Inspiring local governments to mainstream climate action into WASH

Experiences from Nepal and Lao PDR

About SNV

SNV is a mission-driven global development partner, rooted in the contexts and societies where we work. And that mission is to strengthen capacities and catalyse partnerships that transform the agri-food, energy, and water systems to enable sustainable and more equitable lives for all. We are one team of over 1,600 people, the vast majority of whom come from the contexts where we work, in more than 20 countries in Africa and Asia. For more infomation: www.snv.org

About UTS-ISF

The University of Technology Sydney - Institute for Sustainable Futures (UTS-ISF), conducts applied research to support water sanitation and hygiene policy and practice in Asia and the Pacific. UTS-ISF provide partners with technical expertise including climate change; planning, governance and decision-making; gender equality and inclusion; public health and water resources management; monitoring; and policy and practice advice. For more information: www.uts.edu.au/isf

About this case study

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Photos: **(Cover)** Local government in Lao PDR introduces the integration of climate risk indicators in community-led sanitation monitoring in in Champhone district. Photo credit: SNV Lao PDR/ Bart Verweij.

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List of abbreviations

CSO	Civil Society Organisations
CLTS	Community-led Total Sanitation
NUoL	National University of Laos
SNV	SNV Netherlands Development Organisation
UTS-ISF	University of Technology Sydney - Institute for Sustainable Futures
WASH	Water, sanitation and hygiene

Introduction

Climate change is increasing the variability and unpredictability of weather patterns, with localised impacts resulting in disruption of water, sanitation and hygiene (WASH) services in communities. Local governments, as the front-line duty-bearers, are often best placed to respond to community needs, yet addressing climate change impacts on WASH systems and services can feel daunting and overwhelming. Even if awareness of climate change is present, and implementation tools are available, local governments and their civil society organisation (CSO) partners may struggle to understand where to begin.

The purpose of this case study is to share learnings from a methodological innovation, the Q-methodology, to understand and address local government motivations and barriers to tackling climate change impacts on delivering inclusive WASH services. The focus on local government motivations was informed by the Make Rights Real approach, which applies user-centred design to engage local government 'would be heroes' in progressive realisation of the human rights to water and sanitation.[1] Findings from this methodology were used to identify the needs of local government staff and design targeted interventions that built on their strengths and supported them to deliver climate resilient inclusive WASH. The methodology was trialled in Nepal and Lao PDR in collaboration with SNV Netherlands Development Organisation (SNV), the University of Technology Sydney - Institute for Sustainable Futures (UTS-ISF), and the National University of Laos (NUoL) with support from the Australian Government's Water for Women Fund. The first part of this case study describes the methodology used, while the second part presents two case studies sharing the experiences from each country.

This case study is intended for WASH practitioners and researchers who may benefit from learning how to replicate a practical, low-cost method to study and measure people's beliefs and perceptions on a complex topic, that works across different cultural contexts. It can also provide inspiration for use in other development programs, beyond WASH, for instance to assess or evaluate changes in social norms, beliefs, and attitudes towards gender equality, disability, and social inclusion.

What is Q-methodology?

Q-methodology is a simple research approach that explores people's opinions, viewpoints, sentiments, beliefs, attitudes, motivations, and goals related to a particular topic. It is based on a well-established premise from the field of psychology that groups of people tend to form shared sets of opinions on complex topics, and provides a systematic way to study these subjective viewpoints.

This mixed-method approach uses qualitative techniques to collect data and quantitative techniques to analyse the data. It involves asking participants to rank a set of statements about a particular topic in order of how much they agree or disagree with them. Qualitative comments made by the participants are also documented during the ranking exercise. The statement rankings are then analysed using a statistical method to identify clusters of shared opinions. These clusters are analysed alongside the comments made by participants as they explained their rankings. This enables the research team to develop a picture of how groups of participants collectively and subjectively view the topic being studied.

Why we used Q-methodology?

