

# Contingency Planning

## A Review of Selected Guidelines and Plans



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Baseline - Study

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## 1. Introduction

In May 2005, the Indonesian government together with UN agencies conducted a two day lesson learned and best practices workshop on the national and international response to the tsunami disaster of 26 December 2004. A number of main problems and the emerged relevant recommendations were then documented in the workshop summary: beside issues related to institutional and legislative framework, response mechanism, stand-by arrangements and early warning / awareness raising, contingency planning was one of the issues identified.

In January 2005, John Twigg, Honorary Senior Research Fellow, Benfield Hazard Research Centre, University of London and Richard Choularton, Contingency and Response Planning Advisor, Famine Early Warning Systems Network (FEWS NET]) stated in their paper titled “The Asian Tsunami: The Implication for Preparedness and Contingency Planning”:

*“...despite of the significant improvements in preparedness; humanitarian organizations had undertaken virtually no contingency planning for a major tsunami in the Indian Ocean. The most likely explanation for this is a classic dilemma for planners: should you plan for events that are the most likely or the most destructive...”?*

Lessons learnt from the December 2004 tsunami identified by Government, UN agencies, and humanitarian organizations concluded that they should reprioritize contingency planning efforts to ensure that low probability yet catastrophic disasters, such as a tsunami are adequately reckoned in disaster management plans. Some tsunami-prone countries or states, including Indonesia have recently developed tsunami contingency planning for their relevant areas, while humanitarian organizations which are working in tsunami-prone countries also have made significant progress in mainstreaming tsunami contingency plans into their management and operations.

This document provides a brief review on a tsunami contingency plans which have been developed by several districts in Indonesia, the city of Fort Bragg in California, and the Gisborne district in New Zealand. Gisborne and Fort Bragg can be affected by far field as well as near field tsunamis. In regard to the terminology, other countries may perhaps apply different terms, such as “tsunami emergency plan” or “tsunami response plan”.

The author has, in the beginning of the document, briefly provided an overview on contingency planning guidelines, that have been developed by the Inter-Agency Standing Committee (**IASC**), the International Red Cross and Red Crescent Societies (**International Federation**) and the Indonesian National Agency for Disaster Management (**BNPB**). It is clear however that the author realizes that aside of the above mentioned institutions; both other humanitarian institutions as well as government agencies of other countries have also designed their own contingency plan guidelines. The three mentioned institutions represent different mandates, where the IASC addresses guidelines for UN members, the International Federation the Red Cross and Red Crescent Societies and non-

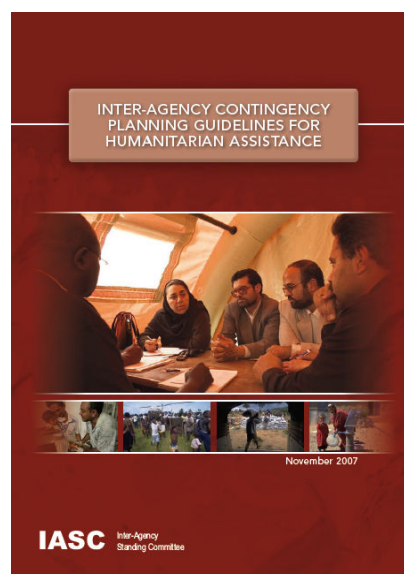
government organizations, whereas the BNPB addresses the government institutions.

In the end of the document the author provided references of the reviewed contingency planning guidelines and tsunami contingency plans.

## 2. Selected Tsunami Contingency Planning Guidelines

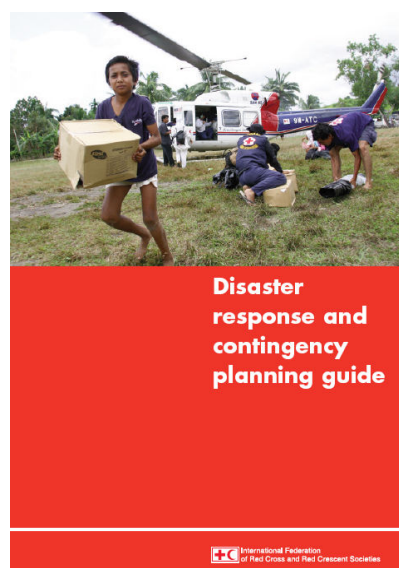
### a. The Inter-Agency Standing Committee (IASC)

IASC established in June 1992 in response to the United Nations General Assembly Resolution 46/182 on the strengthening of humanitarian assistance. It is a unique inter-agency forum for coordination, policy development and decision-making involving key UN and non-UN humanitarian partners. The first version of the Inter-Agency Contingency Planning Guidelines for Humanitarian Assistance was developed in 2001. These guidelines have served as the principal reference document for inter-agency contingency planning. The guidelines have been revised in 2007 through a collaborative effort and consultative process under the guidance of the IASC Sub-Working Group on Preparedness and Contingency Planning, that consisted of members from CARE, ICRC, IFRC, OCHA, UNDP, UNHCR, WHO and co-chaired by WFP and UNICEF, which then had served as the principal reference for inter-agency contingency planning.



### b. The International Federation of Red Cross and Red Crescent Societies (The International Federation)

The International Federation of Red Cross and Red Crescent Societies (IFRC), founded in 1919, is the world's largest humanitarian organization, comprising of 186 Red Cross and Red Crescent society members. The 2007 guideline was developed through a two year process of dialogue and peer reviews from International Federation members. It has since then served as a working tool for disaster response staff within the International Federation at local, national, regional and global levels.



### c. **The Indonesian National Agency for Disaster Management (BNPB)**

The Law 24/2007 on Disaster Management replaced the previous disaster management agency Bakornas PB by the new Indonesian National Agency for Disaster Management (BNPB - Badan Nasional Penanggulangan Bencana Indonesia). Formally established in 2008, the BNPB has two main functions: a) to formulate and issue policies on the handling of disaster management, as well as handling displaced populations in an effective manner and b) coordinate the implementation of disaster management activities in a planned, integrated, and comprehensive manner. The 2008 developed guidelines are governed by Government Regulation 21/2008 on Disaster Management Implementation and BNPB Head Decree 21/2008 on Disaster Management Planning Guidelines.



## **3. Review of the Selected Guidelines**

The review of the Contingency Planning Guidelines developed by **IASC, the International Federation and BNPB** was done in accordance to the following topics:

- a. Objectives and Principles of the Guideline Development,
- b. Key Concept of Contingency Planning Guideline
- c. Planning Process and Steps.
- d. Available References Provided in the Guideline

### **a. Objectives and Principles of the Guideline Development**

The three institutions had written the guideline under the understanding that **governments, both national and local, hold primary responsibility** for providing humanitarian assistance to people in need, which is then supported by national and international communities. Therefore, it is essential to work on response and contingency plans **in consultation and cooperation** with the government that will have to implement or approve them.

