



# DISASTER RISK REDUCTION IN TOURISM

Disaster Reduction through Awareness, Preparedness and Prevention Mechanisms  
in Coastal Settlements in Asia – Demonstration in Tourism Destinations

## SHELTER ASSESSMENT MODEL

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## Table of context

<b>Introduction.....</b>	<b>3</b>
Background .....	3
<b>Shelter assessment.....</b>	<b>3</b>
The Shelter Assessment Model.....	4
<b>Appendix A - General part of shelter assessment.....</b>	<b>5</b>
<b>Appendix B - Specific part of shelter assessment .....</b>	<b>7</b>

# Introduction

## Background

The main objective of the project “Risk Reduction in Tourism Destinations” is to increase the disaster management capacity of the main stakeholders in three tsunami hit tourism destinations (i.e. Kanniyakumari in Tamil Nadu State of India, Patong in Phuket and Pi-Pi Island in Krabi in Thailand). This will be achieved by improving the local authorities’ and the private sector’s ability to manage natural and man-made disasters and by training the residents and tourists how to properly prepare and react to disasters.

In the APELL demonstration the APELL methodology was applied (hands-on) in each community to develop the integrated emergency response plan. The purpose of the APELL demonstration was to show how APELL can be implemented under local conditions, while also providing hands-on training to concerned stakeholders on local cooperative action to improve community awareness and emergency preparedness. The result of the APELL process in each community will be a new or renewed integrated emergency response plan.

Based on the work described above, this part of the project will focus on the shelter issue and result in conclusions and recommendations for a new or renewed shelter plan for each one of the three destinations.

## Shelter assessment

Studies show that survivors from disasters often prioritize shelter in the following order<sup>1</sup>:

1. To remain as close as possible to their damaged or ruined homes,
2. To move temporary into the homes of families or friends,
3. To improvise temporary shelters as close as possible to the site of their ruined homes,
4. To occupy buildings which have been temporarily requisitioned,
5. To occupy tents erected in, or next to, their ruined homes,
6. To occupy tents on campsites,
7. To be evacuated to distant locations.

In this project we will focus on priority number 4 above, i.e. when people are evacuated to occupy temporarily requisitioned buildings or constructions. In order to decide what buildings or constructions that are suitable for temporarily shelters there are many factors that have to be evaluated. For an example depending on type of disaster or number of affected people, we might choose a specific type of shelter. Other factors such as target group or time phase of interest will also affect the choice of shelter.

A general model for shelter assessment has been developed and will be used in this project. The model is described in the next section.

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<sup>1</sup> Office of the United Nations Disaster Relief Coordinator, “Shelter after Disaster, Guidelines for Assistance”, New York 1982.

## The Shelter Assessment Model

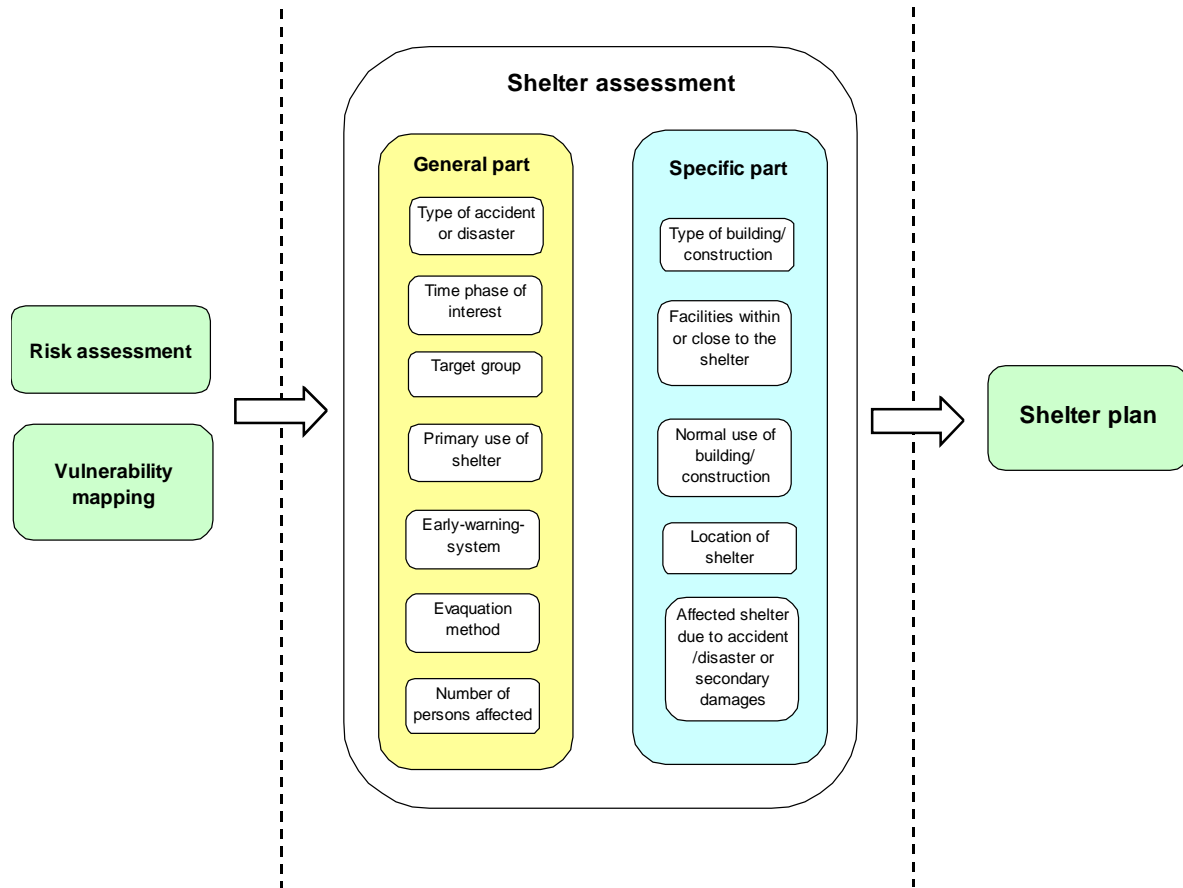


Figure 2. Illustration of the Shelter Assessment Model.

