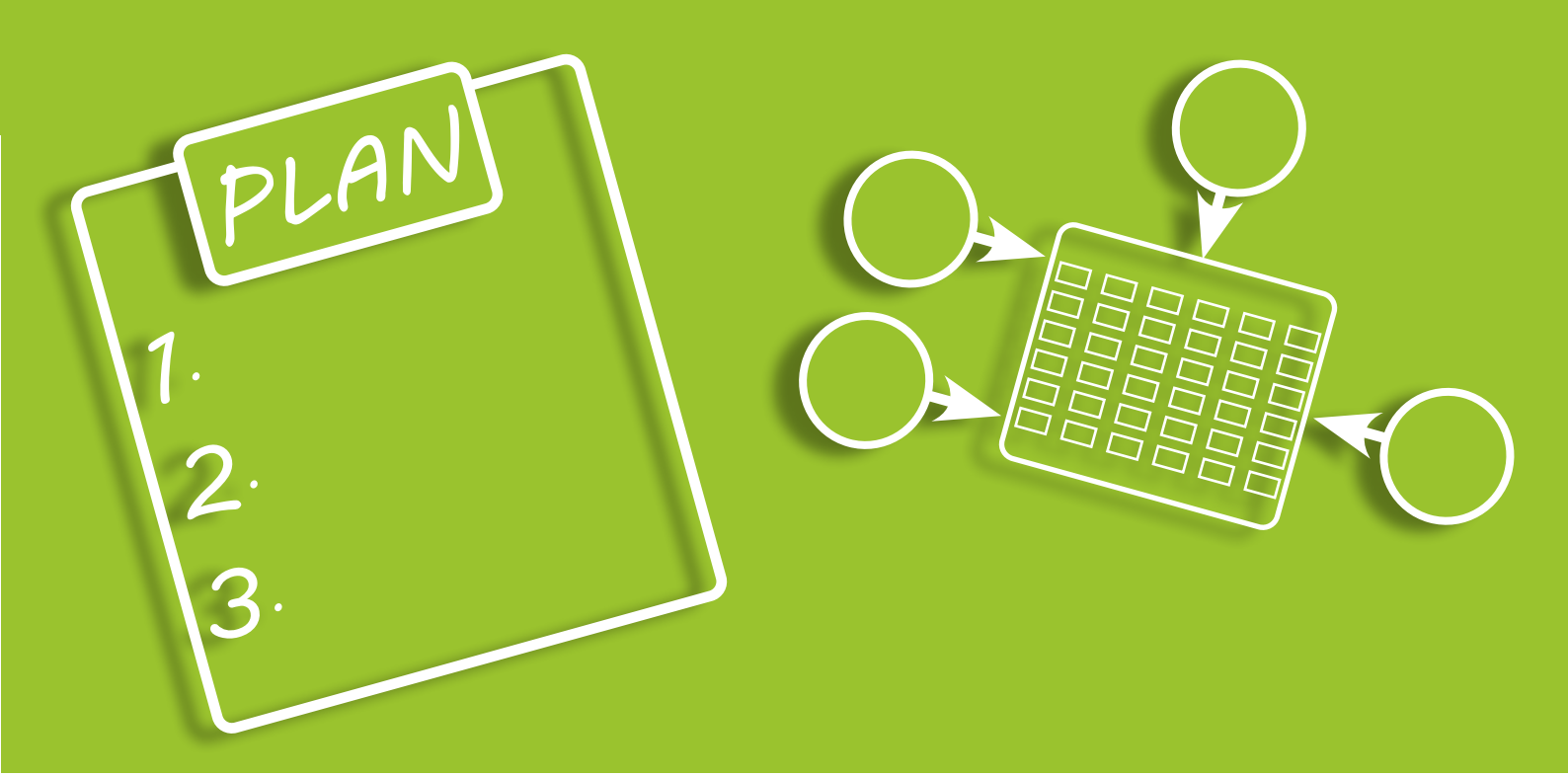

The fundamentals of qualitative research

Using insights from a loss and damage case study

iied

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Qualitative research is important. It allows researchers to explore complex phenomena in depth and emphasises the perspectives and voices of the participants. It provides an opportunity for individuals to share their experiences, beliefs and opinions in their own words, giving them agency and contributing to a more democratic and inclusive research process. Qualitative research can also inform decision-making processes — providing valuable insights for policymakers, practitioners and organisations to help them develop effective strategies, interventions or policies that are grounded in a deep understanding of the target population and its needs.

This toolkit introduces the fundamentals of research, with insights into a case study on loss and damage. The toolkit is based on a series of four workshops hosted by the International Institution for Environment and Development (IIED) for the Loss and Damage Youth Coalition (LDYC) between January and March 2023. The toolkit consists of explanations of fundamental research principles in four phases:

1. Research plan	2. Data collection	3. Data analysis	4. Communication

The toolkit is designed as a comprehensive resource for both novice and more seasoned researchers seeking to understand and employ qualitative research. It delves into the crucial aspects of designing qualitative research studies, including sampling strategies and ethical considerations. Moreover, it explores the art of data collection, providing practical advice on conducting interviews and observations, and analysing qualitative data effectively. It also introduces various techniques for organising, coding and interpreting qualitative data, highlighting the importance of reflexivity and rigour in the analytic process. Finally, this toolkit includes illustrations from open-access papers on loss and damage and a case study on loss and damage in Bangladesh as examples.

Case study

The research project "Centring local values in assessing and addressing climate-related losses and damages" was situated in north-central Bangladesh. The study began with the notion that there is a **limited understanding of the intangible and subjective losses and damages** from climate change people experience, and how to address these. Fortunately, the number of studies explicitly focusing on 'non-economic' losses and damages is growing. However, these assessments are commonly **shaped by top-down, standardised conceptualisations**, resulting in incomplete depictions which are insensitive to local contexts. Therefore, researchers from the International Centre for Climate Change and Development (ICCCAD) and IIED developed a loss and damage **assessment methodology based on locally identified values**. This method was applied in Durgapur Upazila, north-central Bangladesh, to assess and find ways to address the losses and damages people in north-central Bangladesh face from multiple climate-related hazards. The study was conducted between September 2022 and March 2023; it consists of a scoping literature review, surveys, semi-structured interviews, focus group discussions and video interviews.

Contents

1. Creating a research plan

1. Creating a research plan

Research enhances our understanding of loss and damage, which can guide the creation and implementation of new policies to address climate change impacts. A research topic can be determined with the help of a theory of change: a method that helps map how changes or interventions can support a desired long-term change.

After the topic has been decided, the first step in conducting research is often to create a research plan. This plan will serve as the guiding framework for your research and helps to identify and define the focus, methods, goals and processes relevant to your study. Moreover, a plan ensures that you know what your research will look like, which helps when aligning different team members. Research plans can incorporate different structures and components, but commonly start with an introduction that contains the necessary background information, contexts relevant to the research and possibly the problem that you will address. The introduction can be followed by these components:

#	Step	Aim
1	Literature review	A foundation of knowledge relevant to your research topic
2	Research problem	The specific gap or issue in existing knowledge you will address in your research
2	Research question(s)	The question that your research project sets out to answer
4	Methodology	The methods you will employ to ensure reliable and valid results
5	Working plan	A plan outlining the timeline and budget expectations

1.1 Literature review

It is important to have a baseline understanding of the key existing research pertaining to your topic to ensure that your own research will not duplicate other studies and will contribute to gaps in the literature. This existing research will serve as a starting point for your own. Therefore, in this section, you can:

1. Compare or contrast the main theories, methods and debates relating to your research topic.
2. Examine the strengths and weaknesses of different approaches.
3. Explain how you will build on, challenge or synthesise prior scholarship.