Due to this, the IASC uses this guidance to outline how the international humanitarian community can organize itself to **support and complement** national action, while the International Federation view their contingency planning as an on-going activity, which enables *the Red Cross Society* to test and refine existing plans, integrate new partners, and orient staff and volunteers over time **in consultation and cooperation** with the government.

The Process is as important as the plan. The three institutions refer to their document as practical guidance or working tool, rather than a strict rule, and consider the

planning process during the development of the contingency plan is as important as the plan itself.

**Box 1**  
**Objectives of Contingency Planning Guidelines**

*IASC: As a practical guidance for Humanitarian Country Teams involved in providing international assistance and protection to those affected by emergencies*

*The International Federation: As a working tool for disaster response staff from within National Red Cross and Red Crescent Societies and the International Federation working at local, national, regional and global levels*

*BNPB: as a tool for all actors involved in contingency planning development in Indonesia and to provide knowledge and framework in contingency planning in Indonesia.*

Many useful outputs of contingency planning come from the *process* through which the plan is developed. The importance of the process does not mean that the plan is not important. The plan is a measure of the quality of the process. A good planning process will produce a good plan. Even though the emergency that occurs may be very different from the one planned for, the plan however will still remain to be useful.

The three institutions outline that a Contingency Planning Process / Plan should be characterized by the **following principles**:

- It is a participatory process of development
- It focuses on a single-hazard
- It is based on scenario
- Scenario and objectives are developed as a collective agreement, resulted from a common consensus
- It is not a secret/closed plan
- Roles & responsibility must be identified
- It is made to handle emergency situations

**b. Key Concepts of the Contingency Planning Guidelines**

The following key questions are addressed in the guidelines:

- a. What is Contingency Planning?
- b. Why plan?
- c. When to plan?
- d. Who to plan with?
- e. What to plan for?

Aside from this, the guidelines also describe the organization or management of the contingency planning process.

## What is Contingency Planning? The Definition of a Contingency Plan

Different definitions are given by UNISDR (United Nations International Strategy for Disaster Reduction), IASC, the International Federation, and BNPB. However, the term contingency planning is used to describe a wide variety of activities, in a wide variety of contexts to answer some basic questions about a potential situation (what type of disasters or other crisis could happen, what needs and actions should be taken, how much will it cost).

They emphasize a common understanding that contingency planning should cover a forward **management process** to establish **arrangements and procedures to respond** to a potential crisis or emergency. This includes developing **scenarios** (anticipating the crisis), determining the **objectives** of all actors involved in these situations, with clearly-identified institutional roles and resources, information processes, and operational arrangements for specific actors at times of need and defining **what will be needed** to reach those objectives. Contingency planning is an important part of overall preparedness developed for each single-hazard, with the need to be regularly updated and exercised.

### **Box 2** **Definition of Contingency Planning**

**UNISDR:** *Management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.*

**IASC:** *Contingency planning is the process of establishing programme objectives, approaches and procedures to respond to situations or events that are likely to occur, including identifying those events and developing likely scenarios and appropriate plans to prepare for and respond to them in effective manner.*

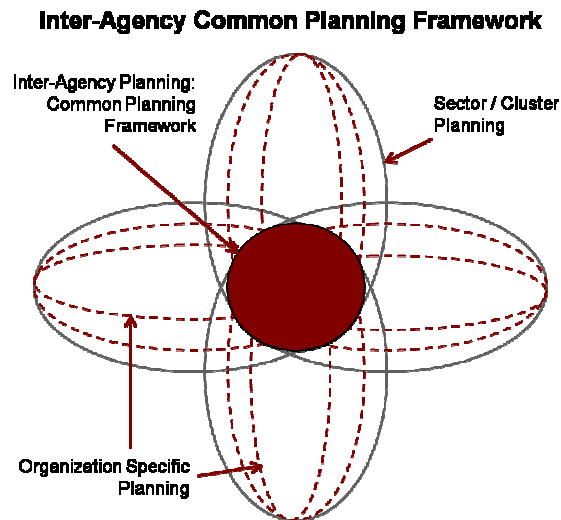
**The International Federation:** *Based on specific events or known risks at local, national, regional or even global levels (e.g. earthquakes, floods) or disease outbreaks to establish operational procedures for response, based on anticipated resource requirements and capacity to enable timely, effective and appropriate responses.*

**BNPB:** *A forward planning process, in the state of uncertainty in which scenario and objective are agreed, technical and managerial actions defined, and potential response system and resources mobilization put in place in order to prevent, or better response to, an emergencies or critical situation.*

The Inter-agency contingency planning provides a common, over-arching framework to guide the collective action of all partners including individual agencies and/or organizations and sector/cluster groups. Interagency contingency planning does not replace the need for planning by individual agencies and/or organizations in relation

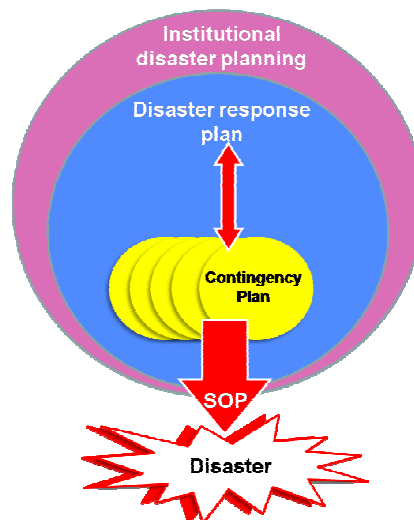


to their mandate and responsibilities within sectors/clusters. However, it provides focus and coherence to the various levels of planning that are required to effectively mount a humanitarian response.



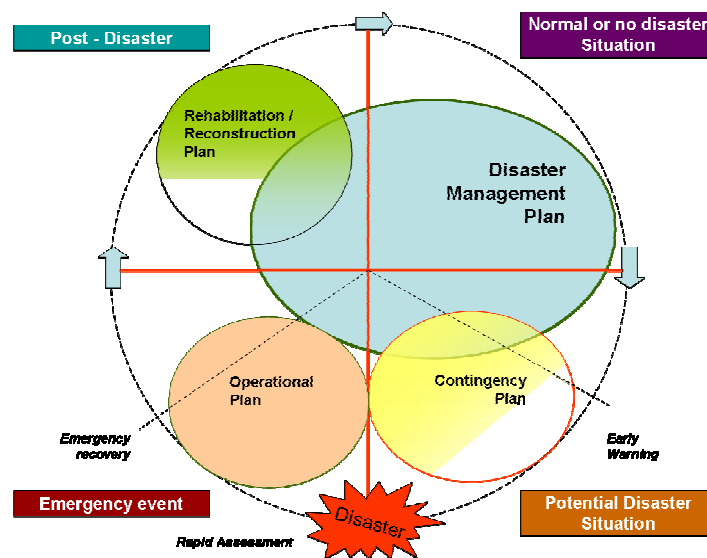
The International Federation outlines contingency planning as part of a disaster response plan, which consists of all activities taken in anticipation of a crisis, including the determining of roles and responsibilities, developing policies and procedures, and identifying and developing generic tools for response, whereas contingency planning is specific to an event and establish operational procedures for direct humanitarian actions.

