

RISK COMMUNICATION AS EMPOWERMENT

Tutorial



CPP Cyclone Preparedness Programme



TUTORIAL

Communicating the risks of storm surge, mudslides, and other hazards from extreme weather events

This section provides a tutorial for crafting hazard warning messages. It is also about empowering people to take charge of their safety and be active in preparing for and surviving extreme weather. This is designed for use by anyone, but it is very relevant for those agency staff, local officials, or community leaders who receive technical weather forecast information and alert others about the need to prepare for the event.

One of the greatest problems with extreme weather events is that too many people do not take positive actions to protect themselves. This is sometimes caused by a sense of powerlessness or a general lack of attentiveness to things outside a person's immediate concerns. This tutorial is aimed at empowering people (whether residents, officials, media, or others) to be more pro-active. One way of encouraging this is to have participate not just as passive recipients of a message but active communicators of these messages themselves.

Imagine you receive (whether directly or through the news) technical information from the national weather agency that a large cyclone (also called hurricanes or typhoons, depending on where you are) is predicted to make landfall in your region in three days. Moreover, the experts are predicting that this event will bring the risk of mudslides in the hilly areas and a large storm surge along the coast. Imagine, too, that you want to transmit the information to officials and residents in your municipality. How should you communicate the information to them in a way that motivates them into action?

You will find several resources that can help you in this task. You have a choice of whether to take the online tutorial and click through a short online training module, or to download a report and toolkit that provides the same training. Click on one of the following.

Why is empowerment important?

We attach special importance to empowerment because one of the ways that people become vulnerable to these risks is by being passive. Being passive means not making the effort to get information, plan for one's safety, stocking up on supplies, moving to a safer place, and other risk-reducing activities. In contrast, empowerment means feeling ready and able to take action. In this tutorial, participants train in not just receiving and understanding risk messages, but to also engage in risk communication themselves. This can empower them to act in other positive ways to reduce risks. And by acting as risk communicators in their own communities, the message can reach everyone.

Tutorial

PREVIEW

First, we walk through two alternative scenarios below.

SCENARIO 1

Imagine you are a local official in a community located in a region with uneven terrain. There are steep slopes, elevated areas, channels, and low-level areas. Your office received a notice from the national weather service that a category 7 tropical cyclone will be coming. The CPP raise the warning flags signaling a high-level risk (three flags). Most families assume this simply means everyone should stay home. Some just assume that this will be a rainy event like the last one and do not ask about it. And some feel powerless and, so, do nothing and ask nothing. The cyclone arrives, and it affects different areas more severely than others. Some homes in steeply sloping areas started sliding or were hit by mudflows. Some homes in lower-lying areas were inundated by water. These homes were destroyed and people injured. Many roofs were blown away by the wind.

SCENARIO 2

We find the same situation as in the first scenario. But, this time, people are active about asking for more advice when they see the three warning flags. People they ask are able to describe to them, in more specific terms than the general warning can convey, what the dangers are. They tell people to watch for mudslides on slopes, and to avoid low-lying areas where they can be a flash flood. Some families on sloping areas evacuate temporarily, as do families in the lowest areas. Everyone takes an action, whether to tie down their roofs or get extra supplies. The cyclone arrives, but families evacuated homes where they perceived a mudslide risk, or channels where there was risk of mudslide. While some homes were lost, no one was injured. Few roofs were damaged.

In the scenarios above, it is the same situation but two very different outcomes.

Lesson 1

PEOPLE must feel EMPOWERED to act and to communicate. One problem is that, sometimes, people feel powerless or fatalistic in the face of impending disaster. They do not take initiative to take any action. Actions can include simply asking others what is going on, asking for advice, planning what to do. The feeling of powerlessness may be stronger among communities that are displaced or those barely making ends meet. Action begins with actively communicating –asking questions, sharing information.

Lesson 2

EVERYONE must be involved in RISK COMMUNICATION. Everyone must be empowered to participate in risk communication. It can be empowering to not only receive messages but to be active in spreading these messages as well. This way, messages penetrate the entire community, reaching even residents who are isolated at home or elsewhere. By everyone, we mean officials in every agency but, also, community residents (neighbors, children, teachers).

Lesson 3

EVERYTHING has to be UNDERSTANDABLE. Risk information has to be communicated in understandable ways. If someone understands the message, they can then pass it on. Agencies often communicate in only technical ways and fight over who is to communicate risk information. Members of the public are hesitant to receive and communicate information that they feel is something only for technical for them to manage.

One problem with warning people about something like mudslides, flash floods, or a large storm surge is that, often, these warnings come in technical bulletins or other messages from authorities. People can ignore these warnings because of a number of reasons:

- ❖ the messages are general and cannot provide much local information,
- ❖ the public does not think the messages address their own situation directly,
- ❖ the language is technical and does not provide information in easily understandable ways,
- ❖ the technical bulletin looks like something that is not meant for the public,
- ❖ local officials are hesitant to interpret or add to the message from the national agency and simply routinely pass it on,
- ❖ the communication looks like a routine agency bulletin that is business as usual,
- ❖ the messages do not suggest what actions people can take,
- ❖ the same national and local agencies focus solely on routines (checklists, protocol, rules) that can stifle the free communication of knowledge instead of ensuring it

For these and other reasons, people dismiss these bulletins and ignore or forget them.

