

## Case Studies, Activity Sheet 1

The purpose of this activity will be to develop a contextual understanding and have a clear baseline package of your region's information. Context information helps to:

- recognize and understand the hazards and context in the project area;
- identify knowledge gaps;
- identify risks to the project from natural hazards, now and in the future; and
- make decisions about how to deal with those risks.

Information on the following key features of natural hazards is needed to identify past, present and potential hazards and their effects:

- *Location and extent.* Is the programme or project area affected by one or more natural hazards, what types of hazard, and where?
- *Frequency and probability of occurrence.* How often are hazard events likely to occur (in both the short and the long term)?
- *Intensity/severity.* How severe are the events likely to be (e.g., flood levels; speed of winds and volume/rate of rainfall during hurricanes; magnitude and intensity of an earthquake)?
- *Duration.* How long will the hazard event last (from a few seconds or minutes in the case of an earthquake to months or even years in the case of drought)?
- *Predictability.* How reliably can we predict when and where events will happen?

**To complete this activity, answer the following questions:**

### 1. What aspects of climate are you vulnerable to ?

- **Water availability? Temperature? Intensity of rainfall? Etc.**

### 2. Is there a particular regional focus to vulnerability ?

- can it be delineated based on sectoral vulnerability ?
- is it culturally based ?
- is it really climate related or is it socially constructed ?

Some sector specific examples include:

#### ○ **Agriculture**

- - which crop ? Do you know it's phenology ?
- - are particular varieties more important
- - irrigated or rainfed ?
- - is there a record of agricultural statistics that can be used to derive climate related vulnerability ?

#### ○ **Infrastructure**

- - Can you estimate damages based on climate e.g. due to flooding or cyclones (winds)
- - do you have records of past damages e.g. costs of repair

#### ○ **Water resources**

- - do you have streamflow records ?
- is it an allocation problem related to infrastructure ?

### 3. What are the physical and social elements of the region of primary importance, etc. (ie. What does the topography of the region look like? )

- What are the principal livelihood/economic activities: If agriculture, what crops are grown? what is their growing season?
- Where are the major economic activities that are vulnerable to climate change located in your country: the subsistence farmers located in your country? Where are the maize farmers? Etc
- which sector (agriculture/water resources) ?
- changes in seasonality, rainfall frequency, total rainfall ?
- infrastructure ? wind/cyclones ?

**4. What larger scale processes do you need to consider when looking at climate change information for your region? (for example, El Nino, the Intertropical Convergence Zone) and how would these impact the climate analysis?**

- What are the major climate hazards affecting your study area? This list should include both a general categorization of the climate hazards (e.g droughts, floods, salt-water intrusion, sea level rise, erratic or changing rainfall) as well as detailed description of the hazard in your specific setting. Data on current climate hazards, risk and variability will provide answers to this question.

You may want to make a map of these hazards, where they are known to occur. Ideas: use symbols, descriptions, historical occurrences. Other questions to address include:

- What are the documented historical trends in these hazards?
- Is the nature and location of these hazards changing, and if so, how?
- What kinds of predictions have been made on these hazards for your country?
- What are the impacts of these hazards on the study site? Who is affected? Why? And How are they affected?

**5. How does climate vary in your area? (seasonal variations, rainfall patterns, etc.) and what data do you have to characterise current hazards ?**

- daily or monthly ?
- data collected by meteorological office ?
- satellite observations ? Are they biased ?

**6. To what extent can you characterise future hazards**

- What trend and variability analyses are there in the literature, and what do they say about the impacts of climate change in your study site?
  - Which period ?
    - GCM data. Are monthly means and large regions sufficient ?
    - RCM downscaling. Is it available and how do you characterise uncertainty?
    - Statistical downscaling.

**7. Why do you need to use the climate data for the study**

- Crop or flood risk modeling?
- fire risk or groundwater availability ?

**8. What issues related to uncertainty should you consider when analysing climate information for your study area?**