**The international Federation**  
**Connection between response and contingency planning and**  
**the overall relationship to institutional planning**



BNPB has stated that effective contingency planning, which can minimize impact of disasters, involves a predictive response element to an impending emergency by developing scenario and estimated need assumptions for emergency response,

ensuring availability of financial, human and material resources, and installing a mechanism for decision making.



### Why Plan? The Objective of Contingency Planning

IASC, The International Federation, and BNPB put different emphasis why organizations should develop contingency plans or how the contingency planning can save people’s lives. However, generally they believe that time spent in disaster response planning equals time saved in the event of a disaster. Delays in providing services can result in needless suffering for individuals and families affected by a disaster, and create additional burdens for those responding. During an actual emergency, rapid and effective action is required. For this to happen, disaster response and contingency plans must be in place before a disaster strikes, along with the necessary resources. Contingency planning can help to **mobilize effective action and resources** for emergency, **actor’s commitment** to react to emergency in coordinated manner, and the ability to **define concrete and sustainable plans** for emergencies.

Planning in advance of an emergency allows participants to think through and address critical questions which include:

- What could happen?
- What would be the impact on the people affected?
- What actions would be required to meet humanitarian needs?
- How would agencies/organizations work together?
- What resources would be required?
- What can agencies/organizations do to be better prepared?

IASC member’s experience demonstrates that “...*The fundamental reason for contingency planning is to **improve** the quality of humanitarian response...as it can enhance the **effectiveness, appropriateness and timeliness** of response to emergencies...*”

The International Federation believes that “...*the contingency plan, which is a well-coordinated plan, is essential for **efficient and successful** disaster response...and leads to **timely and effective** disaster relief operations. It also helps in building **realistic expectations**”*

BNPB stated that “... *The reason for contingency plan is to **maximize the usage** of resources and/or community potential to handle disaster/emergencies...*” However in contrary to the two other institutions, the BNPB considers that a Contingency Plan is more appropriate for **larger scale** disaster, implying that the smaller scale disaster shall not necessarily require contingency planning, as they say that the government already has its own procedures and policies thereto.

### When to Plan?

IASC, The International Federation, and BNPB emphasize the significance of having a plan when it is not needed than having none when it is really needed. Contingency planning is undertaken specifically for an emerging or anticipated crisis. As a general rule, contingency planning should be initiated once a destructive disaster potential, either high or low probability type of disasters, is identified.

The contingency planning process may be triggered by early warning signs of a potential critical event, particularly for the slow onset event like drought, volcanic eruption and epidemic. However, contingency plans for fast onset events like tsunamis; need to be developed once hazard or risk assessments indicate the potential of a threat.

Early warning is an important tool to determine the necessary detailed actions to be taken. Contingency Planning becomes planned action once early warning alert indicates an imminent disaster.

#### **Box 3**

#### **When to do contingency plan?**

**IASC:** *Early warning is an important tool to help determine when to engage in a more detailed contingency planning process*

**The International Federation:** *Disaster response and contingency planning is an on-going process.*

**BNPB:** *Contingency Planning is made soon after the early warning is being alerted or when the high-impact disaster occurrence is uprising*

These plans should be assessed, reviewed, tested and updated regularly to validate their relevance. A good time to update a plan is after the occurrence of a major incident or disaster. This is also good moments to trigger the development of new plans in case no plan had been developed yet.

### Who to plan with?

Developing a plan is a question of teamwork. In order to keep the planning process manageable, specific working groups should be established consisting of community and government representatives as a realization of a collective responsibility between government and community for disaster readiness. The BNPB guideline provides a good description of actors to be involved in contingency plan, including representatives from government institutions, the Armed Forces, the National Police, non governmental institutions, universities, private sector, community organizations, media, prominent and/or religious leaders, as well as other actors. All representatives of the above mentioned institutions must have ability and competence in their individual fields as well as authority for decision making.

Input and support are required from a variety of people in different positions, which then will provide crucial and invaluable assistance for those involved in the planning. These people include those in the different sectors of government, state owned enterprises, private companies, NGOs, international agencies and the communities itself. A system and mechanism of excellent information dissemination must be made in place to ensure that all relevant actors are kept well informed.

IASC, further emphasizes that whenever possible, inter-agency contingency planning should involve the government as they hold the primary responsibility for providing humanitarian assistance to the people in need.

#### **Box 4**

#### **Who to plan with?**

**IASC:** *Contingency planning is most effective when it is a participatory process that includes all those who will be required to work together in the event of an emergency*

**The International Federation:** *Planning is most effective when it is a participatory process that (ideally) includes all the actors who will be required to work together in the event of an emergency*

**BNPB:** *Contingency planning should be made together with all stakeholders and sectors involved in disaster management*

As a contingency plan is a dynamic document requiring continued adjustment and adaptation, the planners are required to encourage all relevant institutions and their representatives that must approve and/or implement the components, to contribute input, provide criticism, discussions and suggestions. All the results thereto and their relevant decision should thereon be disseminated and communicated to the public.

### What to plan for?

Box 5 indicates that contingency planning is to prepare for all types of emergencies. Common lesson of the December 2004 tsunami identified by Government, UN agencies, and humanitarian organizations concluded that they should reprioritize contingency planning efforts to ensure that low probability yet catastrophic disasters, such as a tsunami are adequately reckoned in disaster management plans.

IASC, further recommends that Inter-Agency Contingency Planning should focus on situations in which the scale and impact of the potential emergency requires the concerted action of a number of agencies/organizations. It is equally important that humanitarian actors plan for situations that may affect their ability to maintain operations and put the health and safety of staff at risk.

#### **Box 5**

##### **What to plan for**

**IASC:** *To plan for all types of emergencies including complex emergencies, natural and environmental disasters and other significant crises to which the humanitarian community must respond*

**The International Federation:** *To plan for all types of humanitarian emergencies, including complex emergencies, natural and environmental disasters, and other significant crises*

**BNPB:** *Large scale and destructive disaster*

IASC and the International Federation deem that contingency planning is developed for all types of emergencies, whereas responses of each organizational member may subsequently differ in accordance to the level of mandate and resources capacity and availability.

