

# **Tsunami Situational Report on Sri Lanka:**

With the Special reference to Environmental situation

By

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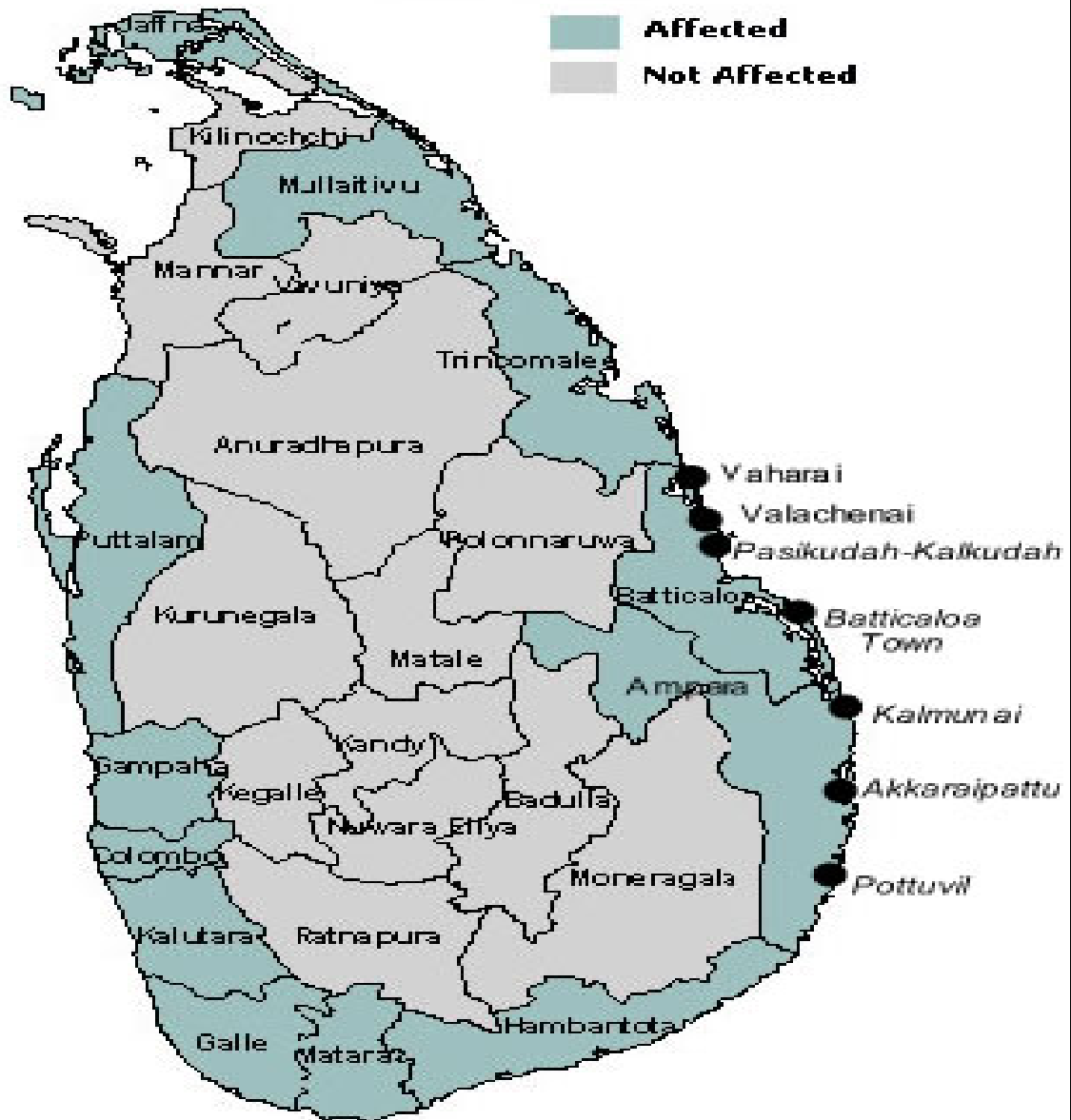
## **Global Over View:**

