative data that could be termed proxy indicators of quality, such as occupancy rates for housing, Pupil/teacher ratios in schools and number of health professionals per 10,000.

The role of an M&E framework

The 2009 TRIAMS meeting discussed that impact assessment through examination of both qualitative and quantitative evidence should be based on a predetermined project monitoring and evaluation (M&E) framework and process. UNICEF pointed out that TRIAMS, as an M&E framework, helps to ensure that what recovery

programmes deliver is evaluable and that impact assessment is in line with the results chain. This also has implications for the international humanitarian community under the cluster approach, in which impacts in a sector are the responsibility of clusters and cluster leads, rather than individual stakeholders.

The TRIAMS framework of indicators is the product of two participatory workshops. The Maldives delegation noted that because of their country's unique geography, a few of the TRIAMS indicators were not appropriate. Clearly, the concept of common indicators has to have some flexibility, as each country situation is unique and the objective is to have a minimum common core of mutually useful indicators, rather than to achieve compliance for its own sake. As underscored by the Indonesia delegation, countries are expected to have detailed sectoral management needs that go well beyond the core indicators.

We don't do ourselves any favors by getting tied up in definitions of impact assessment. What were the objectives we set for ourselves? Let's put in the evaluation systems and the monitoring systems to monitor those outcomes. Did we produce the numbers we said we would? Were they of high quality? Were people satisfied with those things? Are those services going to be sustainable? If we could do that, we would be much more transparent, much more accountable and have much better discussions and transactions with our donors. - Margaret Stansberry, American Red Cross

Part of the TRIAMS indicator framework has been a separate set of cross-cutting indicators specifically chosen to assess overall impact, including Infant Mortality Rate (IMR) and indexes attached to specific survey methodologies developed by WHO: WHOQOL and WHODAS II. The latter was used in Indonesia and in Thailand and demonstrated differentials between affected and non-affected households (Stansberry and Zagaria 2007).

Collective interpretation and analysis that involves local actors and affected populations

Who is going to use the data and findings on impact? One of the most important stakeholders and users is the affected populations themselves. The challenge is how to involve them and facilitate their use of impact assessment, as distinct from merely extracting data from beneficiaries. Secondly, how to involve a wide range of stakeholders? In general, the more stakeholders are involved in the design, the more likely the results are to be used.

Capacities and incentives for improved impact assessment

Are there capacities at the different levels to carry out quality impact assessment? If not, can such capacity be built? What has been accomplished through TRIAMS to build national capacities for impact assessment, and how can this be done better in the future?

Secondly, what are the incentives for initiating impact assessment? What can donors do to create incentives and make impact assessment part of the system? With the data that has been collected as part of TRIAMS in each of the country, partners are responsible to ensure that the data are made available to any current or planned impact assessment work.

The Indonesian delegation pointed out that time pressures will push evaluators to convenient secondary sources rather than primary data. The resulting inadequately researched impact assessment poses a danger because it may reach the wrong conclusions and yet, since it may be the only study available, it is widely used. Furthermore, many reports are published too late to be useful in disaster recovery, and are usually only undertaken by a small handful of agencies, resulting in a narrower view. They also noted problematic experience with ex-post project evaluations. Project information may no longer be available once the project team packs up.

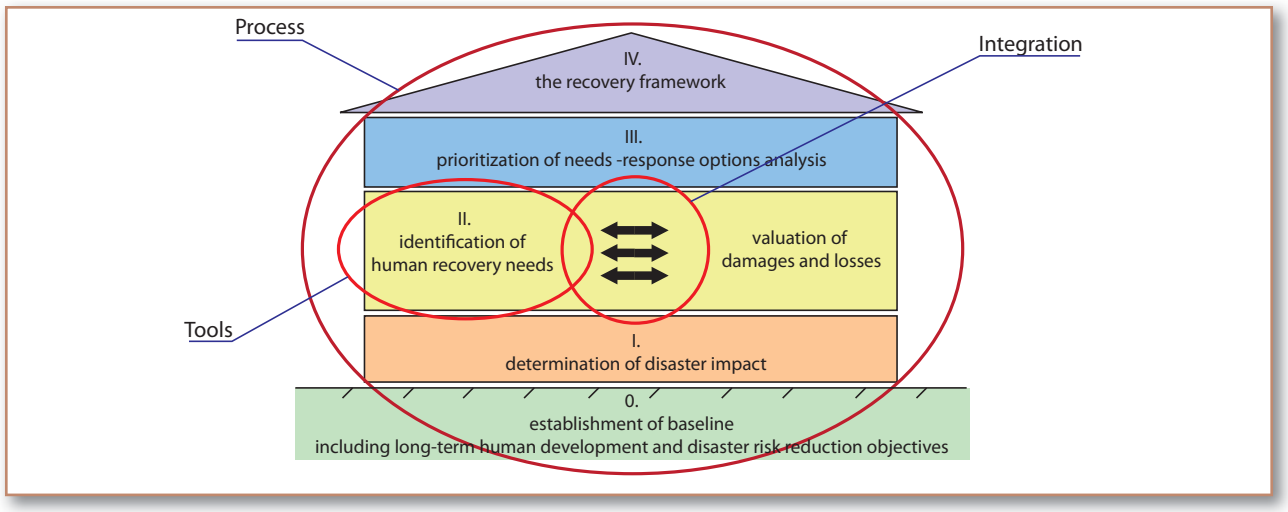
Multi-stakeholder Post Disaster Needs Assessment (PDNA) and the Recovery Framework (RF)[11]

The joint World Bank and UN funded Integrated Multi-stakeholder Post Disaster Needs Assessment (PDNA) project, currently in development, is an integrated approach to multi-stakeholder needs assessment and recovery planning in post-disaster situations.

Its objective is to support effective transition from relief to development by improved capacity and coordination at national and international levels for the conduct of post-disaster needs assessment and the development of a recovery framework.

It seeks to address a number of key challenges facing disaster managers, namely the gaps, overlaps and disconnects relating to the shift from emergency response to recovery, from substitution to restoration of capacities, along with needs for institutional capacities, dedicated resources and attention to cross-cutting issues.