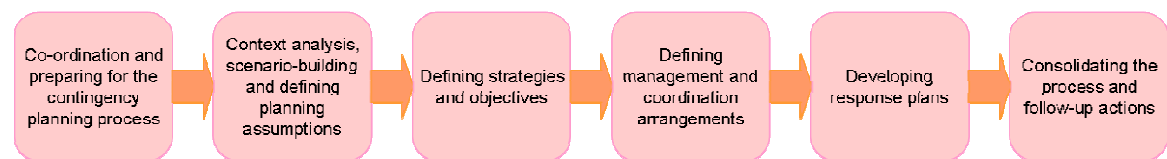
BNPB considers that the Contingency Plan is rather appropriate for larger scale and destructive disaster; however the document does not clarify in more detail the type of event required for an intervention using contingency planning

### **c. The Planning Process and Steps**

The three agencies commonly include the following aspects in the contingency planning **process**:

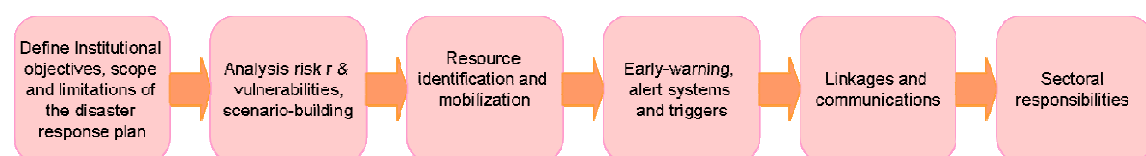
- Analyzing potential emergencies;
- Analyzing the potential humanitarian impact and consequences of identified emergencies;
- Establishing clear objectives, strategies, policies and procedures and articulating critical actions that must be taken to respond to an emergency, and;
- Ensuring that agreements are recorded and necessary actions are taken in order to enhance preparedness.

**The IASC process** focuses more on inter-agency collaboration, both in planning and in implementation. Its model consists of **six steps**.



1. Prepare for and Organize the Contingency Planning Process. Goals are defined and participation is determined, a schedule is set and roles and responsibilities are documented.
2. Hazard and Risk Analysis, Scenario Building and Developing Planning Assumptions. The context analysis is developed to provide planners with a solid understanding of the hazards faced by a population, and their likely impact.
3. Defining Response Objectives and Strategies. Scenarios are then developed, which are used to set objectives and intervention strategies,
4. Defining Management and Co-ordination Arrangements for Humanitarian Response. Management and coordination mechanisms are defined.
5. Developing Response Plans. Response plans are developed, which in an inter-agency context normally means that each sector or cluster develops a specific plan for the delivery of the services or programs that they believe necessary under a given scenario.
6. Implementing Preparedness. Finally, sector and agency response plans are consolidated and checked to make sure that they are consistent with overall objectives and strategies, and with the roles and responsibilities defined in earlier steps in the process

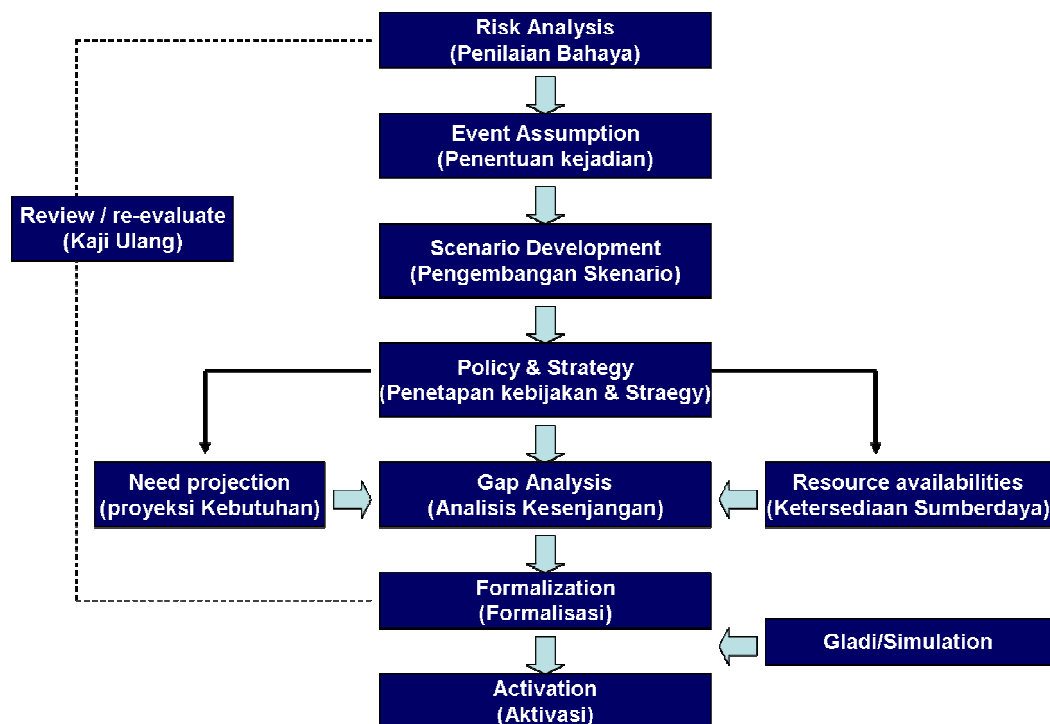
**The International Federation process** focuses on joint planning, information sharing and cross information among the sectors, coordination and cooperation. The main sectors referred by the International Federation are health, food and nutrition, relief, livelihood, shelter, water/sanitation and the promotion of hygiene, safety, security and protection. Its model consists of **six steps**.



1. Institutional disaster planning. Defines the institutional mandate, policies and legal framework upon which the National Society or International Federation will base its response and contingency plans.

2. Hazard, vulnerability, capacity and risk analyses; and scenario building. The context analysis is developed to provide planners with a solid understanding of the hazards faced by a population, and their likely impact.
3. Resource identification and mobilization. Identifying in detail the potential humanitarian needs, actions; resources (include their capacities, capabilities and existing resources), as well as constraints and gaps.
4. Early warning, alert systems and triggers. Early warning is used as baseline information, especially for scenario development. Careful interpretation of early warning signs is required to verify the information and to analyze the implications in order to justify the initiation or implementation of a contingency plan, including probable disaster response strategies and standard operating procedures (SOP)
5. Linkages and communications. Joint planning, information sharing and cross information among sectors, coordination and cooperation are essential, since all sectors link and influence each other.
6. Responsibilities among the sectors. Disaster response and contingency planning should include summaries, of how needs and functions among the sectors will be addressed, including the allocation of roles and responsibilities, institutional preparations, follow-up, evaluations and plan updates.