Literature reviews can consist of academic papers as well as 'grey literature': materials and research published by organisations outside of academic publishing, such as reports by non-profit or civil society organisations. As well as helping you to prepare your research project, the literature review is often part of the final research report, giving the readers an overview of the field of knowledge. For example:

- Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands (McNamara, KE, Westoby, R, Clissold, R and Chandra, A (2021) *Climate Risk Management* 33, p. 2–3)

- A critical review of disproportionality in loss and damage from climate change (Dorkenoo, K, Scown, M and Boyd, E (2022) *WIREs Climate Change* 13(4), p. 3–5)

1.2 Research problem and question(s)

A **research problem** is a statement that addresses a gap in knowledge or a challenge in a particular field. Your research should aim to address this problem by answering a **research question**, which shows what you aim to find or answer through your research, and which is therefore central to guiding your work. A good research question should be **clear, focused and not too difficult to answer**, meaning that you can answer it within a specific timeframe using primary and/or secondary sources. However, it should also **not be too easy to answer**, as the answer should be a thorough addition to your field of study.

Authors sometimes explicitly state their research questions in their reports. Here are some examples from loss and damage-related research:

- **How did the losses and damages caused by the Jure landslide in 2014 vary between poor and nonpoor households, and what are the implications for compensation and relief?** (From: Van der Geest, K (2018) Landslide Loss and Damage in Sindhupalchok District, Nepal: Comparing Income Groups with Implications for Compensation and Relief. *International Journal of Disaster Risk Science* 9, p. 159–160)

- **What are the current financing options for loss and damage from slow onset events in developing countries?** (From: Robinson, S, Mizan, K, Timmons, RJ, Weikmans, R and Ciplet, D (2021) Financing loss and damage from slow onset events in developing countries. *Current Opinion in Environmental Sustainability* 50, p. 139)

- **How is evidence of Indigenous knowledge on climate change adaptation geographically and thematically distributed in the peer-reviewed academic literature?** (From: Petzold, J, Andrews, N, Ford, JD, Hedemann, C and Postigo, JC (2020) Indigenous knowledge on climate change adaptation: a global evidence map of academic literature. *Environmental Research Letters* 15(11), p. 1)

You can also include multiple interrelated research questions to further specify your research aim. Bigger research projects, where more time and resources are allocated, are more likely to include multiple questions. For example:

(From: Gobster, PH, Weber, E, Floress, KM, Schneider, IE, Haines, AL and Arnberger, A (2022) Place, loss, and landowner response to the restoration of a rapidly changing forest landscape. *Landscape and Urban Planning* 222, p. 3)

1. How do landowners identify their sense of place for the landscape?

2. What experiences of loss and change have they felt from natural and management activities on their own land and on the surrounding landscape?

3. How do their experiences of place and loss shape how they respond to change on their own land and on the surrounding landscape?

Case study

While research problems and questions are formulated prior to conducting the research, they can evolve and change over time. Initially, three objectives were determined within the research proposal of the case study in Bangladesh:

1. What are the non-economic losses and damages from climate change populations, in the Northern Bangladesh experience?
2. What responses have affected local populations formulated to address these non-economic losses and damages?
3. What responses do affected local populations wish to see implemented to address these non-economic losses and damages?

After a more comprehensive literature review, the research team decided to centre locally identified values in the assessment, which changed the scope from 'non-economic losses and damages' to 'losses and damages', then to 'everything people perceive to be important'. This change occurred early in the research processes. However, research questions and aims can even change during or after data collection.

1.3 Methodology

The methodology section describes your overall approach and the steps you will take to answer your research questions. Effective collection of data is needed to answer your hypothesis or research question(s). Within this data collection, you can make some distinctions.

Primary or secondary data?

Primary data refers to first-hand data gathered by the researcher(s) directly from main sources, using methods such as interviews or questionnaires. **Secondary data** is existing data which is available for researchers to use for their studies, from sources such as journal articles, databases and reports.

Qualitative or quantitative data?

Data can be collected through quantitative and qualitative research. Employing **quantitative research** methods involves collecting and interpreting numerical data and can be used to find what people prioritise, patterns, or to test causal relationships or generalise results to broader populations. **Qualitative research** methods are used to help understand non-numerical data, such as text or audio recordings. You can therefore use qualitative methods to answer questions that cannot be addressed using quantitative methods, such as understanding concepts, opinions or experiences.

Methods and ethics

If primary data is gathered from participants, it is important to think about ethical considerations to ensure that research participants are not subjected to harm.

Methods and ethics are central to research and will therefore be further described in Chapter 2 and Chapter 3.

1.4 Workplan

1.4.1 timeline

A workplan in the form of a timeline shows how to get from an initial idea to a final report. It helps with planning tasks, setting deadlines and tracking the progress of the research, which in turn helps with organising the team, avoiding stress and ensuring that there are no significant delays. Timelines are commonly broken down into phases or stages, which can be further broken down into smaller steps and deadlines. Components commonly included are:

- Literature review
- Data collection (for example, planning, preparation, travel, interview, survey)
- Data analysis (for example, coding, quantitative analysis)
- Writing (first draft, final report)

Case study

Below is an initial simplified workplan developed for the research in Bangladesh. However, the actual research was undertaken in a less linear fashion. For example, literature was reviewed throughout the timeline and data was analysed between every step in the field research. Moreover, while the initial plan had been to finish the study by February, the deadline was postponed by a month given the large scope of the research.

		Sep '22	Oct '22	Nov '22	Dec '22	Jan '23	Feb '22
Preparation	Conduct literature review						
	Design assessment methodology						
	Select research area(s)						
Field research	Collect contextual information						
	Assess losses and damages						
	Assess ways to address losses and damages						
Writing	Analyse data						
	Write up report						

A timeline is an estimate of how the research will unfold. Certain activities might take more or less time than expected. Therefore, it is useful to keep an eye on progress and make amends if required.

1.4.2 Budget

It is crucial to have a detailed overview of your research budget (especially if you plan to apply for research funding) in which you estimate how much each part of the project will cost. The following components might feature in a budget overview:

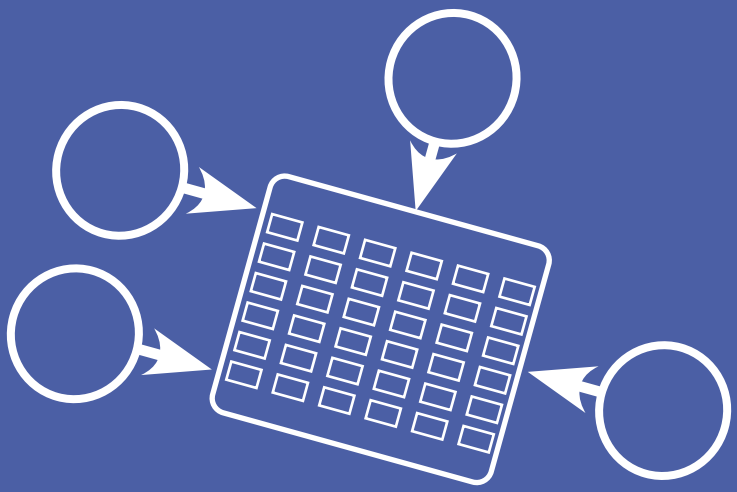
- **Travel costs:** will you travel for data collection? What is the method of transportation? How much will this cost?

- **Materials:** do you need access to software? Do you need to buy materials?
- **Human resources:** will you hire researchers to assist on the project? What will they do and for how many hours?

This list is not exhaustive. All projects will have different budgetary constraints. But all costs must be justified. Within these cost estimates, it is also good to add additional allowances for potential setbacks and delays.

Credit: Leianne Rolington/IIED

2. Data collection methods



2. Data collection methods

When the research plan is finished, you will move to selecting and designing the ways you will collect data. In section 2.1, we outline several methods, mostly focusing on gathering primary data using qualitative methods. In section 2.2, we discuss the demographic makeup of people participating in these methods.

2.1 Methods

Different data collection methods will result in different outcomes. Therefore, we will introduce various ways to collect primary and secondary data and give examples of how other loss and damage-related studies have applied each method.

2.1.1 Literature review

A literature review is a review of written materials, such as policy briefs, journal articles, reports and working papers. It is often conducted using academic search engines such as Google Scholar, SCOPUS, or Web of Science. A literature review aims to gain an understanding of existing research and knowledge relevant to your research topic and present a valuable and critical summary or overview of this knowledge to the reader. There are several types of literature review, each with its own purpose and focus. The choice of review type depends on the research question, purpose and available resources, because each type has its strengths and limitations.

