Migration and Global Environmental Change

CS2: Lessons learnt from the 2004 Indian Ocean tsunami

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Contents

1. Introduction

Mass migration, both short term and long term, took place in the aftermath of the Asian tsunami disaster on Boxing Day 2004, subsequent to the immense human and infrastructural destruction that was caused. The earthquake, recorded at a magnitude of 9.1 on the Richter scale, led to a death toll of over 230,000 and mass displacement of over 1.69 million people across 15 countries in two continents. As of July 2005, official figures put the number of dead, missing and displaced in the Indian Ocean region at more than 175,000, nearly 50,000 and over 1.7 million, respectively (Rofi *et al.*, 2006).

Over half a decade after the tragedy, affected countries have adopted and self-evolved policies and implementation mechanisms, taking into consideration the local political, environmental and socioeconomic contexts, to address issues pertaining to returnees to the disaster sites after the tsunami and those who had permanently migrated from the original location because of the tsunami.

There have been commendable post-disaster improvements in some areas whereas in others there was public protest against such policies. There were also times when a good policy for one area was detrimental to another.

A scientific analysis of the migration-related systems and policies that were in place prior to the disaster in each country and the systems that evolved subsequently would be beneficial in designing and documenting models of good practice and areas that failed, to be used appropriately in the future.

Considering the fact that the most substantial damage was caused in Aceh (Indonesia), Sri Lanka, India and Thailand, this paper attempts to assess the situation in these countries based on the available and accessible literature and the relevant post-tsunami experiences.

Outline

This paper comprises six parts including the introduction and the conclusion. Following the short introduction, Part 2 examines the observed displacement and the return process, the nature of post-tsunami displacement and subsequent return or relocation and details of the number of people who were affected and resettled by country.

Experience of post-tsunami environmental migration is looked at from a regional perspective through a comparison with the Sri Lankan experience in Part 3. The buffer zones, or the no-construction zones, declared by governments of all considered countries that forced some tsunami-displaced people to relocate after the tsunami, are further discussed in this chapter.

Practical issues and problems experienced in the post-tsunami rebuilding and relocation process that require the most attention are those in the areas in which most affected people were marginalised owing to the mismatch between the requirements of the affected and the stakeholders in development. These are examined in Part 4.

Part 5 provides us with conclusions and the possible future interventions that would allow us to better manage such disaster situations and mass environmental migration. Therefore, general and comparative documentation of the issues of environmental migration and policies, and implementation mechanisms of relief, rehabilitation, reconstruction and development would

highlight the areas that need careful attention in order to successfully manage such situations in the future.

2. Observed displacement and the return process

Displacement of coastal populations was seen in unprecedented scales after the tsunami. The main and immediate problem of the ones that survived the tidal waves was to find their lost beloved family members. Then there was a need to restore their assets, which had been accumulated through a lifetime or even longer from generation to generation. Among these assets were houses, property and also livelihood avenues such as the fishing, tourism and agriculture sectors that were severely affected.

Aceh, Indonesia

At the time of the disaster, Aceh province in Indonesia was under a fragile political situation. The people were traumatised with the overwhelming magnitude of the catastrophe, which claimed nearly 50% of the total population of the province, and the devastation that occurred.

The death toll was 128,645 and 37,063 persons were missing by the end of March 2005 (USAID, 2005). Initially, over 600,000 persons became homeless; this figure became 532,898 by 31 March 2005, with the number of displaced persons at 514,150. By mid-2005 the internally displaced population was 479,561, out of the total population of 4,264,947 in the affected area.

Over 1,000 villages and towns were affected and 127,000 homes were destroyed or damaged. A total of 35,000 households who lost their land had to be resettled in new locations. Approximately 15,000 households did not own land or houses before the tsunami (renters and squatters). Of the affected lands, only around 60,000 parcels were titled, mostly in urban areas.

Apart from the issue of resettlement, there was also a need to restore lost livelihoods. A total of 80,000 hectares of land was submerged and 70% of the small-scale fishing fleet was destroyed. Up to 15% of the 37,500 hectares of agricultural land was destroyed. Around 600,000 people lost their sole source of livelihood. The unemployment rate rose from approximately 6.8% before the tsunami to over 33% (Fan, 2006).

Rendering shelter for 600,000 people was an arduous task facing the government, amidst the reconstruction of other infrastructure facilities. It was, however, the ultimate priority. After the tsunami, policies and implementation mechanisms had to be established anew.

Indonesia's official master plan for the rehabilitation and reconstruction of Aceh and Nias was published in March 2005. The multi-donor fund (MDF) was formally established in May 2005, led by the World Bank, comprising a total of 15 bilateral and multilateral donors. The National Land Agency of Aceh (BPN) aimed to provide lost land titles for up to 300,000 people in tsunami-affected areas within 18 months, as well as an additional 300,000 in areas adjacent to the directly affected areas.

By December 2005 there was an increase in eviction threats by land owners who had been allowing displaced communities to stay on their land temporarily. However, the government

was able to ease most of the issues through allocating more government lands to establish barracks. Apart from 78,000 people who were accommodated in tents (temporary shelter), all other displaced people lived in temporary barracks (transitional shelter) or with host communities. Agencies involved in the recovery effort launched a temporary shelter plan of action to get people out of tents.

In June 2006, 52,915 land parcels were surveyed and 50,500 land titles were ready to be issued, awaiting governmental approvals to obtain loans on titled lands (MDF, 2006). By December 2006, 70,000 households were still living in barracks, and many of the barracks were due to be decommissioned at the end of 2006. However, by October 2007, 102,063 permanent homes were built and 5,287 households were living in barracks (European Commission, 2007).