There are other reasons why people ignore evacuation advisories and get caught by a flood at home or on the street:

- people think the coming event is just like what they had experienced in the past but, often, extreme events are things the local community has never seen before,
- people may be passive, just waiting for things to happen,
- people naturally associate the home with safety, security, and comfort, even when their home is located in an area of high risk,
- some people are socially or physically isolated (e.g., home-bound elderly) and not well reached by official communication (e.g., evacuation advisories).
- people do not want to leave home because they fear burglary while away,
- people have negative perceptions of the evacuation center and avoid going there.

One root of the problem is that, in many places, government and society draw rigid boundaries:

- (i) between government and the public,
- (ii) between technical and 'lay' communities, and
- (iii) between one agency and another.

The first issue ensures that the public are treated as simply passive recipients of information and are not expected to participate in risk communication.

The second emphasizes information that is worded technically and difficult for others to understand and pass on. Similarly, the messages may address general or regional weather conditions and cannot mention very much about the local situation.

The third creates in-fighting between agencies as to who is to engage in communication (when, in truth, all have to be engaged) and a tendency to focus only on formal routines (hence the predominance of checklists, forms, classification schemes, rules) and not on the fostering of the free flow of communication.

As you click through the tutorial, you will find ways to address the problems noted above. Essentially, the recommendations address these issues in these ways:

- ✓ Writing a message that provides the same information but in everyday language
- ✓ Translating the message to the local context, adding local details
- ✓ Designing the communication so that people recognize the coming event is out of the ordinary
- ✓ Writing messages in everyday language that everyone can pass on
- ✓ Ensuring that the communication has the necessary elements of a good message including actions for local officials, residents, and businesses to take.

One final note:

To use this tutorial, you can modify the examples to fit the situation you are in. For example, if the exercise talks about storm surge along the coast, and the risk your community faces is instead the risk of mudslides and landslides on hilly terrain, then you can modify the example to fit your actual situation. But the principles are the same, regardless of the particular example you use.

Tutorial

LESSON 1. THE NECESSARY INGREDIENTS OF HAZARD WARNING MESSAGES

MAIN IDEA:

A good message needs to have a number of key ingredients.

Research and experience have shown that, to be most effective, messages (whether long or short) need to have the following elements:

SENDER	Who is sending the message (whether agency or individual)?
RECIPIENT	Who does the message concern, and is it directly addressed to them?
EVENT/DESCRIPTION	What is the hazard? How will this threaten lives and damage homes?
LOCATION	Where will the event occur, and which homes or areas will be most affected?
GUIDANCE	What are some actions people can take?
TIMING	When will the event occur, and by when does the action need to be taken?

Even a short message should have these elements, as in the example below.

- ① Sender ② Receiver ③ Event ④ Description ⑤ Guidance ⑥ Timing

NWS Bulletin.

①

RED ALERT: San Pablo Hills residents, tropical cyclone

②

③

approaching, mud slide and slope instability on steeply

④

sloping areas evacuation begins Tues 2 pm, call 119.

⑤

⑥

A longer message is shown below. To check that the necessary message elements are all present, click on each of the elements below to see where in the message they appear.

- ① Sender ② Receiver ③ Event ④ Description ⑤ Guidance ⑥ Timing

NWS Bulletin.

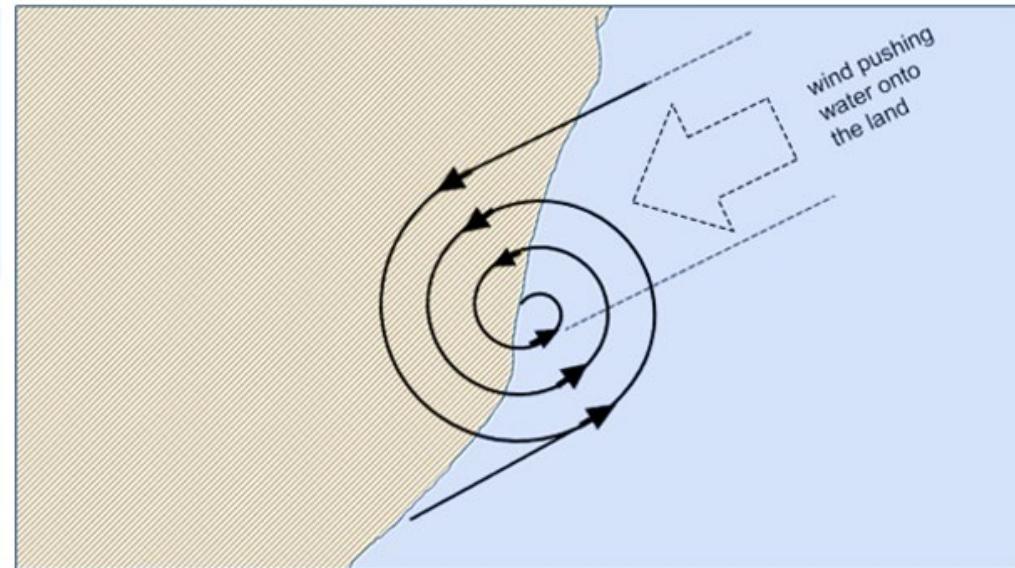
STORM SURGE WARNING: Coastal areas are threatened by a storm surge of 2-4 m high along Southern Isabela province and 0.5-2 m high and those along Northern Isabela province. The Danger level is HIGH beginning early Tuesday morning. A storm surge occurs when extremely strong winds push water onshore, and powerful waves can travel inland for a kilometer or more. Storm surges of even 0.5 m can destroy houses and are life-threatening. Affected communities, please consult your local mayor's office or PDRRMC for evacuation instructions. A detailed map of affected areas is found below.