‘On December 26, 2004, a magnitude 9.0 undersea earthquake off the west coast of northern Sumatra, Indonesia, unleashed a tsunami that affected more than 12 countries throughout south and Southeast Asia and stretched as far as the northeastern African coast. Within six hours the deadly waves traveled more than 3,000 miles and carved a trail of death and destruction as they arrived on land. Current official estimates indicate that more than 250,000 people are dead or missing, and millions of others are affected, including the injured or displaced’ (PAR-05) The World Health Organization (WHO) indicates that an estimated three to five million people lack the basic necessities for survival; between one and two million people may be displaced. In many places the physical environment is badly damaged or destroyed, including entire communities, homes, businesses, tourist areas, and infrastructure (roads, bridges, power and telephone systems, and public buildings). For many their means of livelihood and way of life has been wiped out. In the hardest hit areas, social services are severely compromised or nonexistent. Experts have said this is the most powerful earthquake in 40 years and the fourth (and perhaps the second) most deadly in the last century. Estimates of the dead make it the worst tsunami disaster on record.

## **Tsunami havoc in Sri Lanka:**

‘The Indian Ocean tsunami hit Sri Lanka particularly hard, killing over 35,000. An estimated 40% of those killed in Sri Lanka were children. Between 441,410 and 504,440 were homeless, UNOCHA, 2005. Of these, an estimated 186,000 are thought to have been taken in by friends and family while some 250,000 were placed in welfare centers and makeshift camps. As 4,700 people were missing and Tsunami related damages have been estimated at \$1.8 billion. Sri Lanka has requested some debt forgiveness and a two-year hold on its \$8.82 billion debt.’ (CRS). Due to tsunami life and livelihood of Sri Lankan People disrupted and whole economy is in jeopardy. The natural coastal structure and environment suffered significant changes up to one kilometer from the shore. The tsunami also triggered the displacement of up to 5,00,000 persons, with the total affected population exceeding 1,000,000, (CHA, Decmber, 2005).

## Districts Affected



Source: IUCN – The World Conservation Union

### Situational Assessment on Environment, Sri Lanka:

I have been visited to Aprare, Galle and Trincomalee, Sri Lanka with the special CTF-Tsunami team to study and assess the situation of some worst tsunami affected areas after the One-year of its occurrence. As per the study and observation I got almost same type of problem and situation prevailing in three areas as well. In this report ,I focusing mainly on the Environmental situation area wise as follows.

## **Ampara:**

Ampara is one of worst affected areas as far we covered during our trip and the most of the affected areas of Sri Lanka. Interestingly whole community working together for development in their respective areas in planned way. Most of the affected community mentioned, there should be strict application of Two hundred meters of Seashore, as “buffer Zone” and wave protecting measures should be taken by government. It is also essential to planning for future hazards like sea storm, cyclone or even floods as the most of the tsunami affected areas of coastal areas of the districts are low land area/ below sea level.

## **Environmental Situation**

After the even one year the environmental condition in terms of water & sanitation waste management, drainage and sewage is in worse condition. It causes lots of health hazards and loss of working days within the communities. The major environmental problems are given below;

**Water and Sanitation:** As per our study most of the people displaced from their original homes and staying in temporary shelter facing water crises. The temporary shelters and settlements are not connected water and the water supplied by various GOs and NGOs not sufficient for their basic needs. There is also acute sanitary problems, which make their life hazardous. Due to in present worst sanitary system people frequently falling sickness and dengue and malaria and other mosquito related diseases. People also mentioned the toilet given to them is not sufficient (e.g. 10-12 families using 2-3 latrines). Which leads to number of health problems like dehydration and diarrhea. Doctor also mentioned there is spreading of hepatitis A and yellow fever and other viral diseases now.

**Solid waste:** With the tsunami the remaining of the waste like stones, remaining of the household goods, boat and trees still there it is not properly dumped or managed. There are other substantial hazardous waste like waste engine oil, black plastic, rubber tires and net wares which will cause health hazard in long run.

**Salinization:** With the tsunami the ground water is contaminated by saline water. The government official and doctor mentioned the watercolor is changed after tsunami. The fertility of the soil also less as we observed and discussed with the community.