Sri Lanka

The tsunami struck a relatively thin, but long, stretch of over two-thirds of Sri Lanka's coast line, from Jaffna in the north down through the entire eastern and southern coast, and a part of the west coast. Thirteen out of 14 districts situated along the coastal belt were affected.

The Eastern Province was one of the worst affected areas, reporting the highest number of deaths (14,354) and displaced persons (218,727), while Ampara, a single district of this province, reported the highest number of deaths (10,436) and injured persons (5,762). Southern (10,056 and 159,105, respectively) and northern provinces (6,230 and 64,067, respectively) reported the second and third highest number of deaths and displacements. However, Galle, a single district of the Southern Province, reported the highest number of displaced persons (128,077) (Department of Census and Statistics, 2005).

There were initially 257 camps to host those persons who were internally displaced. By March 2005, 545,715 families were displaced, out of which 422,417 families were living with relatives and friends and 123,298 families were living in camps (Fehr *et al.*, 2006).

Under the temporary housing programme, the tsunami-affected homeless population was provided with temporary houses, which were mostly tents. There was also a population who sought accommodation with friends and relatives as well as in rented homes.

Transitional shelters were similar to the barracks in Aceh, which were built of semi-permanent housing material and targeted to be decommissioned in 2 years' time. A total of 52,000 transitional housing units were required initially.

By December 2006, more than 42,000 of the transitional shelters were decommissioned, with nearly 15,000 shelters remaining occupied. Nearly 12,000 fully damaged houses and 35,000 partially damaged houses were completely rehabilitated under the homeowner-driven programme; 12,000 houses were completed and 13,000 were in different stages of construction under the donor-driven housing programme by the end of 2006 (MoFP, 2006).

By September 2007, 52% of the houses had been reconstructed and 73% of the post-tsunami IDPs had been provided with housing (Belgium Lauds Progress in Tsunami Reconstruction, 2007).

By December 2008, 87,000 houses were completed under the homeowner-driven housing programme, and the Red Cross had completed the pledged 32,866 permanent houses under

the donor-driven housing programme (MoFP, 2006). The possibility of a full recovery, at least quantatively, before 2010 seemed realistic.

India

The tsunami caused extensive damage on the south and south-east coasts of India in the states of Tamil Nadu, Andhra Pradesh, Kerala and the Union Territories of the Andaman and Nicobar Islands and Pondicherry. Out of the 37 inhabited islands in the Andaman and Nicobar group, 15 were affected by the tsunami and flooding.

In India, 75% of the 10,700 fatalities were in the south-eastern state of Tamil Nadu. Unlike in other countries that were affected, the whole of India's eastern coastal belt, spanning over 2260 km and the entire land area of the Andaman and Nicobar Islands, was affected.

A total of 157,393 housing units in 897 villages were damaged by the tsunami. Relocation of 647,556 people to safer places was required. Around 112,517 persons were housed in 256 camps that were set up and 535,039 people moved in with friends and relations in nearby towns (Fehr *et al.*, 2006).

By November 2006, 27,845 houses (28%) of the total 98,478 permanent housing units required across India were completed and the remaining houses were in various stages of construction. In Tamil Nadu itself, 20,128 houses were handed over by November 2006 (United Nations, World Bank and Asian Development Bank, 2007).

Thailand

In Thailand six southern coastal provinces, namely Krabi, Phang-Nga, Phuket, Ranong Satun and Trang, were severely affected. The tsunami affected residents and foreign tourists in the densely inhabited Phuket Island and the surrounding southern coastal provinces. The death rate among the tourists – between 7% and 10% – was twice the rate of the local residents, as many of the tourists were on the beach or in beachfront hotels when the tsunami struck (Fehr *et al.*, 2006).

Owing to the developed tourism sector, the impact was different, and 1,939 Thai nationals, 1,953 foreigners and 1,503 unknown persons were confirmed dead. There were 2,023 Thai nationals and 909 foreign nationals reported missing, and 6,065 Thai nationals and 2,023 foreigners were injured.

A total of 12,068 households with a total population of 54,672 were directly affected by the tsunami. In total, 5,699 persons (2,669 males and 3,000 females) were in welfare camps. The number of houses completely destroyed was 3,302 and 1,504 houses were partially damaged. In total, 2,106 temporary houses were provided.

The majority of the affected families were in the fisheries sector or the hotel and tourism industry and lost their sole form of livelihood, at least temporarily.

Up to 7,000 Burmese migrant workers and their families were affected by the tsunami. In addition to losing family members, homes and jobs, many also lost the immigration documents permitting them to stay in Thailand (Seheper, 2006).

The general trend seen across all affected countries was that people engaged in the fisheries sector were most affected. The tourism industry and the agriculture sector, too, were also badly affected by the tsunami and the resultant salt water intrusion into agricultural lands. In addition, other common trades were affected, such as cinnamon cultivation, confined to the Southern Province of Sri Lanka.

In Sri Lanka and Aceh, multiple displacements were prevalent where some of the populations struck by the tsunami were earlier affected by displacement due to the separatist war situation.

Other affected vulnerable groups were orphaned children and children of single parents who lacked the presence of the primary caregiver and the primary bread winner. People who were undergoing medical treatment (those with disabilities) were also a main category that fell vulnerable because of displacement. Women, mainly women belonging to lower castes in countries such as India, were jeopardised from accessing a fair share of the due relief packaged. People living as tenants and as subfamilies in the same house were also initially excluded from the post-tsunami housing policy. This will be discussed further later.