**BNPB process** focuses on working groups consisting of various community and government representatives as a realization of collective responsibility between government and community in disaster preparedness. Its model consists of **seven steps**



1. Risk Analysis. This stage involves gathering sufficient information regarding the hazards, risks, and vulnerability associated to the predicted emergency events.
2. Event Assumption. Defining the root causes of the event, the manner that the event will take place and observable symptoms that will indicate the unfolding of the event.
3. Scenario development. Several scenarios are developed considering the different shapes of the predicted emergency events using time, space, and magnitude dimensions as parameters. The scenario should also project disaster impact on human lives, housing, properties, livelihood, and infrastructures as well as their corresponding triggering events and threshold for emergency response system activation.
4. Policy & strategy identification. Vision of the direction of the overall operation shall be required. At the national level, there are basic policies for disaster management that also provide the required platform for contingency planning. Some examples include Presidential Decree 03/2001 and Law 24/2007.
5. Gap analysis. This stage focuses on analysis and arrangements among the sectors, answers questions what would each sector's situation look like when the emergency occurs, defines objectives of the sectors, determines the indicators among the sectors, defines the needs by comparing the existing resources vs. projected requirements, and draws a flowchart for the sector's activities and how the tasks are distributed to sector members.
6. Formulation of the plan. This stage is a series of consolidation from drafting up to finalizing the Contingency Plan. A good contingency plan should have tasks and functions defined and clarified as early as possible.
7. Endorsement and Activation. The final plan should be submitted to relevant authorities, e.g to the Head of BPBD, the Mayor, and the Legislative. Such endorsement is critical to ensure institutional commitment of parties involved and to bridge the exercise from merely academic into a formal action plan. Equally important is a justification to the local authorities that in the event of an emergency, the amount of resources specified in the plan will be required for immediate disbursement. A formal endorsement will also encourage the authorities to take the plan seriously and to participate in the monitoring of early warning as well as the eventual declaration of a state of emergency, when appropriate.



<b>Planning Process</b>		
<b>IASC</b>	<b>The International Federation</b>	<b>BNPB</b>
<p><b>Section 3:</b> The Planning Process</p> <ol style="list-style-type: none"> <li>1. Prepare for and Organize the Contingency Planning Process</li> <li>2. Hazard and Risk Analysis, Scenario Building and Developing Planning Assumptions</li> <li>3. Response Planning <ul style="list-style-type: none"> <li>- Defining Response Objectives and Strategies</li> <li>- Defining Management and Co-ordination Arrangements for Humanitarian Response</li> <li>- Developing Response Plans</li> </ul> </li> <li>4. Implementing Preparedness</li> </ol> <p><b>Section 4:</b> The Plan (a matrix describing outline of key outputs of the planning process that should be documented)</p>	<p><b>Chapter 2:</b> Steps for developing disaster response and contingency plans</p> <p>Step 1: Institutional disaster planning</p> <p>Step 2: Hazard, vulnerability, capacity and risk analyses</p> <p>Step 3: Resource identification and mobilization</p> <p>Step 4: Early warning, alert systems and triggers</p> <p>Step 5: Linkages and communications</p> <p>Step 6: Responsibilities among the sectors</p> <p><b><u>Support information</u></b></p> <p><b>Chapter 3</b></p> <ul style="list-style-type: none"> <li>- Internal and external coordination</li> <li>- Internal coordination</li> <li>- External coordination</li> </ul> <p><b>Chapter 4</b></p> <ul style="list-style-type: none"> <li>- Plan implementation and follow-up</li> <li>- Training and awareness of disaster response and contingency plans</li> <li>- Exercises and simulations</li> <li>- Updating and evaluating the plan</li> </ul> <p><b>Chapter 5</b></p> <ul style="list-style-type: none"> <li>- Plan standards, accountability and linkages</li> <li>- Standards and accountability</li> <li>- Linkages between national, regional and international tools (local to global)</li> </ul>	<p><b>Chapter 5:</b> Contingency Planning Process</p> <ol style="list-style-type: none"> <li>1. Risk analysis</li> <li>2. Defining event</li> <li>3. Scenario development</li> <li>4. Defining policies and strategies</li> <li>5. Sectorals planning</li> <li>6. Synchronization/harmonization</li> <li>7. Formalization</li> </ol> <p><b>Chapter 6</b> Follow Up planning</p> <ol style="list-style-type: none"> <li>1. Simulation</li> <li>2. Data update</li> <li>3. Transition</li> <li>4. Re-entry</li> </ol>

**d. Resources and references provided in the guideline documents**

<b>Annexes</b>		
<b>IASC</b>	<b>The International federation</b>	<b>BNPB</b>
<ol style="list-style-type: none"> <li>1. Comprehensive Inter-agency Contingency Planning Workflow</li> <li>2. Inter-Agency Contingency Planning Brainstorming Guide and Contingency Plan Checklist</li> <li>3. Terms of Reference for an Inter-Agency Contingency Planning Working Group</li> <li>4. Generic Terms of Reference for Sector/Cluster Leads</li> <li>5. List of Global Sector/Cluster Leads</li> <li>6. Contingency Planning Reference</li> <li>7. Selected Glossary</li> </ol>	<ol style="list-style-type: none"> <li>1. Disaster response and contingency plans – Suggested structure/minimum contents</li> <li>2. Roles and mandate</li> <li>3. Emergency contacts</li> <li>4. Hazard, vulnerability, capacity and risk analyses</li> <li>5. Scenario building</li> <li>6. Areas of intervention (based on capacities and resources)</li> <li>7. Areas of intervention local-global</li> <li>8. Essential information</li> <li>9. Multi-Sector organizational roles</li> <li>10. Preparedness and capacity building</li> <li>11. Regional potential hazards Pre-disaster preparedness for response</li> <li>12. Standard operating procedures (SOP)               <ul style="list-style-type: none"> <li>- Up to 24 hours – Initial response</li> <li>- 24 hours to end of week 1</li> <li>- End of week 1 to end of emergency</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Example of Outline, Table of content</li> <li>2. Example of statement, from actors involved</li> <li>3. Example of Form, matrix of institutional profile in contingency planning</li> </ol>

## 4. Selected Contingency Plans For Tsunami

### a. Tsunami Contingency Plans in Indonesia

BNPB has facilitated contingency planning workshops in several disaster-prone provinces and districts. The workshops have been considered as a planning process which then have been documented as a contingency plan for the respective areas.

Some areas have developed a tsunami contingency plan as indicated in the table below.

Province/District	Topic	Facilitator	Product
Kabupaten Pesisir selatan	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Padang Kota	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.Pariaman	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kabupaten Pasaman Barat	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kabupaten Mentawai	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.Sukabumi	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.Garut	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.Ciamis	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.tasikmalaya	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.kebumen	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
Kab.Cilacap	Earthquake/tsunami	OCHA-Bakornas PB	EQ-Tsunami CP
kab.Bantul	Earthquake/tsunami	DIY Province Government	EQ-Tsunami CP
Kab.Kulonprogo	Earthquake/tsunami	DIY Province Government	EQ-Tsunami CP
Provinsi Sumatera Barat	Earthquake/tsunami	OCHA,UICT,SCDRR, BAKORNAS PB	EQ-Tsunami CP
Kab.Muko-Muko	Earthquake/tsunami	OCHA,UNICEF,SCDR R, BNPB	EQ-Tsunami CP
Kab.Bengkulu	Earthquake/tsunami	OCHA,UNICEF,SCDR R, BNPB	EQ-Tsunami CP
Kab.Bengkulu Utara	Earthquake/tsunami	OCHA,UNICEF,SCDR R, BNPB	EQ-Tsunami CP
Kab.Gunungkidul	Earthquake/tsunami	DIY Province Government	EQ-Tsunami CP

Note: the table should be updated as several ongoing similar activities are still being conducted in different areas.

