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Multi-Annual Community Tsunami Exercise Programme

Guidelines for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions

(Draft 2: 06/08/2020)

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Foreword

Background

In 2005 the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) established the Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG CARIBE-EWS) to address the risk of tsunamis to all its coastal areas. Over the past 15 years a robust tsunami warning system has been established addressing monitoring, hazard and risk identification, warning services and preparedness, readiness and resilience.

Tsunamis and other disasters have highlighted the need for the coastal communities to be ready to respond with very short lead times. Tsunami exercises are a fundamental action to test local services and identify strengths and weaknesses and these exercises need to be conducted regularly to maintain and advance awareness and readiness in a changing socio economic and political landscape. To support these efforts CARIBE EWS conducts an annual exercise and has included annual exercises as one of the indicators of the Tsunami Ready program. These guidelines have been written to help coastal communities establish a multiannual tsunami exercise program in support of the goals and objectives of the CARIBE EWS.

Abstract

The guidelines provide guidance on how to plan, conduct, and evaluate a multiannual local tsunami exercise program. It has been designed for community use by the Intergovernmental Oceanographic Commission (IOC) member states who will participate in these multiannual exercises. The guideline is divided into four stages to provide a range of practical advice and templates for community stakeholders and in-country exercise developers. It highlights that a progressive and long-term approach is needed for tsunami exercises.

INTRODUCTION

This guide is designed to provide community leaders with a methodology and tools, which are both easy to grasp and to use in preparing, conducting and evaluating a multi-annual tsunami exercise program. It is particularly relevant for bodies that would be directly exposed to the effects of a tsunami (local government, schools, associations, hotels, businesses). The guide highlights that a progressive and long-term approach is needed, which should include the development of a multi-annual programme of exercises. It is advisable to take a progressive approach to allow the guide's target audience to develop their know-how capabilities. This can be done by progressing from a relatively simply designed exercise that is straightforward to conduct towards exercises that are more complex to formulate and monitor, as well as being more logistically demanding.

This progressive approach is also crucial for selecting the type of exercise that would be best suited to achieving the established objectives, while also taking account of a community's existing level of readiness. The first phase could be a drill exercise, where a small-scale evacuation exercise is conducted. It's mainly used to train personnel, test equipment, and see if that organization has the sufficient resources and capabilities. The second phase could be a tabletop exercise. This might be most appropriate if the objective is to raise awareness among a team. For example, within a school setting a class could discuss tsunami-related dangers and learn about the countermeasures they should take to make their classroom and class safe. The third phase could take into account lessons learned during the tabletop exercise and enable a partial tsunami evacuation exercise to be developed. It could involve the same teaching team, each of whose members could be required to know the evacuation route to a tsunami safe location. In the fourth phase, community leaders could design an exercise in which the objective would be for all or part of a community, like a school, to evacuate to a predetermined safe location in less than 15 minutes. Other more in-depth guides for exercises, especially at the national level can be found in the reference section.

This guide also aims to encourage a shared culture of exercises between, on the one hand, the municipal authorities tasked with ensuring the safety and health of those living in their area, and on the other, community leaders – stakeholders in the social and economic life of the area. Also, when planning it is important to take into consideration new threats, for example the occurrence of a pandemic, such as COVID-19, and adjust the exercise program accordingly to promote safety and health in the community. Integration of health conditions in the exercise can help mitigate the spread of infectious diseases and lessen the burden after a tsunami event.

The guide is divided into four sections:

- The first relates to knowledge of the tsunami as a hazard. It provides the information needed to understand the different forms that a tsunami can take, the dangers involved and safety procedures.

- The second focuses on establishing a multi-annual programme of exercises.

- The third deals with the different stages involved in preparing a tsunami evacuation exercise. It concentrates on the different functions that should be in place, the methodological approach to be followed and the practical tools that should be used.

- The fourth section covers the conduction and evaluation of a tsunami evacuation exercise.

SECTION A

PREPARING FOR TSUNAMIS

1. TSUNAMIS

A tsunami (soo-nah-mee) is a series of travelling waves of extremely long length and period generated by a major disturbance in a body of water.

1.1. GENERATION

Tsunamis are usually generated by disturbances associated with earthquakes occurring below or near the ocean floor. Volcanic eruptions, submarine landslides, and coastal rock falls can also generate tsunamis, as can large meteorites impacting the ocean. All known potential tsunami sources can be found in the Caribbean and adjacent regions. There are also some distant sources in the Atlantic (Figure 1).

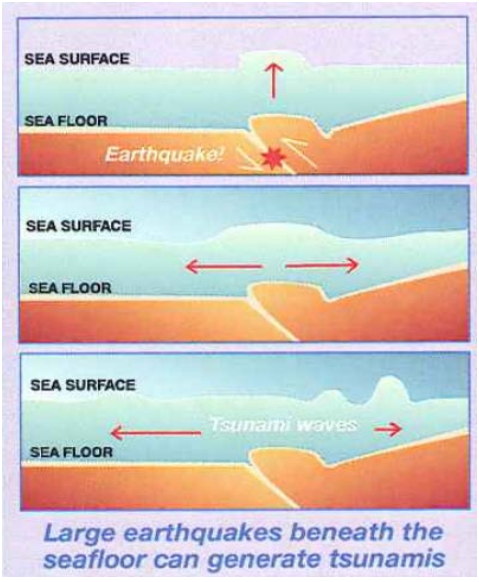

Figure 1. Generation of a tsunami from an earthquake

1.2. ARRIVAL TIME

In deep water, a tsunami forms and can travel at speeds of more than 800km/h. Tsunami waves can occur a number of minutes apart from each other, but can also be separated by several hours. Depending on the distance to be travelled and the depth of the ocean, the first wave can arrive at the coast within minutes or a number of hours.

The time required for a tsunami to travel from the epicentre of its cause to the coast enables us to identify:

-LOCAL TSUNAMIS: can strike in minutes,

-REGIONAL TSUNAMIS: develop at distances of between 100 km and 1,000 km from the coast, and which can strike within one to two hours,

-TELETSUNAMIS: take several hours to cross an ocean.

Over the last 500 years, over 90 tsunamis have been observed and over 4,500 people have lost their lives from tsunamis in the Caribbean and adjacent regions according to the National Centers for Environmental Information (NCEI, 2020). Most of these tsunamis have been generated by local earthquakes, but others from distant earthquakes and local volcanic eruptions, including:

- Lisbon earthquake and tsunami on November 1st, 1755 and generated waves of six metres high in the Lesser Antilles. In addition, an earthquake that occurred off the coast of the Iberian Peninsula on March 31st, 1761 and caused 1.2-metre-high waves off Barbados.

- Eruptions associated with the Soufriere Volcano on Montserrat also resulted in tsunami wave observations four locations off the coasts of Montserrat, Guadeloupe, and two at Antigua and Barbuda on May 20th, 2006. The wave heights of these were up to one meter high, with no recorded deaths.

1.3. SIZE OF TSUNAMI

A tsunami is made up of several waves of varying sizes (Figure 2). The first wave is not always the largest.

In the Caribbean and neighbouring regions, low-lying coastal areas that are less than 10 metres above sea level are considered as highly exposed to tsunami risk.

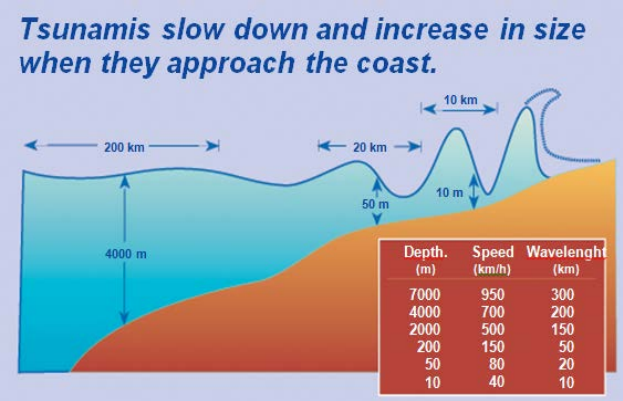

Figure 2. Schematic of how wave height, wave length and speed vary depending on depth

2. TSUNAMI IMPACTS

Tsunamis and the earthquakes that often generate them can impact population, property and the environment in a number of ways.

Protection must therefore be ensured against:

- Earthquakes**,** if they occur, and all associated effects: landslides, buildings collapsing, fire, etc.

- Tsunamis**,** can cause destruction of houses, marine installations, and boats due to

  - Flooding**,** water inundates streets and buildings

  - Debris, buildup of debris that has been carried by the waves

- Currents**,** which can be very strong and can last for several hours after the final tsunami wave has made landfall.

- Environmental pollution, spillage of oil and hazardous waste;

- Outbreak of diseases**,** can be serious in densely populated areas.

3. PREPARING FOR TSUNAMI-RELATED HAZARDS

3.1 RISK AWARENESS

It is crucial to disseminate relevant information to members of the community to make them aware of the risks associated with tsunami events, and ensure that they take ownership of that information. It is also essential to make sure that everyone knows what happens during a tsunami event and what the natural signs are.

3.2 NATURAL SIGNS INDICATING A TSUNAMI OCCURRENCE

A high-intensity or prolonged earthquake indicates a tsunami might have been triggered and could soon arrive at the coast. If the earthquake is felt strongly or lasts for a long time (a minute or longer), the trigger for the tsunami is probably close by. There is therefore little time to evacuate.