Apart from the directly displaced communities, there were also many stresses upon the unaffected communities who lived in the interior, but in close proximity to the directly affected areas. Without prior warning, they had to accommodate, cater and care for the large population that was displaced. Subsequently, the responsibility was vested upon the respective governments, although substantial proportions of the recovery efforts were handled through the non-governmental organisation (NGO) sector.

3. Experience of post-tsunami environmental migration

Experiences of post-tsunami environmental migration differed from country to country and also from locality to locality. In this part, Sri Lankan experience will be taken as a base for analysis, and experiences of other countries will be brought in appropriately to supplement the arguments.

The post-tsunami resettlement process in Sri Lanka was divided into three phases:

- primary – temporary housing programme;

- secondary – transitional housing programme; and

- tertiary – permanent housing programme.

Similar three-pronged programmes were seen in all the major affected countries. Under the temporary housing programme, the tsunami-affected homeless population was provided with temporary houses that were mostly tents. There was also a population that sought accommodation with friends and relatives as well as in rented homes. Transitional shelters were similar to the barracks in Aceh, which were built using semi-permanent housing material and were targeted to be decommissioned within 2 years.

The buffer zone, forced relocation and permanent housing

The decision taken by the Sri Lankan government (GOSL, 2005) to fully enforce a buffer zone of 100 metres in the south and south west, and 200 metres from the high-tide level in the north and the east (as the damage to life and property was highest in these areas), restricted reconstruction of completely or partially destroyed housing units situated within this zone for residential purposes. In late 2005, the housing policy and the buffer zone were revised along with the incorporation of the set-back standards recommended by the Sri Lankan Coast Conservation Department, mainly taking into consideration the impracticality of imposing the 100 to 200-m rigid buffer zones without scientific reasoning.

Similarly, such buffer zones that were declared in India (500–3,000 m), Thailand and also in Aceh (2,000 m) prevented the original settlers from returning to their homes.

In the Sri Lankan context, more than 70,000 families who had lived in this area were forcibly relocated in areas outside the buffer zone (GOSL, 2005; Muggah, 2008).

In Thailand, the issue was even more serious. Polarisation of the actual needs of ground requirements and the remedies given by the state was largest in Thailand despite the fact that the damage was comparatively less.

Fishing and labouring communities who lived in the coastal belt were not in possession of land titles and were hence considered to be squatters in state lands. Prior to the tsunami, most of these settlements were under immense stress from the national and multinational companies that were developing beach fronts and tourism extension programmes.

As they were not legally entitled to the lands in which they were living, they could not claim, hence corporate investment and political pressure was too organised and powerful for poor fishing communities. The tsunami came as a blessing for the investors who were already eyeing the traditional lands of the poor fishermen. Eventually, the land rights of the fishermen were jeopardised. Out of 412 communities that were affected by the tsunami, 81 were tangled in land problems along with the tsunami destruction[1].

As the magnitude of the tsunami on Sri Lanka's economy and social stability was unbearable, its reconstruction and development agendas were highly influenced financially, as well as technically, by international development actors such as the UN, international financial institutions, multilateral donor agencies and international NGOs.

Amidst influences, the government of Sri Lanka was able to utilise its well-established administrative structure and entities established for the sole purpose of managing the disaster aftermath, as explained in Table 1.

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[1] Asian Coalition for Housing Rights.

Table 1: The process of managing donor-built and home owner-driven housing

Donor-built housing (new Houses/new land)		Home owner-driven housing (old houses/existing land)	
Process flow	**Managing agency**	**Process flow**	**Managing agency**
1. Land identification	DS/UDA	Beneficiary selection	GOSL
2. Donor screening	TAFREN	Approval of building plans	UDA (DS Level)
3. Land allocation	High-level committee	Damage assessment	THRU (DS Level)
4. Building and planning guidelines	UDA (district level)	Grant application	Beneficiary
5. MOU	THRU (national level)	Grant approval and stage 1 release	State banks
6. Agree technical details and sign construction	THRU (district level)	Implementation support	THRU (DS Level)
7. Project monitoring and facilitation	THRU (DS level)	Progress review and certification	THRU (DS Level)
8. Certificate of conformity	UDA (DSD level)	Stages 2, 3 and 4 release	State banks
9. Allocation of houses	GOSL	Certificate of conformity	UDA

Source: Presidential Secretariat: 2005.
DS, District Secretary; DSD, Divisional Secretary Division; GOSL, Government of Sri Lanka; THRU, Tsunami Housing and Resettlement Unit; UDA, Urban Development Authority.

In Sri Lanka two types of housing programmes were introduced by the Tsunami Housing Reconstruction Unit (THRU) in relation to the construction of permanent housing:

1. Housing for forced relocatees under the donor[2]-driven housing programme – this programme was introduced solely for the affected families who lived in the buffer zone prior to the tsunami. Under this programme, beneficiaries were given a guarantee of having a permanent replacement two-roomed house with an average floor area of 500 square feet in a state land with infrastructure facilities.

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[2] Donors were often Sri Lankan, or foreign private companies, as well as national and international non-governmental organisations.

2. Home owner-driven housing reconstruction programme – affected families who legally owned land and houses that were completely or partially damaged and were situated outside the buffer zone were eligible to apply for a cash grant that was approved after an initial assessment of damage and subsequent checks of the progress of construction. Affected families living within the buffer zone with legal ownership of land outside the buffer zone (within the same district) were also eligible to apply for this cash grant. Under this programme, owners of partially damaged houses would receive Rs.100,000[3] (US$1,000[4]) in two instalments of Rs.50,000. Owners of completely damaged houses would get Rs. 250,000[5](US$2,500) in four stages: Rs.50,000, 60,000, 80,000 and 60,000, based on the physical progress of construction as a cash grant through government banks in the affected areas. Households that successfully utilised this grant were eligible to apply for another low-interest loan of up to Rs.500, 000 (US$5000), which was disbursed through government banks (Bank of Ceylon and People's Bank). The repayment of this loan is over 20 years with a grace period of 24 months. However, the borrower would have to show a repayment capacity and offer security acceptable to the lending institution (Ministry of Finance, 2005).