The Q-methodology emerged as an appropriate tool to understand the motivators and constraints of local government to tackle climate change issues in WASH due to the following reasons:

■   It helps to explore the subjective views, beliefs, perceptions, and attitudes of participants on a complex concept, like climate change.

1   N. Carrard, H. Neumeyer, B.K. Pati, S. Siddique, T. Choden, T. Abraham, L. Gosling, V. Roaf, J. Alvarez-Sala Torreano, and S. Bruhn, 'Designing Human Rights for Duty Bearers: Making the Human Rights to Water and Sanitation Part of Everyday Practice at the Local Government Level', *Water 2020*, 12, 378, https://www.mdpi.com/2073-4441/12/2/378/htm (accessed 25 October 2022).

■ It enables local government participants to easily convey their opinions and perspectives about sensitive issues (such as challenges faced in their job, motivations to act on climate change, etc.) without them having to articulate these clearly. This was particularly useful in the case of government participants, who may not be used to expressing their personal opinions through traditional data collection approaches, such as interviews.

■ It helps to group people based on their viewpoints and design interventions to provide targeted support addressing the needs of these different groups.

■ The use of ranking, rather than rating agreement and disagreement with individual statements, prompts people to think about

opinions in relation to other opinions, rather than in isolation.

■ It generates quantitative results so there is less risk of information getting lost in translation.

■ It is easy for CSO staff to collect the data.

What we did: How to implement Q-methodology

We used four steps to carry out the Q-methodology, as described below.

Step 1: Define the domain of discourse

To develop the set of statements to be ranked by participants, the first step was to define the domain of discourse on the topic in question. This included generating a full-spectrum of possible opinions on the topic that might come up in ordinary conversation. The discourse that we were exploring was on *Motivations (or lack thereof) for addressing climate change impacts in an individual's job (including WASH responsibilities)'*.

To cover a comprehensive spectrum of viewpoints, UTS-ISF carried out a literature review of survey methods used to study public perceptions of climate change. In addition, SNV carried out open-ended scoping interviews with two government officials in each of Nepal and Lao PDR, to capture any cultural differences in opinions about climate change that may not emerge from the literature. These scoping interviews were unstructured, short, and informal conversations to document their opinions on climate change and their motivations (or lack of motivation) for addressing climate change impacts in their job.

It is not possible to exhaustively list every specific motivation for addressing climate change. Hence, we developed a list of 38 statements that were broad enough to encompass the wide range of opinions identified in the literature review and from the interviews. We chose 38 statements because we judged 38 was the maximum number of statements that participants could rank and discuss within 45 minutes.

Box 1: Things to keep in mind while developing Q-statements

1. Statements should be as simple and clear as possible.

2. Statements should not be double-barrelled or contain multiple propositions e.g., 'I understand the causes of climate change as it is having a large impact on the people in my community'.

3. Statements should not be biased toward a particular viewpoint.

4. Be careful about anti statements that can be confusing because disagreeing with them creates a positive e.g., disagreeing with 'I don't think gender equality is important' means you think gender equality is important. 'I think gender equality is important' might be easier to disagree or agree with.

5. Avoid the use of compound statements (two simple sentences joined by a conjunction e.g., 'I am worried about the impacts of climate change, but my individual action would help little to address climate change impacts on WASH').

6. Collectively, the statements should be broadly representative of the discourse. They shouldn't overlap too much and shouldn't leave major gaps in the discourse.

Step 2: Create the Q-cards

The objective of this step was to shortlist a representative sub-set of statements (Q-cards) from the discourse identified in Step 1. The set of 38 statements from Step 1 were categorised into five sub-sets, namely:

1. perceptions/opinions on climate change;

2. efficacy of climate change responses;

3. enablers and barriers at the workplace;

4. workplace responsibilities and personal capacity; and

5. gender equality, disability and social inclusion (GEDSI).