However, there are other natural signs that are important to recognize:

- An abnormal rise in sea level or a swift withdrawal of the sea from the coast;

- A rapid change in the water level of a river;

- A strange noise or rumbling sound coming from the sea that is similar to a train.

Figure 3. See in Annex III

3.3 WARNING PROCEDURES

National Tsunami Warning Centers (NTWC) are responsible for issuing tsunami alerts. These are often based on messages issued by Tsunami Service Providers (TSP) such as the Pacific Tsunami Warning Centre in Hawaii. NTWC and TSPs use a network of sensors that detect and provide detailed information about the nature of any earthquake and likeliness to generate a tsunami. When criteria are met, the corresponding products are disseminated to local authorities and population. Alerts can be sent out in different ways, depending on the resources and time available: radio and television broadcasts, loudhailer vehicles, sirens, helicopters, SMS text messages, variable message display panels, social media, etc. (Annex I).

3.4 IDENTIFY EVACUATION ROUTES TO SAFER LOCATIONS

Safe locations are usually between 15 and 20 metres above sea level or 2 to 3 km from shore when land is flat. This allows individuals to shelter from tsunami waves. Many communities have tsunami inundation and evacuation maps indicating areas that are at risk and evacuation routes to safer areas (Figure 4). Assembly areas and the most secure evacuation routes that afford quickest access to the location are shown using signs set into the ground (Figure 5). People should locate these routes, as it allows them to leave the danger zone or evacuation zone and arrive at a safe location after a 15- to 20- minute walk. It will be helpful to practice walking the route and should be done regularly. If there are no evacuation signs posted, ask the authorities to find out which evacuation routes to prioritize if a tsunami occurs.

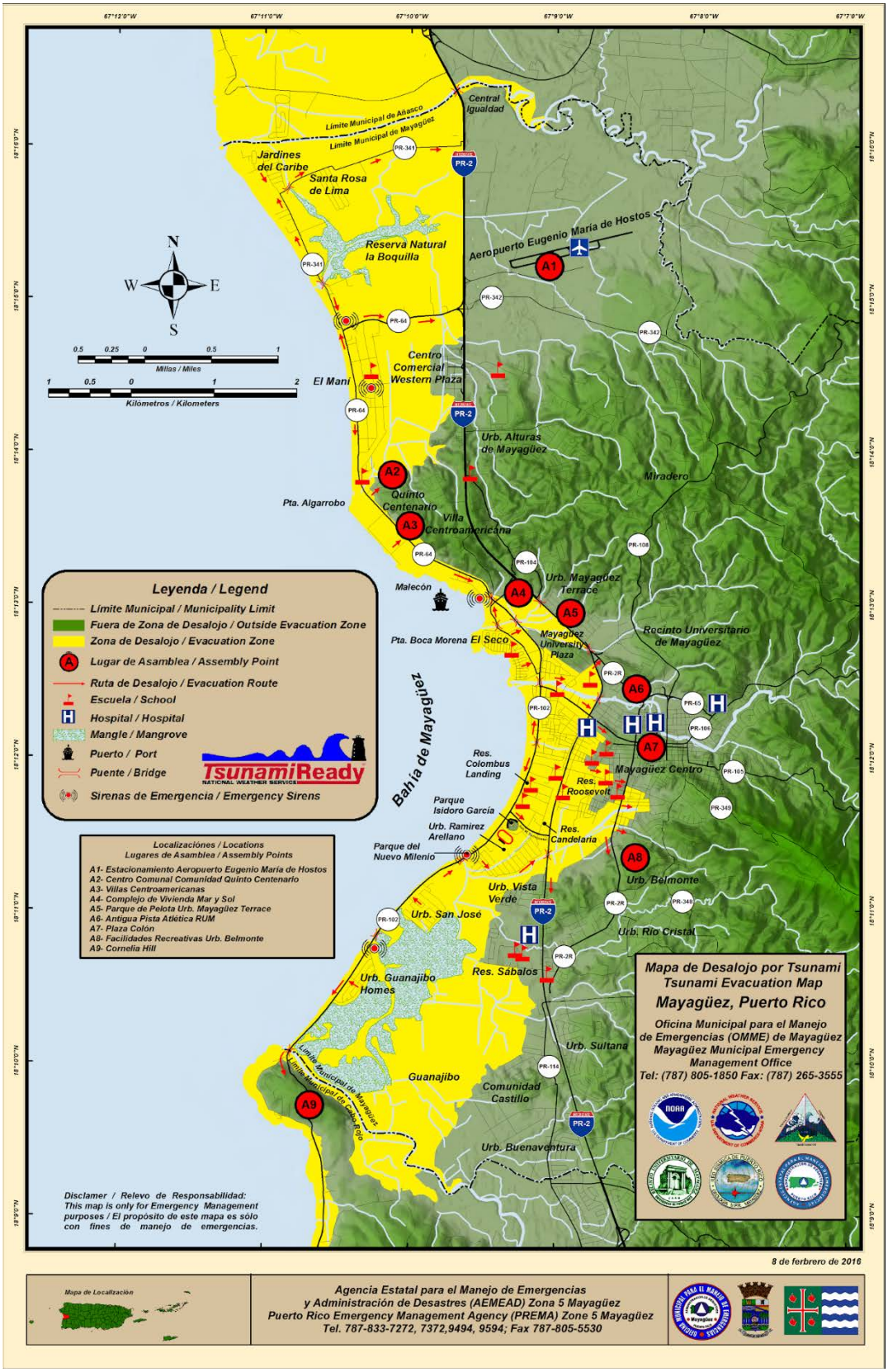

Figure 4. Evacuation map of Mayagüez, Puerto Rico, the first community to be recognized as TsunamiReady® by the US NWS in the Caribbean. It shows the evacuation zone, assembly points, and evacuation routes.(http://redsismica.uprm.edu/Spanish/tsunami/programatsunami/prc/maps/todos.php)

Figure 5. Evacuation signage in Martinique. Photo Credit: Matthieu Péroche

3.5 VERTICAL EVACUATION

Vertical evacuation buildings or structures are designed as a place of refuge above rising water that have the strength and resilience necessary to resist the effects of a tsunami. These structures provide a high ground if none exist or if insufficient time is available to evacuate to higher ground due to tsunamis triggered by local events. When going to a safe location, it should be readily available, signs posted, and preferably at least four stories tall.

3.6 PORTS AND HARBORS

Port and Harbor officials should be involved in any community tsunami response planning activities and should be included in the jurisdictional emergency operations plan. The Coast Guard should also be included in these collaborations. In the threat of a tsunami, Port and Harbor officials should provide the best advice to follow in regard to boating.

3.7 PROCEDURES BEFORE, DURING, AND AFTER A TSUNAMI

The Caribbean Tsunami Information Center has produced a guide in English, French and Spanish about being prepared for a tsunami (Annex II). It lists the essential actions and crucial procedures that everyone must be familiar with and follow carefully before, during and after a tsunami.

If violent tremors occur and you are on the coast, do not wait for the authorities to instruct you to evacuate: it could be too late (Figure 2).

Figure 6. Flyers highlighting procedures during an earthquake and before, during, and after a tsunami. These and additional education materials can be found and downloaded at https://www.shakeout.org/, http://tsunamizone.org, and https://www.ctic.ioc-unesco.org/flyers-main

3.8 PRACTISING

To be able to react better when a real warning is issued, you must practise the instructions and recommendations of the authorities. You can practise by playing map-based games, by holding discussion and reflection sessions in small groups, or by doing tabletop simulation exercises. You can also practise by carrying out simulation exercises in the field, which could involve functional or full scale evacuation exercises in real life (Figure 7). The different types of exercises are explained later in the guide. In regard to health safety, when during a pandemic, some guidelines will change to include hygiene and social distancing measures. These measures developed in response to combat pandemics and infectious diseases, such as COVID-19, and need to be considered even in exercises and in an actual tsunami event. More information on health guidelines can be found here.

3.9 MEDIA

Media participation is recommended in the tsunami exercise and should be given concluding its importance in raising tsunami awareness to the public. Its involvement will vary depending on location, in the forms of a paragraph in a newspaper to television coverage of an evacuation drill to information transmitted to the public via media networks. Spreading awareness can also be done using the communities' most popular social media platforms. It is important, however, to ensure that the media and public know about the exercise beforehand so that they do not mistake it for a real tsunami warning. If the media will be invited to cover the exercise, complete detail of the activities should be provided. An example press release for a tsunami exercise is located in the Annex III.

Figure 7. A tsunami evacuation exercise in … showing the different types of exercises. (waiting for more information) a) the location of the exercise, b) tabletop exercise, c) groups evacuating the building, d and e) evacuation group following evacuation route using the signage, and f) media coverage over the evacuation event. Photo © Matthieu Péroche.

SECTION B

MULTI-ANNUAL EXERCISE PROGRAMME AND HOW TO SET ONE UP

1. OVERVIEW

A multi-annual exercise program is a suite of exercises taking place over several years related to the hazards of tsunami-related events. The aim of these simulations is to establish a virtuous cycle of constant improvement. Once the overall objectives have been achieved and the programme has ended, a new programme with new objectives will be set up.

2. IMPORTANCE

To learn or be reminded of the procedures that the community uses; to improve response times and communication; to identify any lack of resources and remedy the situation as seen in Figure 8. If a programme has objectives, progress can be evaluated.

3. ELEMENTS

To develop a multi-annual exercise programme, the needs of the community should be analysed in advance to identify a coherent objective. The programme can combine tabletop and field exercises to better respond to those needs. This allows the exercises to be planned and evaluated.