The author has chosen five of the most recently developed tsunami contingency plans, i.e:

- Tsunami Contingency Plan of Bantul District, November 2007
- Tsunami Contingency Plan of West Sumatra, March 2008
- Tsunami Contingency Plan of Muko-Muko District, August 2008
- Tsunami Contingency Plan of Bengkulu Province, February 2009
- Tsunami Contingency Plan of Gunung Kidul District, February 2009

### **b. Tsunami Contingency Plans of Fort Bragg, California**

“Tsunami Contingency Plan”, **Fort Bragg, California**, amended on 4/19/2006. The document initiated by Fort Bragg Police Department, Sergeant Mary Miler and Lieutenant Floyd Higdon on January 1<sup>st</sup> 2006. Four months later, the Document was amended by Administration City Clerk Cynthia Van Wormer and City Manager Linda Ruffing on April 19<sup>th</sup> 2006.

### **c. Tsunami Contingency Plans in Gisborne District, New Zealand**

“Gisborne CDEM Group Tsunami Contingency Plan”, **Gisborne District, New Zealand**, 18 January 2005, last updated January 2009. The document which was originally titled “Emergency Services Tsunami Contingency Plan” was prepared by Emergency Services of Gisborne District in January 2005, four years later the Document was updated by a newly established Civil Defense Emergency Management and was renamed as Gisborne CDEM Group Tsunami Contingency Plan.

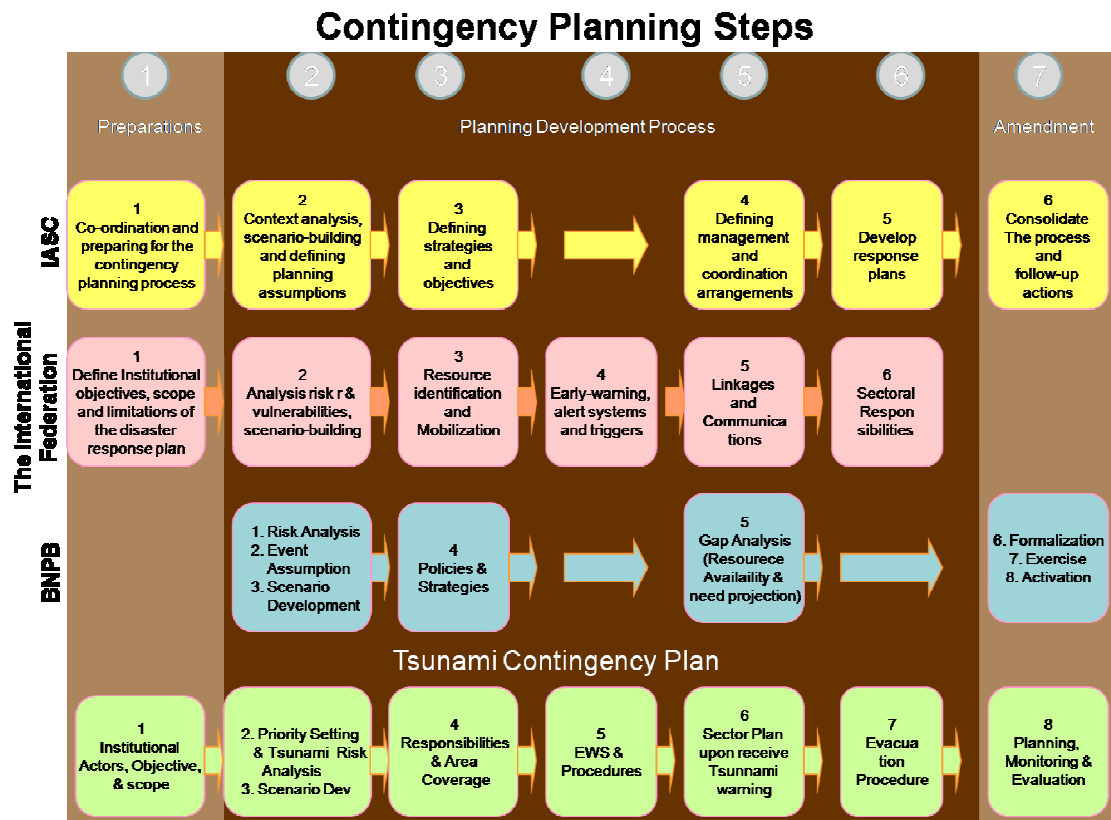
The table below describes the general outline of Tsunami Contingency Plans developed by the three countries.

Indonesia (Bantul-2007, West Sumatra-2008, Muko-Muko-2008, Bengkulu-2009, Gunung Kidul-2009)	Fort Bragg Police Department January 1 <sup>st</sup> 2006	Gisborne District 18 January 2005, then updated in January 2009
<b>1. Introduction</b>	<b>Purpose</b> <ul style="list-style-type: none"> <li>- Provide guidance to City and Police Department staff regarding procedures to be used during a Tsunami Alert event</li> <li>- Address evacuations of the public</li> <li>- This plan can be modified and adopted for use for any major catastrophe</li> </ul>	<b>1 Introduction</b> <ul style="list-style-type: none"> <li>- The Plan is for Distant and local Tsunami</li> <li>- The plan is a combined procedure that the Gisborne District Emergency Services, recognised as Police, Fire, Health and Civil Defence, will use in partnership to provide a co-ordinated response.</li> </ul>
<b>1. General</b> <ul style="list-style-type: none"> <li>- Geographical profile</li> <li>- Administrative profile</li> <li>- Demographical profile</li> <li>- Weather condition</li> <li>- Economical profile</li> <li>- Satlak profile</li> <li>- Disaster management cycle</li> <li>- Tsunami hazard zone</li> <li>- Evacuation areas</li> </ul> <b>2. Measuring Risk and Defining Event</b> Risk measurement using table of probability & impact scale <b>3. scenario development</b> (based on agreement derived from risk measurement) <ul style="list-style-type: none"> <li>- event (EQ SR, epicenter, tsunami travel time, run-up, inundated areas)</li> <li>- impact (people, public facilities, economic, government building, environment)</li> </ul> <b>4. Policies and strategies</b> <b>5. Sectors Plan</b> <ul style="list-style-type: none"> <li>- Management and coordination</li> </ul>	<ol style="list-style-type: none"> <li>1. <b>General</b> (basic information about tsunami hazard; distant and or local Tsunamigenic EQ within the context of Fort Bragg City)</li> <li>2. <b>Scenario</b> for <b>Local EQ</b> generated Tsunami and roles of City and Police Department personnel</li> <li>3. <b>Area of Coverage</b> (within the Fort Bragg city limits, and portions of the Noyo Harbor and the Noyo Jetty.)</li> <li>4. <b>Warning Center Notification System</b> (job division between WCATWC &amp; PTWC in warning notification, possible overlap tasks between the two, warning products include Five types of messages and bulletin issued by WCATWC)</li> <li>5. <b>Scenario</b> for <b>Distant EQ</b> bulletin and roles of the Law Enforcement Officer in Charge in evacuation decision, warning notification using the Emergency Operations Plan, warning methods for evacuation notification</li> <li>6. <b>Police department actions upon receipt of a tsunami watch / warning bulletins</b> including the task division of the Mendocino County Sheriff's Office Communications Center, the Shift Supervisor or the Officer in Charge, the Chief of Police and Police Lieutenant:</li> </ol>	<b>2. Responsibilities</b> <ul style="list-style-type: none"> <li>- Co-ordination</li> <li>- New Zealand Police</li> <li>- Fire Service</li> <li>- Rural Fire</li> <li>- Tairawhiti Healthcare</li> <li>- Gisborne District Council (Civil Defence)</li> <li>- Life Lines</li> <li>- Government Agencies</li> <li>- Logistics</li> <li>- Welfare</li> <li>- Media</li> <li>- Event Monitoring and Impact Report</li> <li>- Event Management Team</li> </ul> <b>3. Operational Priorities/Strategies</b> <ul style="list-style-type: none"> <li>- Established Priorities &amp; Strategies</li> <li>- Warning System/Procedures (Locally Generated Tsunami &amp; Distant Generated Tsunami)</li> <li>- Pre Impact Action (One step for Locally Generated Tsunami; Four steps for Distant</li> </ul>