Figure 20: The PDNA Project - Recovery Planning



Recovery Framework

Disaster recovery should not be what remains from relief, but should be derived from an objective development plan developed at the very beginning of recovery operations. In a relief situation, the tendency is for actors to respond to what they see immediately, as opposed to the recovery phase in which the response should involve more long-term strategic thinking and planning to prevent the scattered implantation of activities.

A recovery plan is a strategic plan, guiding all decisions that need to be made to coordinate the rebuilding of a geographical area after a disaster. The plan is a dynamic vision represented by a document that changes in response to an evolving understanding of the context and the impact of intended and unintended recovery interventions, which can be referred to as the Recovery Framework (RF)

The Recovery Framework is the capstone of the recovery planning process, anchored in a baseline that includes the pre-disaster development plan for the affected area. It describes the recovery vision, not just from an output point of view, but rather with an outcome orientation to "quality of life" and the reduction of future vulnerability. It also reflects the development perspective by taking account of the pre-disaster level of development while holding out a promise to 'build back better.'

11 Based on TRIAMS 2009 meeting presentation by Mr. Ola Almgren, Senior Recovery Advisor, UNDP.

Assessment in support of recovery planning

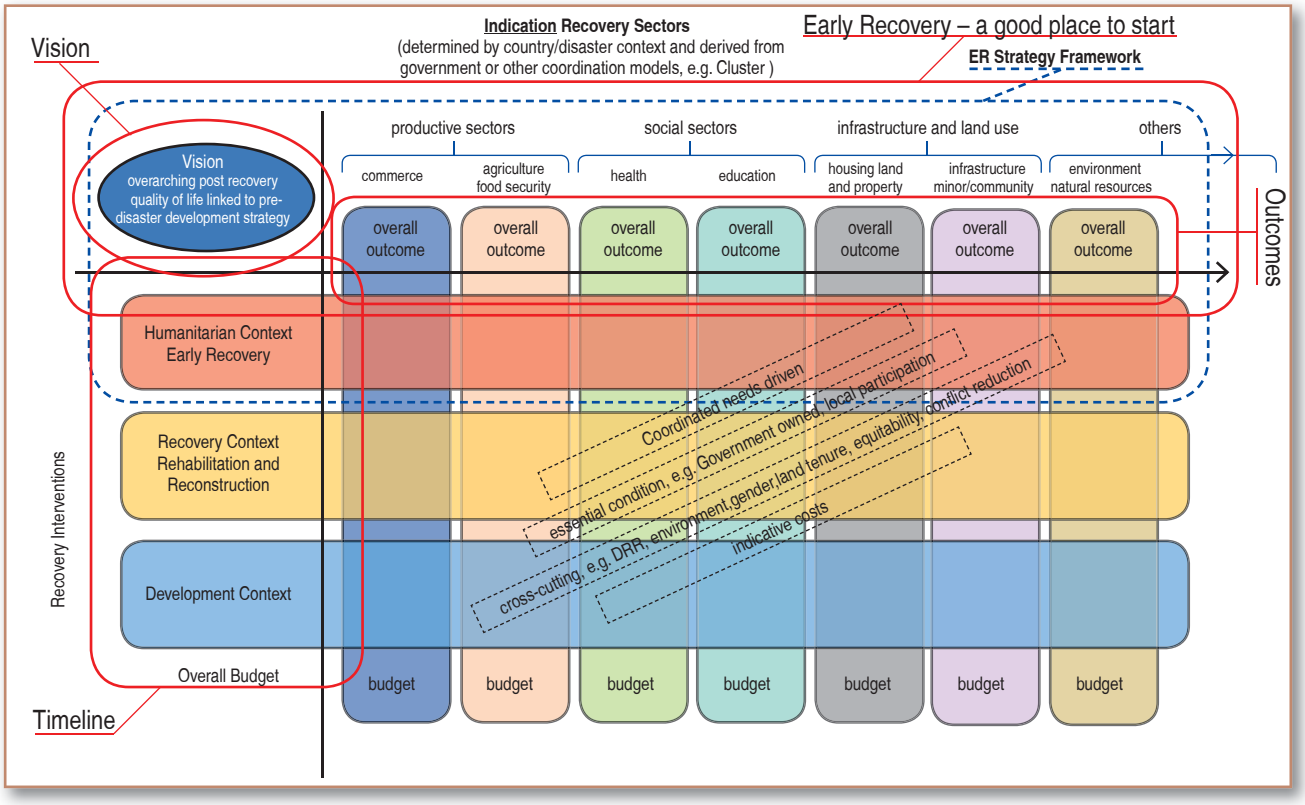
Assessments of the impact of a disaster on individual, household, community and national assets, coping mechanisms and recovery needs build the evidence base for and underpin the development and later evolution of the Recovery Framework. Assessments need to cover a number of different but inter-connected perspectives, broadly categorized as:

- The identification of human recovery needs to support recovery programming
- The valuation of damages and losses to support the mobilization of the necessary capital to finance the recovery process

An unintended positive effect of TRIAMS has been the development of open community of practice.
- Ola Almgren, UNDP

PDNA seeks to integrate these perspectives in one assessment process.

Figure 21: The Recovery Framework (RF)



Future recovery managers could benefit from tools and guidance. While much work has looked at disaster response, the recovery process remains relatively unstudied and so few tools or guidelines exist. Moreover, there is little information available relating to lower intensity disasters that can have as large an impact on the affected populations as do larger disasters. The TRIAMS community represents a source of combined experience and expertise in recovery management, which can contribute to such tools and guidance. This community could be kept alive and the TRIAMS experiences shared with a much wider group of recovery managers.

Conclusions: Lessons in recovery monitoring

Based on TRIAMS experiences to date, including discussions during the 2009 meeting and workgroup exercises, the following represent main lessons for recovery monitoring, with the caveat that they represent suggestions derived from observation, discussion and some consensus by TRIAMS participants, rather than from a formal evaluation or other research.

Lessons for Step 1: Agree on Indicators/framework

This step was carried out in TRIAMS largely through two regional workshops that brought country-level and donor stakeholders together to agree on and finalize indicators and a framework (Stansberry and Zagaria, 2006, 2007). Including multiple stakeholders helped to make sure the framework of indicators reflected what was important to everyone, but such a process understandably risks producing more indicators than may be practical to use. The framework of TRIAMS indicators is attached.