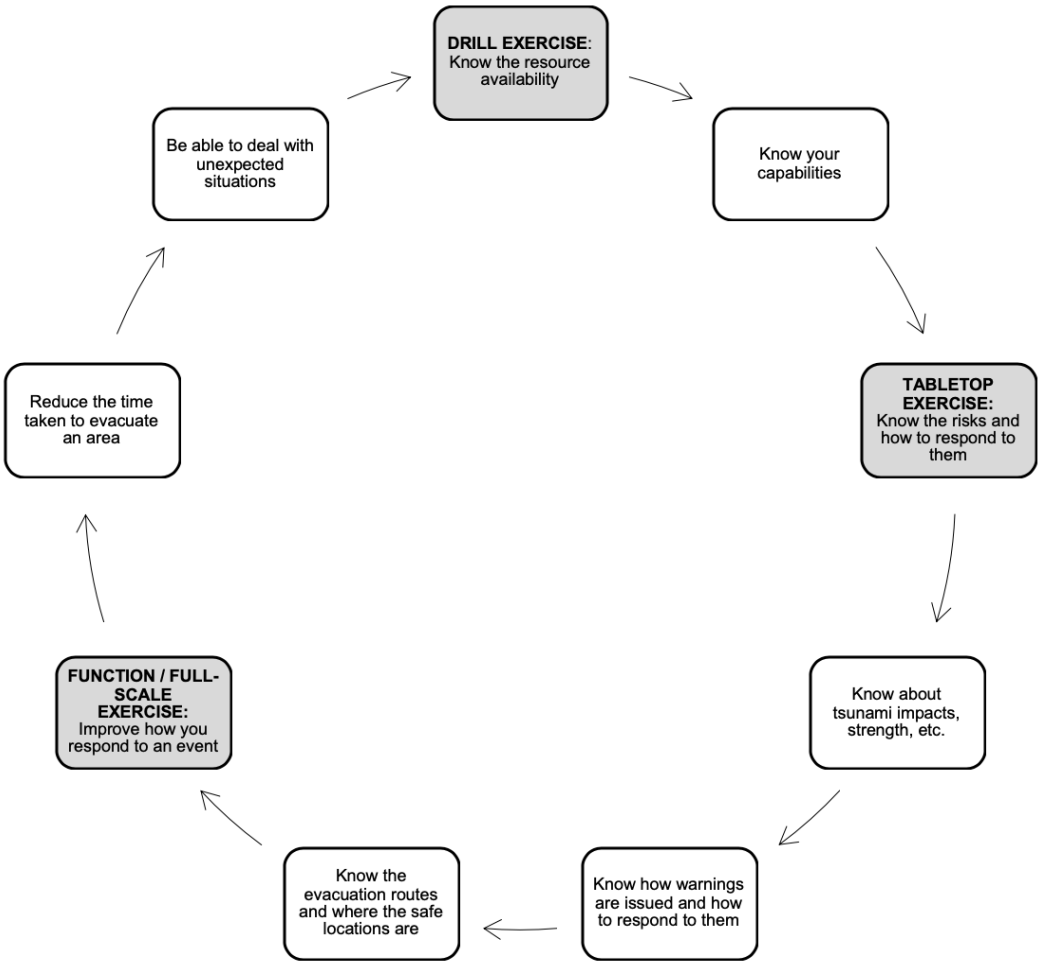

Figure 8. Multi-annual exercise development cycle

A team drawn from the community will develop the programme. Members of the team will then be deployed to implement the exercises and make them a reality.

Do you already have a multi-annual exercise programme in place? If so, you will only need to add some objectives related to preparing your community for earthquake and tsunami risks.

SECTION C

STARTING AND PREPARING A MULTI-ANNUAL EXERCISE PROGRAMME

Make sure you do not run before you can walk. Your exercise may not be the perfectly finished product on the first attempt. The important thing is to define what can be improved in order to do a better job next time. It is crucial not to conduct just one exercise and then stop, but conduct multiple.

Making progress between each exercise is what counts!

To make that progress, you should refer back to the multi-annual programme from one exercise to the next. This will allow the definition of objectives to be achieved in line with the programme and ensure that the community progresses through the different levels of complexity (Figure 8).

The construction of an exercise contains generally a phase of more or less long preparation according to the type of exercise, followed by the exercise phase of conduct and lastly a phase of evaluation of the objectives which will be made through informal or formal lessons learned. Figure 9 presents these 3 major phases.

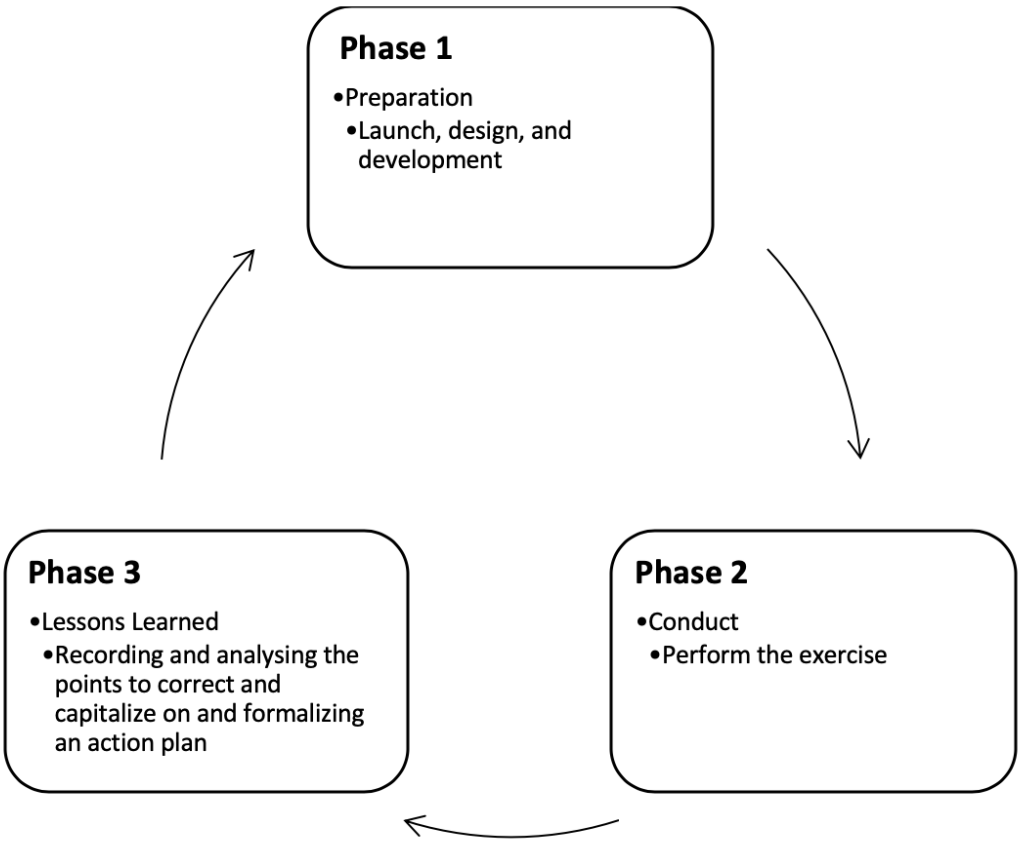

Figure 9. The three major phases of a multi-annual exercise program

PREPARING AN EXERCISE

What objectives do you want to achieve? What sort of exercise should you choose? How can you find a realistic scenario? How much time should you plan for? Where should you start?

- Start with the objectives that you want to achieve. These should be set for each stage of the multi-annual programme as it progresses. When you begin preparing an exercise, you will need to ask the right questions to identify your objectives and focus on your needs. This will allow you to run a tailor-made exercise.

- To prepare and run an exercise, you should form a team made up of people from the community and from elsewhere if necessary. The team, which can be split into smaller groups if required, should be structured around the different responsibilities and activities of coordinating, delivering and evaluating the exercise. To be effective, the team should follow a methodology, which will be detailed later on in this guide.

1. OVERVIEW

The size of the teams set up to prepare and run the exercise should be defined by how extensive the simulation is to be when delivered.

The roles that are generally allocated are as follows:

- **Command team** ensures the overall coordination of the exercise. For larger-scale exercises, a **coordination committee** may be formed. The committee is overseen by the command team and brings together the **director of delivery**, the evaluation officer and their teams. External participants (fire and rescue, law enforcement etc.) should also be included. This multidisciplinary coordination committee defines the objectives of the exercise. It authorizes the type of exercise chosen, the preparation and planning, and the resources to be mobilized for the exercise. The command team is also in charge of producing the exercise dossier. This is made up of several sections, including documentation for delivery issues, communications, finance, a list of invited observers, etc.

- **Delivery group** is responsible for drafting the delivery dossier, which is made up of the **specification note, scenario, synopsis and timeline** for delivering the exercise. These are the crucial tools needed to run an exercise. The delivery group also leads on all the logistics needed for the exercise to take place: preparing those taking part, setting up the materials needed for the simulation, arranging catering for the participants, etc. One member of this team is allocated the task of coordinating the work of the delivery group.

- **Participants** take part in the exercise. They should be people who have the minimum required know-how and appropriate attitude to be able to respond to the situation that the delivery group creates. They must be comfortable with being placed in a situation and reacting as they would in reality. The participants must not contribute to preparing the delivery of the exercise. They must not know the scenario or the actions to be introduced during the game. It is important to observe this rule as it allows the participants to practise and improve their know-how. It is encouraged that pets and service animals also participate in the exercise.

