The Challenge of Holistic Development

Tailoring Environment to the Post-Tsunami Response in Sri Lanka

Ali Raza Rizvi
A brief overview of environmental degradation due to tsunami rehabilitation and reconstruction in Sri Lanka and CARE International’s response to minimize the resulting damage and the efforts to integrate environment into its post tsunami development initiatives

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It should be noted that environmental initiatives taken by other agencies are not intended to be presented or reviewed in this report and any mention is for information sake only.

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All Photos: CARE Team
CoverPhotos: Forest clearing for shelter construction in Batticaloa
Back Cover Photos: Reforestation by villagers in Hambantota (left); Women clearing debris in Wanni (upper right); and Removal of invasive Cactus in Bundala National Park (lower right)
**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CBO</td>
<td>Community Based Organization</td>
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<tr>
<td>CEA</td>
<td>Central Environmental Authority</td>
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<td>CHA</td>
<td>Consortium of Humanitarian Agencies</td>
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<td>EA</td>
<td>Environmental Assessment</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FRP</td>
<td>Fibreglass Reinforced Plastic</td>
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<td>HEC</td>
<td>Human-Elephant Conflict</td>
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<td>IOM</td>
<td>International Organization for Migration</td>
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<td>IUCN</td>
<td>The World Conservation Union</td>
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<td>IWMF</td>
<td>International Water Management Institute</td>
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<td>MFAR</td>
<td>Ministry of Fisheries and Aquatic Resources</td>
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<td>NTFPs</td>
<td>Non Timber Forest Products</td>
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<td>RADA</td>
<td>Reconstruction and Development Agency</td>
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</table>
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Tailoring Environment to the Post-Tsunami Response in Sri Lanka

The devastation caused by the December 2004 tsunami and the subsequent world response was unprecedented. In Sri Lanka too, a number of aid agencies, along with other public and private sector organizations, took up relief and recovery efforts.

In the past one and a half year, many goals have been achieved, while some challenges are being tackled in the reconstruction and rehabilitation effort. These bottlenecks are hindering the recovery of the communities and the sustained rehabilitation of local economies.

One largely neglected area is ensuring the use of environmentally friendly practices by various stakeholders during the relief, reconstruction and rehabilitation phases. Soon after the tsunami, some agencies, including UNEP, IUCN, CARE and some others, undertook Rapid Environmental Assessments (REA) of the damages. Environmental sensitive guidelines were also developed by IUCN, the Central Environmental Authority (CEA), CARE and other relevant agencies. These guidelines were circulated widely in the hope that their implementation would yield a sustainable rehabilitation of the devastated areas and peoples. However, in the rush to achieve project goals, environmental concerns were marginalized. Consequently, environment is yet to be integrated into the mainstream tsunami response. Thus, the long term well-being of local communities, which is dependant on local environmental conditions, is being compromised.

A good initiative by the CEA together with UNEP is the Environmental Assessment (EA) of tsunami reconstruction. This EA is under process and hopefully would contribute in showing the way forward to mitigating some environmental damages. Recently, the Ministry of Environment (MoE), in collaboration with UNEP, has expressed its intention to carry out a Strategic Environmental Assessment (SEA). SEA is a tool to assess the effects of the proposed tsunami response on the environment. As such, this assessment should have been undertaken prior to the implementation of the reconstruction and rehabilitation plans and programmes. SEA could have provided the policy makers and relevant agencies to do environmentally sensitive planning. Now after one and half years, a lot of damage has already taken place.

Earlier this year, CARE in collaboration with the World Bank and the Consortium of Humanitarian Agencies (CHA) conducted a survey to look into the issues related to environmental infrastructure in the post-tsunami housing reconstruction programme. The purpose of which was to assess the status of environmental aspects in the housing sector and use this as an entry point to start discussions amongst the concerned agencies. All together there is a need of around 90,000 housing units for tsunami victims. The survey generated a good deal of interest and almost all major organizations responded.