The Government of India was sufficiently equipped, both financially and technically, to manage the situation and did not seek much international assistance.

In India, Rs.2,000 (US$50) was provided for the houses that were damaged partially and Rs.4,000 (US$100) was provided for houses destroyed completely as initial compensation. Rs.8,000 (US$200) per family was given for the construction of temporary shelters. On average, Rs.2,000 was provided per shelter for repairing the damaged roofs, to provide infrastructure facilities such as toilets, bathrooms and community sheds around the shelters.

The Government announced a permanent housing programme to build 1,816 houses in all areas that were affected at a unit cost of Rs.150,000 (US$3,750) each. Another 507 houses were also allotted for construction. According to the programme, the government provided all infrastructure facilities such as lands for building, roads, water supply, sanitation and rain water harvesting structures[6].

The Thai government stated that it was not in need of international financial aid, but called for technical assistance. The government invested over Bt.23 billion on reconstruction along with offering income, land and administration tax exemptions for the affected, providing funds for assistance and compensation, occupational rehabilitation and medium- and long-term loans for reviving business in the region. The Bank of Thailand and the Ministry of Finance disbursed Bt.30 billion in less than 2% interest soft loans over a period of 1 year.

The temporary housing programme of Thailand provided temporary shelter – plywood-divided homes with little or no ventilation. The buildings were topped with a metal roof, creating an oven effect.

In Aceh pre-tsunami owners were to receive basic 36-m^2 houses on new land with appropriate infrastructure, while pre-tsunami renters received approximately US$2,800 and pre-tsunami

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[3] Repair cost is less than 40% of the replacement cost of the house.
[4] 1US$ = approximately Rs.100.
[5] Repair cost is more than 40% of the replacement cost of the house or if the foundation of the house incurred structural damage (Ministry of Finance, 2005).
[6] Anand (2005).

squatters were given approximately US$1,150. It was a must for renters and squatters to use the cash as a deposit for a loan to obtain ownership of *Badan Rehabilitasi dan Rekonstruksi,* or Rehabilitation and Reconstruction Agency of Aceh (BRR), land and housing.

All the governments of affected countries gave a guarantee, at least on paper, that each family left homeless would return to new homes or repaired original homes with assistance directly from the government or channelled through the government. However, the allocation of houses and resources left many unanswered questions and lessons to be learnt.

4. Practical issues experienced in the post-tsunami relocation process

Initially, tsunami recovery effort focused on strategies to facilitate prompt return or permanent, forced relocation for the displaced. However, there were many bottlenecks that prevented the smooth implementation of relocation activities, which will be discussed in the following section. Here we mainly describe, from a general context, supporting experiences from specific countries where relevant.

Bureaucracy

Bureaucratic delays were among the major setbacks in speedy recovery. The legal procedure for land acquisition is a longer one – it takes some time to acquire lands where necessary. This was evident in all the countries, but mostly in Thailand, where corporations seem to have influenced the political hierarchy and decision makers in their favour, hence depriving the victims from having access to their original and traditional settings (Seheper, 2006).

The administrative procedures of obtaining permits from the District Secretaries did not function smoothly in Sri Lanka, and, as a result, there were undue delays in such reconstruction efforts (Fernando, 2010).

Many government officers were among the dead, documentation was lost and lands were completely and permanently submerged or unusable in Aceh. A similar situation was experienced in Sri Lanka but on a smaller scale (Fernando, 2010).

Latency in house plan approvals was seen in all countries, but India seems to have used a system with better efficiency, but in the Indian context, the spending per house seems to be low. Delays in getting progress reports for donors and other stakeholders resulted in funds not being available to smoothly proceed with the projects. For example, when a decision has been taken at the district level, it takes some time to get the approval at the national level and it resulted in a chain reaction of delays (UNDP, 2005).

There were many occasions where people had no confidence on the public officers. There were many cases reported to the Human Rights Commission of Sri Lanka (Disaster Relief Monitoring Unit, 2006) against violation of human rights within the aid delivery process. There were instances where grass-roots officers were accused of taking bribes for recommending non-suitable persons for relief and shelter. Grass-roots officers did not have reliable information on people.

The number of houses to be constructed under the donor-driven and homeowner-driven housing programmes was revised along with the alterations that were made in the post-tsunami resettlement policy in Sri Lanka. However, there was still a sizeable number of people targeted under compulsory relocation schemes (Disaster Relief Monitoring Unit, 2006).

Stakeholder coordination

Apart from the bureaucracy, lack of adequate coordination at different levels within organisations and among different stakeholders from the donors, implementing partners and the government agencies resulted in lapses and misunderstandings at different levels. Further, inter-organisational competition was also observed in countries rather than a coordinated and cooperative effort, which could have been ideal. This was also due to the lack of participation of implementer organisations – some agencies involved in housing construction did not follow the guidelines that had been developed.

There were occasions where some implementer agencies built houses without signing the memorandums of understanding (MOUs) with the government and other relevant stakeholders. These problems were clear evidence of the lack of monitoring capacity available at the grass-roots levels. Private contracting was seen as the main option for carrying out activities whereas community engagement at all levels of implementation was not seen to be a popular practice (Fernando, 2010). Practical problems were evident because of the lack of proper monitoring on the technical aspects of the houses (Fernando, 2010).