This was followed by a joint workshop between UTS-ISF, SNV country teams, and NUoL to prioritise the statements that reflected the most significant motivators and barriers to climate action for local government. There was also a focus on statements that were consequential, for instance, what can we do if many people agree or disagree with that statement? Further, since the exploratory interviews revealed that there was a common belief among local governments in both countries that climate change was a real and serious problem, we decided to focus more on the workplace constraints to addressing climate change, instead of exploring perceptions of the existence of climate change, because this appeared less likely to be a barrier to action.

From the initial list of 38 statements, a final set of 34 Q-statements (see Box 2 on page 8) were selected by the UTS-ISF, SNV and NUoL project team for use in data collection.

The final list of statements was translated into the local language, and back-translated into English to ensure accuracy. Because the Q-methodology involves participants agreeing and disagreeing with the statements, retaining the meaning of the statement is crucial for Q-methodology to be effective.

Step 3: Data collection, Q-sort process

This step involves participants ranking the Q cards with the statements pertaining to climate change and WASH on a pyramid shaped grid called a Q-board. They are asked to place the Q-cards they most agree with on the right side of the board, and the Q-cards they least agree with on the left side of the board, with a spectrum in between. Qualitative comments and reflections about the participant's though-process are captured through prompt questions during the activity and post-interview questions.

Figure 1: Q-board

Agree less   Agree more
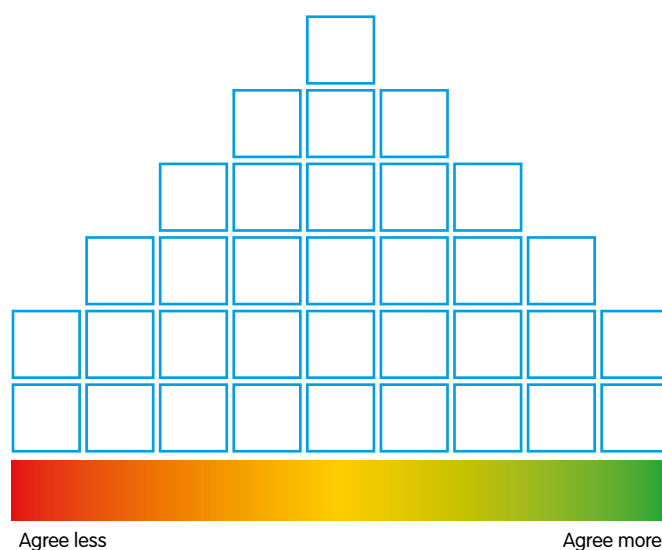
UTS-ISF developed a detailed Q-sort facilitation and interview guide and note-taking template to provide instructions on how to conduct the activity and ask the participant questions. Online training on both ethical data collection and the tools to be used were provided by UTS-ISF to SNV in Nepal and Lao PDR staff and NUoL researchers, followed by piloting of the tools. SNV staff translated the data collection tools into the local languages and carried out data collection among 56 participants across the two countries. The research participants included local government officials from rural municipalities, and district and provincial levels. UTS-ISF provided backstopping support remotely, as needed by the country teams.

How to facilitate a Q-sort activity

Each time the Q-sort is done, it should only involve the facilitator, note-taker, and a single participant. The participant should have privacy during the activity – other people outside of the research team should not be able to see or hear the discussion (see Box 3 on page 9).

Box 2: Q-statements used in the project

1. Climate change adaptation is enormously difficult.

2. Climate change will have a large impact on the people in my community.

3. I am worried about the impacts of climate change on WASH.

4. Local government efforts to address climate change impacts on WASH will make a difference to the community.

5. My department will only address climate change impacts on WASH if higher levels of government or donors encourage us to.

