



ASIA: EARTHQUAKE AND TSUNAMIS

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Logistics – Making the puzzle pieces fit together

Providing relief in tsunami-affected countries is a massive task involving many complex issues that need to come together seamlessly much like a jigsaw puzzle. Making sure that the pieces of the humanitarian puzzle fit together is the job of hundreds of logisticians directing thousands of Red Cross and Red Crescent staff and volunteers who all ensure that aid gets to where it's needed as fast as possible.



Planes and helicopters played a vital role in the rapid delivery of relief supplies particularly in the earliest weeks of the operation.

The 26 December 2004 tsunami operation is among the largest logistic manoeuvres in the Federation's history in terms of territorial coverage, numbers of staff and volunteers involved, budget, number of programme activities, and the number of national societies working directly in the affected areas in support of the host national society. As well as the people directly involved, the Federation and its members have employed an enormous amount of transport equipment, including planes, helicopters, ships, trucks and all-terrain vehicles designed to save lives in the immediate aftermath and increasingly, to rebuild communities.

For example, in the operations carried out to date in Indonesia logistics have played a vital role. At the height of the emergency phase, most relief supplies were delivered by large fixed-wing aircraft directly from donor countries to Medan or to Batam Island. After being received and recorded, these were distributed onward largely by helicopter from Banda Aceh.

During the first two months of the operation, the Federation rented three helicopters which were used to deliver relief goods, transport delegates and Indonesian Red Cross ([Palang Merah Indonesia/PMI](#)) staff and volunteers, and to supply PMI/Federation operational bases in Meulaboh, Lam No, Calang, and Teunom which were not otherwise accessible due to the destroyed roads. Heavy duty cargo helicopters were also used to deliver large tonnage equipment including water cleaning plants, medical equipment and vehicles.



Vast quantities of humanitarian aid have been delivered throughout Aceh province by ships of many shapes and sizes.

A large number and variety of boats were used to deliver relief commodities to affected areas all along the western coast of Aceh Province where and when roads are not passable. In the recovery phase of operations, boats will continue to be invaluable as reconstruction materials are delivered to isolated communities on a

massive scale. For example, on Nias Island, the Federation and its members are providing assistance to 25,000 families, where boats must travel 12 hours across the Mentawai Strait after their cargoes have already travelled overland many hundreds of kilometres from Medan.

After the tsunami, it was immediately evident that heavy duty, all-terrain trucks would be required to deliver assistance because of the destroyed roads and infrastructure. The Norwegian Red Cross sent 64 six-wheel drive trucks which had proved so successful in previous humanitarian operations around the world. In most cases such trucks are the only large-capacity transport vehicles not necessarily dependent on paved or graveled roads. These trucks are used not only to deliver critical humanitarian commodities, but are also reputed for their role in rescue operations, recovering local private and NGO trucks that became stuck in the mud and water of the tsunami-ravaged region.



All-terrain trucks were often the only option for delivery of humanitarian assistance in tsunami-affected countries.

In many cases, the M6 trucks were (and still are) the most effective means of transportation, especially during and after rain. But even these vehicles can require a very long period of time to reach some locations. For example, the distance between Meulaboh and Teunom (on Sumatra's devastated western coast) is 120 kilometres. According to local people, before the tsunami it took less than three hours to travel between these two locations. These days, it takes at least eight to nine hours - after the rain at least 12 hours - for a one-way trip. This equates to an average speed of 10-20 kilometres per hour!

The distance between Banda Aceh and Calang is also around 120 kilometres. Yet it often takes two full days to travel between these locations. Due to current security rules, staff and volunteers travel half the way to Lam No, stay overnight and then continue the journey the next day. Also, near Lam No, personnel must cross over a river, which is possible to do only by pontoon (there is only one for all vehicles passing along this main western coastal route), which adds three to four hours to this already arduous journey.

In Indonesia, the logistical pipeline has managed to deliver over 500, forty-foot shipping containers of relief and recovery items. Every single one of these must be received at point of entry, go through customs clearance, get off-loaded to one of the warehouses, and then be transferred by truck to different operational locations and/or regional warehouses. From there, they are broken down for onward delivery to tens of thousands of beneficiaries in thousands of villages across the earthquake and tsunami-affected areas of Sumatra. Projected programme needs may account for another 1,000 containers for relief needs and an additional 500 containers for transitional shelter.

In Sri Lanka, the nature of the tsunami destruction presented a significant logistical challenge to the Red Cross and Red Crescent Movement in the initial phase of the recovery operation. The tsunami hit a narrow coastal strip, damaging up to 70 per cent of the coastline. The primary challenge for the Federation's logistics team was to oversee the immediate import and distribution of relief goods to tsunami-hit areas. Food and other relief items reached over 300,000 people across Sri Lanka thanks to a network of logistics personnel who managed warehouse storage and transportation.