Policy

None of the affected countries was either prepared or aware of tsunamis of this nature, and they were blind to the possibilities of instantaneous mass displacement of coastal populations and, naturally, were less equipped to effectively manage the situation. Though all the countries had their own policies to address other forms of displacement, tsunami-specific policies took time to evolve, those too far from being near-perfect and people-friendly.

All the considered countries adopted new post-tsunami reconstruction and development policies and were engaged in doing patch work within the process of evolution. One good example is the post-tsunami buffer zone policy, which has been considered by all the nations and was later tailored according to the needs of the day (Olsen *et al.*, 2005).

People were unaware of the policy changes that took place at higher levels but which were already implemented. There were even occasions where the grass-roots government officers were unaware of high-level decisions.

There were other policies, such as considering the subfamilies as recipients of permanent shelters. Similarly, there was a lack of a definite solution to address issues of tenants and those who did not have land titles.

Beneficiary selection

Although, in theory, there were policies that were developed, there was no single measure to select the beneficiaries, and the selection and damage assessment process was dependent on how the individual officers interpreted the circulars that they receive from their superiors. The prospective community was not aware of its rights or the status of permanent shelter programmes in the district or division.

Sometimes the selection of beneficiaries had to be done without the log plan of lost property owing to the tsunami. Further, document banks in administrative hubs such as land registries were also affected by the tsunami, resulting in a lack of any proof of documentation. This was evident in Aceh, where public offices, as well as many public servants, were swept away (Rofi, 2006).

Lack of documentation and lack of bargaining power of the marginalised led to officers at different levels having an informal authority over the beneficiaries, hence paving the way for corruption and bribery. Some officials attached to the government and implementer NGOs carried biases in the beneficiary selection process, where even the unaffected people were allocated, whereas the deserving beneficiaries were deprived of their entitlements (Fernando, 2010).

Politicians, too, engaged in a similar process where they created lists of beneficiaries to be provided with new houses under post-tsunami housing programmes. People who were not affected by the tsunami were also included as eligible for houses because of political influence.

Political interference was highest in Thailand where politicians were alleged to have coupled with the companies that were looking to acquire lands that were once inhabited by poor fishermen before the tsunami. Politics and force were also considered as the main qualifications for relief, which has created divisions among society. Donors tried to identify the beneficiaries on their own measurements, creating a clear conflict of interest between the political authorities, the government officials and the implementing agencies (Rigg *et al.*, 2005).

Even though the final selection of beneficiaries was supposed to be done through the government mechanism that involved the Grama Niladhari (the village administrative officer), the Divisional Secretary and the District Secretary, the donors or the implementing agencies could request the above-mentioned government officials to consider particulars in selecting beneficiaries according to mandates of the individual organisations. For example, Helpage International/Helpage Sri Lanka was able to request the relevant Divisional Secretaries or the District Secretaries to identify beneficiaries (Punchihewa, 2005).

Social issues

One of the major blemishes of the post-tsunami developments in the affected countries is the lack of due consideration given to the social issues of the affected communities when drafting policy and implementing and carrying out each activity.

Beneficiaries who used to live in larger houses were not convinced about the standard or the size of the house that they would be given as a replacement. Large families, including several siblings and grandparents, were given one two-roomed house under the donor-driven housing programme, which is insufficient in room capacity and floor area. There were instances where the prospective beneficiaries did not want to accept the new houses (Disaster Relief Monitoring Unit, 2006).

Influx of monetary resources into the NGO sector resulted in disruption of the self-reliant protection mechanisms and replaced those with a system that was alien and highly dependent on the availability of external funding sources. There were many cases where the implementing agencies were unable to obtain community participation due to the dependency syndrome that was evident among the beneficiaries, created by the overwhelming funding availability (Olsen *et al.*, 2005). This scenario also resulted in short-term unsustained wage increases leading to a

distortion of the expenditure patterns and subsequently inducing long-term indebtedness of the labour force (UNDP, 2005).

Similarly, many practical problems loomed due to the lack of consideration given to the social constructs by the donor community. An insensitivity on the reality of community factionalism, based on ethnicity, religion and caste, led to social exclusion of some families, aggravation of factionalism and deprivation of certain groups from services.

As an example, in Hikkaduwa Galle district in Sri Lanka, the host community, mainly belonging to the 'Salagama' caste who engage in cinnamon cultivation and processing, were reluctant to accept the tsunami-affected resettlers mostly belonging to the Karawa caste, whose main livelihood is fishing. The resettlement was seen by the Salagama as intrusion on their areas by the highly influential Karawa. There were similar situations seen in Jaffna, Ampara and Batticaloa in Sri Lanka, where people from the same ethnicity belonging to different castes had problems getting along (Punchihewa, 2005).

The Indian context was much worse. In Tamil Nadu, Dalit caste, which is considered as untouchable, was rightfully treated in the same way as other castes by some relief agencies. In the aftermath of the tsunami there were many occasions when Dalits were not allowed to consume resources donated to them parallel with others. Some equal-rights relief agencies were not aware of the long-term consequences that their way of treatment would bring once they left. Before the tsunami they were discriminated against, but after the reconstruction process the Dalits, in some areas, were seen as enemies (Burnad *et al.*, 2006).

There were occasions when the Dalits and other lower castes were completely excluded from the post-tsunami decision-making process. Aside from Dalits, in many areas even the less influential and marginalised people who were not capable of voicing their needs were excluded. As an example, single mothers who were voiceless became marginalised. Considering that there were many single mothers as a consequence of the tsunami, this scenario was evident. Some marginalised beneficiaries were literally left out from the planning, implementation and monitoring and evaluation process (Burnad *et al.*, 2006).