6. There is sufficient funding available for us to start working on climate change adaptation for WASH.

7. Climate change in WASH is not a priority compared to other problems that local government is facing.

8. Local government should take more action to address climate change impacts on WASH.

9. My department knows how to plan for WASH systems that are resilient to climate change.

10. It is important for me to learn new skills in my job.

11. I would like to do something in my job to address climate change impacts on WASH.

12. I'm not sure where to begin to address climate change impacts on WASH.

13. My individual action can make a big difference in addressing climate change impacts on WASH.

14. Addressing climate change impacts on WASH is part of my job responsibility.

15. I will encourage others to address climate change impacts on WASH only if my line authority tells me to.

16. In regard to WASH, marginalised people are affected worse than others when there is extreme weather.

17. It is important to have women contribute to decision-making when it comes to WASH.

18. My department needs more data on climate change to make informed decisions.

19. My department has the authority to plan activities to address climate change impacts.

20. The effects of climate change are not always predictable for planning or investment in WASH.

21. The seriousness of climate change is exaggerated.

22. Community cooperation can make a big difference in addressing climate change impacts on WASH.

23. I discuss the consequences of climate change with my colleagues.

24. Community members should participate in decision making about addressing climate change impacts on WASH.

25. In regard to WASH, women are affected more than men when there is extreme weather.

26. I always pay attention to marginalised groups in coming up with solutions.

27. My department knows how to design WASH infrastructure that is resilient to climate change.

28. My district is already feeling the effects of climate change on WASH.

29. Climate change creates uncertainty for existing WASH services.

30. I contribute to solving WASH issues in my community.

31. In order to reach everybody, local government needs to focus first on those who are poor and marginalised.

32. My job gives me opportunities to show how capable I am.

33. Climate change is primarily caused by air pollution from humans.

34. The benefits of addressing climate change impacts on WASH are worth the investment for all.

Box 3: Process for conducting a Q-sort

Before starting the Q-sort

1. Explain how the Q-sort activity works.
2. Inform the participant, for the purpose of this project, climate change means: A change in average weather conditions – such as temperature and rainfall – in a region over a long period of time. This can result in more or less extreme weather and disasters than before.
3. Give the Q-cards and Q-board to the participant, with an explanation on how to start.
4. Suggest the participant to first read through all of the statements, then place them in 3 piles – agree, neutral, and disagree. This will make it easier to place the cards on the board.

During the Q-sort

5. Observe and note the behaviour of the participant while they are placing the statements on the board, for example, if they place a statement on the board quickly, change the spot where they place a statement, or spend a long time looking at the statements.
6. Ask them to explain their decisions behind placing the statements, especially on the extreme ends of the Q-board.
7. Be careful to not interrupt the participant too much while they are doing the activity. Give them space to think!

After the Q-sort

8. Give the participant the opportunity to make any changes to the board if they want.
9. Once the participant is happy with the order, take a photo of the board. Make sure the number on all the statements and the unique participant ID is clearly visible.
10. If the participant has time, post-interview questions can help to get qualitative reflections about the Q-sort process, as well as the thematic content.

Tips to facilitate Q-sort

- Work in pairs (one facilitator, one note-taker).

- Where appropriate and feasible, have women facilitate female participants and men facilitate male participants.

- Clear documentation/photo of the final Q-board is critical for data collection

- Use playing cards for Q-cards, with statements at the front and the number at the back of the cards. Easy to pick up and place down.

- Use a piece of cloth as a Q-board, as this is easy to carry while traveling!


Conducting a Q-sort. Photo credit: Phitsakhone Vanisaveth.

Step 4: Q-sort data analysis

The analysis involves assigning a score to each Q-statement based on where the participant put it on the Q-board. For example, the two statements that the participants most strongly agree with get a score of 4; the statements they put in the middle column get a score of 0; and the statements they agree least with get a score of -4 (Figure 2).