> To really make these tools work, data preparedness is critical—the capacity of routine data systems and national statistical system as well as the robustness of this system to survive external impact. - Jesper Moller, UNICEF

Build data preparedness as part of disaster preparedness. Data availability constraints are in part due to lack of data preparedness—having arrangements in place in advance of an emergency to provide recovery managing agencies with data on a regular and timely basis when the need arises. Such arrangements for provision by data producers of assessment data, baseline indicator values and subsequent routine data for monitoring should be made explicit and documented. Such arrangements could be even be specified in disaster management laws and accompanying legislation, policies and guidelines, right down to the indicators, levels of disaggregation and schedule. The TRIAMS experience suggests that without formal arrangements and the attendant authority to implement them, it will become increasingly difficult for government focal agencies to obtain their data as the recovery progresses.

In addition to these arrangements, certain data should be regularly maintained in advance of an emergency, especially disaggregated population figures and digital maps for the whole country. In practice, suitable digital maps at country, province, district and sub-district level are widely available from other government agencies or from external partners. Population figures from local government or census projections, are required as denominators for many indicators.

> *The question for the future on how we can help countries in disasters is: how can we pool our resources together so that we don't compete against each other? TRIAMS can provide the learning experience for the host country to lead the recovery efforts.* - Eddy Purwanto, BRR

For indicators, 'less is more.' TRIAMS country participants have lamented the lack of resources, the quality and credibility of the data, and the increasing number of indicators and resulting detail to process. All this argues for focus on a more limited, strategic set of indicators, rather than trying to replicate detailed sectoral monitoring. This is part of keeping things simple overall and get a system up and running, which can later be made more sophisticated if required.

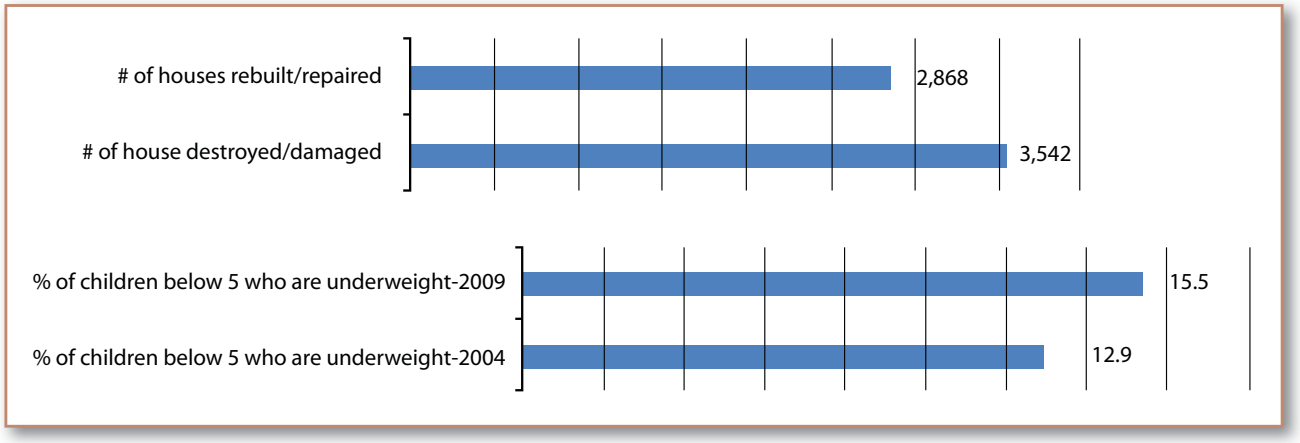
Pick a limited number of strategic indicators that cover the multi-sectoral framework. The development of TRIAMS has produced a menu of indicators from which to draw on, one that is acceptable to both the tsunami-affected countries and to donor and other external partners. The four-way framework of vital needs, basic social services, infrastructure and livelihoods is a central innovation in steering recovery to broader human needs beyond damage and loss of infrastructure.

Together, the framework of indicators comprises a common language for use among partners. If followed closely, it could also be used to monitor multiple countries in an international emergency. While use of the common indicators will have a number of benefits, countries are always free to add additional custom indicators.

TRIAMS has promoted methods to simultaneously present absolute numbers and percentages. The crux of monitoring under TRIAMS derives from the comparison of target and current values for outputs and outcomes:

- Need vs. progress (output) – e.g. number houses destroyed/damaged vs. number of houses rebuilt/ repaired
- Baseline (or other target) vs. current outcome - e.g. · % of children below 5 who are underweight, before the emergency vs. currently

Figure 22: Example of Comparisons for outputs and outcomes



Be prepared to adequately fund data collection, analysis and utilization. Even in the well-funded tsunami recovery programme, financial constraints have been a frequently cited constraint by TRIAMS participants. At the 2009 meeting, the Indonesian delegation pointed out that success in fundraising depended on how donors were approached and cited an example of proposing matching funds as a way of encouraging donor contributions by affirming government commitment. Some software solutions may not prove sustainable in the long term (One system entailed US$ 90,000 per annum for software licensing). The option to develop software in-house is increasingly available in many countries, but with attendant investments in time that may not be available in the post-disaster environment.

Are 50 indicators really necessary? …What seems important is to have few key indicators that try to capture the evolution of the service provided or of the population. - Nevio Zagaria, WHO

Timeliness counts. Be ready and start monitoring early in the recovery. A recovery monitoring system can be most useful if it provides needed data, analysis, findings and recommendations as early as possible, when interest and demand is highest and working patterns among partners are being established. Where data arrangements have not yet been established, this argues for creation of necessary inter-ministerial and technical bodies to bring data providers and users together and agree on urgent steps Because it had to be created from scratch, TRIAMS was not available during 2005, when many key tsunami recovery decisions were being made. Future disasters should be able to draw on ready tools for recovery monitoring.

Basic indicators on population affected will be required along with the agreed indicators for tracking progress. Related to this is the issue of how to manage changing lists of beneficiaries, which proved problematic during the tsunami. Integrating disaster risk reduction into recovery monitoring indicators has thus far proven difficult. Efforts should instead concentrate on audits and other sectoral monitoring.