1 A shorter Sinhala and Tamil version of this report also appeared in the CHA Newsletter in July 2006
2 UN Habitat; Norwegian Refugee Council; IOM Sri Lanka; UNICEF; USAID's Office of Transition Initiatives; Swiss Agency for Development and Cooperation; ITDG South Asia; World Vision; CHA- Post tsunami Recovery Programme; Plan International; Mercy Corps; CARE International; Solidarity; Belgian Red Cross/French; HELP Germany; Basic Needs Sri Lanka; ACTED Sri Lanka; Seva Lanka Foundation; UMCOR Sri Lanka; HELP from Germany; ITDG Practical Action; JTR; Food & Agriculture Organization; Project for Resettlement of Tsunami Affected Communities; SolidHouse Netherlands
The majority of the respondents, 78 percent, indicated that environment related issues arising out of the post-tsunami reconstruction and rehabilitation projects had largely remained unaddressed. Some organizations did adhere to their own environmental standards. However, in many such cases, the response was not systematic and the on-ground implementation of these standards was poor. Most housing projects were found to have caused severe problems due to the insufficient attention paid to the environmental aspects of reconstruction. In the majority of cases, no Environmental Assessment (EA) seemed to have been undertaken. It was pointed out that environment was added-on quite late during the construction processes and still was not followed up in most cases. Lack of attention for water systems, blocking of natural drainage routes, and indiscriminate removal of vegetation were common. It was acknowledged that the limited knowledge and technical know-how on possible environmental damages and their link with livelihoods on part of most of the aid agencies was a major reason behind this negligence. The poor enforcement of national environmental standards by relevant government agencies along with the pressure to complete the permanent shelters as soon as possible were cited as reasons for environment being sidelined during tsunami reconstruction.

Post-Tsunami Environment Related Issues

Some environmental issues in the post tsunami scenario have been highlighted in the following. These are based on observations during field visits, results of the aforementioned survey as well as discussions with experts.

- **Improper Tsunami Debris Disposal:**

  In the aftermath of the tsunami, debris disposal strategies were either not envisioned or not properly implemented. This led to indiscriminate dumping in nearby forest areas, roadsides or beaches. The debris disposed off into the wetlands probably wreaked the most havoc. Local communities are now finding it difficult to navigate into lagoons, and fishing nets are frequently damaged by entangling. Women, who previously had no trouble catching an adequate supply of prawn at the wetland banks, find access difficult due to the large amount of debris collected here. This has severely limited the sources of livelihoods and daily uses of fish for many communities.

- **Decrease in Wetland Depth:**

  The aforementioned dumping has resulted in a decrease in depth of the wetlands. During the rainy seasons this is causing floods in some areas. This has led to a loss of fertile top-soil in the adjoining agricultural lands. This has also decreased water storage/ availability during periods of drought.
**Deforestation:**

Deforestation in Sri Lanka is a direct consequence of land and timber requirements for the construction of shelters. Huge areas of forested land were cleared to make way for shelter sites. These unplanned measures resulted in habitat loss among other associated issues. Another direct outcome was a decline in the availability of Non Timber Forest Products (NTFPs) for the local communities e.g. firewood, medicinal plants, honey, rattan, bamboo, kithul palm \(^3\), edible plants etc. The livelihoods of many rural communities are directly or indirectly dependant on these NTFPs. According to a FAO report\(^4\), almost fifty percent of the rural population of the country uses more than 1000 plant species as traditional (Ayurveda) medicine.

**Improper Shelter Site Selection:**

During site selection for temporary shelters and later for transitional and permanent shelters, it became common practice to allocate land in forested areas, near water catchments and natural drains, and in some cases right on the migratory routes of elephants. Some of these constructed shelters block rain water from getting to the sea. The resulting floods cause loss of human life as well as damage to properties.

**Increased Human-Elephant Conflict:**

The loss of the elephants’ natural habitat due to the deforestation and encroachment of land for tsunami shelter construction is resulting in increased Human-Elephant Conflict (HEC) and consequently loss of livelihoods (due to crops damaged by elephants). This has led to numerous human and animal casualties. Elephants have also destroyed many newly built houses and pose a continued threat to these poor communities. Siribopura, in the Hambantota District is a prime example in this connection. Here, about 1500 housing units have been constructed by the clearing of over 150 acres of forested area. For centuries, this area had been an elephants’ migratory route. After the construction of these housing units around 26 elephants became isolated, from the rest of their herd, within this area. Many had to be driven away by the Wildlife Department when they started posing threat to humans and property. Same is the case in many other areas where tsunami shelters have been put up in forested lands. In many instances, the driven away elephants are creating problems for those communities which earlier had no or minimal elephant related problems.

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\(^3\) Caryta urens

\(^4\) Forest Resources of Sri Lanka, Country Report by FAO, 2001
• **Sand Mining:**

This is another serious issue. Initially, some measures were taken to process oceanic sand to meet the requirements for shelter construction. However, transportation became an issue and now mostly local sand is being used. This is not only causing erosion but would also slowly lead to a fall in the areas’ water table. Sand mining disturbs the local ecosystem and has negative impacts on fisheries. In time, it would also lead to saline-water intrusion from the nearby sea. The adjoining fresh water bodies and wells could become brackish and saline due to this.