<ul style="list-style-type: none"> <li>- Search &amp; Rescue</li> <li>- Social &amp; Security</li> <li>- Health</li> <li>- Transportation</li> <li>- Logistic</li> </ul> <p>6. <b>Monitoring &amp; Follow up</b></p> <p>7. <b>Closing Remarks</b></p>	<ul style="list-style-type: none"> <li>- Notification of the City Manager or designee</li> <li>- Confirm the District Fire Chief or designee has been notified</li> <li>- Determine in conjunction with City Manager and District Fire Chief (if practicable) if public notification and/or evacuation is required immediately</li> <li>- Assess the evacuation tasks needed to be taken</li> <li>- Execute public evacuation notification procedures, if necessary</li> </ul> <p>7. <b>Notification to public</b> Describe job division between the ranking Police Supervisor, The City Manager / Director of Emergency Services, and City public safety forces</p>	<p>Generated Tsunami)</p> <ul style="list-style-type: none"> <li>- Action Summary for confirmed event based upon warning recipient</li> <li>- Warning System Responsibilities PTWC – Pacific Tsunami Warning Center MCDEM – the Ministry of Civil Defence &amp; Emergency Management Gisborne District Council (Civil Defense)</li> </ul> <p>4. <b>Evacuation Procedures</b> (include roles of Police, Fire Service, medical, and emergency management office)</p> <ul style="list-style-type: none"> <li>- Declaration</li> <li>- Evacuation Timings</li> <li>- Operational Actions (Locally Generated Events; &amp; Distant Generated Event , Areas potential evacuation)</li> <li>- All Clear Procedures</li> <li>- Radio Stations</li> </ul>
	<p>8. <b>Designated low-lying areas</b> List of designated low-lying areas within the City of Fort Bragg include all areas below the 60-foot elevation level.</p> <p>9. <b>Evacuation routes</b> List of Evacuation routes &amp; how to evacuate</p> <p>10. <b>People with disabilities</b> Criteria &amp; evacuation tips</p>	<p>5. <b>Plan Monitoring, Testing and Evaluation</b></p>
<p><b>Annexes</b></p> <ol style="list-style-type: none"> <li>1. List of Contingency Planning workshop participant</li> <li>2. list of sectors representatives</li> <li>3. List of Working group</li> <li>4. Thematic Maps (if available)</li> <li>5. profile of institution in relate to contingency plan</li> <li>6. Letter of agreement of the participant</li> </ol>	<p><b>Addendum</b></p> <ol style="list-style-type: none"> <li>1. Sample media announcement form</li> <li>2. Public awareness/education <ul style="list-style-type: none"> <li>- general information</li> <li>- building family 72-hour emergency kit</li> </ul> </li> <li>3. List of website addresses provide useful information</li> </ol>	<p><b>Annexes:</b></p> <ol style="list-style-type: none"> <li>1. Effect on District</li> <li>2. Tsunami Action Plan / Checklist</li> <li>3. Welfare Center</li> <li>4. Evacuation summary of Actions</li> <li>5. Tsunami Information Detail form</li> <li>6. Handout for those being evacuated during a distant tsunami event</li> </ol>

		<p><b>Note:</b> the first document developed in 2005 has put in chapter 2: <b>Effects on District</b> (basic information about tsunami hazard; distant and or local Tsunamigenic EQ within the context of Gisborne District)</p> <ul style="list-style-type: none"> <li>- Scenarios for the east coast, district, and the city</li> <li>- Vulnerable assets and area depending on the wave size generated by local/distant tsunami</li> <li>- Vulnerable assets and area in the city depending on the wave size generated by local/distant tsunami</li> <li>- Considerable work has been done in preparedness and awareness on evacuation</li> <li>- Worst scenario for the camping population from December to January</li> </ul> <p>In the last updated version, this topic were put in Annex.</p>
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## 5. Review Of Selected Tsunami Contingency Plans



The Contingency Planning as described above covers three main processes of actions. First, a preparation processes which involves identification of institutional actors and coordination mechanism. Second, the planning development processes itself, which involves content elaboration of the contingency plan document including hazard and vulnerabilities analysis, scenario development, resource identification and operation strategies, early warning system and procedures, and response plan. Third, an amendment or adjustment processes which involves consolidation, activation, and follow up action.

The tsunami contingency plans developed by Indonesia, Gisborne, and Fort Bragg reflect the above processes and cover at least eight main topics:

1. The institutional actors, objective & scope;
2. Risk analysis & priority setting;
3. Scenario development;
4. Resource identification and operation strategies include responsibilities & area coverage;
5. Warning system & procedures;
6. Sectors plan upon receive tsunami warning & notification procedures to public;
7. Evacuation procedures;
8. Plan monitoring, testing & evacuation

### a. The Institutional Actors, Objective & Scope

Fort Bragg is located in Mendocino County, California, USA. The contingency plan was developed under the framework of the Tsunami Response Plan and Standardized



Emergency Management System (SEMS). The Governor's Office of Emergency Services (OES) supported by Federal Emergency Management Agency (FEMA) and National Oceanic and Atmospheric Administration (NOAA) has provided a document, "Local Planning Guidance on Tsunami Response" to assist local governments in the initial development of a tsunami response plan and the procedures necessary to deal with a tsunami's impact on their communities. In line to above guidance, the purpose of Fort Bragg Police Department tsunami contingency plan is to focus on procedures to be used during a tsunami alert event and address evacuations of the public.