- Evaluators. **The evaluation of an exercise is conducted by people who are there purely to observe. They do not interact with those playing a role in the simulation. They use an evaluation chart to record the extent to which the objectives have been achieved, and make observations about what went well (what should be**

capitalized on) and about points that are in need of improvement (Annex VIII). Together with the command team, they contribute to preparing the lessons learned phase.

2. PRODUCING THE DELIVERY DOSSIER

The delivery dossier is a specification note with a synopsis and timeline. The delivery group uses the two attachments as tools to run the exercise (example specification note, synopsis and timeline are annexed).

2.1 DRAFTING THE SPECIFICATION NOTE

The specification note (Annex IV) summarizes all aspects of the exercise, particularly the objectives, type of exercise, scenario, timeframe, rules of play and safety measures.

2.2 DEFINING THE OBJECTIVES

Defining the objectives is the first and essential step towards delivering the exercise. The choice of exercise type, scenario, duration, people involved etc. will be influenced by the objectives chosen. It is a good idea to try to establish a coherent link between the overall objective of the exercise and the goal defined in the multi-annual programme for the phase in question.

What should be asked to define the objectives?

The following questions can help define the objectives:

- What knowledge, know-how and attitudes will individuals need to have as a prerequisite for participating in the exercise?
- What should the exercise add to the participants' knowledge, know-how and attitudes?
- How should the change in the participants' levels of knowledge, know-how and attitudes be measured during the exercise?

One overall objective should be identified, with two or three specific objectives flowing from it as seen in Figure 10 below.

Example objectives

Example 1
Overall objective: Carry out a test evacuation of people in an evacuation zone as if a tsunami warning had just been issued.

Specific objectives:
1. 100 per cent of the 1,000 people in the evacuation zone when the warning is issued should know the quickest way to reach a tsunami safe location on foot.
2. 90 per cent of the 1,000 people in the evacuation zone when the warning is issued should have reached a tsunami safe location in less than 15 minutes.
3. 100 per cent of the 1,000 people in the evacuation zone when the warning is issued should have evacuated on foot.

Example 2
Overall objective: Test the system for issuing a tsunami warning via a siren, smartphone messaging or community warning vehicle to those in a given sector of the evacuation zone.

Specific objectives:
1. 100 per cent of those to be evacuated should know that they can receive a tsunami warning by one of the three methods above.
2. 100 per cent of the 1,500 people to be evacuated can receive the warning by at least one of the methods.
3. 90 per cent of those to be evacuated should have received the warning by at least one of the three methods in less than five minutes.

Figure 10. Shows examples of one overall objective with specific objectives coming from it

The objectives should be S.M.A.R.T. and follow the Figure 11 below:

S.M.A.R.T. Guidelines for Useful Objectives		
Objective		**Description**
S	***Specific***	Objectives should specify what they want to achieve – i.e. what results they are looking for.
M	***Measurable***	The objective should set the level of performance, so that results are observable and can be identified when the objective has been achieved. This is attained through indications of success/failure or by quantifiable standards.
A	***Achievable***	The participants should be able to achieve the objectives. For example, achieving it should be within the resources that the agency would reasonably be expected to commit to in a real event.
R	***Realistic***	The objective should be able to reproduce in a real-life situation. Even though an objective might be achievable, it might not be realistic for the exercise.
T	***Task oriented or time driven***	The objectives should focus on a behavior or procedure. With respect to exercise design, each objective should focus on an individual function. Objectives should also be time driven stating when something should be completed by.

Figure 11. S.M.A.R.T. Guidelines for writing objectives

2.3 CHOOSING AN EXERCISE TYPE

There are several types of exercise, each of which will be more or less suitable depending on the objectives that have been set, the time available, funding levels, and how much the participants know on how to react to instructional warnings (Figure 12).

There are four types of exercise:

- Drill

Drill exercises focus on detailed arrangements for testing specific operation or function in a single organization, facility, or agency such as a hotel, school, village, etc. This is different from the full-scale exercise, which is less detailed and instead formulate findings towards a higher strategic focus. Drills are used to test the response time with regards to a specific activity, train personnel, assess the capabilities of equipment, assess the cooperation between agencies, and determine whether the capabilities of the resources and personnel staffing is sufficient. An example of a drill exercise would be activating an Emergency Operations Centre or using alternative communications (such as radios) in a tsunami exercise. An example flyer over drills can be found in the Annex V.

- Tabletop

A tabletop exercise may be referred to as a discussion exercise which are desk-based activities. This type of exercise is intended to generate discussion of issues related to the state of emergency. Participants are presented with a situation that they are required to discuss and for which they formulate the appropriate response or solution. An exercise controller or moderator introduces a simulated scenario to participants and as the exercise advances (in time) exercise problems and activities (injects) are further introduced. Tabletop exercises may be used to increase public awareness, validate plans, policies and procedures, and training concepts, and/ or to assess the type of systems needed to guide the prevention, protection, mitigation, response, and recovery from the event that has defined. It can also be used to practice problem solving and coordination of services with or without time pressures.

- Functional

A functional field exercise may also be referred to as an ‘operational’ or a ‘tactical’ exercise. This type of exercise is simulated and takes place in an operational environment that requires participants to perform the functions of their roles. These participants interact with the exercise control group who provide prewritten injects and respond to questions and task developing out of the exercise. Functional exercises usually focus on testing plans, policies, and procedures. As well as the multi-agency staff participation involved in the management, direction, command, control, and focusing on the testing of standard operating procedures and internal/external communications between organizations. Functional exercises provide a more realistic simulation of an emergency situation compared to the tabletop exercise.

- Full-scale

A Full scale exercise may also be referred to as a ‘practical’ or ‘field exercise’. They are usually the biggest, most expensive, most complex and resources-intensive types of exercise, as the focus may include higher-level response structures, and they can be with one agency or multi-agency (different levels of governments from national to local). These exercises are used to test all aspects of the warning and emergency management systems and processes, such as the practicality and communication methods. They are useful to assess and improve operational activity, interagency cooperation, testing resources and personal allocation, manage the public and media, and test equipment capabilities. An example of full-scale

exercise would be a post impact tsunami response with volunteers portraying 'victims' and the emergency services using real equipment at the scene with coordination between multi-agency personnel and response to the event. Since actual field mobilization and deployment of response personnel are conducted, full-scale exercises are the most costly, time consuming, and complex to plan, conduct, and evaluate.

Types of Exercise	Drill	Tabletop	Functional	Full Scale
Format	Actual field or facility response of a specific element or function. Actual equipment Is used, or a physical action performed.	Group discussion of a scenario or problem. Presented narrative scenario; can be facilitated by exercise control. Players note or present their solutions or outcomes.	Players respond to a scenario in real or condensed time and in a realistic environment. Narrative scenario facilitated by exercise control. Players are evaluated. Interactive and complex.	Players respond to a scenario (with simulated enactments) in real time. Visual narrative, players exercise in actual centres and/or impact site(s). Tsunami Warning Centre (TWC) actions trigger Emergency Operations Centre (EOC) actions. EOC actions trigger community actions. Actions at scene serve as input to EOC simulation. Interactive and simple or complex.
Leaders	Manager, supervisor, department head, or exercise coordinator	Facilitator	Exercise Coordinator	Lead exercise coordinator and exercise coordination Committee
Players	Functional staff	Normally staff of the same level with a warning/response role for the type of situation	All staff with warning/response roles for that function	All or specific staff with warning/response roles
Facilities	Facility, field, or EOC	Conference rooms or rooms	TWC, EOC or other operating centre (multiple rooms)	Realistic 'on the ground' setting TWC, EOC or other operating centre.
Time (typical)	1 – 4 hours	2 – 4 hours or longer, up to 3 days	4 hours up to 1 or more days	2 hours up to 1 or more days
Preparation	Simple preparation, 1 – 2 weeks.	Complex but inexpensive preparation, 1 – 3 months. Preceded by drill.	Complex and expensive, 6 – 18 months preparation. Preceded by simpler exercises. Significant allocation of resources.	Expensive due to extensive time, effort, and resources. 6 – 18 months preparation. Preceded by drills, tabletop and functional exercises

Figure 12. Summary of exercise types and relevant elements

2.4 CHOOSING THE RIGHT TYPE OF EXERCISE

Is this the first exercise that we have organized? Do the participants understand the safety procedures? How much time do I have (do I have a large or small amount of time)? Do I have the right number of support staff with the right skills to deliver and oversee a field exercise? One should choose the type of exercise according to:

- The level of required knowledge of those taking part**.** Knowing about good ways to respond to a tsunami event is an essential prerequisite for those taking part in a field exercise. People can learn about good ways to respond through a tabletop exercise or functional exercise simulation. Individuals who have already completed exercises and have a sound understanding of the response procedures can be tested on a wider set of objectives by participating in full-scale field exercises.

- Objectives**.** Some objectives cannot be tested in a tabletop setting, such as "test the time taken for an evacuation to be completed" or "engage all people to be evacuated from the community". Those sorts of objectives must be dealt with in a more realistic situation.

- Resources**.** When performing these exercises take into consideration the resources available (including finance and personnel) to identify and resources gaps. Ask the questions “is there a budget to deliver the exercise?” or “does the agency have the resources to tailor the exercise further, and what staff and time commitment will be required to do this?”. From previous post-exercise evaluations done in several countries, a challenge found was resource commitment for planning and preparation.