- **Narrative literature review:** provides a descriptive overview of the existing literature on a particular topic.
- **Scoping review:** aims to map the existing literature on a particular topic by identifying the key concepts, theories and/or empirical evidence.
- **Systematic literature review:** follows a structured and rigorous approach to searching, selecting and analysing the literature on a particular topic to synthesise the evidence and draw reliable conclusions.
- **Critical literature review:** involves critical analysis and evaluation of the existing literature on a particular topic, focusing on identifying strengths, weaknesses and gaps in the evidence.

The most significant difference is that some literature reviews (narrative, scoping) form the basis for further data collection, while others (systematic, critical) are used to systematically collect and analyse data. Data for a literature review can be collected by taking these broad steps: prepare keywords, define scope, search and categorise articles, and screen the relevant reports.

Credit: Susan Q Yin via Unsplash

The three journal articles below include detailed descriptions of their processes, giving practical insight into how systematic literature reviews are relevant in loss and damage research:

- Loss and Damage in the Rapidly Changing Arctic (Landauer, M and Juhola, S (2019) *Loss and Damage from Climate Change*, p. 430–431)
- Loss and damage from climate change and implicit assumptions of sustainable development (Boda, CS, Faran, T, Scown, M, Dorkenoo, K, Chaffin, BC, Nastar, M and Boyd, E (2021) *Climatic Change* 164, p. 3–4)
- 'Seeing with Empty Eyes': a systems approach to understand climate change and mental health in Bangladesh (Hayward, G and Ayeb-Karlsson, S (2021) *Climatic Change* 165, p. 29).

2.1.2 (Semi-structured) interviews

There are two types of interviews used in this type of research. In a **structured interview**, researchers ask a set of predetermined questions in a particular order. In **semi-structured interviews**, researchers also use predetermined questions but are also allowed to diverge from a set structure, ask follow-up questions and engage in dialogue. This report focuses on the latter type, as the ability to ask follow-up questions helps uncover the complex dynamics often related to loss and damage. The aim of a semi-structured interview is to collect qualitative data and explore participants' thoughts, feelings and beliefs. They usually take 30 to 60 minutes and can be conducted following these steps: creating an interview guide, pilot testing, conducting the interview. Before these steps, it is vital to have a good understanding of existing knowledge on your research topic by, for example, conducting a literature review. A semi-structured interview can be used for different kinds of studies and with a range of stakeholders — from ministerial officials to affected societies — which is illustrated in these two studies:

- The 'national turn' in climate change loss and damage governance research: constructing the L&D policy landscape in Tuvalu (Calliari, E and Vanhala, L (2022) *Climate Policy* 22(2), p. 186–187)
- Addressing unavoidable climate change loss and damage: A case study from Fiji's sugar industry (Nand, MM, Bardsley, DK and Suh, J (2023) *Climatic Change* 176, p. 2).

Case study

Semi-structured interviews were used for various purposes within the research in Bangladesh (see p. 15–17), for examples to gain an understanding of what people valued most in their everyday life. Semi-structured interviews were preferred as they allowed participants to share their personal stories and allowed researchers to ask follow-up questions. First researchers introduced the study aim, explained how the data would be used and asked for consent to use the participants' data. Then, researchers asked a set of predetermined questions that were derived from similar studies. For example:

- What are the things that make you stay in [insert village name]?
- If you had the power to change anything you would like, what changes would you like to make to [insert village name]?
- Overall, what would you say you value most about living in [insert village name]?

Semi-structured interviews were again used later in the process to gain an understanding of how climate change affects the aspects of life people value most. The following questions were used:

- Can you describe how the aforementioned weather-related processes and events impacted [insert value] for you?
- What specific event(s) or process(es) caused [insert impact]?
- Did [insert impact] cause any further impacts to your life?

The interviews took 15–45 minutes depending on the range of information given by the participant.

2.1.3 Focus group discussions

Focus group discussions are similar to interviews. However, instead of conducting one-to-one conversations, research topics and questions are discussed in a group setting. A focus group discussion aims not to reach a consensus but to uncover a range of perceptions, perspectives and experiences. Focus group discussions often include five to ten participants with shared experiences related to the research issue. For example, they could all have been affected by a flood or heatwave or have taken part in loss and damage negotiations. Focus group discussions often take 60 to 90 minutes. One researcher will act as the moderator, facilitating the discussion to ensure extensive and valuable responses. Another may serve as a note taker, writing down the key points of the discussion in addition to recording the session on tape. The group element of focus group discussions makes them more complex than interviews. Therefore, it is essential to:

- Design questions that **promote discussion**. For example, statements and examples such as "We have heard that everyone's health was affected by the flood. What were the most prominent symptoms and diseases?" can invoke lively discussions.
- Ensure that everyone feels **safe to voice their opinion**. This can mean holding a separate discussion for women, people belonging to a particular religious community or young people, so there is no pressure from elders.
- **Engage everyone** in a group discussion. Some participants will engage more than others; some might not talk. The role of the moderator is to try to involve everyone and prevent any single person from taking over whole conversations.

The following loss and damage studies involve focus group discussions:

- Evidence from the frontlines of climate change: loss and damage to communities despite coping and adaptation (Warner, K, Van Der Geest, K, Kreft, S, Huq, S, Harmeling, S, Kusters, K And De Sherbinin, A (2012) Loss and Damage in Vulnerable Countries Initiative. United Nations University Institute for Environment and Human Security, p. 26)
- Local responses to climate-related non-economic losses and damages: a case study in Burigoalini and Gabura Union, Southwest Bangladesh (Van Schie, D Ranon, RJK, Mirza, AB, Anderson, S (2022) IIED, p. 15).

Credit: David Dodman/IIED

2.1.4 Observation

Observation in research refers to observing participants and phenomena in their most natural settings and helps the researcher gain insight into behaviours and discover topics that they may not have initially foreseen. Participant observation is when the observer becomes part of the observed group; non-participant observation refers to when the observer is 'on the outside looking in' — they are present but not actually part of the situation. Observation can be undertaken by one or multiple researchers. If multiple observers are present, they can take notes individually and consolidate them after discussions to compare different perspectives. The studies below used observation as a data collection method:

- Making sense of the politics in the climate change loss & damage debate (Calliari, E, Serdeczny, O and Vanhala, L (2020) *Global Environmental Change* 64, p. 3–4)
- Salt in the wound: embodied everyday adaptations to salinity intrusion in the Sundarbans (Sen, R (2023) *Ecology and Society* 28(2), p. 10).

2.1.5 Creative methods

Creative methods can help better portray the personal and emotional aspects of the impact of loss and damage. Creative methods include photos, art-based methods, soliciting diaries, first-person narratives and storytelling. We highlight two of these methods.

Photovoice is a participatory method that encourages participants to lead the research process by visually representing their perspectives and concerns using photography. After the researcher has identified their participants, this can be done following these broad steps:

1. Introduce and discuss the photovoice methodology with participants. At this point, you also give instructions on the study's theme and how long participants can take photos for.
2. Distribute the cameras to participants and review how to use them. The method can be undertaken using film, digital or polaroid cameras, or even those on the participants' phones.
3. Host a focus group discussion in which the participants present and discuss their photographs.

The following study was done using a photo-based method:

- Local knowledge and perspectives of change in homegardens: a photovoice study in Kandy District, Sri Lanka (deHaan, R, Odame, HH, Thevathasan, N and Nissanka, SP (2020) *Sustainability* 12(17), p. 5–7).

Like the photovoice method, **soliciting diaries** involves asking participants to record their perspectives, which researchers later analyse. In this method, however, rather than using cameras, researchers ask participants to write diaries about specific topics. Unlike private diaries, these diaries are written with the full knowledge that they will be shared with the researchers. The process is similar to that of the previous method, except that a final meeting is not always appropriate as diaries can be highly personal. A requirement for participation is literacy, as the method involves writing. This can be complicated in some regions affected by climate change. These issues are discussed in the following case study with urban refugee women in Jordan and Lebanon:

- Solicited diary methods with urban refugee women: Ethical and practical considerations (Linn, S (2021) *Area* 53(3), p. 454–463)

Case study

The usage of video material can help readers better visualise the people and environment that are affected by climate change. Therefore, ten video interviews were integrated throughout the Bangladesh case study to further highlight people's personal stories (See p. 19–39).