Poor households, such as fisher folk, tourist resort casual workers and migrant workers, were often neglected or ignored. There was discrimination against the most disadvantaged and marginalised who were undocumented casual labourers representing many poorer fishing households (Olsen *et al.*, 2005).

Furthermore, effects on migrant communities, mainly in Thailand – which included Thai nationals as well as migrants from countries such as Laos – remain a hidden dimension[7].

Return migration to the buffer zone by renting, vacating or selling newly donated housing units in new settlements situated far from previous settlements could be identified as a 'last resort' employed by some new resettlers who were unable to successfully cope with the combination of stresses to which they were exposed as a result of forced relocation (i.e. distance to the city, lack of employment opportunities, poor-quality housing and common infrastructure, conflicts with the host community, etc.) (Werellagama *et al.*, 2004; Hettige, 2008). The government administration was well aware of this growing tendency, but was unable to stop it. In this context, one can argue that this is a sign of relocation failures and would expect more deaths and other type of losses in future tsunamis or other coastal hazards (Fernando, 2010).

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[7] Rigg, J. *et al.* (2005).

Economic issues

Owing to the relocation schemes, livelihood patterns were distorted and alternative livelihoods were required. The fishing labourers initially engaged as construction labour workers in post-tsunami resettlement schemes later shifted back to their conventional livelihoods along with the replacement of destroyed boats.

Tourism sector workers were unable to find attractive employment opportunities in a similar way as their skills were less in demand within the reconstruction process. In Sri Lanka the tsunami damage was followed by a flash of unsettled security situations spanning several years, reducing tourist arrivals and thus taking a heavy toll on the communities that were dependent on the cash in-flows from the tourism sector (Fehr *et al.*, 2006).

As the new relocation sites were, obviously, to be located outside the buffer zone, there was a need for a strong, realistic programme for alternative livelihoods. There were low-interest loan schemes with an elastic grace period carried out through governments and aid agencies to resurrect the tsunami-affected small- and medium-scale industries (Olsen *et al.*, 2005).

The resettlement schemes were insufficiently planned to incorporate the needs of the fisher folk, who constituted a major proportion of the recipients of houses, as they became highly dependent on access to public transport for their livelihood (Fernando, 2010). Owing to the lack of developed public transport, hired three-wheelers (tuk tuks) were more expensive and consumed a considerable proportion of their earnings. As building was not allowed within the buffer zone, fishermen were compelled to leave their boats and fishing gear and return to a home that was situated sometimes as far as several kilometres away (Fernando, 2010). Transport from the new resettlement locations not only affected people's livelihoods but also took its toll on accessing services such as health, education, banking and finance (Fernando, 2010).

Political issues

The local, national, regional and global politics impacted on the tsunami-affected communities that were forced out of their original settlements. In whichever context, political biases reduced the chances of providing equitable benefits in housing and development entitlements after the tsunami (Olsen *et al.*, 2005).

Sri Lanka was already an attractive destination for the donor community as it was in transition from nearly three decades of separatism and was in a ceasefire agreement with the terror group. While there was a requirement to pump in resources to the affected communities, groups with mosaics of agendas intruded on the opportunity of incapacitating the militant groups with monetary and non-monetary resources, hence depriving the needs of the actual prospective beneficiaries. Naturally, the progress of housing programmes in the northern and eastern provinces of Sri Lanka was slow because of the political disability and unsettled security situations in the then Liberation Tigers of the Tamil Elam (LTTE) terrorist-controlled areas. One of the major blemishes was that the LTTE was consuming resources that were sent to the north and east for military empowerment and bunker building (Disaster Relief Monitoring Unit, 2006).

In parallel, as the President of Sri Lanka and most of the powerful political authorities of the country came from the southern part of the country, they were able to convince donors to have more housing projects in their areas, resulting in more housing units than were actually

required. Those who really required houses did not get the entitled benefit because of the political interference. Political interventions created a new division among the affected families over the distribution of basic needs such as water, housing and other infrastructure facilities.

The unequal distribution of relief between the different communal groups has increased the number of divisions among the communities. For example, in Ninthavur, a small Tamil population became a localised minority among the local majority of Muslims. Similarly, there was a small Sinhala population within a Tamil-speaking majority in Pulmudai. They have also been victimised in terms of having equal access to relief (Disaster Relief Monitoring Unit, 2006).

Unsettled security situation

In some districts, post-tsunami reconstruction and development was quick whereas in others it was significantly backward. This difference was mainly due to peace mosaics in different districts, population densities in different coastal districts and political leadership in different areas.

The unsettled security situation was another limiting factor that acted negatively for the forced relocates. Two countries out of the four were going through internal conflicts and terrorism that needed halting. While the Free Aceh movement was fighting a separatist war against the Indonesian Government, the LTTE were fighting for a separate homeland in Sri Lanka.

Talks with the Acehnese secessionists and the government of Indonesia led to an MOU being signed in Helsinki on 15 August 2005, which brought an official end to three decades of armed conflict during which some 15,000 people lost their lives and tens of thousands were displaced. Since the signing of the MoU, return of conflict-affected internally displaced persons (IDPs) to their villages, a governmental programme to repatriate trans-migrants who fled Aceh as a result of the conflict, contestation over land between local communities and the military, and a campaign by some political elites to carve two new provinces out of present-day Aceh were emerging. In December 2005, approximately 4,500 conflict-affected IDPs from Bireuen and Pidie decided to return on foot to their homes in Bener Meriah and Aceh Tengah, which they had fled in May and June 2001 (Fan, 2006).