- Allocated time. Tabletop exercises save time when preparing and running an exercise. They are well suited for small groups of people, such as those responsible for overseeing the evacuation of the community. A functional or full-scale exercise will take more hours to prepare, conduct, and evaluate.

Before running a field exercise, you must ensure that the participants have the necessary minimum level of knowledge to respond to a simulated situation. If no preventive information has yet been disseminated, it would be better to start with a tabletop exercise involving those likely to be helping to oversee the evacuation.

2.5 CHOOSING A SCENARIO

Scenarios must be thought-through and chosen on the basis of your location and events that have the potential to occur. It is pointless practising evacuations that can deal with 20-metre-high tsunamis if the maximum expected wave height is five metres. It is important to be geared to reality. The National Tsunami Warning Center and the National Emergency Management Organization can help the community define the appropriate scenario. Alternatively, scenarios of CARIBE WAVE exercises can be used (https://caribewave.info).

A scenario must be **credible** and **compatible** with your geographical location.

To choose a scenario, find out from the authorities (National Tsunami Warning Centers) about the maximum projected height of waves in your region, the sorts of warnings to expect, response times etc.

Varying the scenario for every exercise is one of the best ways to practise. If you plan to conduct two live evacuation exercises during the year, the objective for the first exercise could be to test how the warning is received when issued by the authorities. The scenario could involve a regional or a distant tsunami. The objective of the second exercise could be to test

an unplanned evacuation. The scenario could be that a tsunami had formed nearby, so that the area had to be evacuated without waiting for the authorities to issue a warning.

The scenario must relate to the objectives that have been set, not the opposite

2.6 DETERMINE THE DURATION OF THE EXERCISE

The scenario can be conducted in real time or compressed time (meaning that the time and space in which the exercise is conducted is less than the time that would be needed in reality). If the exercise was run in compressed time, this would need to be specified.

2.7 EXERCISES CAN BE ANNOUNCED OR UNANNOUNCED

Depending on the objectives and the participants' level of knowledge, the three types of exercise can be announced (participants know the date and time of the exercise in advance) or unannounced (participants are partially or totally unaware that the exercise is to take place).

You should decide in advance whether or not you want the participants to be aware that an exercise is to take place. This choice will affect the ways in which they respond.

2.8 DEFINING THE RULES OF THE EXERCISE

The rules are instructions given to the participants to define the boundaries of the exercise. In the case of a field exercise, for example, you should clarify what will be played out in reality and what will only be simulated (i.e.: what will not be fully played out).

2.9 DEFINING THE SAFETY MEASURES

These are all the measures to be taken to ensure the safety of those participating in the exercise, particularly when running a full-scale, live field exercise. This task can be allocated to an appropriate person from the community, or to someone from an external body, such as the fire and rescue service.

2.10 PREPARING THE LOGISTICS

The materials for the elements of exercises always need to be organized. For a tabletop exercise, you should prepare what you need to run the activity that you have planned with the participants. For example, if you want to establish an evacuation route, it may be useful to have evacuation maps, paper and pens on to hand.

For a field exercise, you will need to make sure that you have all available equipment that the participants will need, as well as anything that will help the exercise to be as realistic as possible. That is why it is important to choose a location and, where necessary, to "decorate" it so that the exercise runs in a setting that is sufficiently realistic for the participants.

If the exercise is being run over a large area, you should ensure that you have an appropriate way of simultaneously informing all participants about the start and end of the exercise. Depending on the length of the exercise, you might also need to provide the participants (actors, 'bodies' etc.) with food and accommodation.

2.11 DRAFTING THE SYNOPSIS

The synopsis sets out how long the exercise will last and the main phases of its delivery from start to finish. It establishes a timeline of the key moments or events that will occur throughout the exercise, as well as the expected responses of the participants (Annex VI). The events are

"compulsory stages" in light of the specific objectives set.

2.12 DRAFTING THE TIMELINE

The timeline sets out a chronology of the groups of actions that will be introduced to elicit a response from the participants throughout the exercise. It should include a start time, sender, receiver, communication method, and expected response (Annex VII). The timeline will be more or less detailed depending on whether the scenario is straightforward (an opening situation) or more complex (involving knock-on effects or disruptive factors).

Members of the delivery group introduce each action in the exercise. They should never be participants, as they know how the entire exercise will turn out. For a tabletop or partial field exercise, the delivery group can play certain key roles to allow the exercise to run realistically. For example, in a tabletop exercise the participants might play a group of people that had been evacuated, one of whom had been severely wounded during an earthquake. When the participants need to call the fire and rescue services, a member of the delivery group could take on the role of a firefighter. By contrast, during field exercises, the delivery group is there to launch the exercise and, if necessary, to introduce some disruptive factors that would have been planned out in advance. However, with this type of exercise, the general aim is to let the simulation run its course from start to finish without intervening.

SECTION D

CONDUCTING AND EVALUATING THE EXERCISE

1. OVERVIEW

The way in which the exercise runs mainly depends on the people that have prepared it. These people should know about and follow certain specific rules according to the type of exercise selected. These individuals participating in the exercise are separated into their respective teams, each playing a different role with varying involvement levels depending on the selected exercise. These teams can be broken down into the Exercise Command and Delivery teams, Participant team, and Evaluators teams as described below and in Figure 13.

1.1. THE EXERCISE COMMAND TEAM

The exercise command team's, also known as the exercise coordination committee, role is to provide general oversight of the exercise and in particular:

- To launch and end the exercise;
- To anticipate and manage any potential difficulties that might disrupt the smooth running of the exercise;
- To ensure appropriate levels of safety, especially during field exercises;
- To decide to end the exercise earlier than planned if a significant problem arises (such as a serious injury or a real-life situation occurring during the exercise);
- To make sure actions are followed through that will raise the profile of the exercise, especially inviting the authorities to attend and replying to press queries.

The exercise command therefore works very closely with the director of delivery.

1.2. THE DIRECTOR OF DELIVERY TEAM

The Director of Delivery teams' main role is to coordinate the work of those in the delivery group. With support from their team and sometimes from the evaluators, the director is constantly kept informed of how the exercise is running. They can intervene to facilitate the conduct of the exercise, either by increasing the speed at which new actions or factors are introduced in comparison to the planned timeline, or by slowing down the pace of the exercise.

The director of delivery should ensure that the circumstances of the game do not result in stalemate or total failure for the participants. They are allowed to make mistakes. The exercise should always have been of some benefit to them. Mistakes are not a measure of the exercise's lack of success.

Under the leadership of the director of delivery, the delivery group should:

- Brief the players on how the exercise will be run, especially on the rules of the game and the safety instructions;
- Use the synopsis and timeline to trigger the planned events so as to place the participants in a given situation and elicit responses from them.

1.3. PARTICIPANTS

The participants (who can also be known as actors or even 'bodies') are the human resources. These should be people who have the minimum required know-how and appropriate attitude to be able to respond to the situation that the delivery group creates. They play a very specific role that will contribute to simulating the exercise scenario. They must be comfortable with being placed in a situation and reacting as they would in reality. If necessary, they can be made up to simulate their role and/or their state of health. Participants do not know everything that will happen during the scenario; they are only aware of what they need to do, as directed by the delivery group and should not contribute in preparing the delivery of the exercise. It is important to observe this rule as it allows the participants to practise and improve their know-how. One of the main aspects of a field exercise is preparing the participants to act as injured people, those involved in the event or passersby. For example, during an evacuation, a participant might be asked to play the part of a distressed parent who has come to school and wants to collect their child. As appropriate pets and service animals can also be included in the exercise as participants.

1.4. THE EVALUATION TEAM

The Evaluation Team's main role is to observe the behaviour of the participants and evaluate the extent to which the objectives are met. Each evaluator should record their observations in writing on an evaluation table that will have been prepared in advance (icon with cross-reference). For field exercises, the evaluators can record images and sounds (photos and videos) to substantiate their observations. However, they should make sure that they do not interfere with the participants. An example of the Exercise Evaluation Form can be found in the Annex VIII.