Figure 2: Scoring each statement on a Q-board

Agree less   Agree more
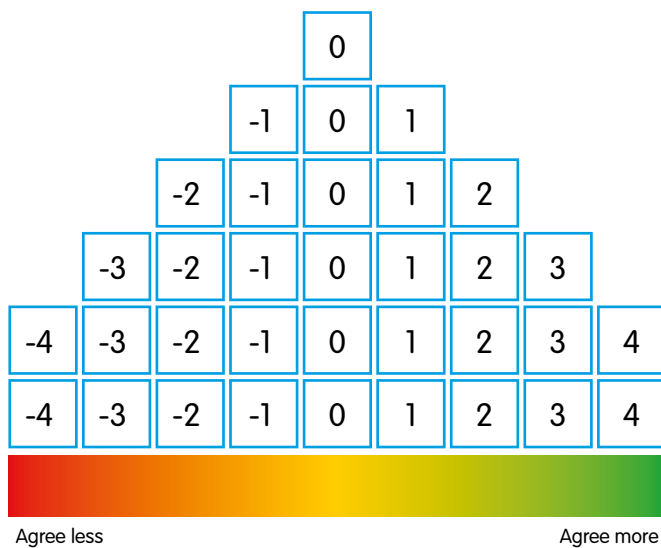
This step involves using software to analyse the data. While some free and paid software is available online, we used a subscription-based software ('Q Method Software') to analyse the

data. For each participant, the raw data entered into the software was a table of the statements (across rows) and the score the participant gave to each statement (across columns) (Table 1).

The results of the 56 Q-sorts were inputted in the software that then performed a factor analysis. This analysis looks for correlations or patterns between the responses of different participants. In other words, the software tries to find people who did similar Q-sorts and group them together.

In this way, the factor analysis process clustered the participants into four groups based on their shared viewpoints (referred to as 'personas'). Interestingly, the software neatly placed nearly all participants from Lao PDR into two groups, and nearly all participants from Nepal into two groups. This suggests the Lao PDR and Nepal participants had significantly divergent opinions on climate change.

The following case studies describe the results of the Q-methodology data analysis in more detail and how the data was used to implement interventions to inspire local government heroes of climate action in Nepal and Lao PDR.

Table 1: Input of Q-sort data into 'Q Method Software'

Participant ID	Statement 1	Statement 2	Statement 3	Statement 4	Statement 5	Statement 6
L01	-3	3	0	1	4	-3
L02	4	4	-1	2	-3	-4
L03	0	4	0	3	-1	-4
L04	0	-2	0	-1	-1	1
L05	4	4	3	0	-1	1
L06	3	3	-1	0	-3	-1
L07	1	4	-1	0	-1	-4
L08	0	0	1	2	0	0
L09	0	1	3	0	-1	-4
L10	1	4	2	-2	0	-3
L11	-1	1	0	-2	-1	4
L12	0	2	1	4	1	-2
L13	-2	-1	-1	2	-1	-3
L14	2	0	1	0	-2	-1

Case study #1: Local governments in Dailekh and Sarlahi districts, Nepal

Historical climate and disaster trends show that the intensity and frequency of extreme rainfall events in western Nepal, and of drought and glacial lake outburst floods elsewhere in the country, have increased significantly since 1960.[2,3] Under all future climate scenarios, climate projections suggest that extreme rainfall events will become more frequent and dry season rainfall could decrease, but there is a high level of uncertainty in rainfall projections.[4,5]

The Q-methodology was carried out by SNV in Nepal and UTS-ISF with local government staff in Dailekh and Sarlahi districts in Nepal to learn about local government staff members' beliefs and perceptions about climate change and inclusive WASH. Data collection for the Q-methodology was carried out from November to December 2021. Participants included 33 local government staff (30 men and 3 women) with responsibilities related to delivery of rural water services, such as technical design of water supplies or rural development planning, in their respective districts.

Results of the individual Q-sorts were run through the 'Q Method Software' platform (along with Q-sorts from a parallel case study in Lao PDR) which found that the Nepal local government participants tended to cluster around two of four broad sets of perceptions and beliefs. In the project, these were called Persona #1 and Persona #3 (Personas #2 and #4 are covered in the Lao PDR case study).