LESSON 2. UNDERSTANDING THE EVENT

What is a Storm Surge?

A storm surge is a rise in the level of seawater that is caused by strong winds pushing the water onshore. The flooding caused by this can be devastating, so the greatest risk from storm surge is to coastal communities. However, a large strong surge can reach up to a kilometer or more inland like a very large wave.

The figure below shows how a storm surge forms. Above the equator, typhoon winds rotate counter-clockwise. The figure illustrates a situation when winds in the northern half of the typhoon are blowing to the west and, so, pushes seawater onshore in the eastern coast of a country. The situation can be reversed on the western coast, when the southern half of the typhoon blows seawater onto the shore.



What is a storm surge like?

Storm surge survivors report different things occurring during the storm surge. In some cases, as the eye moves through an area, the direction of the wind changes. This can cause the shore to recede initially, as the winds push the water away from the land. And, then, when the wind changes, it can start pushing the water in the other direction, onto the land, forming a storm surge. This was reported by some eyewitnesses during Typhoon Haiyan.

The storm surge can develop rapidly. In some cases, the weather can seem calm, even sunny, hours before the typhoon arrives. But when the winds begin gathering strength, the storm surge can form very quickly, rising several meters in a matter of minutes. This is why people get trapped, as they assume they can wait until the last minute to flee the coastal area.

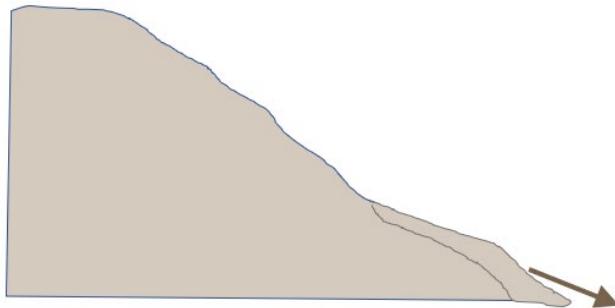
What are Mudslides and Slope Failures?

A mudslide occurs when the soil gets full of water from continuous rain and starts to slip down the slope. This can take the form of "rivers" of mud or "chunks" of mud that start to travel down the slope.

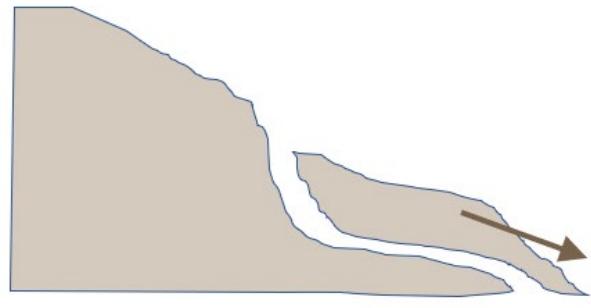
A slope failure (or landslide) is when the entire side of a hill breaks away and tumbles down the slope. This can also be caused by the soil getting too saturated with water.

High risk conditions include continuous rain on sloping terrain. The risk is higher when the slopes are bare and have little trees and vegetation (because there are no roots to hold the soil). The soil is "heavier" when it is full of water.

Warning signs can include small flows of mud or debris, slight movements of the ground underneath, or a crack in the earth that is starting to form.



mudslide



slope failure (landslide)

What are some warning signs?

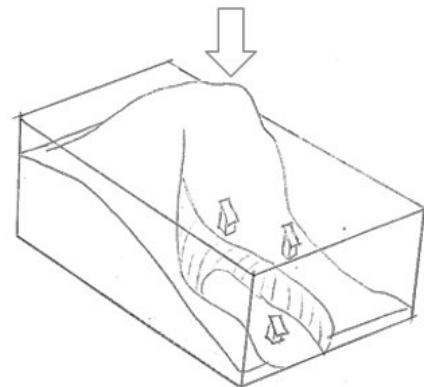
Often, mudslides or landslides can occur without warning. Sometimes, there are signs like water or mud seeping from the ground, slight movement of the soil underneath your feet or around you. Sometimes, one can hear low rumbling sounds from the earth starting to move.