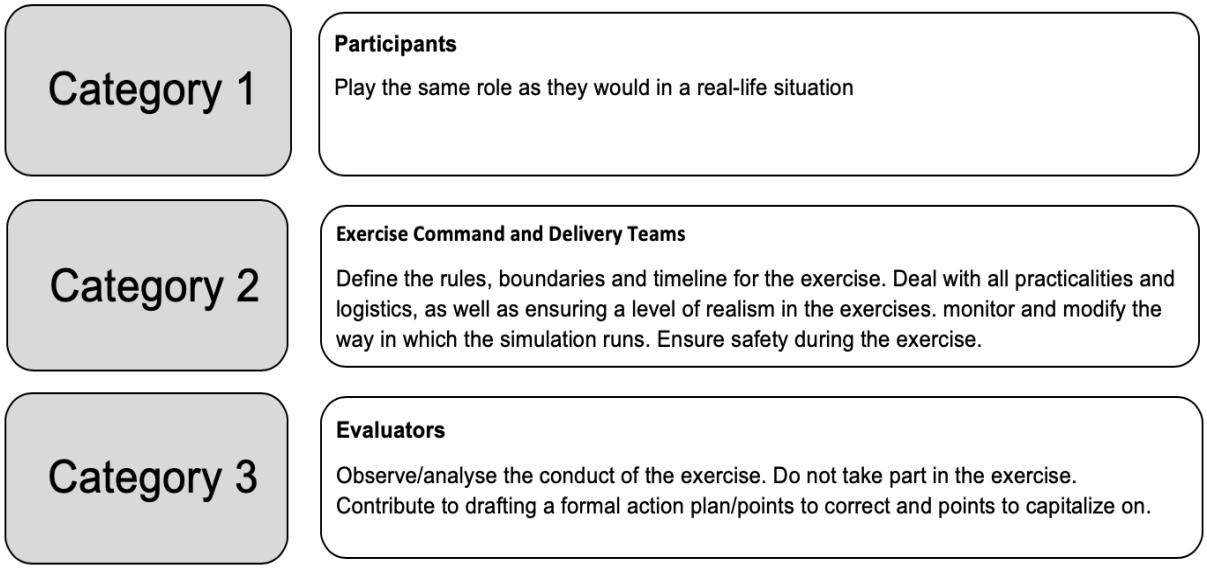

Figure 13. Describes the different exercise component categories

1.5. SPECIFIC GUIDANCE FOR CHOOSING, PREPARING, AND RUNNING A DRILL EXERCISE

A drill exercise is small scale, simple and requires less planning than the tabletop or function/full scale exercises. The exercise usually has a time frame element and can be a subset of a full-scale exercise. It is used to test the response time with regards to a specific activity, train personnel, assess the capabilities of equipment, and determine whether the capabilities of the resources and personnel staffing is sufficient.

When planning a drill, have a goal in mind of what one would want to achieve such as testing the communication network. For instance, within a warning centre, a drill might consist of the operations for a local tsunami warning, or just the communication notification procedures for local tsunami. The exercise command and delivery team will prepare and run the exercise, while the participants' team will perform the exercise. At the end the evaluation team will provide feedback on what can be improved at the end of the exercise. The command and delivery team should make the objectives clear on what is to be achieved.

1.6. SPECIFIC GUIDANCE FOR CHOOSING, PREPARING, AND RUNNING A TABLETOP EXERCISE

A tabletop exercise is well suited to testing the organizational capacity of a community in a crisis situation. It is also useful for testing team relations among those in leadership positions, and relations with people outside the community (institutional and public authorities, emergency services, law enforcement, harbour masters, health officials, media, etc.)

The objective of this sort of exercise is often centred on the participants' capacity to structure themselves so that they can collect information, process it to analyse the situation, anticipate potential developments, and propose both setting objectives and taking action that will protect and/or provide assistance to members of the community.

It is a good idea for community leaders to present initial and interim situation reports in order to work out what action should be taken. These situation reports require leaders to formalize their decisions. They are therefore a good way of providing objective evaluation and distinguishing good practices from those that should be avoided.

The delivery group should be made up of people who:

- Will not act as participants in the exercise;
- Have a good understanding of the expected responses of participants when placed in the simulated situation.

One objective that should be achieved is to establish a robust delivery group within the community. Its members should be chosen for their good grasp of what should be done to manage a simulated crisis situation in the most effective way. These people can hone their skills over time and become a "professional" team, capable of preparing and conducting exercises that allow the community to improve through practice.

The delivery group should observe certain rules:

- Keep details of the scenario (synopsis and timeline) confidential so that the exercise retains credibility and enables the participants to be properly evaluated;
- Allow participants to interact with the delivery group by establishing methods of audiovisual communication that enable the actions planned in the timeline to be introduced into the exercise. The communication can be by telephone, electronic messaging, video conference … For example, a member of the delivery team might play the role of a fire and rescue operations centre and call the participants by phone: “Hello, firefighters calling…” The participant could then ring back on the same number to contact the firefighters: "Hello, is that the firefighters? This is the community leader calling…"

- Draw up an exercise directory where all communication methods (telephone, email address, video calling) are made available to the participants to contact the authorities and partners being simulated by the delivery team.

- Be capable of making adjustments to their work in line with the participants' reactions. The exercise has an educational objective. This means that while it is running, the director of delivery should take into account the participants' reactions and slow down, speed up or sometimes adjust the actions planned out on the timeline.

1.7. SPECIFIC GUIDANCE FOR CHOOSING, PREPARING, AND RUNNING A FIELD EXERCISE (FUNCTION OR FULL-SCALE)

The general principles laid out above for tabletop exercises also apply to field exercises. However, field exercises have a few specificities.

The delivery team should produce an exercise dossier containing the same delivery tools, including:

- A specification note that lays out the logistical and safety issues with further details as added below. It is more important to take account of these details in a field exercise than during a tabletop game.

- A synopsis to identify the key phases of the exercise; this should allow the participants responses to be evaluated so as to check whether they are in line with the objectives set for the exercise.

- A timeline: this will be shorter than for a tabletop exercise. In a field exercise, the aim is for the delivery team to place the participants in a situation and leave them to respond. Take, for example, an exercise that simulates an earthquake followed by a tsunami that hits a school community. The delivery group would launch the exercise by sounding a siren that denotes the beginning and end of the tremors. The group would observe the responses of the participants who should take shelter during the tremors and then evacuate to higher ground. The delivery group could introduce some obstacles along the evacuation route. This would test the capacity of the community leaders to find solutions to unexpected situations.

- A plan for the more significant logistical and safety issues. Field exercises require a small delivery team with a larger number of people to prepare all the logistical matters needed to run the exercise. A number of matters should be borne in mind to ensure that the simulated scenario that the participants are to be confronted with is as realistic as possible.

- In the case of a tsunami evacuation exercise, these matters are:

    - The method used to signal the beginning and end of tremors or to issue a tsunami warning;

    - The signage set up to mark out the zone to be evacuated, the route to follow and the safe location that must be reached in order to be out of danger;

    - What methods to deploy to secure the route that should be followed during the evacuation, particularly when that route follows roads normally used by cars;

    - Information to disseminate to residents in the community so that they are aware that an exercise is being conducted;

- Make up and/or briefing for people ('bodies') whose role is to play a wounded individual or to disrupt proceedings;
- Tabards or other methods of distinguishing the delivery group, participants and observers / evaluators.
- Including people with disabilities
- Participation of the media

- Field exercises also mobilize a large number of participants, people who ensure the safety of the players, and people placed at various locations where the exercise is taking place tasked with observing the responses of the players and evaluating the exercise. For a tsunami evacuation exercise, it might be useful to record how much time elapses between the first and the last participant reaching the safe location.

2. COMPLETING THE 'LESSONS LEARNED' PHASE OF THE EXERCISE

The lessons learned phase is essential in order to learn from past experience of conducting an exercise, capitalize on good practices and avoid making the same mistakes again. These findings should be shared with the exercise command team, corresponding tsunami stakeholders, and exercise participants.

The lessons learned phase generally breaks down into two parts:

- 'Hot lessons learned' or debriefing occurs directly after the end of the exercise. The exercise command team facilitates this phase in which the various people that took part make comments. The team ensures that key points are recorded. This allows reference to be made later to the opinions of the participants, players, delivery team and evaluators regarding the positive points and the points for improvement.

- 'Cold lessons learned' takes place several weeks after the exercise and is consolidated in writing. It often involves a smaller group of people. The process deals in more detail with lessons that can be drawn from the exercise. The positive points, the aspects to capitalize on and the points for improvement (objectives that were not achieved or bad practices that should be banned) all form part of the learning process. These lessons should be consolidated in writing and brought to the attention of the participants. They will be the basis of a draft action plan designed to improve the readiness of the participants. The consolidated lessons learned document will be the point of departure for the next exercise.

No exercises should be conducted without objectives or without a lessons learned phase to evaluate the extent to which those objectives were achieved

ANNEX I

FIGURES AND DOCUMENTS

BLUE INFOGRAPHIC ON RIGHT HAND SIDE:

Title reads:

SIGNAGE FOR A TSUNAMI HAZARD ZONE

Legible parts of the graphic with black/yellow triangle (left and map (right) read:

[Left] Tsunami hazard zone

[Right] Tsunami evacuation plan. College du Robert 3

Caption underneath graphic with black/yellow triangle (left) and map (right)

Sign used in a hazard zone within the territories WITH evacuation plan

Each hazard zone symbol must appear together with an evacuation plan.

A sign showing the evacuation route must be on display where the route begins.

BLUE HEADING ABOVE 4 GREEN SIGNS

ESTABLISHING AN EVACUATION ROUTE

Legible parts of green signs read:

Tsunami evacuation route: 300m

Tsunami evacuation route: 430m

Tsunami evacuation route: 620m

Tsunami safe location: Pontalery heights

Captions for green signs:

Evacuation route signs. These show the most direct routes to an elevated tusnami safe location. They are displayed in strategic places for maximum visibility (squares, junctions etc.).

Tsunami safe location sign. This sign designates an assembly point at an elevated location that is more than 15 metres above sea level. It is a safe location that should be used as a priority by those in a given area where there is a risk of a tsunami.

Figure I–1. Signage for a Tsunami Hazard Zone

ANNEX II

GUIDELINE FOR WHAT TO DO BEFORE, DURING, AND AFTER A TSUNAMI

Before a Tsunami

1. Contact your local authorities regarding the tsunami alerting procedures, threat and preparedness activities for your community.
2. With the help of your local disaster management officials, identify the potentially vulnerable areas and assembly locations using inundation and evacuation maps where available. Specifically include your home and workplace in your discussions.
3. Determine escape routes to high ground or inland, avoiding low lying coastal areas and river plains.
4. In the nearby coastal areas, identify concrete, steel-reinforced multi-storey buildings preferably at least three-storeys that can possibly be used for vertical evacuation if necessary.
5. Ensure that all family members and co-workers can recognize the natural tsunami warning signs, as timely, official Tsunami Warnings from authorities may not be possible.
6. Prepare a tsunami emergency plan, and teach and practice your plan with all family members and co-workers.
7. Prepare a safety backpack, including emergency supplies and equipment such as canned foods, medication, flashlights, battery-powered radios, clean water and first aid kits.