**Infrastructure- (Hospital and Education):** With the tsunami whole infrastructure of coastal Ampara district was heavily destroyed. Now the road and mass communication system restoration process is going on now. The main hospital is totally disrupted due to tsunami right now it functioning in a community hall and proposal is going on for permanent hospital in this Kalmunai area. The school is also destroyed due to heavy water force. Now various international donor agencies supporting to construction the school and restoring the whole infrastructure. The school dropouts are one of the major problems

with the present situation. There is also urgent need of drainage and sewerage for safe environment.

### **Galle:**

During my visit to Galle e.g.; Beruwela, aluthgama, Benthotti, Induruwa, Kosgoda, Aluthgale, Balapitiya, Ampalangoda, Polwatte, Hikkaduwa, Gintotai, Mahamodai and Galle, I found the condition of the people still remains static as before in the initial days. After tsunami people loss their house, means of livelihoods (net and boots) and mentally they are depressed.

#### **Environmental Situation:**

As most of the tsunami camps are setup in down town or hill side because there is no specific site provided by the government for temporary or permanent settlement. Most of the campsites are in venerable condition and unsafe environmental condition. We saw in the most of the camp where People are leaving in the small compact houses and without proper drainage & sewerage system. People dump their household waste near to their houses, which makes the all leaving environment more unhealthy and unsafe. Also those people who are leaving in the hill sites there are lot of chance of landslides and near public drainage and stagnant water. As government and NGOs are put some relief camps which are not safe to environment and their life as well.

#### **Water and Sanitation Situation:**

Water and sanitation is on a drastic condition even after one year from the mishaps. There is not sufficient clean water provided to the campsites, people waiting for long time even one day to get drinkable water. As people leaving in a temporary shelter there is no possibility of hygienic sanitary provision to all people within the camp. There are some people leaving in a health problem due to poor hygienic condition. We have seen in the camp, only 6-8 toilets provided by the different GOs and NGOs for 21 to 25 families. With coming of rainy season the situation become worsen and people within the tsunami camp suffering a lot.

#### **Solid Waste Management:**

As per my observation in the tsunami revised areas, the waste is dumped in everywhere and making unhealthy condition and unsafe for leaving. Peoples were not thinking about their surroundings and prevailing situation rather arranging their livelihoods. There is no machinery either in government or private to aware or train for waste management. As still people staying in near by the sea and violent the set back notice given by government.

### **Trincomalee:**

Trincomalee is one of the worst tsunami affected Northeastern province of Sri Lanka. It is unique province where all three communities (Tamil-Muslim-Singhalese) represented more or less equally. It is also one of the civil war affected areas where people are suffering from prolong war since two decades. During the visit I contact with various

affected community, INGOS and Government official and take their view and suggestion and constructive remarks for improving prevailing conditions. The environmental condition still in a worse condition and people still acute unhealthy condition. People already feeling about the climate change and lot of impact on both flora and fauna. Now we studied there are lots of mismanagement and no coordination and cooperation between the different donor agency, NGOs INGOs, GOs and community for the distribution of goods and assistance toads bringing back the normalcy. Restoration of livelihood is big challenges in Trincomalee districts.

### **Environmental situation:**

#### **Waste Management**

Waste management is one of the major concerns in tsunami-affected areas of Trincomalee province. Still there are lot of ravis dumped in various part of the affected areas. The waster generated by the household and small-scale industries polluting the whole environment. Mostly the rabbis from the old and damaged boat toxic color and engine oil contaminated the soil as well as the water of the sea beach. Government also not allocated proper dumping place to manage the waste. This waste will make big problem in coming days if not taken proper attention on it.

#### **Drainage and Sewerage**

Drainage and Sewerage is totally disrupted during tsunami and now because of its geographical condition and improper management on it. Due to civil war and improper housing policy of the government the drainage and sewerage system totally failed mostly in the tsunami affected areas even one year after. Frequent Due to the worst drainage and sewerage system in tsunami affected Trincomalee, frquent flood like situation even little rain.