Lessons for Step 2: Collect and compile the data for the selected indicators

The largest constraint encountered in implementing TRIAMS and other similar initiatives has been in obtaining quality data. Problems of timeliness of data and analysis for decision-making also owe their origins to data availability problems and attendant delays.

> *In Health sector… at national level, at provincial level there are some standards… You cannot have districts where there is one puskesmas (community health center) per 5,000 people, when in the neighboring district it is 1 per 25,000. Obviously there is a dialog and sometimes tensions among local governments at different levels, but it is exactly where during the recovery when you really need to provide access—and quite fast—to basic health--this has to be taken into account, because in fact we are using resources to produce inequalities.*
> - Nevio Zagaria, WHO

Define the affected population carefully and use the same definition consistently. Obviously, data collected need to refer to the affected population. Countries will employ their own definition of populations directly affected, who have family members killed, missing or injured, or have property destroyed, damaged or lost, as well as those indirectly affected, e.g. through loss of livelihoods. Similarly, countries will define directly affected areas as well as indirectly affected areas that may be hosting displaced persons, or where affected populations will resettle. It is very useful to track indicators of number of affected people and to tag affected areas. In the months and years following the tsunami, estimates and definitions of affected populations evolved over time.

Aim to use the most geographically disaggregated data available. It has been frequently highlighted that seemingly good indicator values in the aggregate may hide pockets of unmet needs. The tsunami reminded that even large-scale natural disasters are local in their effects. For example, in Thailand, only 21% of villages in the affected provinces were considered directly affected by the tsunami (Singhasivanon et al. 2007). Arguably, the most convenient way of targeting affected populations is to consistently use the most geographically disaggregated data available.

TRIAMS set the target for data collection at the sub-district level as the basis for monitoring how equitably recovery is progressing. TRIAMS-funded analytical work in 2006 demonstrated the utility of sub-district comparisons through thematic maps in illustrating how fairly and evenly recovery outputs are distributed. In practice in the four TRIAMS countries, it has not been possible for government focal recovery management agencies to obtain or analyze sub-district data except for a few indicators. This was due to lack of will in some cases and to lack of standardized data collection and reporting in others. Given the advantages, countries should pursue sub-district level data collection and revert to district level only if this proves impossible.

Geographic disaggregation relates to important considerations of scope. When monitoring a particular indicator over time, care must be taken to ensure that it consistently refers to the same population throughout. E.g., it could be misleading to compare *% of children under 5 who are underweight* for all affected sub-districts one year with the total for an affected province in another year. Again, the most direct approach is to consistently use the most geographically disaggregated data available.

> *Our advice to other countries is to create a user-friendly database for the entire country. It should be updated…to keep the system alive when the country is free from disasters...and have comprehensive country-wide social mapping through GIS.*
> 2009 TRIAMS meeting working group

Use clear indicator definitions up front and quality control of data received to help ensure data quality. The experience of Indonesia--where staff were assigned different groups of indicators and were required to sign off on the data in the database-- has underscored the importance of putting in place quality control and quality assurance procedures to ensure high quality data.

In order to avoid confusion, invalid data and delays, provide data producers with clear documentation explaining indicators and try as much as possible to standardize around those definitions.

Local use of data helps ensure its veracity. Experience has shown that data that gets used at the local level will be better quality than data that is merely reported to a higher level for compliance purposes. Similarly, widespread reporting of data and data use is the best way to flush out inaccuracies and contrived data, ensuring over time, the reporting of truthful, accurate and valid data. In this way, data use and data quality go together.

We need to look at what we will do during the next crisis because, like it or not, there will be a next crisis - Claude de Ville de Goyet

Use third parties to assist in data collection. In some cases the official government channels may be unable to provide data quickly enough or in sufficient quantity or quality. The disaster itself may have damaged reporting channels, or there may be no regular government survey to supply needed outcome data. The use of third party partners to help collect and compile data has worked effectively in some countries and described as 'inefficient' in another. All TRIAMS countries have been able to make effective use of in-country research partners for data collection and countries facing recovery monitoring should investigate early-on using such channels if government data sharing arrangements would prove too slow, or if in-house capacities to obtain and mange the data are inadequate.

Adapt scheduled household surveys to collect necessary outcome data, adapting sample sizes and survey instruments accordingly and accelerating turnaround time for priority indicators. This was emphasized in initial TRIAMS meetings and all countries were able to do this, particularly early on. Delays in processing survey results have been problematic, however.

Look primarily to existing routine data systems to get timely data at a sub-district level and concentrate on maintaining data validity and ensuring feedback of compiled data to the sub-districts.

Priority data requirements for calculating TRIAMS indicators include:

- Detailed electronic maps, standardized for use by multiple actors and systems.
- Disaggregated damage figures to use as denominators for infrastructure and livelihoods.
- Disaggregated population figures to use for denominators (1yr-olds, primary school-age, M, F, total)
- Disaggregated pre-disaster baseline values for outcome indicators
- Beneficiary registration for housing and livelihoods, etc.

Lessons for Step 3: Analyze the data

Once collected, data are sometimes sequestered into databases, or compiled and presented in vast tables out of interest in compliance or as an end in itself without taking the time to properly analyze it, make findings, draw conclusions or offer recommendations. **Data obtained on indicators needs to be reviewed and compared with baselines/targets and key findings highlighted for attention and action. This should be done closely with decision makers and other intended users so that analysis focuses on users' most relevant needs.**

Analysis requires both technical capacity and available manpower. Who is in the best position to analyze the data? Most of the TRIAMS indicators are easily interpreted, insofar as analysis is mainly monitoring the completion of needed outputs and monitoring the difference from a baseline for outcomes. Additional issues of interpretation may arise with extra indicators and in making comparison with norms and standards. While some information on interpretation of indicators can be included with metadata accompanying a database, interpretation of data may require consultation with experts, which will be available in-country and should be accessible to the recovery management agency. **Ideally, technical capacity to interpret the data should be readily accessible to the recovery managing agencies and this should be coupled to an organizational culture that is open to critical, honest assessment.**

Technical staff charged with handling the data, may be familiar with the indicators and data, but uncomfortable with interpreting it, or not feel qualified or authorized to make findings or recommendations in the political context and organizational culture.