Sandbox Exercise

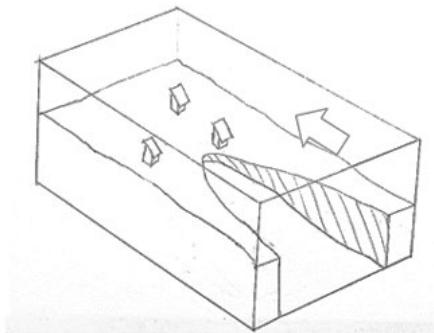
One easy exercise you can try is to have people simulate the risks using a simple "sandbox". This is simply a plastic bin with sand or soil inside. People can shape the soil to resemble a hilly area or to resemble a coastal area. They can place small plastic houses (or pebbles) and place them in locations that they think are more hazardous (or safer). If done outdoors, this may not even need a plastic tub and can simply be done on the ground.

The hilltop exercise then involves slowly pouring water onto the hilly terrain until mud starts flowing down the hill. If enough water is poured, then entire chunks of earth may fall to the bottom of the bin.

The coastal exercise means filling the "ocean" with water and then using a piece of wood, cardboard, or plastic ruler to push water onto the "shore" as if strong cyclone winds were pushing it.



Mudslide Sandbox



Storm Surge Sandbox

During the exercise, participants can reflect on where the miniature houses are washed away or flooded, and which areas seem safest.

If sandboxes are not available, the facilitator can just show the videos referenced below and find a few other videos showing actual storm surges and mudslides.

Examples:

- <https://www.environmental-communication.space/learningmodule> (mudslide, storm surge)
- <https://www.youtube.com/watch?v=pyY0KIdmQdM> (storm surge)
- <https://www.youtube.com/watch?v=9r80c0UA6Ps> (mudslide)

LESSON 3. INTERPRETING THE MESSAGE AND PASSING IT ON

MAIN IDEA:

You should not simply receive an official message, warning, or bulletin and simply pass it on. Instead, you should understand and interpret it in non-technical language and be prepared to share the message in your own words.

Often, officials and others will simply copy and pass on the agency's technical bulletin or warning message without adding to it. They do this because they feel that one has to be an authorized official or expert to do anything other than pass on the message.

But here is the problem: technical messages need interpretation in order for others to pay attention to and understand them. Everyone has the responsibility to translate the information into terms that others will understand more easily.

If you are passing on a message, you should translate the message into one that will be more easily understood. Doing so does not mean that you are changing the information, pretending to be an expert, or assuming a role that you do not officially have. First of all, you can always attach the original technical bulletin. Secondly, your message can acknowledge that you are interpreting the technical message into something that the general public can understand.

You may also translate this to fit the local situation, maybe even adding some local detail.

Here are some suggestions on how you can interpret technical messages:

- Rewrite the information using everyday, non-technical terms.
- If the signal is a simple warning sign, flag, or siren without an accompanying message, then compose a short message in simple words.
- In your message, say who is directly at risk and where they are.
- In your message, comment on what the warning means directly for the people you are communicating with. Describe the risk: how people can be hurt and homes damaged.
- If a map is provided with the bulletin, interpret the map and tell others what it is saying about their particular location.
- Add more information about possible effects of the event.
- Lastly, if you can, give people advice regarding what they can do.

LESSON 4. TALKING TO A FRIEND: PERSONALIZE, LOCALIZE, DRAMATIZE

MAIN IDEA:

The most effective message is one that is told like someone you know telling you a story. This is most easily understood. Also, it is most easily passed on. When you write a message, imagine you are telling a friend the story face-to-face.

Often, someone ignores an official bulletin because the bulletin seems like just a routine agency message and the message does not pertain directly to her or his personal situation. For this reason, messages should be written so that they:

Personalize

Write the message so that it identifies, and addresses directly the recipient of the message. This can be done when you write a message directly addressed to someone or a group of people or directly identifies which group or community is being affected. You can identify people by location, as well (e.g., "those of you living on the hillside slope"), which is a way of both personalizing and localizing (see next point).

Localize

Write messages for localities, in which the geographic area is directly identified. Messages can also identify local landmarks or known places that will help the recipient imagine where the event will take place.

Dramatize

Instead of merely giving technical, factual descriptions of the event, the message can provide more vivid imagery or more explicit detail. If this is an unusual or once-in-a-lifetime event, then say so. Describe how a mudslide happens and what it looks like. Or describe how a storm surge happens and what it is like.

Following the above suggestions increase the chances that the recipients of the message understand that it is talking to them and their situation directly, and it increases the degree of trust they attach to the message.

The following are examples of message elements that are **Personalized**, **Localized**, and **Dramatized**.

Personalized and Localized

- "To the residents of District 4"
- "To those living on the slope or at the bottom of the hill"
- "Message for residents who live along San Pedro Bay" /

NOTE: Even if the technical bulletin is regional, you can always tell a local community that the bulletin is relevant to their local area with a header like "Message for Residents of Santa Ana".