For example: https://youtu.be/8rEoxlG0GL0

The possibility of recording video stories was discussed with participants at the start of the research process to gain an understanding of their willingness to participate. At the end of the research period, participants knew the researchers and research aim very well, and were comfortable telling their stories. The research team made sure that participants knew how the recordings were going to be used, which is discussed in more detail later in this toolkit.

2.1.6 Surveys and questionnaires

Surveys and questionnaires can be used to gather qualitative data, predominantly by using open-ended questions, or quantitative data, predominantly by using numerically rated queries. They can be conducted in paper or electronic form and emailed to participants using online tools such as Survey Monkey or Google Forms. Surveys can help gather information from a large group of participants, resulting in significant statistical evidence. The following loss and damage studies used surveys to collect both qualitative and quantitative data:

- Loss and Damage from salinity intrusion in Satkhira District, coastal Bangladesh (Rabbani, G, Rahman, A, Mainuddin, K and Shoef, IJ (2013), Loss and Damage in Vulnerable Countries Initiative, United Nations University Institute for Environment and Human Security, p. 15–16)
- Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands (McNamara, KE, Westoby, R, Clissold, R and Chandra, A (2021) *Climate Risk Management* 33, p. 3–5).

2.2 Preparation

Almost all research methods start with researchers determining the group from which they will collect data. This is called sampling. They also ensure that the designed methodology will yield the expected results, which can be done through pilot testing.

2.2.1 Sampling

The aim of sampling is to obtain reliable and generalisable data about the population without examining every person within the group. Multiple ways of sampling exist:

- Simple random sampling: individuals are chosen by chance, and all individuals have equal chances of being included
- Systematic sampling: individuals are chosen according to a random starting point but with a fixed, periodic interval (this interval is calculated by dividing the population size by the desired sample size)
- Stratified sampling: individuals of similar characteristics are grouped together and then randomly selected from those groups
- Clustered sampling: individuals are divided into groups or clusters, and these clusters are randomly selected.

Sampling can also be done iteratively: data collection is followed by an analysis, which is again followed by interviews. This process can be continued until no new relevant information is found and further sampling

becomes redundant. This endpoint is called saturation. This cannot be done in surveys, which can rely more on calculations. For example, these two loss and damage-related studies show the rationale behind their sample sizes for surveys:

- Evidence from the frontlines of climate change: loss and damage to communities despite coping and adaptation (Warner, K, Van Der Geest, K, Kreft, S, Huq, S, Harmeling, S, Kusters, K And De Sherbinin, A (2012) Loss and Damage in Vulnerable Countries Initiative. United Nations University Institute for Environment and Human Security, p. 29–31)
- Priority practices for addressing non-economic loss and damage caused by typhoons in Japan: case study of Nachikatsuura Town (Chiba, Y and Prabhakar, S (2017), Institute for Global Environmental Strategies, p. 8–10).

2.2.2 Piloting

Research processes are not always linear; researchers often go back and forth between data collection, analysis and reframing of the research questions. This dynamic is also common during the piloting process, when researchers test the designed methods on a few participants to evaluate and possibly change them, which enables the interviewer to learn the best and appropriate wording and types of questions and gauge the interview length. Piloting is possible and recommended for virtually any research method. However, it can lengthen the research process.

2.3 Research ethics

Adhering to ethical principles is essential to protect the wellbeing and rights of research participants, especially in regions affected by climate change, where people might struggle due to the losses and damages they face. Careless enquiries or inaccurate depictions of their personal lives might cause additional harm.

2.3.1 Consent

Informed consent is central to research ethics; it involves giving participants a thorough overview of the research and what it means to participate in the study, and checking whether they are willing to participate in the research project. At this point, it is also commonly emphasised to participants that they will remain anonymous throughout the research process. Consent is always obtained before including a participant in any research. Any consent process must be understandable to the participants concerned. For example, a low literacy rate may mean that participants cannot read and sign forms. Therefore, there are two distinct ways that researchers can obtain consent:

- **Written consent** that involves signing a form. This is only possible when reading and signing are not a problem. Forms showing written consent are especially useful for funders and for legal reasons.

Case study

Oral consent was obtained during the semi-structured interviews, surveys and focus group discussions because participants did not always know how to read. Prior to each session, researchers explained the purpose of the research, the type of questions they were going to ask, what the information would be used for and in what manner it would be used, and whether the participant consented to this (See p. 14–15). This process was recorded.

A similar approach was taken for the videos. Additionally, a local researcher showed participants the final videos and asked them about their opinion of the video process and final product to ensure that they felt it presented their beliefs and opinions (See p. 15).

- **Oral consent** means the researcher and participant converse to give information and obtain consent. A recording of this conversation can be used as proof. Oral consent can be used when reading and signing are problematic or when participants have concerns about signing a form.

The exact method for obtaining consent can differ for each sociocultural setting. The following study gives examples from India, Iran, and Nigeria to highlight the diversity within and between these countries:

- Informed consent in international research: perspectives from India, Iran and Nigeria (Bhan, A, Majd, M, and Adejumo, AO (2006) *Med Ethics*).

2.3.2 Permits and legal issues

Research permits are required in some countries, especially when collecting data at the community level. Moreover, some communities require permission from local leaders. It is essential to check the necessary permits and approvals for your specific research in the early stages, as obtaining permits might take time.

2.3.3 Positionality

The term 'situated knowledge' describes how all knowledge is embedded in the researcher's cultural, historical or linguistic contexts. Therefore, a researcher's gender, class, race, experiences, privileges or other self-identifications and characteristics will influence research methods and writings, especially in participatory and community-level research, where the researchers' questions and attitude towards participants can greatly influence comfort levels and responses. Questions about the researcher's positionality within the study, such as: "Who am I in relation to this research?", "How does who I am affect how I approach this topic, my interaction with participants and the manner in which I conduct(ed) this research?" and "What have I done to account for, acknowledge and/or mitigate my influence on this research?" can make this clear for yourself and the reader, encouraging more ethical research practices. The concept of positionality in (international) research is further explored in this paper:

- Reflexivity, Positionality and Participatory Ethics: Negotiating Fieldwork Dilemmas in International Research (Sultana, F (2007) *ACME: An International Journal for Critical Geographies* 6(3), 374–385).

2.3.4 Causing additional harm

Research on loss and damage can mean collecting data from populations affected by climate-related disasters and who are currently economically and emotionally recovering.

Time

Methods such as surveys, interviews and focus group discussions can take time. Time can be valuable to participants as they might want or need to work or spend time with their families. Therefore, it is essential, where possible, to plan the research around people's schedules. This can mean accounting for work, prayer or dinner times and emphasising that people can leave during sessions if unexpected activities arise. Moreover, it is common practice to compensate people for their participation, by, for example, giving payment or facilitating drinks and food. Appropriate remuneration differs according to sociocultural situation; therefore, talking with local researchers about their practices can be helpful. The following paper mentions extractive dynamics related to research and time in Argentina and Mexico and potential appropriate responses:

- Doubly engaged ethnography: opportunities and challenges when working with vulnerable communities (Pacheco-Vega, R and Parizeau, K (2018) *International Journal of Qualitative Methods* 17(1)).

Wellbeing

Enquiring about sensitive subjects such as mental health, loss of loved ones, or relocation risks inflicting further harm to people's mental wellbeing. Therefore, it is essential to inform the participant of potentially sensitive subjects before conducting a method. Moreover, it can be useful to recheck people's comfort levels before asking particularly sensitive questions and to emphasise that participants do not have to answer questions when they do not feel comfortable doing so. Another factor to consider is recovery time; participants will not be able to participate in research immediately post-disaster. There is no set ruling for this, but generally, waiting at least a few months ensures that participants have time to process the losses and damages they face.

Case study

Upon arrival at the research area, the research team first spoke to local leaders and particularly vulnerable groups about the envisioned research aim and activities in order to gauge people's willingness to participate.

Research activities were planned according to people's working schedules and prayer times. During the research, the team was aware of the fact that enquiries about the losses and damages that people experience can bring up painful and traumatic memories (See p. 17). Therefore, participants were briefed extensively on the research aim and questions prior to each survey, interview or discussion. Additionally, researchers emphasised that participants were not obliged to answer each question and should indicate when they felt uncomfortable, and comfort levels were rechecked prior to addressing particularly sensitive topics such as loss of life or gynaecological health.