Key logistical support now includes overseeing the procurement, storage and transport of programming equipment. In cooperation with the relief and disaster management departments, the logistics team - which

already manages over 2,800 cubic metres of warehouse space - is identifying warehouses to store pre-positioned disaster relief stocks left over from initial relief distributions. These stocks will increase the disaster preparedness capacity of the [Sri Lanka Red Cross Society](#) (SLRCS) by enabling all 26 of its branches to assist up to 350 families for a week in times of disaster. The Federation is also purchasing radio equipment which will be a key component of the communications network in disaster response.

The logistics coordinator also sits on the tender board, a committee of representatives of SLRCS and the Federation set up to ensure transparency, accountability and best value on all procurement in Sri Lanka. The character of the Sri Lanka operation, which includes construction of up to 15,000 houses, calls for large-scale tender and procurement. The tender board will facilitate more rapid reconstruction.

Logistics in Sri Lanka is not without challenges. A large proportion of relief goods and material assets are imported in to the country requiring ongoing negotiations and liaison with government and customs authorities. The allocation of land for reconstruction is also dependant on government decisions.

In the Maldives, the unique environment where 290,000 people live on 199 islands scattered across 850 kilometres of the Indian Ocean presents many challenges to logistics personnel. Not only is transport dependent on boats to cover the distances between islands but, in some cases, finding suitable landing on the islands can be difficult. Island jetties have been damaged or destroyed by the tsunami and harbours have had to be cleaned of tsunami debris, including large trees that have found their way across the ocean from as far afield as Indonesia.

In addition, limited local suppliers and storage facilities coupled with very expensive transportation due to the geographic isolation of some atolls and weather-dependant service delivery add to the difficulties facing agencies providing assistance in the Maldives.

The East Africa region has experienced many difficulties similar to those encountered in countries where the tsunami impact was greater. Delivering aid was complicated by the remoteness of some affected areas where coastal roads are non-existent, and by difficult security environments. For example, access to coastal tsunami-affected areas from the main inland towns of Somalia can take more than a day even with the use of all-terrain vehicles.

While these challenges are many and varied, the Federation and its members continue working tirelessly to assist those most in need across the vast tsunami-affected region. Although recovery and reconstruction of these communities will take many years, the Red Cross and Red Crescent will provide for mid-to-longer term needs and at the same time ensure affected populations are better equipped to deal with future emergencies.

Operational updates by country

Indonesia

With the technical support of the Federation, PMI has identified 43 locations for rehabilitation and construction of health centres in Aceh Barat district. Site construction assessments are actively underway, with design standards having been received from the Ministry of Health, and memorandums of understanding are being completed with authorities in all six identified sub-districts. When these health facilities are completed, they will serve approximately 100,000 people.

With the winding down of the emergency phase and stabilization of the population in temporary living centres and with host families, the provision of safe water by tanker trucks from mobile treatment plants to storage reservoirs and from bore holes built on site remains consistent at some one million litres per day reaching approximately 113,000 beneficiaries in towns, villages and in 53 temporary living centres and 24 tent camps.

In addition, a further 350 household wells have been cleaned in Teunom, and water supply systems have been repaired in two towns on Simeulue Island. The Teunom and Simeulue activities have added 8,000 people to the total number of beneficiaries now drinking safe water provided through PMI/Federation resources. As well, seven barrack buildings in the Lhong Raya Stadium camp in Banda Aceh are being fitted with rain water harvesting eaves for collecting water for washing, bathing and for household cleaning. This outfitting will also reduce flooding during rain storms.



Brand new, durable tents are en route to replace tents which have reached the end of their lifespan in advance of the rainy season.

temporary shelters. The Federation has 33,000 durable replacement tents in the distribution pipeline; 4,000 tents have already been provided, and an additional 8,600 tents are being transported from PMI/Federation storage warehouses, while the remainder are being shipped from outside the country.

A construction support base has been established in the district capital of Calang, and stocks of building materials, earth moving machines and construction tools have been pre-positioned at that facility. Federation construction delegates are providing self-help training to local artisans in the mixing of concrete to meet earthquake standards, in the identification and use of hurricane-resistant building materials and in the correct procedures for obtaining building permits.

PMI and the Federation are participating in a governmental and multi-agency assessment mission to determine requirements and capacities for a tsunami early warning and mitigation system in the country.



Large, two-room tents will provide more spacious and comfortable accommodation for tsunami-affected people while permanent housing is constructed.

Indonesia is currently in a strong position in terms of preparedness planning and public awareness. PMI and Federation staff will continue with their risk reduction awareness campaign throughout Aceh Province, using a video animation and billboard displays produced especially for this purpose. Topics include: risk reduction planning through community participation; safe housing construction practices, including water and sanitation concerns; escape route mapping, and coastal protection through mangrove tree plantation. The presentation has been delivered to 10,000 people in 20 camps. The Federation and its members are also working actively with PMI to establish an independent early warning and emergency communication system. This programme includes a radio network and training of PMI personnel in community-based risk reduction and disaster response logistics. To date, 100 PMI staff received this training, with further training sessions scheduled for an additional 150 staff and volunteers on Nias Island and in Meulaboh.