In Sri Lanka, a lack of understanding between the LTTE and the Government of Sri Lanka led to delays in transporting reconstruction materials from government-controlled to LTTE-controlled areas during the post-tsunami reconstruction period. There were blemishes on the state as well as the LTTE. While the LTTE and some NGOs operating in the 10 LTTE-controlled areas were worried about the red tape around the government's release of cement and construction material to the LTTE-controlled areas, the government's version was that the LTTE was using the construction material that was released to build bunkers and military facilities. There have been instances of soldiers at checkpoints delaying those who have obtained permits and of the LTTE taxing lorries carrying reconstruction materials to their territory. One year into the post-tsunami housing reconstruction programmes, the security situation of the country became more fragile by the day amidst various attempts, highly induced by the donor community, to implement a joint operation mechanism that was to make the government of Sri Lanka and the LTTE equally responsible for reconstruction and development work. However, this was also interpreted as an attempt to provide a legal recognition to the banned terrorist group, LTTE. By mid-2006 the government started its offensives on LTTE targets amidst continuous breaching of the ceasefire agreement by the LTTE, which resulted in a full-blown bloody war that prevailed until mid-2009, when the LTTE was militarily defeated in

Sri Lanka. Unlike in Aceh, where a peaceful settlement could be achieved, in Sri Lanka, the militant group and the government were unable to come to a peaceful settlement on any grounds.

Environmental

Alongside mass resettlement, degradation of land due to clearing of forest lands and destruction of natural habitats and logging to meet the timber needs were seen. Implementing housing programmes without proper environmental impact assessments or rushed impact assessments has resulted in many issues, including wild elephant intrusion into the new settlements. Although it is seen as a case of wild animal intrusion, in reality, it is a case of human intrusion of the natural habitat of the elephants (UNDP, 2005).

There were serious concerns with regard to environmental mismanagement and environmental sanitation aspects. Environmental sanitation was becoming an issue in many areas as it linked directly to preventive health. As many were counting on safer preventive health mechanisms, they were forced far away from the curative health services (UNDP, 2005).

When choosing cluster housing, it is important to consider waste management and sanitation in general when designing the whole programme. This component should be addressed parallel to addressing the problems with regard to water scarcity or drainage systems.

Problems in sewerage systems have created problems in relation to environmental sustainability. Owing to exploitation of natural water resources, water tables around new settlements have reduced. These reduced water tables were sometimes contaminated with unplanned sewerage systems.

The process of providing water to the housing sites that were constructed in hilly areas required sumps and secondary pumping facilities, but there was also a problem of who would fund the sustenance of the programme even if the machines were installed.

Intrusion of human settlements into the protected areas and reserves resulted in fragmentation of natural ecosystems. (For example in Hambantota, in Sri Lanka, some of the new resettlement sites are experiencing human–elephant conflict.) Similarly, in Thailand (Lawt, 2005) there are many coastal environments that were inhabited by fishing families, who did not have legal ownership, and thus were legal properties belonging to the state as declared reserves. However, the subsequent post-tsunami developments by companies resulted in legalising encroachment of tourist hotels beyond human settlements and into the nature reserves.

Resource constraints

Resources come in different forms. Human resources, capital resources and natural resources are the major items that are discussed.

After the tsunami, skilled masons, carpenters and construction workers were in high demand and the cost on human resources doubled in some areas, mainly owing to the demand. Unskilled labour workers were abundant after much of the contemporary livelihoods were shattered by the tsunami impact. However, unskilled labour availability soon became a problem with subsequent livelihood interventions under diverse programmes (UNDP, 2005).

Similarly, construction materials such as iron, cement and sand became expensive commodities. However, the price rise in construction materials was minimal in Thailand because this particular market was recovering from a downturn at the time and was not in a position to compromise. India, on the other hand, was comparatively better equipped to handle the aftermath of the disaster. The scale of the disaster compared to the size of the country's economy was small. It was most evident in Sri Lanka and Aceh, where the shock was imposed on relatively small populations. In spite of having the capacity to invest in large-scale housing programmes in India, the Indian government has not invested heavily in providing housing compared with other affected countries (Anand, 2005).

Natural resources required for construction, such as sand, and processed natural resources, such as cement, were in high demand. Similarly, land scarcity was also evident mainly in the areas with high population density. Later construction of high rises for the densely populated areas was seen as the sole option.

There were cases where the lands that were provided by the government to the donors to implement permanent shelter programmes had no, or a relatively low amount of, useable water resources. This became a problem during construction. On the other hand, the resettlers had to anticipate and find alternatives to face other serious problems that accompany the water shortage. Even though Matara and Galle districts are located predominantly within the wet zone of the country, there were instances where there was water scarcity (UNDP, 2005).

When considering cluster housing, it is important to analyse soil texture and the availability of water. Moreover, it was also important to consider the water table and ground water level and quality. A thorough qualitative and quantitative analysis of water was recommended as it is planned to construct permanent shelter.

Insurance

Most of the damaged facilities were uninsured. However, it was mostly in Thailand where the insurance repayments were a case that did not threaten the re-insurance companies because of the extent of the damages. For example, Munich Re insurers believe that its total exposure was less than US$136million, while Swiss Re, the world's second biggest re-insurer, says its exposure should be under US$88million. Therefore, local insurers, too, are not expecting to make significant pay-outs. Muang Thai Insurance in Thailand, for example, has reported that its total liability in the six affected provinces was around US$9.7million, the majority of which was motor insurance. In Sri Lanka, less than US$50 million in claims have been filed, most of which relate to loss of life rather than property. In total, insurers paid out less than US$5 billion across the region (EIU, 2005).