#### **WASH (Water, Sanitation & Hygiene)**

Water, Sanitation is one of the biggest problems in this tsunami-affected areas and it directly related with Hygiene. As I already mentioned the water is mostly contaminated due to improper management, waste dumping and with the disrupted drainage and sewerage system. Clean and safe water is mirage in most of the tsunami-affected areas of the Trincomalee. Most of the people affected due to mosquito related diseases and most of the people leaving in the unhygienic conditions and unhealthy conditions prevailing there. Most of the doctors mentioned after tsunami people mostly affected water borne diseases and stomach problem.

#### **Territorial Environmental Assessment:**

Tsunami brings tremendous impact on territorial eco-system on Sri Lankan peninsula. I studied as the climate of the Coastal Sri Lanka and people facing lot of problem like unsystematic rainfall, frequent low-pressure humidity and thick fog. Some researcher

predict in future many natural disaster like; flood, landslide, drought, cyclone, tornado will be occur frequently and subsequent problem will be happen as well. The water level also changed and salinated after the tsunami occurrence. Some of the major territorial changes in Sri Lanka as follows:

- Human settlements have generally suffered most damage and reported greatest loss of life when these were located between 25-200 m from the HWL and the landscape was flat and of low elevation.
- Wells in all tsunami-affected area have been uniformly contaminated by salt-water intrusion and in some cases by human wastes.
- Soil in agricultural and other types of lands within the tsunami-inundated areas has been severely affected due to increased salinity conditions, forming a dry crust on the surface of the soil in many areas.
- Beaches in general have suffered extensive erosion and sand migration, with some beaches suffering over 50% loss of beach width and up to one-meter loss in height. Much of the gentle seashore Pandanus and creeper vegetation have been significantly damaged.
- There is also a large amount of organic and inorganic debris on most beaches.
- Palmyrah trees have suffered extreme and widespread damage, even when located in far inland areas, indicating their low resistance to high soil salinity conditions. Coconut has been relatively less affected.
- The invasive alien prickly pear cactus has been found to be regenerating in some inland areas.
- Damage to home gardens has varied depending on distance from the sea and on the salt tolerance of individual species.
- Trees like Neem, Mango, Tamarind, Indian Willow, Banyan, Temple tree, Oleander and
- Tulip tree located in the tsunami-inundated areas were found to be relatively less damaged, particularly in the distal areas. Banana was found to be stressed in several cases. In general, the species-richness of fauna in severely affected home gardens was found to be very low.
- Lagoons assessed under this study were not found to be significantly affected other than through the deposition of sand and debris in some of them.
- Narrow mangroves stands immediately adjacent to the sea or along the banks of lagoons close to the sea were observed to be severely damaged by the tsunami

waters. However, in the case of dense broad mangroves, only the frontline trees growing in the first 2-3 m were found to be affected with less damage caused to the inner stands.

- A number of environmental impacts of post-tsunami activities were also observed. These included the following:
  - i. Haphazard burning of debris
  - ii. Haphazard disposal of debris
  - iii. Deterioration of environmental health conditions in urban areas
  - iv. Location of temporary relief camps in ecologically-sensitive areas
  - v. Intensive use of timber in temporary settlements
  - vi. Damage to unaffected agricultural crops by free-roaming goat and cattle

The 2004, December, 26<sup>th</sup> tsunami disaster causes lot of damages to flora & fauna and total costal ecosystem of the Sri Lankan island as well. As it will be remained as greatest natural disaster ever human being ever faced. Total environment is disrupted due to massive tsunami waves. It will be take long time to recover its previous form. The water supply, health and sanitation, waste management remains static as it was in initial days. There should be need lot of cooperation between government and nongovernmental organization and affected people to overcome from the national problem. There should be much need of Government intervention for proper national disaster policy and planning for management of this issue successfully.

#### **Need for Intervention:**

1. Government has to set up and coordinate all issues related to multi hazard issues.
2. Environmental review committee should be setup and analysis whole issue related to environment/disaster quarterly.
3. Sri Lankan government should make sustainable environmental plan and policy.
4. There is a great need of coordination and cooperation among the Government official, INGOs and NGOs to aware and train common people for sustainable environmental management particularly costal areas of Sri Lanka.
5. Government also take bold step to protect marine ecosystem and environment as well by planting mangrove trees which is much effective mechanism to protect future disaster like tornado, cyclone and tsunami.

