

Rebuilding of Regions Affected by the Tsunami

The tsunami of December 2004 destroyed the coastal regions of the Indian Ocean. The affected areas must now be rebuilt, and lessons learned from the disaster can be employed to ensure that future tsunamis are not as damaging. Safety of civilians and the environment must be kept in mind when dealing with the issues of cleaning, rebuilding, and protecting the areas.

Debris has been scattered across the coastlines of the Indian Ocean, making areas now covered in waste unsafe for human living. The thousands of tons of waste contain oil and many other environmentally damaging substances, which do not only deteriorate the environment, but also human health. Nations affected have already begun removing rubble from the areas so that rebuilding efforts can be made.

Sewage and salt water entered the water systems when the tsunami damaged pumps, wells, and septic tanks. According to a UNEP assessment, “60,000 wells and 15,000 hand pumps contaminated, damaged or destroyed” in Indonesia alone. In the Maldives, 90 percent of the water supply has been damaged. Sri Lanka has 62,000 wells contaminated by salt water, while Thailand has issues of wells contaminated by sewage.

The large amount of salt water washed onto the land has decreased the soils fertility. In some cases, the salt content of the soil is twice the level local plants can tolerate. The agriculture industry has heavily hit by the disaster, with thousands of hectares impacted by the exposure to salt water.

Sri Lanka has declared that the land from the ocean to 200 meters above the high tide line will be a “no build zone.” The practice of moving buildings to safe elevations has been used in the Pacific Ocean, where tsunamis are common. Being a major part of the areas economy, the tourism industry has been encouraged to relocate farther back, so that a future tsunami will not be as destructive.

The environment must also be protected, as studies have shown that the presence of healthy reefs and vegetation drastically decreased the intensity of the wave. These habitats are important for wildlife, and attract tourism, which in turn helps the nations economy.

Past Action

2005 The UNEP Asian Tsunami Task Force adopted the Cairo Principles, 12 guiding principles to help the rebuilding of the coastal areas affected by the tsunami.

The Cairo Guiding Principles (as decided by the participants of the UNEP Coastal Zone Rehabilitation and Management in Regions Affected by Tsunami meeting)

Principle 1 (overarching Principle) - Reduce the vulnerability of coastal communities to natural hazards by establishing a regional early warning system, and

applying construction setbacks, greenbelts and other no-build areas in each nation, founded on a science-based mapped 'reference line'.

Principle 2 – Promote early resettlement with provision for safe housing; debris clearance; potable water, sanitation and drainage services and access to sustainable livelihood options.

Principle 3 – Enhance the ability of the natural system to act as a bioshield to protect people and their livelihoods by conserving, managing and restoring wetlands, mangroves, spawning areas, seagrass beds and coral reefs; and by seeking alternative sustainable sources of building materials, with the aim of keeping coastal sand, coral, mangroves and rock in place.

Principle 4 – Promote design that is cost-effective, appropriate and consistent with best practice and placement of infrastructure away from hazard and resource areas, favoring innovative and soft engineering solutions to coastal erosion control.

Principle 5 – Respect traditional public access and uses of the shoreline, and protect religious and cultural sites.

Principle 6 – Adopt ecosystem-based management measures; promote sustainable fishery management in overfished areas, and encourage low impact aquaculture.

Principle 7 – Promote sustainable tourism that respects setback lines and carrying capacity, benefits local communities and applies adequate management practices.

Principle 8 – Secure commitments from governments and international organizations to abide by these Principles and build on and strengthen existing institutional arrangements where possible.

Principle 9 – Ensure public participation through capacity building and the effective utilization of all means of communication to achieve outcomes that meet the needs and realities of each situation.

Principle 10 – Make full use of tools such as Strategic Environmental Assessment, spatial planning and Environmental Impact Assessment, to identify trade offs and options for a sustainable future.

Principle 11 – Develop mechanisms and tools to monitor and periodically communicate the outcomes of the reconstruction through indicators that reflect socio-economic change and ecosystem health.

Principle 12 – Widely disseminate good practices and lessons learned as they emerge.

Addressing Critical Issues

When drafting a resolution, consider the following problems:

- The regions affected by the tsunami were not prepared for a disaster on such a large scale.
- The tsunami has created all kinds of waste, including oil and nuclear waste, which have been scattered all across the affected areas.
- Freshwater supplies have been damaged and contaminated by seawater and sewage.
- The economies of the affected nations have been damaged by the loss of buildings in the coastal regions and agricultural failure due to high salinity in the soil and water.
- Coastal forests and coral reefs have been significantly damaged.
- Marine wildlife is trapped in fishing equipment that was lost during the tsunami, creating an unbalance in the areas food chain.
- Beaches have been eroded, placing new sediment in ports and harbors.
- Steps must be taken to prevent such a future catastrophe.

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