• **Improper Solid Waste Management:**

In many cases, there are no solid waste systems in place for the shelter sites in tsunami devastated areas. The tendency is to dispose off this waste outside the Shelters themselves. This is creating a serious and potentially hazardous situation. The rains take this waste into the water bodies thus increasing water pollution. Heaps of garbage in many areas attracts wild elephants thereby increasing incidents of HEC. To deal with the garbage problem several schemes to create compost from it were started. Some of these initiatives came to a premature end due to a lack of demand for the compost.

• **Over Fishing:**

This is a contentious issue. In almost all tsunami hit districts of the country, Fiber Reinforced Plastic (FRP) boats and traditional crafts supplied by various aid agencies and other private donors, are in excess of pre-tsunami numbers. The use of fine-meshed nets is also a commonality. There is a strong possibility that these conditions could result in over fishing in the long run. However, as a fish stock-taking has not been undertaken it is difficult to estimate if and by what percentages, the local stock is decreasing.

The following table indicates that there could be an estimated oversupply of over 2800 FRP boats and about 650 traditional crafts. Whereas, there would be a shortfall in the supply of multi-day boats & beach seine crafts, if present conditions prevail. However, these figures are based on information provided by the aid agencies in the loop of the MFAR and FAO. There is no compiled information about the number of boats supplied by private donors and other smaller organizations. At the same time, the validity of the pre-tsunami data is also in question as many boats were never registered.
Table 1: Supply of Boats by Aid Agencies

<table>
<thead>
<tr>
<th>Boat Type</th>
<th>Destroyed</th>
<th>Replaced</th>
<th>Balance Pledges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-day boats</td>
<td>187</td>
<td>11</td>
<td>164</td>
</tr>
<tr>
<td>One day boats</td>
<td>276</td>
<td>44</td>
<td>350</td>
</tr>
<tr>
<td>FRP boats</td>
<td>4480</td>
<td>6775</td>
<td>567</td>
</tr>
<tr>
<td>Traditional crafts</td>
<td>11158</td>
<td>11187</td>
<td>637</td>
</tr>
<tr>
<td>Beach seine crafts</td>
<td>806</td>
<td>358</td>
<td>239</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16907</strong></td>
<td><strong>17970</strong></td>
<td><strong>1957</strong></td>
</tr>
</tbody>
</table>

Source: MFAR & FAO, June 2006

The individual and collective impacts of these issues would slowly but surely further deteriorate local environmental conditions and thus the fragile local economies which are dependant on local natural resources. Guidelines in various sectors, developed by relevant agencies, are either not being followed or too broad. Unfortunately, most of the development agencies have not realized the adverse impacts of environmentally insensitive practices during tsunami reconstruction and thus totally ignored this very important sector. Some other agencies have put environment as a crosscutting theme, without the required political will for its integration. Past experience shows that when any sector becomes crosscutting, you never know when it crosses and where it cuts!

It is critical to note that the aforementioned issues are inextricably linked. They cannot be tackled in a stand alone manner. A concerted effort by all concerned/involved parties needs to be undertaken in a holistic and fully integrated manner.

**CARE International’s Post-Tsunami Environmental Initiatives**

Recognizing the possible detrimental affects of the continued neglect of the environment, CARE International has tried to address this important sector. Various steps have been taken to integrate environment into CARE’s efforts for tsunami reconstruction and rehabilitation.

- Immediately after the December Tsunami, CARE Sri Lanka in collaboration with UNEP and the Catholic Relief Services commissioned a study to gauge environmental damage. Based on the findings a document entitled, “Checklist-Based Guide to Identifying Critical Environmental Considerations in Emergency Shelter Site Selection, Construction, Management and Decommissioning”, was developed. This document provides simple checklists to assist in the setting up and functioning of environmentally viable post-tsunami transitional shelters.

- It was realized that to address this pressing issue in a cohesive manner, it was important to create a partnership with an environmental organization. This led CARE to have a Memorandum of Understanding with the World Conservation Union (IUCN) which resulted in having an IUCN Staff member seconded to CARE with an aim of integrating environment into organizational functioning.
CARE International in partnership with the Benfield Hazard Research Centre, and the University College, London undertook the project, Rapid Environmental Impact Assessment in Disasters. This project was launched to study the environmental issues in the immediate aftermath of a disaster. Under this project a document entitled, "Guidelines for Rapid Environmental Impact Assessment in Disasters" was also developed. This document also provides guidelines in connection with the environmental aspects of relief procurement, i.e., "green procurement".