Dramatized

- "the storm surge may be like a destructive 3 meter wave moving at high velocity"

- "the mudslide can be like an ocean of soil flowing down the hill and destroying everything"
 - "houses may be torn apart and trees uprooted"
 - "this may be worse than any flood we have ever experienced"
-

Exercise.

You are a community leader in a small village located on hilly terrain. The local emergency preparedness team just raised a high-alert warning, consisting of three warning flags, on the flagpole. They did this because there is a level 7 tropical cyclone approaching.



Some local families approach you and ask, what does this sign mean?

You can compose a short message to tell them, in simple language, what this warning means, what the dangers are, who is at most risk, and what actions they can take. Try to include all the elements of a complete warning message, as discussed earlier.

An alternative form of this exercise is to assume that, instead of being located on hilly terrain, that the community is in a coastal area.

LESSON 5. ADDRESS KEY ISSUES

In any population, there will be key issues that prevent people from following evacuation and other advisories. Because of this, they can stay home and put themselves in danger. The following are some common issues and examples of language that one can put in the message to address these.

ISSUE	"Home is the safest place to be"
WHAT MESSAGE CAN SAY:	If you live in District 8, your home is in danger of being destroyed. It is too dangerous to stay home. Move to the evacuation center.
ISSUE	"The evacuation center is dirty, unsafe, and uncomfortable"
WHAT MESSAGE CAN SAY:	The evacuation centers have been prepared to ensure your safety and comfort. Health and social workers will be at the evacuation center to help you be comfortable.
ISSUE	"Our house will be burglarized while we are away"
WHAT MESSAGE CAN SAY:	The health and safety of you and your loved ones is more important than your possessions. Roving patrols will watch for burglars in your neighborhood.
ISSUE	"This is just like the previous storms"
WHAT MESSAGE CAN SAY:	This storm will be worse than anything we have experienced in the past. The storm surge will be higher and stronger than any flood you have experienced.

Exercise.

Reflecting on one's situation is an important part of empowerment-based training. The group, at this point, can spend some time exchanging ideas about what the most important problems are in the community, especially with regard to communicating the risks from cyclones. One important topic is what causes people to be passive, to not seek advice and get information, to not evacuate when advised, etc. One good way to guide the reflection is for a facilitator to say "One big problem with cyclones is that some people feel powerless to do anything. They don't seek information, they don't plan, don't evacuate, etc. What can you do or say to convince them to be more active?"

LESSON 6. USING MAPS

A map is a powerful way of describing a forthcoming extreme weather event. Maps can show the predicted track of an oncoming typhoon, or they can show predicted levels of storm surge flooding.

However, there are some issues regarding the use of maps:

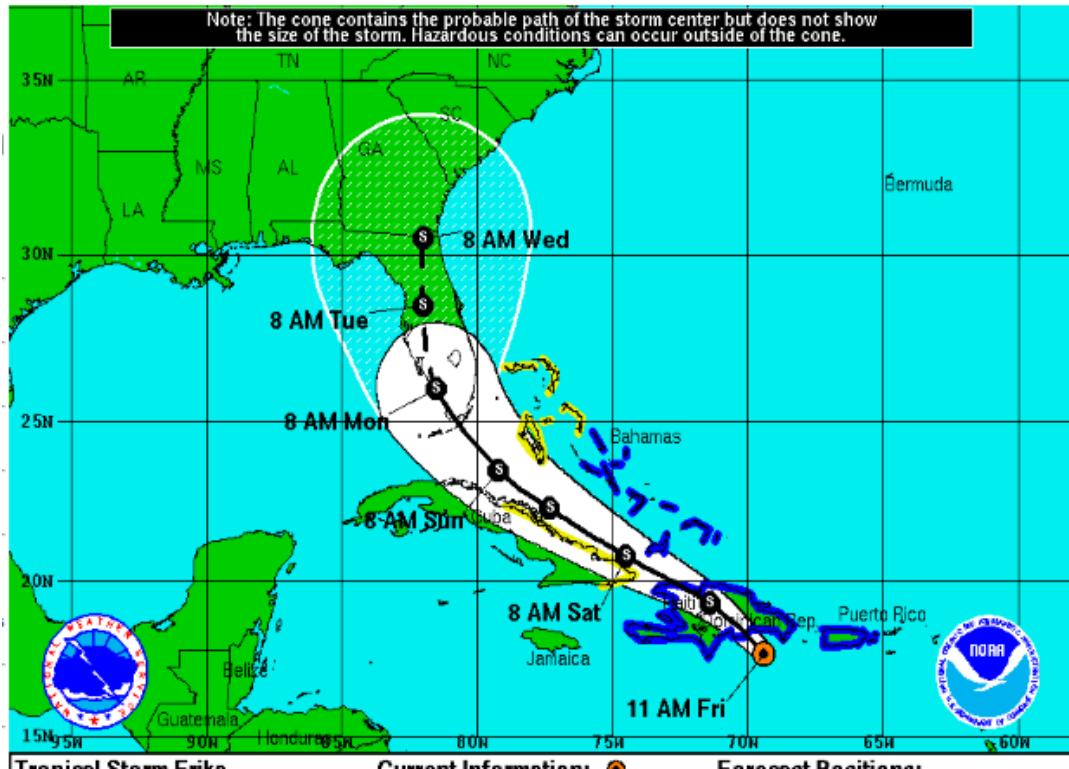
Agencies can assume that a map can contain and communicate all the relevant information. In contrast, many people are not sure how to interpret the maps and, for some, maps are not understandable.