Conflict

Research ethics can be especially complicated in conflict regions. The ethics and safety regarding doing research in South Sudan, Afghanistan and Yemen, all conflict areas, are described in this paper:

- Ethical considerations of disaster research in conflict-affected areas (Mena, R and Hilhorst, D (2021) *Disaster Prevention and Management*, 31(3), 304–318).

Credit: H&K Communications/IIED

3. Data analysis

3. Data analysis

Data analysis is the interpretation of the collected data using analytical and logical reasoning to determine patterns, relationships or trends. This is important because the collected data does not say anything as it stands — no conclusions can be drawn from it without analysis.

Quantitative and qualitative data can tell different stories. Generally, an analysis of **quantitative data** can quantify a problem by answering questions such as "how many people …" or "how often do people …"; **qualitative data** can provide rich and detailed insights into complex phenomena or subjective experiences and perspectives. This toolkit predominantly focuses on analysing **qualitative data**.

3.1 Analysing

3.1.1 Literature review

Analysing a literature review involves critically evaluating and synthesising the existing literature on a particular topic, with the aim of identifying key themes, patterns and gaps in the evidence. The following are some steps that can be taken to analyse a literature review:

#	Step	Description
1	Read literature	Read the literature carefully to understand the research question, methodology and findings, and to identify the themes, concepts and arguments
2	Evaluate quality	Evaluate the quality of the literature reviewed in terms of relevance, credibility and reliability. Assess the strengths and weaknesses of the individual studies
3	Synthesise themes	Synthesise the findings of the literature review by identifying key themes, patterns and gaps in the evidence
4	Evaluate implications	Evaluate the implications of the literature review findings for practice, policy and future research.
5	Consider biases	Consider the author's biases or assumptions in interpreting the literature and assess the objectivity and impartiality of the review

The third step, synthesising themes, can be conducted in various ways, each of which depend on the aim of the review. For example, the analysis of literature with the aim of gaining a foundation of knowledge on particular themes (for example a narrative or scoping review) will be less rigorous than analysing literature with the aim of drawing conclusions (for example a systematic or critical review). The first step can be done through a **narrative analysis**, an approach that synthesises and presents information from multiple sources in a cohesive manner, drawing out the story or narrative. It involves analysing and interpreting the key themes, concepts and arguments present in the literature, and presenting them in a way that tells a coherent story about the research topic or question. The second step is often carried out by coding the data, which is explained in the following section.

3.1.2 Coding

Coding is the process of organising your qualitative data in order to identify different themes and the relationship between them. It can be applied to various kinds of data: transcripts of interviews and focus group discussions, secondary literature, observations, and more creative outputs such as solicited diaries.

Coding can be carried out by following these steps:

#	Step	Description
1	Organise your data	Ensure that all the data is in similar, workable formats
2	First round of coding	Read the data and assign codes to various excerpts
3	Organise codes	Group the codes into categories. Categories consist of codes that relate to similar topics or concepts
4	Second round of coding	Re-examine the codes and groups you have created so far: rename, recode, merge codes and recategorise your work
5	Convert from data to narrative	Write out your findings by referencing the coding and groupings

There are special programs for coding data (for example Atlas.ti or NVivo). However, it can also be done with common software such as Microsoft Word or Excel. Different types of codes can be used, for example:

Coding type	Description	Example
In vivo	Using participant's words	"Ministers have been reluctant to integrate loss and damage into existing policies" **— reluctant to integrate loss and damage**
Process	Describe an action	"Ministers have been reluctant to integrate loss and damage into existing policies " **— reluctance**
Descriptive	Summarising the content	"Ministers have been reluctant to integrate loss and damage into existing policies" **— reluctance to integrate L&D into existing policies**

Inductive coding and deductive coding

Coding can be done **inductively**, meaning that codes are derived from the data, and **deductively**, in which the researchers start with predetermined codes derived from the theory.

Validity

Coding interviews is a relatively subjective process as different researchers can assign different codes according to their perceptions and worldviews. The following measures can be undertaken to ensure the validity of the analysis:

- Other researchers can **peer review** the coding process
- The researcher can undertake a **negative case analysis**, which involves investigating whether there is data that contradicts the themes or findings, or
- Multiple researchers can independently code the data and compare their results. This is called **intercoder reliability**. Coding software commonly includes features to facilitate this process.

Case study

Data from semi-structured interviews was coded **inductively** to analyse what people valued most in life (See p. 16). Inductive coding was preferred vis-à-vis deductive coding because the researchers wanted to explore the wide range of values people held, and a deductive approach would have limited this analysis. The data was coded using in vivo coding, for example:

- "**My son** is in class ten. I **teach** him every morning. Afterwards, I bring him to school. When I get back home, I **teach** my son again"
- "**Mental health** is very important, the brain is the engine of the body"
- "If I have **money**, I can **care for everyone**, including my **parents** and **children**. If I do not have money, I do not have **value in the family.**"

These codes were analysed and grouped by the research team. After, ten 'local values' were determined together with the participants. These ten values were used as a framework through which to analyse the losses and damages people in the research area experienced (See p. 17). This deductive approach was preferred in order to create a clear structure to display how climate change affects what people value most. For example:

- "We have **a Puja which requires seven kinds of flowers** and puts a garland over the God. Now, **we struggle to get these flowers**" (coded as '**religion**').
- "I wonder **how my child will survive** and **about his future**" (coded as '**family**')
- "During the last flood, **my body was completely wet alongside my clothes**, and I was menstruating as well. This disgusted me. **I could not eat for three days**" (Coded as '**health**' and 'mental health').

Examples of coding in the literature

The studies below applied coding to literature and interview data in an inductive or deductive way:

- **Inductive** coding: Framing Climate Change Loss and Damage in UNFCCC negotiations (Vanhala, L and Hestbaek, C (2016) *Global Environmental Politics* 16(4), p. 114–115)
- **Deductive** coding: A critical review of disproportionality in loss and damage from climate change (Dorkenoo, K, Scown, M and Boyd, E (2022) *WIREs Climate Change* 13(4), p. 7)
- **Inductive** and **deductive** coding: Place, loss, and landowner response to the restoration of a rapidly changing forest landscape (Gobster, PH, Weber, E, Floress, KM, Schneider, IE, Haines, AL and Arnberger, A (2022) *Landscape and Urban Planning* 222, p. 6)

3.1.3 Surveys

Quantitative data can further validate your qualitative data. For example, focus group discussions and interviews can show how people experience a certain loss or damage. Surveys can illuminate to what extent this issue is prevalent among communities. There are specialised programs which analyse quantitative data (for example SPSS). However, basic analysis can also be done using standard software programs such as Microsoft Excel. Quantitative data can be analysed following these steps:

#	Step	Description
1	Validate	Ensure that the data is relevant and free of personal bias
2	Clean	Edit the data for relevancy and consistency
3	Analyse	Analyse the data using statistics
4	Interpret	Transform the data so it can be easily understood

How you undertake the third step, analysing data, will depend on the type of information that is collected. Common statistical tools are the mean, median, or percentages. The mean is used when there are no outliers in the data, whereas the median does compensate for outliers. The following study uses the median to explain the perceptions of various stakeholders on non-economic loss and damage:

- Climate-induced Non-Economic Loss and Damage: Understanding Policy Responses, Challenges, and Future Directions in Pacific Small Island Developing States (Chandra, A, McNamara, KE, Clissold, R, Tabe, T and Westoby, R (2023) *Climate* 11(3), 74).

The following study shows how people in different countries experience different climate stressors using **percentages**. Then, they take the **median** of all countries to show an approximate average:

- Loss and damage from climate change: local-level evidence from nine vulnerable countries (Warner, K and Van Der Geest, K (2013b) *International Journal of Global Warming*, 5(4), 367).

The **mean** was used in the case study in Bangladesh:

Case study

Surveys were used in the case study to determine how important different participants deemed each local value, and how different participants felt each value was impacted (See p. 17). 101 participants were asked to rate the importance of and impact on each value using a five-point scale. This data was analysed using the **mean**, as there are no grave outliers on a five-point scale (See p. 34–36).