The Shelter Assessment model in this project is divided into two separate parts. With input from the risk assessment and the vulnerability mapping the first part (General part) contains general questions about the type of disaster or accident, the target group, time phase of interest, primary use of interest, early warning system, evacuation method and number of persons affected. The general part is used to define and clarify basic conditions before the second and more hands-on part of the assessment begins. The specific part is focusing on local conditions such as evaluation of different buildings, location of the shelter, normal use of the shelter, facilities within or close to the shelter and if the shelter can be affected by secondary damages. A detailed description for each step in the shelter assessment model is found in appendix A and B.

## Appendix A - General part of shelter assessment

<b>Type of accident or disaster?</b>	What kind of accident or disaster is of current interest?
	Does the accident or disaster have different scenarios? Magnitudes?
	In order to advance with the shelter assessment it is necessary to choose a dimensioning scenario for each accident or disaster.
<b>Time phase of interest?</b>	<p>Which one of the following time phases is interesting for the shelter assessment:</p> <ul style="list-style-type: none"> <li>• Immediate relief period (impact to day 5),</li> <li>• Rehabilitation period (day 5 to 3 months),</li> <li>• Reconstruction period (3 months onward)?</li> </ul>
<b>Target group of interest?</b>	<p>What is the target group for the assessment?</p> <ul style="list-style-type: none"> <li>• General public (specific groups)</li> <li>• Key positions or organizations in disasters such as police, fire brigade, local authorities, decision-makers, etc</li> <li>• Others.</li> </ul>
<b>Primary use of shelter?</b>	<p>What will the primary use of the shelter be?</p> <ul style="list-style-type: none"> <li>• Protection against cold, heat, wind and rain?</li> <li>• Storage of belongings and protection of property?</li> <li>• The establishment of a staging pint for future action (including salvage and reconstruction, as well as social reorganization)</li> <li>• Emotional security and the need for privacy</li> <li>• Accommodation, for families who have temporarily evacuated their homes for fear of damage</li> <li>• Health care?</li> <li>• Food distribution?</li> </ul>

<b>Early-Warning-System?</b>	<p>Is the area equipped with Early-Warning-System for the chosen disaster or accident?</p> <p>How will his affect the evacuation method?</p>
<b>Evacuation method?</b>	<p>What method for evacuation is the most likely?</p> <ul style="list-style-type: none"> <li>• Spontaneous</li> <li>• Spontaneous, but with guidance from local authorities?</li> <li>• Evacuation planned and organized by local, regional or national authorities?</li> </ul>
<b>Number of persons affected?</b>	<p>According to the risk assessment and vulnerability mapping, how many people will be affected by the accident or disaster (dimensional scenario)?</p>
	<p>According to the risk assessment and vulnerability mapping, how many residents, hotels etc will be affected by the accident or disaster (dimensional scenario)?</p>

## Appendix B - Specific part of shelter assessment

Appendix B - Specific part of shelter assessment	
<b>Type of building/construction</b>	What construction method is used for the shelter?
	Does the building have disaster resistant structures?
	Is the shelter suitable for the chosen type of accident or disaster?
	Does the shelter have reasonable water and sanity facilities due to time phase of interest and number of persons hosted?
	Is the capacity of the shelter enough compared to the number of persons evacuated?
	Is the shelter safe for its normal use?
<b>Where is the shelter located?</b>	Is the location suitable for the evacuation method?
<b>Normal use of the building/construction</b>	How is the presumptive shelter used under normal conditions?
	Does the building have specific normal use that can be of special interest in case of being used as a shelter? <ul style="list-style-type: none"> <li>• Hospital?</li> <li>• Official buildings?</li> <li>• Capacity to host many evacuated people?</li> <li>• Good water supplies?</li> <li>• Etc.</li> </ul>
	Does the building have to be evacuated before being used as a shelter?
	What preparations can be done to speed up the use of a building as shelter in case of emergency? Agreements? Contracts?

<p><b>Is it possible that the shelter will be affected in the accident or disaster?</b></p>	<p>Due to the accident or disaster, is the shelter located to reduce the risk of being affected itself?</p> <ul style="list-style-type: none"> <li>• Geographic location in relation to accident or disaster?</li> <li>• Topographic matters?</li> </ul>
	<p>Is it possible that the evacuation route will be affected by the accident or disaster?</p>
<p><b>Possibility of secondary damages</b></p>	<p>Is it possible that the shelter will be affected by secondary damages such as:</p> <ul style="list-style-type: none"> <li>• Landslides,</li> <li>• Fallen trees,</li> <li>• Demolished buildings or constructions,</li> <li>• Power loss,</li> <li>• Contaminated drinking-water,</li> <li>• Damages to industries or other buildings or installations with chemicals or hazardous material or substances,</li> <li>• Etc.</li> </ul>