Despite several vaccination rounds, there continue to be cases of the Wild Polio Virus, being reported in the country. In an attempt to counter the potential spread of this virus, the government conducted the first of two mass immunizations for children under five years on 30 August, and a second round of inoculations is scheduled for 27 September. PMI is providing logistic support for the delivery of 600 vaccine carrier boxes provided by the Federation, and PMI volunteers are distributing UNICEF leaflets, fact sheets and stickers throughout all targeted districts.

Sri Lanka

In August, Sri Lanka Red Cross Society (SLRCS) and the Federation signed a memorandum of understanding worth USD 100 million with the Government of Sri Lanka allocating projects to SLRCS to construct and renovate water supply facilities over the next seven years. Areas targeted include Galle, Matara, Hambantota, Ampara, and Jaffna. Projects worth USD 30 million have been identified so far.

Support to health infrastructure rehabilitation continues. Two pre-fabricated nursing schools will arrive in September for construction in Galle and Ampara. Each school will accommodate an additional 250 students in support of the government's campaign to train over 15,000 extra nurses by 2015. The schools will eventually be replaced by permanent structures.

Each year dengue fever affects hundreds of urban dwellers. This year, there are increased numbers of potential dengue mosquito breeding grounds as populations shift and regular garbage disposal and environmental cleaning mechanisms are disrupted. SLRCS volunteers are being trained as part of a dengue eradication campaign in Colombo and Gampaha, areas particularly prone to dengue. The volunteers go on house-to-house visits to raise awareness and activate the community and local authorities to eradicate breeding grounds and prevent dengue.

There is still a risk of increased incidence of communicable diseases, particularly in congested camps for the internally displaced and along the coastline where existing water and sanitation facilities have been damaged. To meet ongoing needs, specialist water units are producing and distributing over three million litres of drinking water per week to some 50,000 people in Ampara and Batticaloa districts. The Red Cross and Red Crescent Movement funds water trucking in nine districts in the South, East and North of Sri Lanka. It has also provided over 20 water tanks (varying in size from 75m³, 10m³, 5m³) for water storage in Ampara district.

The Federation and SLRCS representatives met with the President of Sri Lanka in August to discuss the Red Cross and Red Crescent Movement's pledge to construct up to 15,000 houses for 75,000 people. The Federation and SLRCS have developed a fast track process to speed up construction of an initial 3,500 houses on 25 sites. Simultaneous construction on all sites will help meet this goal. Contracts have been signed with consultants for 24 of the sites. The aim is to have one model house constructed immediately on each of the sites, which will act as an office for construction staff. Model houses are under construction on three sites in Matara and one in Batticaloa.

Maldives

The Government has formally given the "green light" for the formation of a Maldives Red Crescent Society. The date of 28 September has been set as the occasion for a public meeting to form an establishment committee. A major briefing will be held on 15 September to raise awareness among government officials, civic organizations and local NGOs. The Secretary General of the Cook Islands Red Cross is assisting the planning and organization as she has recently been instrumental in forming her own national society and because of the geographic similarities that exist between the two countries.

Houses are now under construction on Guraidhoo and Kudahuvadhoo islands. The first houses will be completed before the end of the year. Bids for the construction of 600 houses on the island of Dhuvafaaru are currently being evaluated and, after the contract is awarded, building should commence in October.

Over 3,700 water tanks and rain water harvesting kits have been distributed directly to the islands. This represents 25 per cent of the total distribution which targets over 15,000 households on 78 islands.

The Federation has been working with the UN Development Programme and the government in planning strategies for disaster risk management. The Red Cross and Red Crescent Movement will take primary responsibility for community-based preparedness and capacity building (linked to the formation of a Maldives Red Crescent Society) and opportunities are being identified for building multi-functional buildings, e.g. schools, on second storey pillars so they can double as shelters when the sea swells or flooding occurs.

Thailand

Assessments were conducted on psycho-social needs in Phang Nga and Phuket in preparation for health projects to provide psychological support.

A survey was conducted in Krabi, Phang Nga, and Phuket to assess availability of clean water supply for schools in tsunami-affected provinces.

Teachers from six affected provinces were trained on various Red Cross youth volunteer activities related to dealing with the tsunami at a gathering of youth from Southeast Asia held in Nakornratchasima. These teachers are expected to become trainers of Red Cross youth volunteers in tsunami-affected provinces.

East Africa region

A regional logistics preparedness and response training was held in Nairobi in August 2005 and attended by logisticians from 12 national societies in the region. The workshop's aim was to equip the logisticians with the skills to effectively handle large-scale natural disasters.

For more details and news stories, photos and all operational updates related to the tsunami visit:
<http://www.ifrc.org/what/disasters/response/tsunamis/index.asp>