

## Resources 1\_Refining and defining a research topic

### 1. State your research objective in the form of a question

Example: Research Objective:

This research project aims to analyze the variability of rainfall in the Volta Basin in order to determine optimal allocation of water

Research Question:

What is the optimal allocation of water in the Volta River Basin, given the variability of rainfall

### 2. Research Context and Justification: Who cares and Why?

Given the complexity of water management issues and their interconnectedness with many aspects of natural resources management, food production, environmental services, food production and poverty – it seems like everyone in the world should care about your research if you are looking at a water management question. However, depending on your topic, a subset of people will have a greater interest, as it may pertain to their specific water management concerns more directly, and help them to improve the quality of their own knowledge and/ or to effect change to improve conditions on the ground.

If you can frame your research topic within a specific context, your proposal will stand out as one that is clearly seeking to find solutions to a particular problem. The role of a researcher is not to manage water, dig wells, improve water quality, or build reservoirs. As a researcher, your problem should be something that will be aided by better information. Your research proposal should explain how the information you gather, contributes to filling knowledge gaps that are current obstacles to improving water management.

The research context helps to frame the problem.

The questions which can help you clarify your research context are:

1. Who cares – Which “stakeholder(s)” might have a compelling interest in your study?
2. Why – How will your information fill knowledge gaps and how will that help improve things

For Example, based on the research question above,

Who might want to know the optimal allocation of water in the Volta River Basin, given the variability of rainfall?

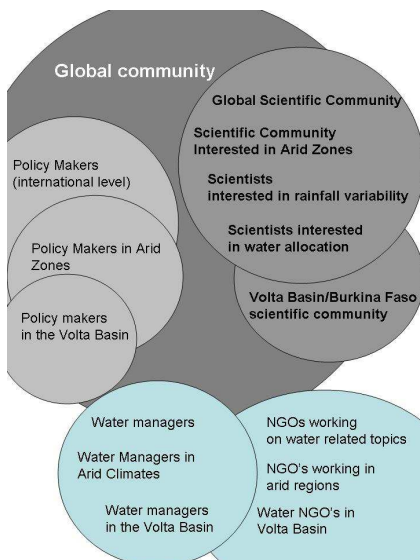


Figure 1 depicts a varied selection of potential stakeholders for such a study.

Depending on the stakeholder, the example study might be more or less pertinent for one or the other. For example, if you were aware that in the next five years, the World Bank was planning on making a major investment in water development in West Africa, you would want to highlight this as part of the research context, as it would indicate that your study had an important policy implication at a regional level.

Another example would be that if there was a well funded international NGO that was doing water allocation related work in many arid river basins, and their work was failing because they did not have an adequate understanding of the relationship between rainfall variability and water allocation, you could easily explain why your study was important.

## Resources 1\_Refining and defining a research topic

### 3. Define the scope of your question

Research Question:

What is the optimal allocation of water in the Volta River Basin given the variability of rainfall?

Identify Key Words:

What is the **optimal allocation** of **water** in the **Volta River Basin** given the **variability** of **rainfall**?

Then see if it is possible at this stage to be more explicit about those key words:

#### **optimal**

Optimal in terms of what? Economically speaking? In terms of equity? In terms of plant growth?

#### **allocation:**

Allocation between sectors (if so, which sectors?), between farmers (if so, which farmers), between countries, (if so, which countries)..etc

#### **water**

Which water? Irrigation scheme water? Ground water? Dry season water?

#### **Volta River Basin**

Which part of the Volta River Basin? The whole basin? A particular sub-basin? In a particular country? In the rainfed agricultural zones? Do you have a map of the region of the basin you are interested in?

#### **rainfall variability**

Temporal or spatial? Over what time period? Is the data available for the variability you want to measure?

### 4. Refine your question based on a more clear definition

Refined Research Question:

What is the optimal allocation of water ***within growing seasons between rice irrigators in the North West of Burkina Faso portion*** of the Volta River Basin ***based on yield***, given the variability of rainfall ***over the period 1975 - 1995***?

The words in ***italics*** are examples of choices you might make to clarify and narrow your research topic. The research question may now include all of the specific boundaries you are interested in, but it may not be clear unless you decouple the “optimal allocation” question from the “rainfall variability question”

From this, we might develop two questions which link rainfall variability to a distinct water management concern:

- a. What is the rainfall variability in in the North West portion of the Volta River Basin Burkina Faso, over the period 1975-1995?
- b. Based on the pattern of rainfall variability over the 1975-1995 period, what are recommended water allocations between rice irrigators to maximize yeild within growing seasons under different conditions of water supply?

Ask yourself, 1. Does this more clearly describe the goals of my research? 2. Does the topic seem more easily targeted in terms of “why and who cares”

If so, than you have improved your topic.