The Tsunami Contingency Plan for Gisborne District in New Zealand was developed under the framework of the National Civil Defence Emergency Management Plan Order 2005 (National CDEM Plan); the Guide to the National Civil Defence Emergency Management Plan 2006 (the Guide to the National CDEM Plan) and CDEM Group plans. The plan is a combined procedure that the Gisborne District Emergency Services, recognized as Police, Fire, Health and Civil Defense, will use in partnership to provide a coordinated response.

The Tsunami Contingency Plan for districts in Indonesia was developed using the National Guideline of Disaster Management Plan Development (2008), which has recently been translated as Contingency Planning Guidebook. The development of tsunami contingency plan for district level is supported directly by the National Agency for Disaster Management (BNPB) and done in cooperation with the local governments.

#### **b. Risk Analysis & Priority Setting**

At the risk analysis stage, all tsunami contingency plans, involves gathering sufficient information regarding distant and or local tsunami hazards and their likely impact.

Fort Bragg tsunami contingency plan does not elaborate about risk analysis. However, in a separate document, "Local Planning Guidance on Tsunami Response" covers the topic. According to the guidance, the use of modeled inundation maps is necessary as a basis for a tsunami response plan. The inundation map for each tsunami-threatened area shows the maximum potential flood from tsunami action based on the Seismic Safety Element Geotechnical Hazard Synthesis maps of the County General Plan, or more current information. Information gathered during the transfer of the model inundation maps to local map overlays will be the basis for identifying both high priority responses and the steps to reduce potential dangers. The estimates can also be used to determine where damage is likely to occur, which areas and segments of the population are at the greatest risk, and to develop an evacuation route with a traffic control plan. Fort Bragg tsunami contingency plan identify some places as a safe elevation level for tsunami event (above 60-foot) and designated low-lying areas bellow 60-foot elevation level. Specific arrangement for public notification and traffic control are defined for those areas.

The Tsunami Contingency Plan for Gisborne District describes the effects on district level, containing basic information about tsunami hazard; distant and or local tsunamigenic earthquake sources; scenarios for the east coast, district, and the city, as well as description of vulnerable assets and area depending on the wave size generated by local/distant tsunami,

for which also considerable work has been done in preparedness and awareness on evacuation, and worst scenario for the camping population from December to January.

### **c. Scenarios as a Base for Tsunami Contingency Plans**

**All of the plans indicate that specific scenarios** had been developed, which are used to set objectives and intervention strategies. Several scenarios for local and distant generated tsunami are developed by considering the different shapes of the predicted emergency events using time, space, and magnitude dimensions as parameters.

Fort Bragg uses the warning message type issued by The West Coast and Alaska Tsunami Warning Center (WCATWC) as parameter of intervention. The five types WCATWC messages are: information message (below 6.5 SR); Information Bulletin (greater than 6.5 SR but less than the warning threshold); Advisory bulletin (tsunami warning from PTWC to entire Pacific Ocean basin but far enough from or tsunami poses no threat to the WCATWC); Watch Bulletin (> 7 SR EQ, the watch area is one hour tsunami travel time from the warning zone boundary or > 7.5 SR EQ the watch areas is three-hours tsunami travel time); Warning bulletin (EQ within WCATWC area of responsibilities over 7.0 covering areas within two-hours tsunami travel time from the epicenter, over 7.5 covers up to areas within three-hours tsunami travel time from the epicenter). Further description on tsunami watch and warning system is provided in a separate document “Local Planning Guidance on Tsunami Response”.

Gisborne uses the warning messages issued by Pacific Tsunami Warning Center (PTWC) as parameters of intervention. Key triggers for decision are arrival times and heights at Easter Island and the Chathams

Indonesia developed their scenario based on the natural warning sign and interpretation of probable impact of tsunami event from available historical data. Official early warning mechanism from InaTEWS is not considered in the documents.

Scenarios for local tsunamis: Gisborne district and Fort Bragg indicate in their strategies the encouragement of self evacuation in the event of a local tsunami due to the assumption that the warning for local tsunami is highly unlikely issued by the WCATWC and PTWC.

### **d. Warning System & Procedures**

Except for the district contingency plans in Indonesia, the respective tsunami early warning schemes play an important part in the contingency planning processes, including for the scenario development, as well as in the plans itself. Early warning signs are considered in order to decide whether to activate the contingency plan.

Explaining **tsunami warning procedures** to the public is considered a local government responsibility in Fort Bragg. It is necessary to clarify that the West Coast and Alaska Tsunami Warning Center in Alaska (**WC/ATWC**) and the Pacific Tsunami Warning Center (**PTWC**) produce tsunami warning messages and bulletins,

but they do not undertake possible impact analysis. All information received is passed directly to the **Operational Areas** using different types of communication channels such as CLETS, the California Alert and Warning System (CALWAS) and the Emergency Alert System (EAS). As part of their tsunami contingency plans, local emergency operation center are in charge to develop **procedures for disseminating of information** to local jurisdictions and districts. Local governments should cooperate by **developing their own notification system** through their local or regional emergency operation center.

In the case of Gisborne, the PTWC is the agency that issues the warnings. These warnings are forwarded directly to the Ministry of Civil Defense & Emergency Management (MCDEM) of New Zealand, which in turn passes it on to the Local Authority Civil Defense and the Police, which then in turn sends it to the Emergency Management Office, which then takes the appropriate actions.

#### **e. Evacuation Procedures**

Unlike in Indonesia, the tsunami contingency planning for Fort Bragg and Gisborne district indicate the engagement of senior management at all levels. In addition thereto, evacuation procedures are clearly visualized, whereas this is not the case of Indonesia.

## **6. Conclusion**

Tsunami contingency plans in general cover eight main topics: 1) the institutional actors, objective & scope; 2) risk analysis & priority setting; 3) scenario development; 4) resource identification and operation strategies include responsibilities & area coverage; 5) warning system & procedures; 6) Sectors plan upon receipt of a tsunami warning & notification procedures to the public; 7) evacuation procedures; 8) plan monitoring, testing & evacuation.

A sufficiently detailed scenario as a basis for contingency planning should provide flexibility for adaptation, as a pre-set scenario previously established by the experts in the contingency plan, may differ from the likely event of a disaster.

Written plans are important, but however without a good contingency planning process, the efforts can be ineffective. A tsunami contingency plan should not be seen as a technical activity, but as a management function, as it has consistently proven that the engagement of senior management at all levels has resulted in effective contingency planning processes and better emergency responses.

Early warning is an important tool to determine the necessary detailed actions to be taken. Contingency Planning becomes planned action once early warning alert indicates an imminent disaster.

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