The use of third party research institutions has proven to be useful in TRIAMS, but is dependent on the relationship between the recovery management agency and the research institution. In Indonesia, the preferred partner was the information analysis section of the UN office of the recovery coordinator and now the TDMRC. In Thailand, it has been the Faculty of Tropical Medicine of Mahidol University. In Sri Lanka, the Centre for Policy Alternatives has implemented two tsunami beneficiary satisfaction surveys. Standing agreements with such partners could specify roles and responsibilities in the event of an emergency.

Issues of objectivity and independence have arisen whereby countries have requested an external independent (international) consultant to help analyse data and credibly call attention to progress and gaps without threat of vested interests.

Terms of reference for third parties should be clear about the expected level of analysis and intended audience, which may be different from the needs of academic and other audiences.

Beneficiary perspectives enrich quantitative analysis. TRIAMS has advocated the use of qualitative beneficiary perspectives, as a complement to analyzing quantitative data. Client satisfaction surveys can add richness to analysis, by providing details about client experiences and about how closely recovery interventions match with expectations. In Sri Lanka, the implementation of a complaint mechanism also provides a systematic way to monitor client satisfaction. Much less is known about the experience of other countries, and while some client surveys are known to exist, they did not find their way into TRIAMS discussions. Focal point institutions lack experience and know-how in contracting and using the results of qualitative beneficiary surveys.

Lessons for Step 4: Utilize the analysis

Even when data are collected and analysis points to findings and recommendations for action, the analysis is not necessarily used to influence recovery management.

At the 2009 meeting, one of the cross-country working groups highlighted the following barriers to utilization, and proposed solutions:

Problem	Solution
Data and analysis are difficult to find, because they have not been shared or are poorly organized, making it difficult to locate what is needed and relevant.	Make a shared database available (on-line and using common media)
Analysis is not presented understandably	Improve presentation of data and analysis to be more informative and user friendly
Changing government priorities	Make government priorities and frameworks more transparent
Lack of knowledge about or distrust in the reported data	Increase level of knowledge about indicators and data collection
Data don't exist because data collection methodology was too expensive or complex for stakeholders.	Involve all stakeholders
Budget constraints	Advocate for giving more priority to the budget needs of monitoring and evaluation

In short, the data/analysis may go unused because it may be too hard to access or understand. Alternatively, data/analysis don't get used because the data are not seen to support government imperatives, or because there is simply a lack of knowledge, experience or trust in making decisions based on data.

Proposed solutions include things TRIAMS countries are already implementing. The database makes it easier to find data and analysis. Beyond merely storing data, the database can also encapsulate models of working, conceptual frameworks, indicators and completed analysis. It can also include metadata explaining the data and something about its interpretation and use, which, along with utilization-focused training, can improve users' knowledge about indicators. The process of putting together and using the database helps to flush out a broad range of issues, including data availability and quality gaps, definitions of indicators and geographic scope. Increasingly, provincial level authorities are able to create and manage their own databases for use online and controlling access to a limited group or to everyone over the internet. All TRIAMS countries are in the process of establishing or improving their databases as spelled in the *country progress* section. Outputs of systems in TRIAMS countries are being prepared to be clearer and more user-friendly. This also means making them more concise.

Examples of outputs/information products that support utilization	
Brief or presentation	Can provide priority top line findings and recommendations in a page pr two for use by decision makers
Printed report	While more detailed and narrative, printed reports should be designed to be as succinct and user-friendly as possible in order to encourage use. For example, highlight key findings in text boxes to make it easier to scan for relevant information.
Regular meeting/forum	Can provide an environment where stakeholders review and comment on data and analysis presented discuss and agree on a suitable response.
Database	Can store data but also conceptual frameworks, indicators and completed analysis along with metadata and instructions for use.
Website	Can obtain inputs from the public and provide links to multiple products for users with reliable connections, including training materials, policies and procedures.
Dashboard	Like an automobile or airplane dashboard, it provides current indicator values for selected, critical indicators in a concise, readable package.
Thematic maps	Can show the geographic distribution of indicator values as coloured regions on a map. Like a table or a graphic chart, likely to be a part of the other products mentioned.
Media/press conference/press release	Standard methods for interacting with media to amplify and disseminate an interpretation of data

It is necessary to differentiate findings and recommendations on the one hand from databases and reports on the other. In order to put analysis in front of decision makers as soon as possible, it would be preferable to publish findings and recommendations before the associated database or printed report, rather than wait for the database to be posted online or the report to be published.

In many cases, the time it takes to collect data, analyze and distribute through reports is excessively long. This argues again for collecting fewer indicators and depending more on shorter briefs and forums for data utilization, and less on the longer reports as main products.

Open, representative, decision making forums, of the type currently employed by Sri Lanka's national steering committee for housing and being supported by TRIAMS at district level—represent an excellent way of getting timely data in front of stakeholders and creating a transparent environment for their use. With internet connections improving everywhere, it may be possible to recreate such forums online.

Although relatively few experiences in working with media have been discussed as part of TRIAMS so far, clearly media can be used to amplify and validate data findings with the public, and internationally to provide leverage with international partners. There is high demand for objective data by media, but the tsunami experience show that interest in even the most high profile news stories quickly diminishes. This argues for having data available in the early phases of a recover operation.

The tsunami experience has reminded that difficult decisions will sometimes entail trade-offs. E.g., the buffer zone policy in Sri Lanka was consistent with imperatives of disaster risk reduction, but clearly compromised livelihoods.

Example uses for recovery monitoring data and analysis
1. Manage recovery to obtain intended results a. Make operational resource allocation decisions b. Formulate and justify budget requests c. Monitor efficiency of recovery operation d. Identify and solve performance problems e. Motivate staff involved in recovery f. Help hold external partners and contractors accountable for results
2. Be accountable to beneficiaries and to the general public
3. Be accountable to internal and external partners
4. Identify priorities to support planning
5. Advocate broadly to help solve problems and achieve objectives

At the 2009 meeting, several specific examples of the TRIAMS utilization were discussed and are described in the *Country Progress* section.