3.1.4 Triangulation

Triangulating data means using multiple methods or sources to gather and crosscheck data to increase the reliability and validity of findings. For example, data from interviews, surveys and a literature review can be used to illustrate the same finding. Triangulation is important for the following reasons:

1. **Increased reliability:** it is more likely that findings are accurate and reliable if the results from different methods or sources are consistent.
2. **Increased validity:** validity refers to the extent to which the research measures what it is intended to measure. By using multiple sources and methods, researchers can ensure that they are capturing a range of perspectives and experiences related to the research topic.
3. **Reduction of bias:** using multiple sources or methods can reduce the impact of individual biases or errors in the research process.

4. **Enhanced understanding:** researchers can gain a more comprehensive understanding of the topic and may be able to identify deeper patterns and relationships that may not have been apparent if only one method or source had been used.

3.1.5 Critical engagement questions

Another way of increasing the reliability and validity of findings is to ask the following c**ritical engagement questions** when analysing data:

1. How would a different assumption or starting point challenge the main argument being made?
2. Is this argument relying on 'common sense' or knowledge that is assumed rather than justified?
3. How might the author's assumptions be problematic?
4. Whose voice is missing in this argument?
5. Is this argument pushing an agenda?
6. Is this argument culturally specific?
7. Are political and historical conditions of significance being overlooked?
8. Does this argument serve to reinforce a dominant narrative?
9. Does the argument or intervention make sense from the perspective of local people?

3.2 Presenting

3.2.1 Writing

Writing up research based on qualitative data can be challenging as there will often be differing viewpoints and complex dynamics. It is common practice to use terms such as "all interviewees…", "the majority of participants…" or "one interviewee…" to describe how far a certain result or belief was shared among participants. The excerpt below from a study on cascading loss in the Pacific is an example of this:

> "While the mechanisms are being established and the international discourse on loss and damage is growing, according to one stakeholder: "there is very little knowledge on NELD in the region" (participant #2, 2020). Similarly, another stakeholder emphasised that there is a lack of prioritisation in terms of understanding loss at that local grassroots level: "…while NELD has been an objective of discussion at the national level, it is not part of conversation at the community level — especially the understanding of it and what it means for the Pacific people" (participant #42, 2020). These sentiments were reiterated by other stakeholders who argued: "…we need to first of all get the basics around loss and damage in place" (participant #16, 2020) and that there is "not an urgency, no finance available for this kind of survey [of loss and] damages" (participant #4, 2020)."
>
> From: Cascading loss and loss risk multipliers amid a changing climate in the Pacific Islands by Westoby, R, Clissold, R, McNamara, KE, Latai-Niusulu, A and Chandra, A (2022) *Ambio: A Journal of the Human Environment* 51(5), p. 1243.

The excerpt above also uses a wide range of quotes to support the researchers' claims and illustrate the opinions of the participants. The usage of quotes can be a key feature in qualitative research outputs; they can evoke emotion, ensure that participant's ideas are well reflected and give validation to the researcher's interpretations.

As a researcher, your writing can represent the voices of a community. Therefore, it is important to consider how the community is framed within the study. For example, in research centring on on-the-ground losses and damages, one of the major aims can be documenting pain or loss in an individual, community or society. This kind of 'damage-centred research' risks portraying people as 'defeated' or 'broken'. An alternative to this is designing research that also captures desires, hopes, visions and wisdom held by affected communities. Another way of ensuring that communities are well represented is by writing 'with' rather than 'for' the community, meaning that communities are thoroughly engaged within the research process.

3.2.2 Data visualisation

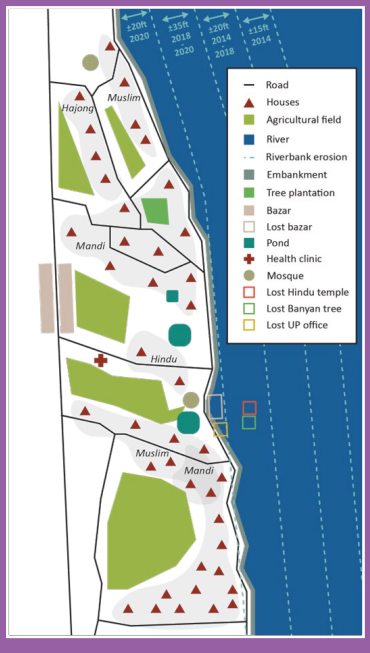
Visualisations can also help transmit your message; visualised data is most often **quantitative**. **Tables** are commonly used to show the reader how different variables interact, and readers can look up exact values and compare them with others. **Graphs** are a more visual representation of information that show the overall trend of your results instead of the details. They help readers to quickly understand patterns, trends or relationships. **Figures**, such as maps of the research area and infographics, can further help people understand complex systems or data. The study below has made use of (1) **bar graphs** to show the socio-demographics of participants, (2) **pie graphs** to show the work activities of participants, an (3) **infographic** to show their typology of non-economic loss and damage, and (4) a **table** to display their quantitative survey data:

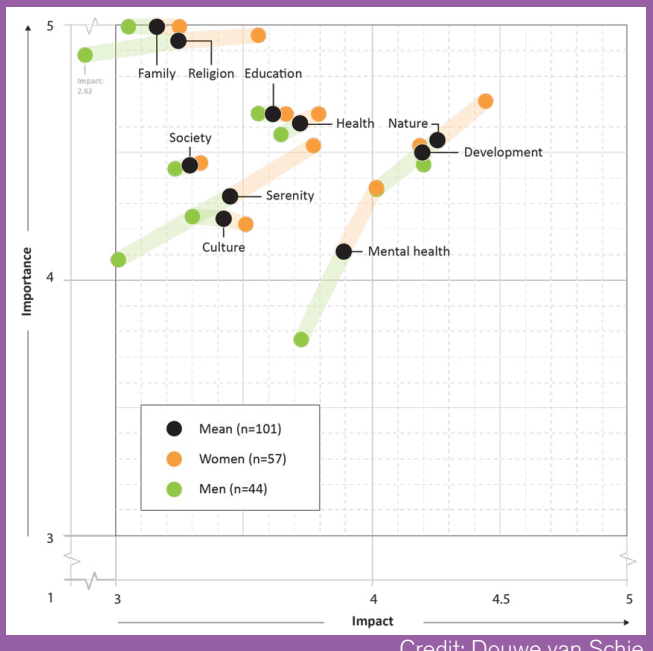
- Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands (McNamara, KE, Westoby, R, Clissold, R and Chandra, A (2021) *Climate Risk Management* 33, p. 4–6)

Case study

The final report of the case study contains seven tables and 32 figures that each visualise different data. For example, the left-hand figure below is a digital visualisation of a map drawn with participants and gives the reader insight into the qualitative data regarding local vulnerabilities and exposure (See p. 20).

Quantitative data from surveys is displayed in the right-hand figure. The visualisation shows how the perceived importance of and perceived impact on ten different values differs by gender (See p. 34).





Credit: Douwe van Schie

This data could also have been displayed in a table, but the visualisation instantly makes clear how the perception of men and women differ, and which values people prioritised.

3.3 Challenges

3.3.1 Correlation or causation?

Correlation = a relationship between two variables where a change in one variable is associated with a change in the other variable.

Causation = a situation where a change in one variable directly causes a change in the other variable.

When analysing data, it is very important to know that correlation does not imply causation. For example, there is a positive correlation between (A) ice cream sales and (B) shark attacks: as ice cream sales increase, so do shark attacks. This does not mean that ice cream causes shark attacks, it is more likely that more people consume ice cream and get in the ocean when it is warmer outside. This is also relevant in loss and damage research. For example, if (A) global warming changes rainfall patterns and (B) people are facing more losses and damages from floods, it might seem that climate change is directly causing loss and damage. While this is likely true to some extent, this conclusion ignores many contextual factors: it might be that the embankment that a community depends on is not well maintained and breaks frequently or that increasing poverty reduces the resilience of people, increasing their vulnerability to climate change. This example shows that it is important to consider contextual socioeconomic, cultural and environmental factors in analysing data relating to losses and damages.