**Recommendation/Feed back towards the Environmental impact on Tsunami (Particularly CTF point of view):**

During the visit to Ampara, Galle and Trincomalee and study the environmental impact of the Tsunami, I realize there is great need of environmental awareness and training required in these areas. There is a multi hazard warning system and CBDRM module and mechanism with trained disaster (volunteer) team from CTF should be formed, which can be helpful for them in long run. Still I feel, as it is my first trip and desperately need more trips to study the present situation and need of the people in depth. I think there is need for research on some key areas like Water & Sanitation and related issues. I am preparing to do a in depth study and research on this issue and I cooperation and help from CTF secretariat and Trincomalee field bureau to workout this noble initiatives.

1. There are proper coordination needs between field bureau and CTF-Sectriate on tsunami related issues.
2. There is more need of study and research on tsunami Impact on Environment as well as the socio-economic issues.
3. There should be cooperation and coordination among the community, NGOs INGOs, GOs and UN bodies on tsunami related issues and properly management.
4. There are more trips to the Trincomalee required for ous to study and know in-depth various issues related to tsunami after one year as it is our delayed and first time visit.
5. There are need for super vision from the CTF secretariat and arranging some disaster preparedness and management training progamme, mainly on Community level Disaster preparedness and Management programme.

**Future plan of Action with CTF for Sustainable Environment in Tsunami Affected Areas of Sri Lanka:**

1. Providing Training on Healthy Environment and health (best) practices with CTF field bureau from May 2<sup>nd</sup> week.
2. Starting Environment Awareness campaign with CTF field bureau (Ampara, Trincomalee and Puttalam) in Tsunami affected areas. (May 15<sup>th</sup> Onwards)
3. Arranging seminar and workshops related sustainable Environmental management.
4. Pursuing Governemnt official and donor agencies to assist and support 3R-Environmental Practices (Reduce-Recycle-reuse).
5. Identifying more venerable groups in disaster prone areas and support to improve the environmental status and related issues like –(Psycho-social health) and hygiene.

## **Conclusion:**

In conclusion, Government Organizations, Non Government Organizations, civil society and international Organizations/community should work together to meet this present need of the suffering people and working towards sustainable Environmental Development. Tsunami is one of the greatest tragedies in the earth, which human being ever faced and Sri Lanka is one of the worst affected country as well. There should be great need of cooperation and coordination between the government and NGOs and affected community for bring back the normalcy. The assistance should be reach to the people timely and it should be manage properly Tsunami brings lots of Destruction and opportunity as well, Destruction in terms of damage in infrastructure and environmental system and opportunity in terms of development as lot of funds comes to the area. The whole Tsunami scenario can be divided in to three phases, (i) devastation,(ii)reconstruction and development .As I studied and discussed with the various community and affected people CTF has done some tremendous work mainly restoring the water and sanitation in the affected areas of Trincomalee province. There is great need from the all parts of the community, Nongovernmental Organizations, INGOs, donor agencies and government organizations to coordinate, cooperation for effective management the disaster related issues in the area. Government also already started some short of long term planning as they prepared “Towards a safer Sri Lanka Road map for Disaster Risk Management”, which can be help full for developing long term multi hazard disaster preparedness/management system in Sri Lanka. Government should support to school and university researcher and student to study and research various aspect disaster, Environmental impacts like climate change and best practices with different Asian countries and International Organizations.

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N.B: Finally every body should contribute their best to bring back normalcy and livelihood of the tsunami-affected people of the Sri Lanka.

## **Source: IUCN – The World Conservation Union**

UNDP, Sri Lanka Report on People consultation on Post Tsunami Relief,

Reconstruction and rehabilitation in Sri Lanka, July-September 2005

National Rapid Environmental Assessment - Sri Lanka

UNICEF on February 11, 2005.

CRS Report, 2005, USAID

Observation and study during my field visit to Ampara, Galle and Trincomalee-  
2005/ 06