Lessons for step 5: Institutionalize/mainstream into sustainable systems

Making improvements in evidence-based recovery monitoring part of the regular way of working in a country entails incorporating the lessons outlined above at three related levels: in institutions, in policies and procedures and in capacities. While this applies to preparedness, some tsunami countries have already been responding to new crises. Moreover, the transition from recovery to development holds potential for improved evidence-based recovery monitoring to spill-over into improved evidence-based development monitoring linked to normal planning, budgeting and review cycles.

Beyond the country level, TRIAMS partners have emphasized that these lessons should also be institutionalization at a regional or even global level to improve how international agencies support post-crisis recovery.

Institutions - Recovery coordination bodies like BRR and TAFREN/RADA need to properly hand over lessons and good practices to sustainable institutions before they shut down. Many of the roles and data-sharing arrangements established under inter-ministerial committees and task forces can be continued, if on a reduced scale or schedule. In particular, countries need to decide what the role of the national disaster management institutions should be and who will take care of the indicator data during non-disaster periods.

International agencies have similar concerns in transitioning temporary coordination structures (e.g. UNORC and HICs). Agencies need to be ready to propose, promote and stand by consistent recovery monitoring approaches from an early stage. This can be easier if TRIAMS lessons have a regional or global long-term home.

Recovery takes time, even when adequately funded. Implications for monitoring include delayed outcomes and impacts, as well as a longer-term commitment to arrangements to collect, analyse and utilize data beyond the initial stage when the disaster automatically gets highest priority.

Policies and procedures - Disaster management laws and their attendant operational guidelines should specify roles for institutions, specifically on data preparedness pre-emergency and on provision of data to focal agencies during emergencies. Such arrangements could alternatively be enshrined in national statistics or information policies.

Capacities - A central tenet in TRIAMS has been utilizing available government capacities in all phases. At the same time, the tsunami recovery has stretched those capacities to the limit and pointed out weaknesses in the use of data. More fundamentally, the lack of manpower is cited as a basic constraint.

TRIAMS capacity-building activities have focused on technical assistance and low-cost, in-country trainings designed to build government counterpart knowledge of indicators and skills in managing and using indicator data in databases and GIS, and using evidence in decision making. Lessons on capacity from TRIAMS participants similarly focus on government human resource capacities:

- Make the most of available capacities through effective horizontal and vertical coordination.
- Leverage available manpower with use of local research institutions in collection and analysis of data for recovery management. All TRIAMS countries have done this to one degree or another.
- Decentralize the monitoring process to district level-to improve quality and distribute the workload- as well as to train the district staff. The localized nature of natural disasters makes local recovery management all the more important, yet as earlier TRIAMS meetings pointed out, local capacities may be seriously damaged by the disaster/crisis itself. As a minimum, central authorities should be careful to feedback compiled data and analysis to the local government institutions that have provided the data in the first place.
- Provide training in collaboration with higher education and public service training institutes.
- Multiply available capacity through use of technology, including satellite and other remote sensing.
- Include civil society and media in trainings on access and use of data to promote transparency and broad utilization.
- Capacity building is an ongoing need, requiring ongoing efforts.

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Annex 1: TRIAMS Indicators

Indicator	Category	Type
% of population with access to water from an improved source	Vital needs	Output
% of population without basic sanitation facilities	Vital needs	Output
proportion of population with housing damaged/destroyed living in emergency shelter/temporary houses/permanent houses	Vital needs	Output
measles immunization coverage	Vital needs	Output
# titles to land given, by gender	Vital needs	Output
% of housing built meeting applicable hazard-resistance standards	Vital needs	Output
# primary schoolchildren per school	Basic Social Services	Output
# primary schoolchildren per teacher	Basic Social Services	Output
# hospital beds per 10,000 population (inpatient & maternity)	Basic Social Services	Output
# of physicians, nurses and midwifes per 10,000 population	Basic Social Services	Output
# outpatient consultations/person/year	Basic Social Services	Output
% of one-year-olds immunized with DPT3	Basic Social Services	Output
# of health facilities with emergency obstetric care per 10,000 population	Basic Social Services	Output
# trained workers providing psychosocial support per 10,000 population	Basic Social Services	Output
# km of repaired/new road by type of road	Infrastructure	Output
# bridges repaired by district	Infrastructure	Output
# harbours/jetties rehabilitated by type	Infrastructure	Output
# of new/rebuilt/rehabilitated schools, by category	Infrastructure	Output
# of new/ rebuilt schools by category that meet the applicable hazard resistance standards	Infrastructure	Output
# of new/rebuilt/rehabilitated health facilities by category	Infrastructure	Output
# of new/rebuilt health facilities by category that meet applicable hazard-resistance standards	Infrastructure	Output
# sq km of natural habitat restored, by type	Infrastructure	Output
# km of coastal protection constructed/repaired, by type (bio-fencing, seawalls, quay walls, breakwaters)	Infrastructure	Output
% of affected and/or overall population who have received loans, by type of loan, by gender	Livelihoods	Output

% of affected and/or overall population enrolled in social protection programmes, by type, by gender	Livelihoods	Output
# people employed by different sectors, by gender	Livelihoods	Output
% of boats damaged/destroyed repaired/replaced, by use (fishing, tourism, ferrying and other income-generating activities) and by district	Livelihoods	Output
% of children below 5 who are underweight	Vital needs	Outcome
% of children below 5 who are wasting (moderate and severe)	Vital needs	Outcome
% of children below 5 who are stunting (moderate and severe)	Vital needs	Outcome
% of low birth weight newborns	Vital needs	Outcome
% of children under 5 who have experienced a diarrhoea episode during the previous 2 weeks	Vital needs	Outcome
% of overall population living in durable and safe housing	Vital needs	Outcome
% of population issued with land certificates that have changed name or collateralized in past year (country specific)	Vital needs	Outcome
% of households without home ownership	Vital needs	Outcome
net primary school enrolment ratio	Basic Social Services	Outcome
Primary school drop-out rate	Basic Social Services	Outcome
% of births attended by a skilled birth attendant	Basic Social Services	Outcome
adequate antenatal coverage (at least 4 visits during a pregnancy)	Basic Social Services	Outcome
% of local administration offices fully functioning	Infrastructure	Outcome
volume of trade (MT) through ports	Infrastructure	Outcome
# passengers through ports	Infrastructure	Outcome
% of population earning below national poverty line	Livelihoods	Outcome
average household income by gender	Livelihoods	Outcome
labour force participation rate by gender	Livelihoods	Outcome
% of households that have regained their pre-crisis livelihoods, by gender	Livelihoods	Outcome
crop and cash crop agricultural production	Livelihoods	Outcome
-% of population with worse functioning (WHODAS)	Cross-cutting	Impact
-% of population with poor quality of life (WHOQOL)	Cross-cutting	Impact
-Infant mortality rate	Cross-cutting	Impact
-% of affected communities consulted by implementing agencies	Cross-cutting	Output