Practicing tsunami evacuation in the Virgin Islands (UK). *Source: bvinews.com.*

During a Tsunami

1. Follow official guidance. However, if you recognize any of the natural tsunami warning signs, do not wait for an official warning before evacuating; authorities **may not** have enough time to issue a Tsunami Warning.
2. If you are at the beach and recognize any of the natural tsunami warning signs - move immediately (preferably **by foot**) to an assembly point or higher ground. Abandon belongings; focus on saving your life, not your possessions.
3. If you are unable to move to higher ground, go to an upper floor (preferably at least the 3rd storey) or roof of a concrete, steel-reinforced building.
4. Sometimes tsunamis may occur without the initial pulling back of the sea. In this case, a massive wall of water may be seen approaching land. If you can see the wave you are already too close to outrun it.
5. As a last resort, climb a strong tree if trapped on low ground.
6. If time permits, vessels should navigate offshore to waters 100-400 meters deep.
7. Prepare a safety backpack with all the essential items (at least water, non-perishable food, battery or hand held radio and flashlight) you will need if you are trapped or have to evacuate.
8. Tsunami waves may flood areas much further inland than storm surges. If swept up by a tsunami, look for something to use to keep you afloat.
9. A tsunami is not a single wave, but a series of waves and very strong currents that can come ashore and affect beaches and harbours for hours. The first wave may not be the largest.
10. If a Tsunami Warning is issued NEVER go down to the beach to watch the waves come in.
11. Stay in the safe area until a recognised authority e.g. your local disaster management office issues the "ALL CLEAR," THIS MAY TAKE MANY HOURS.

After a Tsunami

If possible, stay tuned to a radio or television to get the latest emergency information. ONLY venture out of your safe area, return home or go to the coast when authorities give the ALL CLEAR indicating it is safe to do so.

Once the ALL CLEAR is given:

- Keep out of stagnant water.
- Stay out of damaged buildings.
- Help injured or trapped people if possible and call for help if necessary.
- Check for damage to gas, sewer and water lines.
- Open windows and doors to help dry buildings.
- Check food supply and test drinking water.
- Fresh food that has come in contact with floodwater may be contaminated and should be discarded.
- Remove mud while it is still moist to give walls and floors an opportunity to dry.

Tsunamis often leave behind stagnant water which contains dangerous debris. American Samoa, September 2009. *Photo: Gordon Yamasaki.*

IF YOU RECOGNIZE ANY SIGNS OF A TSUNAMI, MOVE IMMEDIATELY TO HIGHER GROUND.

Figure II–1. https://www.ctic.ioc-unesco.org/

ANNEX III

PRESS RELEASE

SAMPLE PRESS RELEASE FOR LOCAL MEDIA

TEMPLATE FOR NEWS RELEASE

USE AGENCY MASTHEAD

Contact: (Insert name) **FOR IMMEDIATE RELEASE**

(Insert phone number) (insert date)

(Insert email address)

(*insert exercise name*) EXERCISE TO BE CONDUCTED ON (*insert date*)

(*insert community name*) will participate in a tsunami response exercise on (*insert date*). The purpose of this exercise is to evaluate local tsunami response plans, increase tsunami preparedness, and improve coordination throughout the community.

(*insert a promotional comment from a local official*, such as "The 2010 Haiti, 2010, 2014, 2015 Chilean, 2011 Japan, and the recent 2018 Sulawesi earthquakes and tsunamis have reminded the world of the urgent need to be more prepared for such events," said (*insert name of appropriate official*). "this important exercise will test the current procedures of the Tsunami Warning System and help identify operational strengths and weaknesses in each community." (*Please modify for uniqueness*.))

The exercise, titles (*insert title*), will simulate a widespread Tsunami Threat situation throughout (*insert location*), which requires implementation of local tsunami response plans. The exercise will (*insert "include" or "not include")* public notification.

Insert paragraph tailored for specific community. Could identify agencies and specific plans. Could describe current early warning programs, past tsunami exercises (if any), ongoing mitigation and public education programs, etc. Could describe tsunami threat, history of tsunami hazards, if any.

If any real tsunami threat occurs during the time period of the exercise, the exercise will be terminated.

For more information on the U.S. tsunami warning system, see http://www.tsunami.gov.

ANNEX IV

SPECIFICATION NOTE TEMPLATE FOR TSUNAMI EVACUATION EXERCISE

Specification Note for Running an Exercise			
Exercise type o Drill o Tabletop o Functional o Full scale o Announced o unannounced	Location of exercise:		Scheduled date:
	Level of participants in the exercise:		Timings: Day/night Morning/afternoon Start time: End time:
Subject			
Objectives	Overall Objectives:		Specific objectives:
Those involved	(Ranging from general public to media to fire and rescue services)		
Pace	o Fast	o Slow	o Compressed time
Weather conditions	o Real	o Fictitious	If fictitious:
Communications during the exercise	o Yes	o No	If so, who is to provide the communications? Where and when?
Participants	o Yes	o No	If so, specify which and how many.
Scenario and Timeline	General overview and breakdown of timings		
Exercise rules			
Logistics			
Evaluators			
Evaluation form	o Submitted	o Not submitted	
Observations			
'Hot' lessons learned	What time, where and with whom?		
'Cold' lessons learned	What time, where and with whom?		
Name of Director or exercise command			
Name of Director of delivery			
List of actions to be introduced (optional)			

SPECIFICATION NOTE FOR TSUNAMI EVACUATION EXERCISE

Example Collège Robert 3

Thursday 17 March 2016

<table>
<tr><th colspan="4">SPECIFICATION NOTE FOR RUNNING AN EXERCISE (Page 1/2)
Tsunami exercise – CW16</th></tr>
<tr><td rowspan="2">Exercise type
o Tabletop
o In the field
o Partial
o Full scale
o Planned
o Unplanned</td><td colspan="2">Location of exercise</td><td>Scheduled date
Thursday 17 March 2016</td></tr>
<tr><td colspan="2">Risk type
o Natural risk
o Technological risk
o Health risk
o Social risk</td><td>Level of participants in the exercise:
Establishment director
Communal command post
Departmental operations centre
Academic crisis cell</td></tr>
<tr><td colspan="3"></td><td>Timings:
Day/night
Morning/Afternoon
Start time: 1030
End time: 1200</td></tr>
<tr><td>Subject</td><td colspan="3">An earthquake measuring 8.4 on the Richter scale has occurred in the north of Venezuela. It has triggered a tsunami that is to strike Martinique. The warning comes from the Rector's Office - no tremors are felt.</td></tr>
<tr><td>Objectives</td><td>Overall objectives:
Test the crisis cell in the college and the tsunami evacuation route</td><td>Interim objectives:
• Activate the targeted safety plan.
• Evacuate, ensuring that no one remains at the college (use checkpoints).
• Check the responsibilities of each person</td><td>Specific objectives:
• Activate the targeted safety plan.
• Walk to the tsunami safe location at Pontalery heights in less than 15 minutes.
• Issue a situation report from the safe location to</td></tr>
</table>

		in the crisis cell. • Test the tsunami evacuation route	the Rector's Office. • Test the cascaded warning system (Town hall and Rector's Office => college).
Those involved		Low-intensity delivery	High-intensity delivery
	Selected		
	General public	o Collège Robert 3	• Town hall • Departmental operations centre • Rector's Office • Fire and rescue service
	Other	o Media o Parents	
Pace	o Fast	o Slow	o Compressed time
Weather conditions	o Real	o Fictitious	If fictitious:
Communications about the exercise	o Yes	o No	If so, who is to provide the communications? Rector's Office Where and when? After the exercise
Communications during the exercise	o Yes	o No	If so, who is to provide the simulated media challenge?
Participants	o Yes	o No	If so, specify which and how many.

SPECIFICATION NOTE FOR RUNNING AN EXERCISE (Page 2/2) **Tsunami exercise – CW16**	
Scenario and timeline	<u>General overview and breakdown of timings</u> T-15 mins: Observers and evaluators to be in place at the college. Participants to be in place at the departmental operations centre. T0: Prefecture issues tsunami risk warning to coastal town halls. T+1 min: Town hall issues tsunami risk warning to college. T+1 min: Rector's office forwards tsunami risk warning to educational establishments in the coastal zone. T+2 mins: Director of establishment activates targeted safety plan and triggers the tsunami evacuation alert. T+3 mins: Evacuation of the school community using a roll call system. Check that no one is left behind and that people with special needs are evacuated. T+15 mins: Muster at the tsunami safe location. Conduct roll call. T+20mins: Issue situation report to town hall and Rector's Office.
Exercise rules	Safety and actions to be either simulated or not played out according to the rules.
Logistics	Departmental operations centre room. Evaluators in educational establishment. Access to safe location secured.
Evaluators	Fire and rescue service Town hall
Observers	
'Hot' lessons learned	What time, where and with whom? In the establishment. With the observers in the establishment crisis cell.
'Cold' lessons learned	What time, where and with whom? Ten minutes after the end of the exercise, in the safe location, with the evaluators and checkpoint volunteers.