3.3.2 Biases

When collecting and analysing data, it is essential to be aware of your own biases and assumptions that may influence your data analysis. Take note of any preconceived ideas or expectations that you bring to the analysis and consider how they may impact your interpretations. Engage in ongoing reflection throughout the analysis process to ensure that you remain open to alternative perspectives. There are several types of bias, including:

- **Confirmation bias:** This occurs when researchers look for information that confirms their pre-existing beliefs or hypotheses and ignore evidence that contradicts them.
- **Sampling bias:** This occurs when the sample used in the research is not representative of the population being studied, leading to inaccurate or unreliable results.
- **Selection bias**: This occurs when the selection of participants for a study is not random, leading to a biased sample that does not accurately represent the population being studied.
- **Observer bias:** This occurs when researchers' preconceptions or expectations affect their observations and interpretations of the data, leading to subjective or inaccurate results.

3.3.3 Limitations

No research is perfect and most will have weaknesses within the research design that influence the outcomes and conclusions of the study. These limitations should be presented to the reader as it creates transparency about the research process and creates opportunities to improve the quality of future studies. Examples of limitations might be a small research sample, time constraints or individual biases. Limitations can be presented through the following steps:

1. **Describe** each limitation
2. Explain **why** each limitation exists
3. Explain why each limitation **could not be overcome** during the research

4. Assess the **impact of each limitation** in relation to the findings of the study
5. If appropriate, **present alternatives** and directions for future studies

The studies below thoroughly describe their research limitations:

- Spinning in circles? A systematic review on the role of theory in social vulnerability, resilience and adaptation research (Kuhlicke, C, de Brito, MM, Bartkowski, B, Botzen, W, Doğulu, C, Han, S, Hudson, P, Karanci, AN, Klassert, CJ, Otto, D, Scolobig, A, Soares TM and Rufat, S (2023) *Global Environmental Change* 80, p. 11)
- Data integration for Climate Vulnerability Mapping in West Africa (De Sherbinin, A, Chai-Onn, T, Jaiteh, M, Mara, V, Pistolesi, L, Schnarr, E and Trzaska, S (2015) *International Journal of Geo-Information* 4(4), p. 2575–2576)

Case study

While the final report of the case study does not include an explicit limitation section, several limitations have been outlined in the discussion (See p. 45–47).

These include: when only focusing on values most important to participants, which meant that the inherent value of nature was not always included in this analysis. For example, wildlife also suffers from increasing temperatures and droughts. This is not extensively examined in the research. Another example of a limitation of the study is a lack of mental health experts amongst the research team, which limited the analysis of mental health issues mentioned by participants.

4. Communication

4. Communication

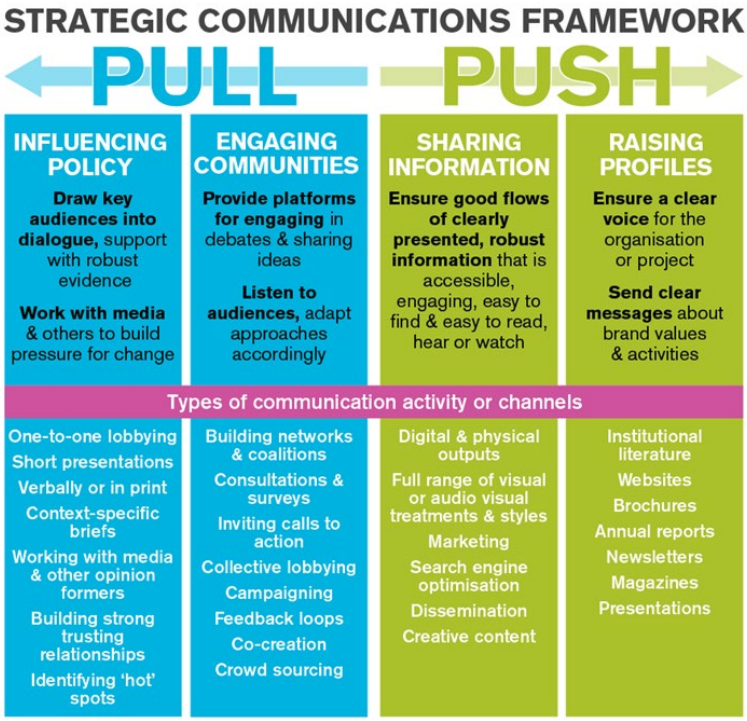
Proactively communicating your research will amplify its impact; it can raise public awareness and inform policymakers or decision makers.

4.1 Strategy

Research communications start with a strategy: a plan of action to achieve a long-term goal. This strategy could run from several months to several years, depending on what your objectives are. There are **six elements** to a communication strategy:

1. **Situation analysis:** understanding the context in which the research communication takes place. Relevant questions: are there any events relevant to our publication? Is there interest about the topic from external parties? Is the topic politically sensitive?
2. **Objective:** determining the aim of the communication strategy. A communication strategy can have multiple aims or objectives. Objectives need to be **SMART**: Specific, Measurable, Achievable, Relevant, and Time-bound. Relevant questions: which stakeholders need to know about the research? What do they need to know?
3. **Strategy:** understanding the situation and objective. Relevant questions: who are the relevant stakeholders? Where are they?
4. **Tactics:** knowing your audience. Relevant question: how will you reach the relevant stakeholders?
5. **Activities:** planning the details of your strategy. Relevant questions: who will do what? What money will they use? When will they plan the activities?
6. **Control:** installing indicators to measure the success of the strategy. Relevant questions: did we achieve our objectives? Would we do the same next time?

It is easy to think of communications as just 'pushing out information': sharing things via emails or presentations. However, an important part of communications is drawing your audience in through conversations by listening to them and getting to know them. This also means that when 'pushing' information, you will receive more engagement.



Case study

The main communication around the case study was a press release drafted by the marketing department of the IIED (see here: www.iied.org/bangladeshis-brace-for-return-monsoon-reveal-true-toll-last-years-record-rainfall). The press release framed the new research in terms of a recent phenomenon with value for news websites: the return of the monsoon after the floods of 2022. It contained a brief description of the study, relevant contextual information, quotes from key people involved and a link. The press release was communicated through channels such as Twitter (X) and other social media channels.

The press release was followed by a short film based on the research published on the Loss and Damage Forum website, which aimed to spread awareness. Over the next weeks, several other forms of communication are planned, such as messaging through the Loss and Damage Collaboration, communication via social media by authors of the report, and blogs with non-governmental organisations involved in the project. The research is also uploaded to Google Scholar and Researchgate to enhance visibility in the scientific community.

Photos describing aspects of the research were also published in collaboration with the New Scientist.

4.2 Audience

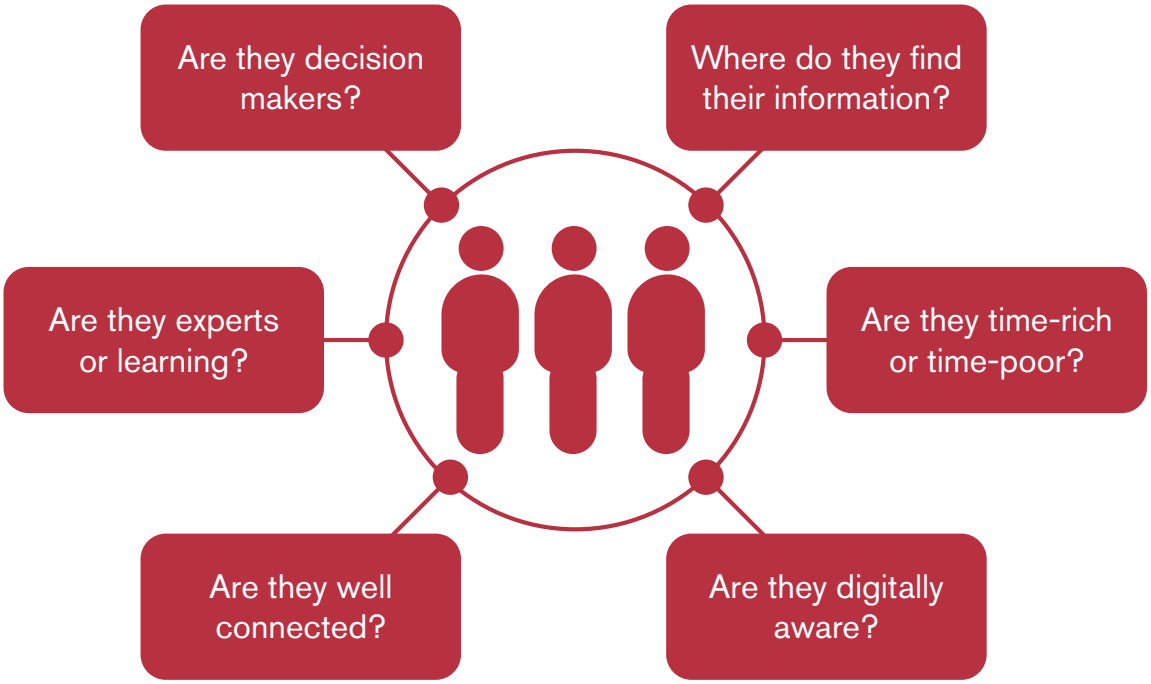
Building a deeper connection with your audience is key to a good communication strategy. This creates a long-term strategic relationship with audiences which may not happen when they only receive short bursts of communications from time to time.