Annex 2: 2009 TRIAMS III Meeting Outcome Statement

TRIAMS stakeholders met in a third regional workshop in order to learn lessons from one another on how to best sustain progress in applying TRIAMS and to further refine the TRIAMS methodology, for continued use both in the four participating countries, as well as to contribute to the way future recovery operations are managed.

The large and diverse group comprised over 50 participants from various government departments at national, provincial and district levels, UN agencies, Red Cross Red Crescent, University and Research Institutions that have been partners in TRIAMS. As evidence of the long term collaboration that has characterized the initiative, nearly half of all participants had been part of previous TRIAMS workshops.

The meeting also set out to try and answer the critical "So what?" question, by looking at the possible benefits of TRIAMS on the tsunami recovery, including how the use of TRIAMS data has improved the quality of decision making.

Country presentations on progress showed evidence of commitment and real advances in data collection, analysis and reporting. Some specific examples of data use were described, including detecting the intended as well unintended outcomes of the sectoral and overall recovery process, the monitoring of the number and needs of IDPs, the beneficiary perspective and satisfaction and the evolution of housing needs. Other, indirect benefits of TRIAMS were also cited, including intuitional and policy changes, increased collaboration among sectoral ministries and decreased competition among agencies. The potential for use was evident, with presentations pointing out recovery progress, remaining gaps and in some cases, excess supply. Ultimately it was determined that the question of data use required further inquiry, along with further encouragement and capacity building.

The workshop examined TRIAMS among other, related approaches. TRIAMS represents perhaps the most visible and most researched initiative in multi-sectoral recovery monitoring and evaluation; with the significant political, financial and intellectual investment that has been made, it is important to capitalize on this for the benefit of future recovery operations. Though all agree on the importance of having information tools early in an emergency, it was noted that most such systems--including TRIAMS--were designed only at the time of the crisis.

The workshop also considered the use of TRIAMS in assessing impacts of tsunami recovery, including the question of beneficiary perspectives and recommended a framework. In most countries, it is only now that countries have a database that can permit assessment of tsunami recovery outcomes. It was recommended to focus on the results of assessments rather than get caught up in the definition of impact assessment, and rely more on project-oriented impact evaluations. Beneficiary perspectives were convincingly represented by Sri Lanka and it was agreed that such perspectives are an important compliment but not substitute for other quantitative and qualitative data.

Multi-country working groups provided an opportunity for cross-fertilization around themes that emerged from the country presentations and earlier workshops focusing on data management. On data constraints, given problems of cost and quality, focusing on fewer indicators would be better. For data preparedness it was recommended to find a balance in each country on which indicators are maintained by the national disaster management authority and which by line ministries. In further exploring data use in decision making, the gap between the willingness to show data and the reluctance to analyze and debate around it needs to be bridged. Critical in the discussions was the issue of the analysis and utilization of data by the national and local authorities and stakeholders.

The importance of recovery monitoring as one element of overall recovery management linked to a viable recovery plan was emphasized.

Partners reaffirmed their commitment to consolidating some of the TRIAMS work in-country and to documenting and applying lessons that have been derived from TRIAMS toward a recovery management toolkit. Countries identified priority actions for the period 2009-2010 and agreed on the following:

As follow up to the workshop:

- Work with countries to complete analysis presented (e.g. complete baseline)
- Finalize workshop report document
- Produce secondary knowledge product to draw some conclusions on TRIAMS country specific and across the 4 countries involved in the TRIAMS initiative
- Initiate formal independent, external evaluation of TRIAMS
- Publish lessons learned in a guidelines format for the next generation of disaster managers (by universities or research institutions)
- Contribute TRIAMS lessons to a recovery management toolkit

As continued support to country capacity:

- Support to some identified near-term priorities
- Continued partnership activities
- Maintain contact on TRIAMS/recovery monitoring issues via web (TRIAMS Google group)

Annex 3: 2009 TRIAMS III Meeting Agenda

Agenda (Lessons learned in post-crisis recovery monitoring: 3rd Regional Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) Workshop, Bangkok, Thailand, 25 – 27 February, 2009

Day 1: Wednesday, 25 February			
Time	**Activity**	**Responsible**	**Notes**
8:00 – 8:30	Self-Registration		
8:30 – 8:45	Welcome		
8:45 – 9:15	Opening Remarks and Expected Outcomes	Sponsoring agencies Facilitators	
9:15 – 9:45	Participants' introductions and expectations from the workshop	Participants	
9:45 – 10:00	Administrative Issues and Housekeeping	Facilitators	
10:00 - 10:30	TRIAMS background and Meeting Objectives: -Learn about utilization of TRIAMS and constraints to it -See how lessons should be mainstreamed in institutions, policies and procedures -Clarify priority actions and opportunities for support in the immediate term -Start to document a few key, strategic lessons that can contribute to a recovery management toolkit for the future.	Partners	TRIAMS explanation and background
10:30 – 11:00	coffee break		
Section 1: Recent progress in tsunami recovery monitoring			
11:00 – 13:00	Country tsunami recovery monitoring	Plenary country presentations (30' each)	Countries' presentations focused on utilization and institutionalization
	Plenary discussion		
13:00 – 14:00	lunch break		
14:00 – 15:00	Country tsunami recovery monitoring (cont.)	Plenary country presentations (30' each)	
	Plenary discussion		
15:00 – 15:30	coffee break		
15:00-16:30	Country tsunami recovery monitoring (cont.)	Plenary country presentations (30' each)	
	Plenary discussion	Plenary	