Maps are not the primary means of wayfinding for some people and communities. In some cases, the meaning of the map needs to be put in the form of text, as well.

A good idea is to test how effective a map is, and whether or not people interpret it correctly.

Take the figure below, which shows the trajectory of an oncoming typhoon. Imagine a survey respondent looking at the map for the first time and being asked questions such as:

- Can you tell, from the map, when the typhoon will arrive at your town?
- Why does the size of the area covered by the track increase as the storm moves onward?



Similarly, consider a storm surge flooding map, such as shown below, and imagine the surge respondent being asked the following questions:

- ❖ Can you find your place of residence on the map?
- ❖ Can you judge what the predicted flood height will be for your area?
- ❖ Given the previous storm surge track, by when do you think you should evacuate?

There are some problems with relying only on maps:

- ❖ Some people may not understand their area in a map-like way. For example, some people figure out how to get from one part of town to another without imagining or using a map.
- ❖ Other people may not be motivated or inclined to read and interpret a map and would rather read or hear direct information and advice.

As an example, in one survey, a sample of residents in a community were asked to study a print-out of a storm surge flood map and asked to locate their homes on the map and interpret how deep the predicted flood would be in their area. Only about 83% of them were able to indicate locations of their homes on the map (though not all did so accurately). Of those who indicated their homes on the map and provided their addresses, only 55% of those did so accurately.

This means that if the main mode of warning a population about an incoming cyclone and storm surge, you should translate the map into a message for that community, telling them when to expect the storm surge and what areas would be most affected.

Instead of relying on maps alone, think of combining maps with words. The key is to write the message (and design the map) so that people will still get the information they need if the map is missing or the message is missing.

EXERCISE 1

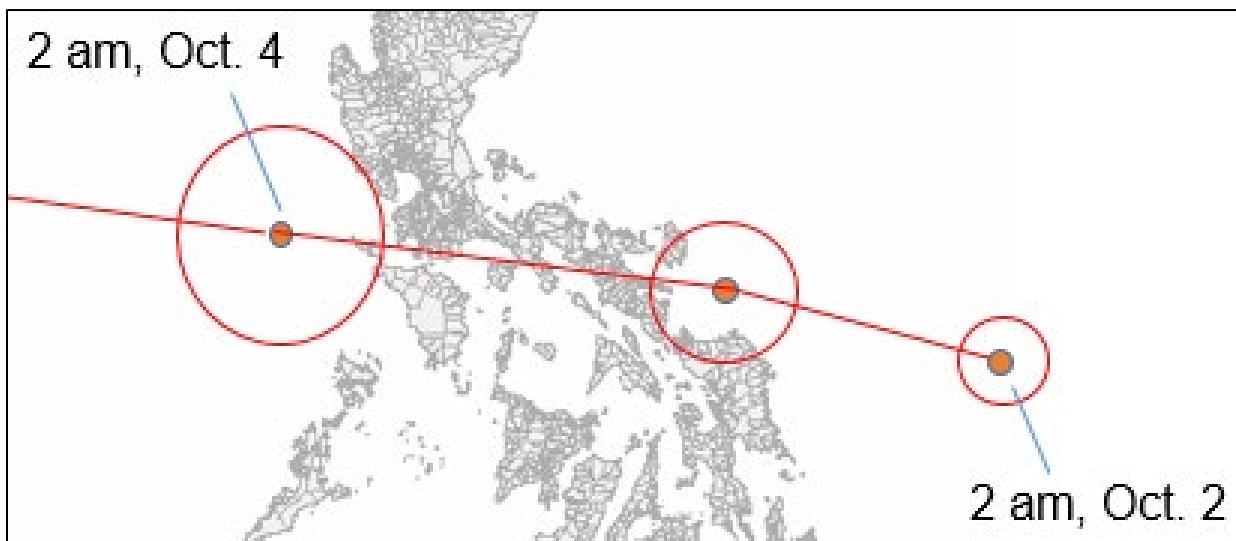
(PART 1: Tracking the Storm)

Interpreting Weather Bulletins

Imagine you are the disaster risk prevention officer for the local municipality and you receive the following from the national weather agency:



Here is a close-up of the map:



Study the maps above, as you answer the following questions.

Question 1. Suppose you live in Balangiga. When will the typhoon arrive in your area?
(Give day and time.)

Answer:

Question 2. Suppose you live in Balangiga. Are you in the path of the typhoon?
Explain your answer.