A first step here is identifying relevant people or organisations. These may be:

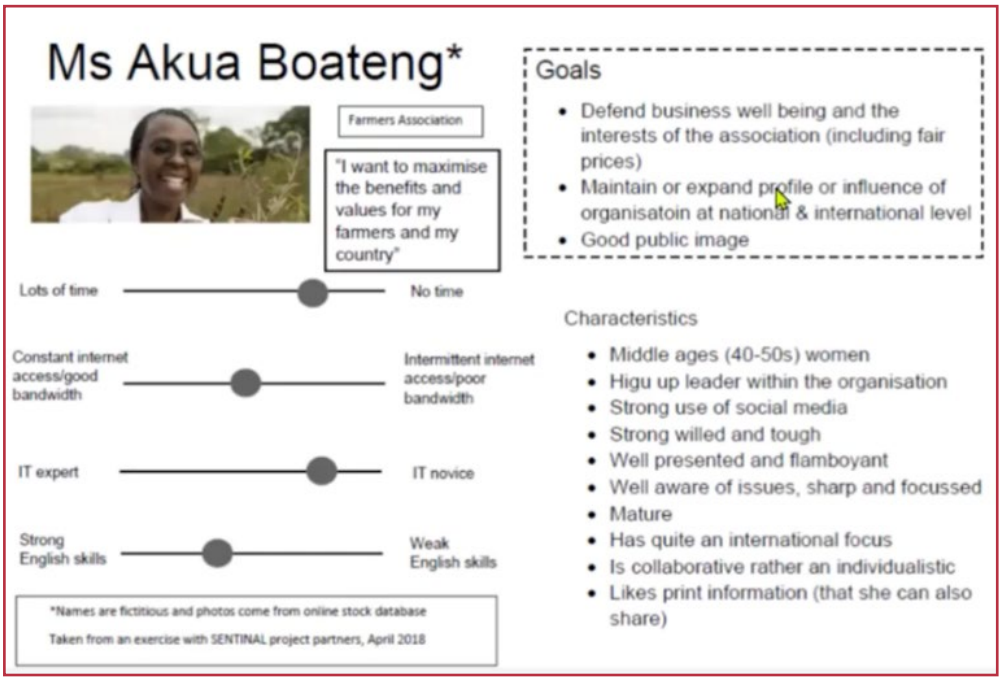
- Those **affected** by, or who **significantly affect** the issue
- Those **with information**, knowledge and expertise about the issue
- Those **who control or influence** important factors that relate to the issue.

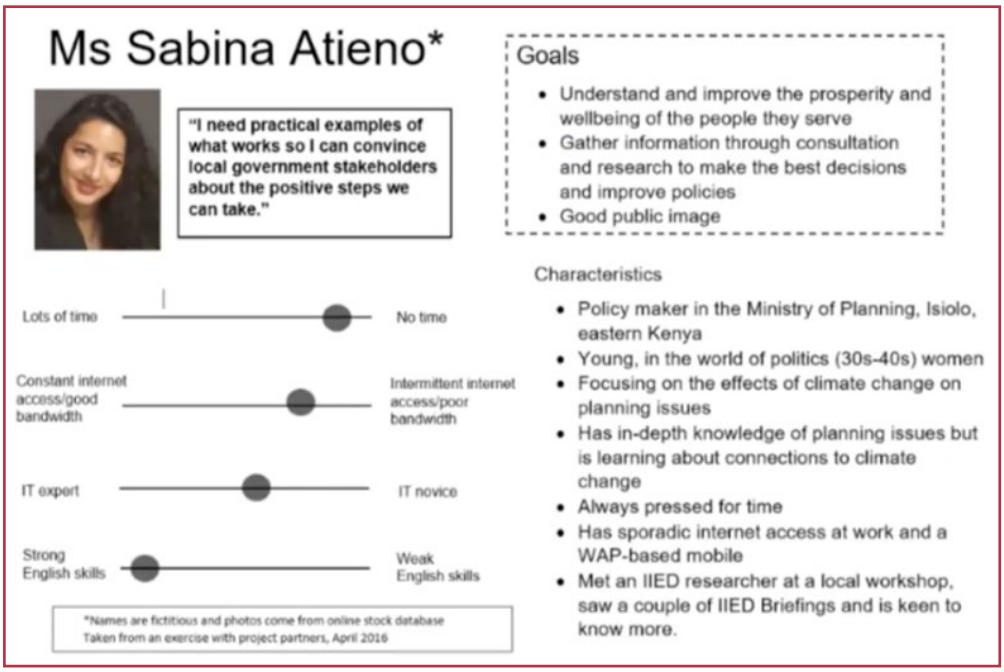
It is important to be specific about your audiences. For example, it would be more effective to focus not only on the government, but on a specific government department or specific actors within that department. Mapping audiences in this way helps you to gain a better understanding of what your audience looks like. Questions that are relevant here are:

- **Where do they find their information?**
  - What do they have access to? For example, the library or the internet.
- **Are they time-rich or time-poor?**
  - If they are time-poor, you might want to create something very short (for example, a two-minute video). If they are time-rich, long-form content is possible.
- **Are they digitally aware?**
  - Do they have internet and a smartphone? Do they have online networks that they share things with?
- **Are they well connected?**
  - Are they part of a network? Are they active on social media?
- **Are they experts or learning?**
  - Can we get technical? Should we give background information?
- **Are they decision makers?**
  - Can they influence policy? Do they have the budget to make a change?



Creating personas can help with audience mapping and imagining who you exactly want to reach. Personas are fictional, meaning that they are not necessarily based on real people, but are built on information from previous analysis or projects. For example:





These example personas are both short of time. Meaning that long-form or time-intensive types of communications do not fit this communications strategy. A short brief, such as a two-pager, might work better in this situation. Ms Akua Boateng is relatively well versed in IT and has reasonable access to the internet, so a Twitter thread could be useful. Ms Sabina Atieno has in-depth knowledge of planning issues but is learning about climate change, meaning that communications can help her learn about how climate change connects to her existing knowledge.

5. Further reading and helpful resources

- A free course on 'becoming an ethical researcher' by Open University:
  - www.open.edu/openlearn/education-development/becoming-ethical-researcher/content-section-overview?active-tab=description-tab
- A document by the International Development Research Centre on how to design and conduct research projects:
  - www.idrc.ca/en/book/designing-and-conducting-health-systems-research-projects-volume-1-proposal-development-and
- Open access textbook about social science research and methods:
  - https://open.umn.edu/opentextbooks/textbooks/79
- An open access book on loss and damage which talks about the concepts, methods and policy options:
  - https://link.springer.com/book/10.1007/978-3-319-72026-5
- A journal issue that includes case studies from loss and damage in Mozambique, Burkina Faso, Ethiopia, The Gambia, Kenya, Nepal, Micronesia, Bangladesh and Bhutan:
  - www.inderscienceonline.com/toc/ijgw/5/4

Knowledge Products

Toolkit

November 2023

Climate change

Keywords:
Research methods, loss and damage, research ethics

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