The Resettlement Support Services Unit of CARE, which is responsible for tsunami reconstruction, has provided training to its Staff to carry out Environmental Assessments. During site selection, timber use, and other construction activities all possible care is taken to be environmentally sensitive.

CARE International in conjunction with the UNHCR and the technical assistance of the Benfield Hazard Research Centre has developed an important document, namely *Environmental Assessment In Refugee-Related Operations: A Handbook For Project Managers And Practitioners*. This Handbook has been prepared to assist UNHCR and its Implementing Partner staff and government authorities to improve the way in which environmental considerations are incorporated into decisions affecting certain refugee-related situations.

Local staff in various CARE Offices has been provided with training and environmental guidelines to integrate environmental concerns into their on-ground operations. In this connection, *IUCN Best Practice Guidelines* were used which were made available to them in the Sinhala and Tamil languages.

At CARE, as a policy, all new project proposals include environment as a cross-cutting theme as well as a separate area of implementation, where applicable. In one of the Projects, at Hambantota, funded by the Oak Foundation, CARE has successfully initiated the implementation of a project that includes restoration of damaged ecosystems; biodiversity enhancement; rehabilitation of destroyed turtle beaches and hatcheries; production of audio-visual environmental awareness-raising material; and capacity building. It is expected that the on-ground work and the resulting lessons learned at Hambantota would further help in integrating environmental concerns into CARE’s other projects and programmes in the country.

CARE is also planning to have a pilot run in a village in Hambantota of an initiative to minimize the Human-Elephant Conflict. Methodologies employed in Africa and India are planned to be used where it was found that growing chilies and using chili paste was an effective elephant repellant.
• CARE also commissioned an important study, “Tsunami Impacts on Shallow Groundwater and Associated Water Supply on the East Coast of Sri Lanka” through IWMI. The aim of this initiative was to look at the nature and extent of the impact of the tsunami on the water supply and resources. It was envisioned that the finding of this study would help in designing the recovery plans.

• For the purpose of environmental advocacy, the Post Tsunami Environmental Infrastructure Survey (mentioned earlier) played an important role. This initiative contributed to the revival of the Environmental Forum at CHA. The Forum had been dysfunctional for the last eight months. Subsequently, CARE also made a presentation on the survey’s results in one of the Forum’s meetings. The Environmental Forum could potentially play a critical role in promoting an environmentally sensitive tsunami response by the international and national aid agencies.

• In a collaborative effort between CARE and IUCN, guidelines for tsunami livelihoods rehabilitation from an environmental angle have been developed.

• Another important initiative is contribution to the development of a key publication on “Ecosystems, Livelihoods and Disasters: An integrated approach to disaster risk management”. This is a joint venture among CARE, IWMI, and IUCN. This comprehensive document outlines various environmentally friendly approaches for disaster management, relief and recovery operations.

• CARE has just started the process to explore the possibilities of working towards the development of a Sustainable Fisheries Strategy, in the backdrop of the tsunami, for Jaffna. This initiative will be undertaken in collaboration with the Fisheries Department and IUCN. This would be a first of its kind initiative in the Jaffna Peninsula and would contribute positively towards this sector. The fishing industry is the second highest economic activity, after agriculture providing livelihoods to around 60,000 fishermen in the area.

The idea behind these measures is to mainstream environment into CARE’s functioning. However, there is still many a challenge to be addressed both at the organizational and implementation levels. But it has been realized that the well-being of the communities is positively correlated with the local environmental conditions. Also, the livelihoods of the communities are directly or indirectly dependant on the sustainable use of local natural resources. Thus no measure targeting poverty eradication and social justice would be able to have the desired results unless and until it is environmentally sensitive.

**The Way Forward**

A major step taken by CARE Sri Lanka is its decision to have environment as a cross cutting component in all future initiatives. Also, during the assessment phase for programme and project development, special attention is given to assess the contribution of natural assets, particularly Non Timber Forest Products, to the livelihoods of local communities. It is hoped that in time environment would be fully infused into CARE International’s operations in Sri Lanka and help achieve its objective of poverty eradication in a sustainable manner. The lessons learned from this initiative of environmental integration and thus maximizing on-ground sustainable impacts would regularly be shared with stakeholders at national and international levels.
**Some Suggestions:**

- The need now is for advocacy at the macro-level, targeting aid and government agencies as well as donors. It is of foremost importance to encourage others, including the INGOs and NGOs operational in the country, to be sensitive to environmental issues.

- The Reconstruction and Development Agency (RADA), the main government body responsible for tsunami reconstruction, should play the central role by ensuring that environmental concerns are no longer neglected. However, it urgently needs to review its own understanding and commitment to the environmental aspects of the tsunami response.