Answer:

Question 3. Why do you think the circles get larger and larger as the typhoon gets closer and closer?

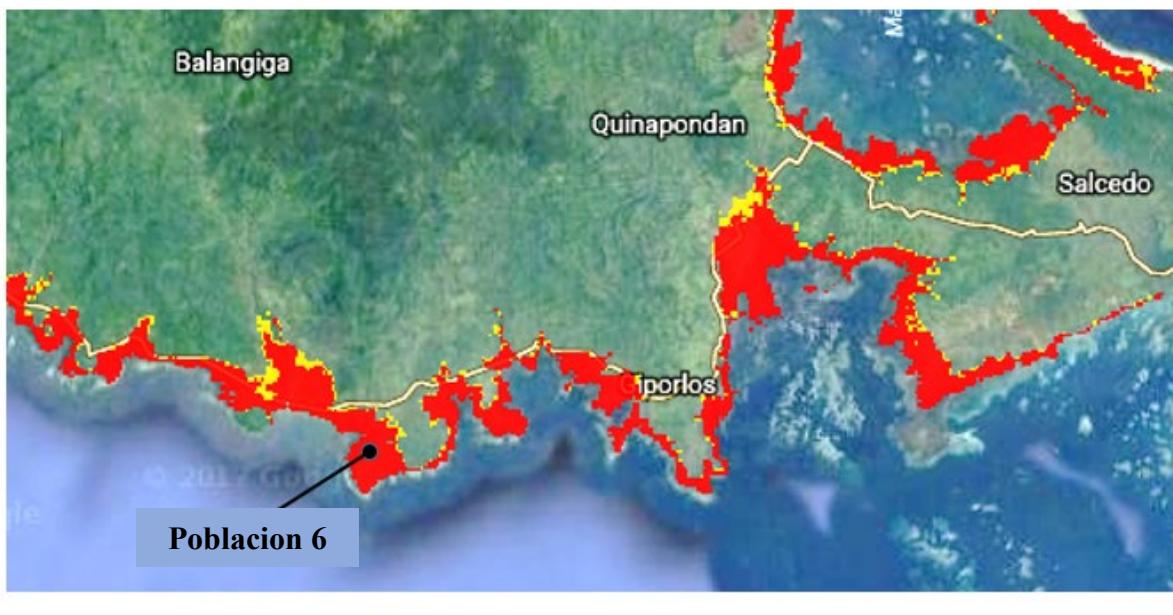
Answer:

EXERCISE 2

(PART 2: Storm Surge and Flood Warnings)

Interpreting Weather Bulletins

Imagine you work at the local barangay office in Poblacion 6 in Balangiga and you receive the following storm surge hazard map from Manila:



Legend:

Yellow	1 m flood
Red	2 m flood

Question 1.

Is there a danger of storm surge in your area?

Answer:**Question 2.**

How severe will the storm surge be in your area?

Answer:

EXERCISE 3**The Necessary Ingredients of a Message**

The bulletin on the right was received from the main office of the national weather office, along with the maps shown on the previous pages.

Question 1 Can you find all the necessary elements of a good message in the bulletin?

Answer:

Question 2 What elements are missing?

Answer:

A storm surge warning has been raised for parts of Region 2. Surge heights of up to 1.5 meters are predicted. High risk of mudslides for areas on steep slopes.

Question 3 By typing/writing directly inside the box, please write text in order to add the missing elements to the message.

EXERCISE 4**Talking to a Friend: Translate, Personalize, Localize, Dramatize**

Imagine you are having a sincere conversation with someone you know, and you warn her or him about the risk of a storm surge face to face. This is how you will write your message.

Now, follow these instructions:

STEP 1**Translate**

Is there language that is too technical and formal for the public to understand? Try rewriting these words or passages.

STEP 2**Personalize**

Rewrite words in the message on the right so that it addresses someone directly (i.e., talks in second person: "you" instead of "they").

(text copied from previous page)

STEP 3**Localize**

Modify the message so that it identifies a specific group of people or location and talks directly to them.

STEP 4**Dramatize**

Add words or sentences that describe the coming event (storm surge) in a way that it is easier for the reader to picture what will happen.

EXERCISE 5**Addressing Key Issues**

You can improve the message even more by adding sentences that address key issues that make people ignore or choose not to follow evacuation warnings.

Follow these instructions:

STEP 1

People think home is safe

Add words or a sentence to the message on the right that tells people that they are in more danger if they stay at home.

STEP 2

People dislike evacuation centers

Add words or a sentence that assures people that conditions at the evacuation center are good or, at least, not as bad as expected.

STEP 3

People worry about theft

Add words or a sentence assuring people that there are measures to guard their neighborhood, or that their health and safety is worth more than their property, or both.

**STEP
4**

This storm is just like previous ones

Add words or a sentence that tell people that the coming storm and storm surge will be worse than anything they or the community has ever experienced in the past.

(text copied from previous page)

STEP 5

Check your language

Take a look at the text you have written. Is it easy to understand, and is it written as if you were talking to someone you know? If not, you can rewrite any part of it.