16:30 -17:00	Day 1 wrap up and close		
18:30	Reception 4th Floor Pool		

Day 2: Thursday, 26 February			
Time	**Activity**	**Responsible**	**Notes**
Section 2: Cross-fertilization			
8:45-9:00	Recap of Day 1	Plenary	
9:00 – 10:00	Plenary presentations on related initiatives	Claude de Ville de Goyet; Mihir Bhatt	
10:00-10:30	Plenary discussion		
10:30 – 11:00	coffee break		
11:00 – 11:10	Introduction to working groups	Facilitators	
11:10 - 13:00	Working groups		
13:00 - 14:30	lunch break		
14:30 – 15:30	Presentations of working groups to plenary	Working groups	
15:30–16:00	coffee break		
16:00-17:00	Presentations of working groups to plenary	Working group racon-teurs	
17:00	Day 2 close		

Day 3: Friday, 27 February			
Time	**Activity**	**Responsible**	**Notes**
Section 3: Synthesis of lessons learned in recovery monitoring			
8:30 – 8:45	Recap of days 1 and 2 and introduction to coun-try work groups	Facilitators	
8:45 – 10:30	Country working groups	Country delegations	
10:30 – 11:00	coffee break		
11: 00 –12:00	Country delegations on future plans	Country delegations	
12:00-13:00	Agency delegations on future plans	Agency representatives	
13:00 – 14:00	Lunch break		
14:00-15:00	Next steps	Plenary	
15:00	Meeting Adjourned		

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Annex 5: List of Abbreviations

AIDMI	All India Disaster Mitigation Institute
ALNAP	Active Learning Network for Accountability and Performance in Humanitarian Action
BPS	Bureau of Public Statistics (Indonesia)
BRR	Aceh and Nias Rehabilitation and Reconstruction Agency (Indonesia)
CWGER	Cluster Working Group on Early Recovery
DAD	Development Assistance Database
DALA	Damage and Loss Assessment
DDPM	Department of Disaster Prevention and Mitigation (Thailand)
DNP	Department of National Planning (Maldives)
ECHO	European Commission Humanitarian Aid Department
ECLAC	UN Economic and Social Commission for Latin America and the Caribbean
EMS	Emergency Medical Services
FOREC	Fund for the Reconstruction and Social Development of the Coffee Belt
GIS	Geographic Information Systems
IAS	Information Analysis Section (part of UNORC)
IASC	Inter-agency Standing Committee
IDP	internally displaced person
IFRC	International Federation of Red Cross and Red Crescent Societies
ISDR	UN International Strategy for Disaster Reduction
M&E	monitoring and evaluation
MDG	Millennium Development Goal
MNB&EID	Ministry of Nation Building and Estate Infrastructure Development
NEHRU	North East Housing Reconstruction Unit
NGO	non-governmental organization
NSO	National Statistical Office (Thailand)
OSE	United Nations Office of the Special Envoy for Tsunami Recovery
PDNA	Post-Disaster Needs Assessment
RADA	Reconstruction and Development Agency (Sri Lanka)
RAND	Recovery Aceh-Nias Database
RF	Recovery Framework
SIDA	Swedish International Development Agency
SUMA/LSS	Humanitarian Supply Management System/Logistics Support System)
TAFREN	Task Force for Rebuilding the Nation (Sri Lanka)
TEC	Tsunami Evaluation Coalition
TRIAMS	Tsunami Recovery Impact Assessment and Monitoring System
TRIP	Tsunami Recovery Indicator Package
UNDP	United Nations Development Programme
UNDP-BCPR	UNDP Bureau for Crisis Prevention and Recovery
UNICEF	United Nations Children's Fund
UNORC	United Nations Recovery Coordinator for Aceh and Nias
WHO	World Health Organization
WHODAS	World Health Organization Disability Assessment Schedule
WHOQOL	World Health Organization Quality of Life

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

TRIAMS: Improved monitoring and evaluation of post-crisis recovery

The 2004 Indian Ocean tsunami combined multi-country needs and multi-country funding on an enormous scale. The evident need to monitor progress of ongoing recovery programmes and the results for affected populations faced a common constraint-the lack of a tested monitoring framework that governments and their international partners could use to manage and continuously adjust the recovery effort. Without such a system, many feared that funding would be misused and needs would go unmet. Moreover, recovery represents the opportunity for accelerated development. How can we ensure that such development is spread equitably and does not worsen existing inequalities?

The Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) initiative was meant to improve government monitoring of the overall recovery by focusing on some common recovery outcomes and related outputs. Since 2006, Indonesia, Sri Lanka, Maldives and Thailand have been employing the TRIAMS approach to help manage the completion of recovery interventions and to assess results, while highlighting remaining gaps. They have been assisted by TRIAMS Red Cross Red Crescent and UN partners, who are interested in learning from the TRIAMS experience to help build suitable recovery management tools that could be available for use in future large-scale emergencies.

Key aspects of the TRIAMS approach include:

- A multi-sectoral conceptual framework including vital needs, basic social services, infrastructure and livelihoods
- Focus on a limited number of common, priority indicators to provide an evidence base for overview of the overall recovery effort
- Orientation toward results for beneficiaries
- Attention to equity in the recovery effort through use of more disaggregated (sub-district level) data
- Country ownership and leadership

The methodologies promoted in TRIAMS include:

- Use of existing routine and survey sources of quantitative data
- Collection and compilation of indicator data, metadata and analysis in a database
- Use of thematic mapping to show geographic distribution and equity dimension of recovery assistance
- Incorporation of disaster risk reduction elements into the indicators
- Use of beneficiary perspectives to triangulate and better understand how affected people view the quality and relevance of the recovery assistance.

This document highlights country experience in recovery monitoring using TRIAMS approaches, looks at other approaches to recovery monitoring and assessment of recovery impacts. Based on these experiences, including discussions during the third regional TRIAMS meeting held in 2009, the document also spells out main lessons learned at each step in the process:

1. Agree on Indicators/framework
2. Collect and compile the data for the selected indicators
3. Analyze the data
4. Utilize the analysis
5. Institutionalize/mainstream into sustainable systems

TRIAMS documents are available online

www.who.int/hac/triams