- It is also critical that relevant public sector agencies, particularly the Central Environmental Authority (CEA), enforce compliance of the country’s environmental polices and legislation. The CEA, together with UNEP, are currently involved in an Environmental Assessment of the post-tsunami housing sector. It is imperative that this initiative not end with the completion of the study, but rather should initiate the development and implement a strategy to rehabilitate the environmental damages identified through the study.

- Donors too can play a critical role to ensure that environmental considerations do not get compromised in the rush for the completion of project activities. The monitoring and evaluation criterion must include an assessment of the environmental impacts of project implementation.

- In the tsunami affected areas, it was observed that sand dunes, coral reefs, and mangroves acted as barriers against the waves. In Sri Lanka too, communities have realized this and during field visits showed their strong desire to have the damaged sand dunes and mangroves rehabilitated. In some instances, local communities together with NGOs have started planting mangroves. However, a concerted effort is required not only for mangrove rehabilitation but also for the protection of existing coral reefs and sand dunes. A country wide strategy for the protection, rehabilitation, and restoration of these natural barriers would be an important step towards this. The Coastal Conservation Department and the Forest Department, along with other local organizations, have an important role to play. A project, *Mangroves for the Future*, for the rehabilitation of the mangroves in the twelve tsunami affected countries in being planned by IUCN.

- It is important to look into the issue of ‘over supply of boat’ in a broader perspective. Currently planning is being done by the MFAR and FAO to buy back the additional boats to bring their number closer to pre-tsunami numbers in an effort to resolve the presumed concern of over fishing. The issue is that in the absence of any fish stock taking, there is no yard stick against which ‘over-fishing’ could be measured. It is quite possible that in some areas even the pre-tsunami numbers of boats were responsible for over fishing. Moreover, there are other related issue such as fishing by big trawlers; marine pollution; destruction of coral reefs and mangrove, which are the breeding grounds for fish; etc. which contribute towards fish depletion. Considering this it is strongly recommended that fish stock-taking be undertaken without any further delay. FAO, together with MFAR, could undertake this critical task. Moreover, for the long term sustainable economic development of fisheries, coastal communities and the associated industry, an Integrated
Coastal Zone Management (ICZM) Plan for Sri Lanka should be developed and implemented. Technical assistance could be sought from agencies such as the National Oceanic and Atmospheric Administration, perhaps through USAID, and IUCN which have the required capacity to take on this task.

- Environmental organizations should facilitate the process of environmental integration into the operations of major aid agencies. In many instances, the guidelines and checklists developed by them were either too broad or too technical to be implemented by field staff. Hence, these guidelines should be presented to the target audience in a workshop setting, and in some cases locale-specific guidelines should be developed.

- The main guiding documents for emergency response such as the *Sphere Handbook* should have environment integrated as a cross-cutting theme as well as a separate chapter in the handbook. In this way, environmental aspects could be 'inculcated' into the mainstream emergency/disaster responses.

- There is a growing concern regarding the land on which the temporary and transitional shelters are situated. There is a need for a strategy whereby, once the tsunami victims move to permanent housing units, this land is restored and the debris from the shelters properly disposed off. In some cases these shelters are planned to be used by conflict affected Internally Displaced Persons. Many such sites are now in the process of being decommissioned. It seems that many of the implementing agencies did not consider this aspect and as such it was never budgeted for. The Reconstruction and Development Agency (RADA) has recently requested the International Organization for Migration (IOM) to function as the lead agency for transitional shelter care and maintenance. At this time it is imperative that environmental aspects of this issue should not be ignored yet again. The Forest Department and the Coastal Conservation Department could also take it up with other relevant organizations.

- The Environmental Forum has the potential to play a critical role to advocate for an environmentally sensitive tsunami response. The need is to promote an exchange of ideas amongst the various sectoral Forums. This could be accomplished by inviting experts from other sectors; e.g., livelihoods, housing, water and sanitation, etc., to this Forum. Similarly, environment experts should be facilitated to give input into Forums for other sectors.

- The challenge remains for the environmental organizations to fittingly ‘market’ environment to the disaster/emergency response agencies. It is one of the major stumbling blocks in the integration of environment into the post-tsunami response. Even today, environment is considered to be a para-disaster response. Environmental organizations need to demonstrate, perhaps through pilot projects, that environmentally friendly actions would enrich their response rather than cause delays and add an extra layer to the disaster initiative.
All stakeholders, particularly aid agencies, must realize that environment is no more a luxury or ‘something’ for future generations. It is a case of here and now and any more negligence on their part could seriously jeopardize the sustainable recovery and rehabilitation of tsunami-affected communities.

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