Name of Director of exercise command	
Name of Director of delivery	
List of actions to be introduced (optional)	None

ANNEX V

DRILL FLYER

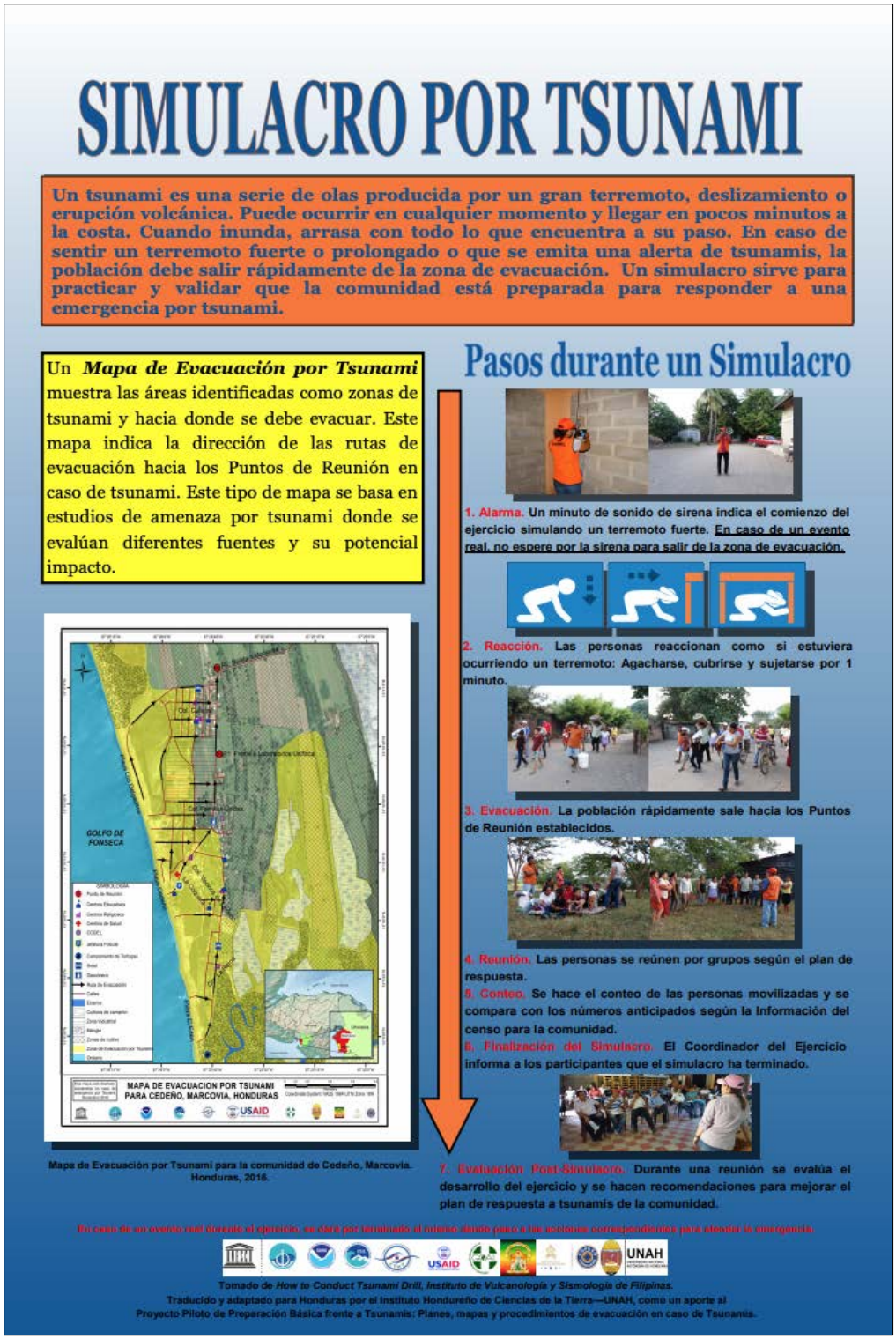

Figure V–1. Simulacro por tsunami.http://itic.ioc-unesco.org/images/stories/tsunami_ready_international/Cedeno/AfichePublicitario_CTWP-final.pdf

ANNEX VI

SYNOPSIS

Events	Incidents	Time	Expected response	
			Communal command post	Departmental operations centre
		0800	Delivery room and crisis room set up for the participants.	Delivery room and crisis room set up for the participants.
A road tanker crashes into an [ILLEGIBLE] at the SARA refinery, causing a leak in one of the tanks at 0830. A fire starts in the cab of the road tanker.	Exercise begins	0830	Initial warning from the services. Verification of information, preparation of plan etc	Initial warning from the services. Verification of information, preparation of plan etc
The Prefect informs departmental operations centre that he wants a situation report at 0930.	Retention tank bursts into flames	0900	Communal command post goes live (official message)	Prefect requested to trigger the targeted intervention plan and inform the mayor
	Message from departmental operations centre : risk of [ILLEGIBLE] of the road tanker	0915	Contain or evacuate?	Contain or evacuate?
		0930	Situation report	Situation report
		1000		
		[...]		
	End of exercise	1600		

ANNEX VII

TIMELINE OF ACTIONS

Exercise CARIBE WAVE, collège Robert 3

Thursday 17 March 2016

Actual time	Exercise time	Sender	Receiver	Method of communication	Event	Expected response
1030	T0	Town hall	Director of establishment	Phone call	*An earthquake measuring 8.4 on the Richter scale occurred in the north of Venezuela. It triggers a tsunami that is to strike Martinique. The warning comes from the Rector's Office - no tremors are felt.*	- Activate the targeted safety plan. - Alert school groups and evacuate them to Pontalery heights.
	T + 1 min	Prefecture	Rector	Text message	The Prefecture issues a warning to the Rector's Office that a tsunami is likely to strike the coast.	- The text message is forwarded to all head teachers and directors of establishments. - The academic crisis cell is activated.
	T + 18 mins	Director of establishment	Town hall + Rector's office	Phone call	Situation report issued: school groups (staff and pupils) have reached safety at Pontalery heights. We await instructions from the authorities.	
1145	T + 1 h 15 mins	Town hall	Director of establishment	Phone call	Warning period ends	

Figure VII–1. Timelime of actions during exercise Caribe wave at college Robert 3

ANNEX VIII

EXERCISE EVALUATION FORM

TSUNAMI WARNING FOCAL POINTS EVALUATION FORM

Tool to evaluate (*insert name*) Tsunami Exercise. The objective of this evaluation is to assess the efficiency of the Tsunami Response Plan and local authorities through the exercise in order to identify areas that need to be strengthened in the Plan or at the Community level to ensure a better response in case of a real event.

Please consider the following Exercise objectives. The Exercise ensures that:

- The warning system is timely and efficient.
- Tsunami warning systems are heard in the entire evacuation area.
- The community is well prepared and trained to respond in case of a tsunami.
- Tsunami evacuation is carried out in time and it takes place in an orderly manner.
- The system takes care of people with disabilities.

Tsunami Warning Focal Point:	
Name of the person in charge:	
Name and Organization of the evaluator:	
Evaluator's email:	
Date:	

1. Please, complete with the reception hour of the messages (hours shall be given in local time)

# message	Message	Sending time of the message	Message reception	Reception method	Comments
1	Beginning of the Exercise – Information Bulletin				
2	Message title				
3	Message title				
4	Message title				
5	Cancelation of warning				
6	All clear				

2. Were the bulletins understandable? Were you able to evaluate the threats in the coastal zone and make decisions according to the community response?

_____

_____

_____

3. Did you have any other information available to help you in the decision-making?

_____

_____

_____

4. Was a tsunami emergency response SOP (Standard Operational Procedures) available? If this was the case, did you follow the SOP? Did that work?

_____

_____

5. Actions taken after receiving the messages.

# Message	Time	Actions taken

6. Were the messages disseminated to other organizations or entities?

Please, fill the dissemination messages table (if applicable).

Type of message	Message recipient	Sending time of the message	Communication method	Comments

7. Did you receive confirmation or information from other agencies? Which ones? Please, explain.

_____

_____

8. Dissemination methods used (for example: sirens, WhatsApp, text messages, telephone, email, radio, police, door to door notification).

_____

_____

_____

9. The media were informed? If this was the case, please explain:

_____

_____

_____

10. Ending time of tsunami warning cancellation. What was the reason? What type of measures were taken?

_____

_____

_____

11. Time assessment to alert the population

Action	**Time (for example: 5 minutes)**
To take the decision of sending the alert	
To prepare the statement together with the alert	
To activate public notification systems	
Total time	

12. Was the population evacuated? Yes or no. Comments about the evacuation (time, behavior…)

_____

_____

13. Was the evacuation map available? Comments/ Suggestions

_____

_____

14. Community knowledge level about tsunami risk.

_____ None _____Low _____ High _____ Very high

Comments

_____

_____

15. Was the "All clear" message sent? If this was the case, comments, suggestions.

_____

_____

16. Do you think that this exercise improved tsunami planning and community tsunami warning in case of a real tsunami event?

_____ Yes _____ No

17. What improvements are needed in future exercise?

_____

_____

_____

_____

18. Please, rate the exercise planning, development, format and style

_____ Poor _____ Average _____ Good _____Excellent

Additional comments

_____

_____

_____

_____

THANK YOU!!!

ANNEX IX

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