Table 2: Non-life insurance premiums, 2003

Country	Premium volume	Premiums per head	Premiums as % of GDP
Indonesia	1,733	8.0	0.83
Sri Lanka	137	7.0	0.74
India	3,712	4.0	0.62
Thailand	1,711	27.6	1.19

Adapted from EIU (2005).

Community participation

Success rates of international development agencies were not dependent on the size of investment. Agencies that used local knowledge and assistance of NGOs and community-based organisations (CBOs) performed better. It is good to combine the financial resources of the international agencies, the management of national agencies and grass-roots intervention of local NGOs/CBOs. Even a fair amount of capacity building of local grass-roots-level NGOs and CBOs coupled with deadlines will benefit in achieving the primary project objectives.

There have been many instances when prospective beneficiaries were unaware of the housing units they were to receive. Recipients were happier in areas where community participation was obtained in the reconstruction phase. However, it was ideal if the prospective recipients were incorporated in the design, implementation and monitoring and evaluation phases of housing programmes. Owing to the lack of community participation and lack of transparency, there were many allegations against some of the construction companies that undertook post-tsunami contracts. One of the most common allegations was manipulation of values, over-budgeting and use of inferior construction materials and techniques for construction. There were occasions when complete housing projects had to be decommissioned and restarted. Many people have no faith in the houses built by the NGOs as they have some doubts about the technical standards (Fernando, 2010).

5. Conclusions and recommendations

It was evident how the unprecedented nature of the tsunami natural disaster could bring about short-term turmoil and long-term chronic developmental issues, firstly for the people in affected areas and then for the countries and regions. One cannot set aside the global consequences of natural disasters. Short-term and long-term remedies in pre-disaster preparedness, management of immediate consequences and planning for long-term sustainable and just resettlement programmes are key areas that should be focused on.

Focusing on the South Asian and Southeast Asian countries that were seriously affected by the Indian Ocean tsunami in late 2004, most people in the affected nations were unaware of the phenomenon of tsunamis and hence became vulnerable. At least with substantial cost, the region's policy machines have adopted disaster preparedness mechanisms and awareness within their national agendas. However, the actual effectiveness of the preparedness measures

and increasing awareness among the public and relevant support stakeholders could still be tested if a similar or a worse disaster strikes the region again.

Immediate management of the aftermath would be a reality only if a majority of the population is unaffected. The affected areas of Sri Lanka were accessible to the people in the interior of the country. As the responsible government and non-governmental stakeholders were unable to access these areas, people in the interior worked voluntarily for the benefit of the affected without any guidance and direction. Religious institutions and schools became immediate places to provide shelter and grouping. In contrast, in Aceh, disaster took away nearly half the population of the land and the recovery was hamstrung. However, the similarity between Sri Lanka and Aceh was the three-decade-long internal conflicts that the nations were facing and which were eventually dealt with by regimes through militarily steamrolling opposition and through negotiated settlement, respectively.

Although the tsunami seems to have influenced settlement of internal conflicts, during the aftermath of disaster marginalisation of common people was even more influenced because of political and security fragility. One person's grievance became another person's opportunity. It was evident with militant groups who were able to manipulate the existent local and international structures for their advantage. On the other hand, the stakeholders from the top to the bottom, as well as the prospective beneficiaries, were increasingly becoming opportunity searchers with the highly available funding opportunities that came from overseas. This resulted in many activities that bypassed priorities. Funding also distorted local salary structures and, with diminishing funding avenues further down the process, resulted in negative impacts on job markets.

The construction industries contributed substantial proportions of the respective countries' gross domestic products (GDPs) in the few years after the tsunami. This was less evident in India as the damage in comparison with the size of the economy was negligible. The insurance schemes started to include natural disaster covers, and this was seen as a successful way of mitigating migration in Thailand. However, in the long run, considering the fact that most of the coastal fishing villages were already poverty stricken before and after the tsunami, implementation of sizeable insurance schemes would result in a lack of incentive to invest. However, micro-credit schemes and community-based insurance schemes seem to have the potential to mitigate and address the local mosaics of natural disaster.

However, community-based post-tsunami management and development was not seen as important components by any of the stakeholders, although most of them incorporated community participation in their project conceptualisation process rather than in the planning, implementation and monitoring and evaluation processes. Exclusion of the beneficiary communities from the decision-making and active engagement in the process resulted in providing a free hand for corporate corruption as well as corruption and lack of adhering to quality standards by the construction companies and donor and implementer intermediate agencies.

Exclusion of people from the decision-making process resulted in policy machines having authority over people's will and wishes, and hence placing people in compulsory resettlement programmes such as the donor-driven housing programme in Sri Lanka, which came subsequent to the declaration of the executive buffer zone policy.

The buffer zone policy, though later literally withdrawn, considered practical issues such as scarcity of lands, but a sizeable proportion of the post-tsunami displaced families were compelled to move to new resettlement locations that were under-facilitated, under-resourced

and lacked transport facilities to continue with livelihood avenues and schooling, which was essential for the next generation to progress. Families who were considered under the home owner-driven housing programme of the Government of Sri Lanka were more fortunate. They were given the liberty of selecting land and acquiring donor support for their own construction that provided more authority and a sense of ownership and inclusion to the beneficiary.

Therefore, more active participation of the beneficiary community could have made a difference in the qualitative improvement of the post-tsunami migrating population, and it could have also resulted in minimising back-migration of people into the buffer zone because of their inability to cope successfully with the forced relocation and the related stresses, such as poor-quality housing, distance to the sea and the city, lack of employment opportunities and conflicts between host and resettled communities. As a result of back-migration into the buffer zone, these families have become more and more vulnerable to future tsunamis and other coastal hazards.

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