EXERCISE 6**Compare the New Message to the Old, Sharing It**

Now, compare the original message to the new one you have just written (below). Think about how the new message might be received differently, by members of the public, than the new one. If you are working on this in a group, you can share thoughts and exchange ideas about communicating this type of information.

Old Message

A storm surge warning has been raised for parts of Region 2. Surge heights of up to 1.5 meters are predicted. High risk of mudslides in areas with steep slopes.

New Message

(copied from previous box)

Write down some notes about how you would then share this with officials, residents, and others in your community (whether in writing or verbally):

If there is broad representation among the group, you can divide participants up into sectors or subgroups (e.g., women, elderly, youth) and ask each subgroup about what improvements/edits/suggestions they have for the message (produced in the exercise) and the toolkit in general.

This can be a long discussion, so do allocate plenty of time for this step. Ideally, the discussion would be recorded or, at least, have someone take detailed notes. It can start with a statement like, "Please share how experiencing a typhoon or disaster can be different or more difficult for you" and other "Now start reflecting on how we can improve the message or the toolkit to reflect your experience and concerns". Often, a participant will give a very brief answer, and the moderator should always ask a follow-up question like "Please tell us more about that" to solicit more from the participant.

EXERCISE 7**Integration**

An optional exercise is to have a discussion, among the entire group of participants (or, alternatively, in small groups) concerning how the new practices of risk communication can be integrated or be made a part of the existing Early Warning System or Emergency Response System.

Also, think of who, in the community are most vulnerable or most isolated. Who are often excluded from communication like this (e.g., home-bound elderly)? How can the communication process be modified to better reach them? How can they be included in the risk communication process (and, moreover, in these workshops)? Should representatives from these groups act as spokespersons (who deliver messages themselves through different media, such as radio)?

This can be a long discussion, so do allocate plenty of time for this step. Ideally, the discussion would be recorded or, at least, have someone take detailed notes.

EXERCISE 8**Safe Haven Game**

The game is played with two or more small groups (ideally, between 3-5 people per group). Each group picks a Situation Card which describes a typhoon-and-storm-surge scenario for a town. Each scenario provides a typhoon track and velocity, along with a storm surge warning. The group then takes the information given and deliberates over what the information means and what evacuation actions to recommend (including selecting a suitable evacuation center).

The game is timed, and the groups raise their hand when they are finished. Each group brings their work to the front and explains their analysis. Winners are determined in order of speed of completion of the task, and prizes are given to all. During their explanation, the moderators play the role of community leaders and asks questions meant to simulate things one might hear from members of the public.

The groups are each given a large map of an area, showing elevation contours and locations of local schools that might be used as evacuation centers. They are given colored crayons to draw on the map with.

A sample Situation Card is shown below, with questions the group is to respond to.

SITUATION A

You are the designated local disaster risk reduction officer, charged with planning of pre-typhoon evacuation. You receive the following information from the national weather office:

Current Date: _____

Typhoon Claudio is 280 km southeast of _____ and approaching with a speed of 10 km/hr. It will strengthen into a Category IV cyclone on the Saffir-Simpson scale. The area is at risk for storm surge, which can reach a height of 1-1.5 m. Areas with hilly terrain are at risk for mudslides and slope failure.

You are provided with a large map of the town showing elevation contours and locations of key facilities, including local schools that can be used as evacuation centers.

To prepare the evacuation plan for the town, you must answer the following questions.

1. When will the typhoon arrive?

Answer:

2. If you evacuate people, when should you do it?

Answer:

3. What area is to be evacuated? Show this on the map by shading the area red.

Answer:

4. To where should they be evacuated?

Select two possible locations on the map by coloring the locations yellow.

Answer:

5. Reporting

As soon as you are done, raise your hands and let the moderator know.

Each group then presents their work and explains the decisions they made in front of the rest of the workshop participants. The moderator takes the role of a local community leader who is skeptical over the proposed plan and asks a number of questions such as the ones shown below.

- ✓ "So this is another typhoon. How is your plan different? We will proceed like we normally do."
- ✓ "What do you mean by a storm surge?"
- ✓ "What do you mean by a mudslide?"
- ✓ "Nobody will go to the evacuation center. Everyone knows it is crowded and unsafe. Mothers will not bring their newborn babies there."
- ✓ "Safer if each resident instead stays home and strengthens the doors, windows, fastens the roof."

6. Follow-up Exercises

6.1

After all the groups have reported, the moderators lead the participants through a reflection exercise. There are two parts to the reflection. The first is showing a large print-out of the geohazard map for the town, which shows that one school location is shown as being outside the hazard zone. The question the moderator poses is: the national disaster risk management agency says to use the official hazard map, which shows that one of the evacuation sites you rejected can be used. What do you do? What do you say?

6.2

The moderators then lead a discussion around what everyone learned in the tutorial game and how both can be improved.

7. Assessment

Survey

The final part involves the participants filling out a post-exercise survey. This is to be compared with a pre-event survey previously filled out by the participants.