

REGIONAL SOPs FOR CLIMATE RESILIENT WATER INFRASTRUCTURE

Level 2 Training – Module 3: Community-based water supply and sanitation

Community-based water resilient assessment tool for the Caribbean – 1 hour

Task 1: Identify potential natural or climate hazards for each exposed infrastructures/assets

Table 1. Identification of hazards

Infrastructure	Hazards
Community Water treatment systems	
Pipelines	
Pump and storage	
Latrines and septic systems	
Wells	

Note: the table above can be expanded to include more infrastructure.

Table 2. Example of Table of exposed assets

Assets	Hazards
Residents	Extreme Heat
Roadways	Landslides, Flooding
Winter Recreation Revenue	Warming (early snowmelt)
Commercial Properties	Floodplain inundation
Residential Properties	Floodplain inundation, Wildfires, Landslides
Parks	Floodplain inundation, Water Shortage

Source: <https://toolkit.climate.gov/steps-to-resilience/explore-hazards>



Task 2: Define your community-based project

Describe potential consequences

For each infrastructures/assets-hazard pair on your list, write descriptions of the range of impacts that could result from different intensities of the hazard.

Explore past events to ground your descriptions in reality, and then imagine what could happen to the infrastructure/asset if they experience a minor, moderate, or major hazard event.

These descriptions can serve as warnings about what could happen to your community's valued infrastructures/assets.

Conditions that make hazards more frequent or severe are called stressors. These stressors include:

- Climate stressors include changes in the frequency or severity of extreme weather events that can occur due to natural climate variability (i.e. episodes of El Niño and La Niña) as well as through human-caused climate change.
- Non-climate stressors include things such as changes in land cover (e.g. when natural vegetation is cleared and replaced with roads and buildings), construction projects that disrupt natural water drainage or common traffic patterns, and population growth.

Identify a champion

A committed community leader who has the ability to get things done within the local government is needed to bring together human and financial resources needed to design and implement effective resilience-building projects.

Build a team

What groups or individuals in your community might be concerned with the issue(s) identified?

Make a list of *all* the organizations, groups, and businesses that could be affected by the issue at hand. Identify one or more points of contact for each group, looking especially to engage people who have responsibilities related to your issue. To ensure community buy-in, it is essential to be inclusive when building a team.

Define the scope of your project

Identify and focus on groups of shared values and interests. Throughout the communications and activities, keep a strong focus on participants' common goals. The more clearly you define a problem the group is willing to work together to solve, the easier it will be to find a solution to match it.

Task 3: Assess Vulnerability & Risk

To understand community's infrastructure resilience there is the need to develop methodologies to assess vulnerabilities and risk. Watch the video before starting exercise below.

Video link: <https://vimeo.com/211553923>

Understanding Risk discussion points

Discussion points:

- First, assess the probability of a hazard occurring. How likely is it that the hazard will happen in your location? How frequently has it occurred in the past, and has climate change caused an increase in frequency?
- Secondly is the magnitude of consequences from the event. Would the hazard cause a major disruption for a large number of people in the community for an extended period? Would it require large amounts of money and time to restore the previous level of function?

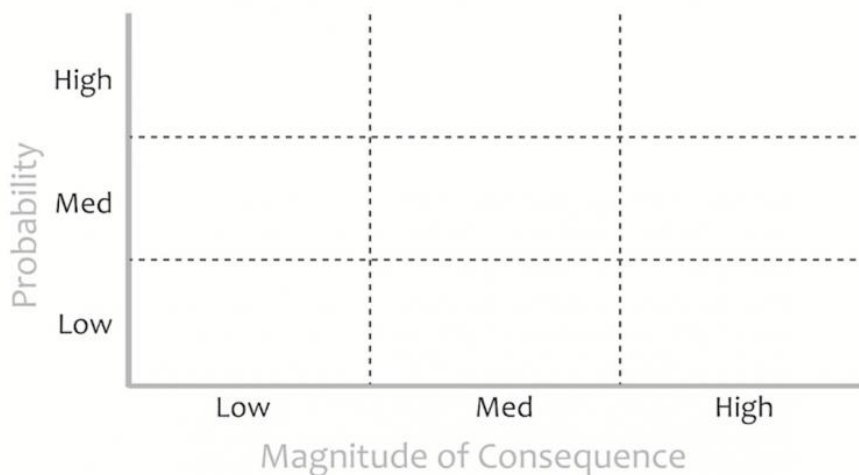
Estimate hazard probability

For the hazards that could impact your most vulnerable infrastructure/assets:

- Collect information on how frequently the hazard has occurred in the past.
- Check if climate change or other stressors are likely to increase the frequency or severity of the hazard over time.

Final Exercise

For every asset-hazard pair, plot the probability of the hazard and the magnitude of the loss on a 3x3 matrix shown below. Asset-hazard pairs that you plot in the High-High or High-Medium areas of the matrix represent your highest chances of sustaining a substantial loss.



Reference

JMP Joint Monitoring Programme for Water supply & Sanitation WHO/UNICEF, Taken 2008-03-20
from <http://www.wssinfo.org/en/welcome.html>

United States Environmental Protection Agency (USEPA). n.d. Community-Based Water Resiliency Training:
Conduct your own CBWR Workshop Training session in your community!
<https://www.epa.gov/communitywaterresilience/community-based-water-resiliency-training>

United Nation Environmental Program (UNEP). n.d. Wastewater, sewage, and sanitation.
<https://www.unep.org/cep/wastewater-sewage-and-sanitation>

United Nations Framework Convention on Climate Change (UNFCCC). 2007. Climate change: Impacts,
vulnerabilities, and adaptation in developing countries. <https://unfccc.int/resource/docs/publications/impacts.pdf>