



USAID
FROM THE AMERICAN PEOPLE

Disaster Risk Reduction

Final Project

WORKBOOK



INTRODUCTION

Now that you have completed the Disaster Risk Reduction course, it's time to put what you have learned into action. In this workbook, you'll walk through the steps of creating a complete Disaster Risk Reduction Scenario.

Getting Help

As you complete this workbook, remember that you can always get help using the forums on Moodle. There are staff from USAID/OFDA who will be there to answer questions you might have. You don't have to post this assignment to the forum to get credit though.

Filling Out This Document

There are two ways you can fill out this document. The first is to print it off and write your answers into the blanks provided. You also have the ability to type your answers in each blank and save them. Use the method that will work best for you.

Document Templates

There are document templates for the activities in this workbook on Moodle. These templates are provided in various formats for your convenience. You can download and use these templates as needed to create future scenarios.



CREATE DISCUSSION GROUPS

Instructions

The first task of the scenario building process is to create a list of people who should participate in the hazard identification process and break them into discussion groups. It's necessary to ensure that a reasonable number of people with specific technical or scientific expertise are included in each discussion group.

In the table on the next page, enter the name, agency, and title for each person you think should be involved with the hazard identification process. Also mark which individuals have a scientific or technical background. Make sure that each group has at least one person with a technical or scientific background.

We've only included room for 3 groups since this exercise is not intended to actually form groups but simply to get you thinking about who will be involved in the hazard identification process.



Disaster Risk Reduction Final Project

Discussion Group Worksheet

Group 1

Name	Agency	Title	Scientific/ Technical?

Group 2

Name	Agency	Title	Scientific/ Technical?

Group 3

Name	Agency	Title	Scientific/ Technical?



HAZARD IDENTIFICATION

Instructions

Now that you've identified the participants in the Hazard Identification process, it's time to list the specific hazards your area will be facing. On the next page is the Hazard Identification Matrix. Fill in the "Hazards" column with all the hazards that may happen in your area. Don't worry if you run out of room, just list as many as you can in the space provided.

After you've identified your hazards, come up with criteria for each of the "Frequency", "Area of Impact", "Intensity/Magnitude", "Importance to the Community", and "Total" columns.

Now enter a value for each of the remaining columns.

Once you've completed these steps, you will have a completed Hazard Prioritization Matrix.



Hazard Identification Worksheet

Hazard	Frequency	Area of Impact	Intensity/ Magnitude	Importance for the Community	Total
Scale	1 (low) - 5 (high)	1 (low) - 5 (high)	1 (low) - 5 (high)	1 (low) - 5 (high)	
Criteria for Selection					



HAZARD ANALYSIS

Instructions

The next step in the scenario creation process is to analyze each hazard identified in the “Hazard Identification” step.

Research each hazard in the Hazard Prioritization Matrix using whatever information is available to you. Once you’ve completed your research, you’ll fill out the “Hazard Analysis Templates” on the following pages.

After entering the name of the hazard in the appropriate space, you will have to identify the criteria you will use to classify the intensity/magnitude of the hazard. For example, for an earthquake, you could fill out the table like this:

Criteria Richter Scale

	Range
High	> 6.0
Medium	5.0 – 6.0
Low	4.0 – 5.0

After you’ve identified the criteria you wish to use, you’ll determine the number of times it occurs within a specific period (the “Recurrence”), and the period within which the hazard is expected to occur (the “Return Period”).

Once you’ve identified the recurrence and return period, you’ll define the zoning for each intensity/magnitude. This zoning will define the areas that would be impacted by the hazard. Some things you’ll want to indicate in this area is whether the zone will be limited to a specific area or will include a broader area, and the characteristics or expected effects of the event.

Continuing with the earthquake example from above, you’d identify the parts of your area that would be affected by each of the intensity/magnitude levels you’ve defined. To do this, you’d use data such as the soil type, and geology to define how your area would be affected.

When creating scenarios for your area, using the “Hazard Analysis Template” we’ve provided you should help you through this process.



Disaster Risk Reduction Final Project

Hazard Analysis Worksheet

Hazard Name:

Potential Magnitude for Analysis

Criteria

	Range
High	
Medium	
Low	

	Recurrence	Return Period
High		
Medium		
Low		



Zoning

High

Medium

Low



Disaster Risk Reduction Final Project

Hazard Name:

Potential Magnitude for Analysis

Criteria

	Range
High	
Medium	
Low	

	Recurrence	Return Period
High		
Medium		
Low		



Disaster Risk Reduction Final Project

Zoning

High

Medium

Low



Disaster Risk Reduction Final Project

Hazard Name:

Potential Magnitude for Analysis

Criteria

	Range
High	
Medium	
Low	

	Recurrence	Return Period
High		
Medium		
Low		



Zoning

High

Medium

Low



VULNERABILITY ASSESSMENT

Instructions

Now that you've collected data on each hazard at three different intensities/magnitudes, you'll have to determine how vulnerable your area is. You will complete a vulnerability assessment for each intensity/magnitude of each hazard. In other words, you will have three pages for each hazard you've listed.

First, determine the elements of your area that are at risk and enter them in the "Elements at Risk" section below. Some of the information that should be included in this section are:

- Population at risk
- Housing and public buildings
- Lifelines
- Productive infrastructure
- Environmental susceptibility to the hazards
- Critical facilities for response (health, shelters, schools, fire stations, important community facilities.)

When filling out the "Characteristics of the Population at Risk" section, include the following as appropriate:

- Spatial distribution of people including: socio-economic level, ethnicity, main economic activity, etc.
- Human development indices or other indicators of quality of life, access to health services, education, etc.

The goal of the "Analyze Organizational Capacities" section is to ascertain

It is necessary to estimate the community's ability to respond to a hazard. Remember the following when completing the "Estimate Response Capabilities" section:

- First response organizations and/or institution present in the community
- Estimation of human, physical (i.e.: equipment) and financial capabilities
- Analysis of existing plans and level of ownership by institutions, population, press, and other stakeholders as appropriate.
- The existence of specific plans in response to one or more scenarios and background on their prior use.
- Estimation of the existence of a culture of preparedness and response to specific risks.
- Willingness of the population to have coordination in case of emergency.

We haven't provided templates for the Vulnerability Assessment since you'll probably want to create documents that fit your specific needs. You can use the following pages as a guideline for your documents.



VULNERABILITY ASSESSMENT WORKSHEET

Hazard:

Intensity/Magnitude: High, Medium, Low

Elements at Risk



Characteristics of the Population at Risk



Organizational Capacities



Estimated Response Capabilities



Disaster Risk Reduction Final Project

Hazard:

Intensity/Magnitude: High, Medium, Low

Elements at Risk



Characteristics of the Population at Risk



Organizational Capacities



Estimated Response Capabilities



Disaster Risk Reduction Final Project

Hazard:

Intensity/Magnitude: High, Medium, Low

Elements at Risk



Characteristics of the Population at Risk



Organizational Capacities



Estimated Response Capabilities



ASSESSMENT OF RISK SCENARIOS

Instructions

Now that you've done all your research, it's time to put together the scenario itself.

The first step is to determine at least one level of magnitude from the Hazard and Vulnerability Analyses. Remember that, if you choose a higher intensity/magnitude, your scenario will apply to all lower intensities/magnitudes. For example, if you select "high", your scenario will also be appropriate for "medium" and "low" as well. This can save you a lot of work but you shouldn't always choose the highest intensity/magnitude since this may put the hazard scenario too far outside a reasonable probability.

Next, you'll describe the event that may trigger this hazard at the specified intensity/magnitude. When completing this section, use the following terms to describe the hazard:

- Slow or sudden onset
- Duration of impact
- Geographic extension/zoning of impact
- Magnitude or intensity, as appropriate
- Sequence and characteristics of the appearance of the event

Then, you'll describe the expected impact of the hazard (for the level you've selected). There are two types of effect that can occur – direct and indirect. When completing this step, provide the following details regarding the probable impact of the hazard:

Potential Direct Effects	
• People (health in the broad sense of the word) • Critical facilities and lifelines • Critical facilities for response (i.e.: shelters, schools, hospitals, fire stations, etc.)	• Housing and public buildings • Productive infrastructure • The Environment

Potential Indirect Effects	
• Economic Impact • Social Impact	• Environmental Impact • Political Impact



Assessment of Risk Scenarios Worksheet

Hazard:

Intensity/Magnitude: High, Medium, Low

Trigger Event Description

Expected Impact

Potential Direct Effects

Potential Indirect Effects



RECAP

Congratulations! You're now on your way to creating your first Disaster Risk Reduction Scenario! Hopefully the information in this course and in this workbook have been helpful to you. Remember that if you need help or something isn't clear, make use of the course forums on Moodle. They're staffed by others who are taking the course as well as USAID/OFDA/LAC staff who can answer any questions you have.