Local government personas – The common shared sets of beliefs and perceptions about climate change

According to the results of the Q-sort analysis, 16 local government staff members tended to share the set of perceptions and beliefs characterised by Persona #1. Twelve local government staff members belonged to Persona

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Box 4: Top and bottom five Q-statements for Persona #1

Top five Q-statements (tend to agree more)

1. The benefits of addressing climate change impacts on WASH are worth the investment for all.

2. In regard to WASH, marginalised people are affected worse than others when there is extreme weather.

3. It is important to have women contribute to decision making when it comes to WASH.

4. In order to reach everybody, local government needs to focus first on those who are poor and marginalised.

5. In regard to WASH, women are affected more than men when there is extreme weather.

Bottom five Q-statements (tend to agree less)

30. I'm not sure where to begin to address climate change impacts on WASH.

31. There is sufficient funding available for us to start working on climate change adaptation for WASH.

32. Climate change in WASH is not a priority compared to other problems that local government is facing.

33. Climate change adaptation is enormously difficult.

34. The seriousness of climate change is exaggerated.

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[2]   USAID, 'Climate risk profile: Nepal', climatelinks, WA DC, United States Agency for International Development, 2017, https://www.climatelinks.org/resources/climate-risk-profile-nepal (accessed 2 September 2022).

[3]   P. Bohlinger and A. Sorteberg, 'A comprehensive view on trends in extreme precipitation in Nepal and their spatial distribution', International Journal of Climatology, 38(4), 2018, pp.1833-1845.

[4]   USAID, 'Climate risk profile', 2017.

[5]   World Bank Group and Asian Development Bank (ADB), 'Climate risk country profile: Nepal', OKR - Open Knowledge Repository, 2021, https://openknowledge.worldbank.org/handle/10986/36374 (accessed 2 September 2022).

> **Box 5: Top and bottom five Q-statements for Persona #3**
>
> **Top five Q-statements** (tend to agree more)
>
> 1. Climate change is primarily caused by air pollution from humans.
> 2. Local government should take more action to address climate change impacts on WASH.
> 3. Climate change will have a large impact on the people in my community.
> 4. Addressing climate change impacts on WASH is part of my job responsibility.
> 5. I discuss the consequences of climate change with my colleagues.
>
> **Bottom five Q-statements** (tend to agree less)
>
> 30. The seriousness of climate change is exaggerated.
> 31. My department will only address climate change impacts on WASH if higher levels of government or donors encourage us to.
> 32. I will encourage others to address climate change impacts on WASH only if my line authority tells me to.
> 33. I'm not sure where to begin to address climate change impacts on WASH.
> 34. Climate change in WASH is not a priority compared to other problems that local government is facing.

#3. Boxes 4 and 5 show the top five (tend to agree more) and bottom five (tend to agree less) Q-statements that people within Persona #1 and Persona #3 respectively ranked.

Distinguishing statements (statements that distinguish people in this persona from the other three personas in the dataset) for Persona #1 included the following:

- It is important to have women contribute to decision making when it comes to WASH (more likely to agree)
- My individual action can make a big difference in addressing climate change impacts on WASH (more likely to agree)
- Climate change adaptation is enormously difficult (less likely to agree)

Distinguishing statements for Persona #3 included the following:

- My department knows how to plan for WASH systems that are resilient to climate change (more likely to agree)
- In regard to WASH, marginalised people are affected worse than others when there is extreme weather (less likely to agree)
- It is important to have women contribute to decision making when it comes to WASH (less likely to agree)

Local government participants belonging to Persona #1 explained in interviews that involving women in decision-making about WASH is important because they felt women have a major role in managing WASH at the household level and are more exposed to climate hazards. They also explained that climate change acutely affects everyone in their district, hence climate action can provide benefits to all.

Participants in Persona #3 explained that they have ideas about what can be done to reduce the impacts of climate change in their districts, climate change is a priority because it affects economic and social wellbeing, and there is no need to wait for directives from upper bodies in government or donors to act.

Enablers and barriers for local governments in Dailekh and Sarlahi

To characterise Personas #1 and #3, the SNV and UTS-ISF research team analysed the quantitative Q-sort data and qualitative interview notes and reflected on SNV staff's experience working with the local government staff. They noted that people belonging to Persona #1 tended to:

- strongly acknowledge the differential impacts of climate change across social groups;

Dailekh district government staff during WASH workshop on climate resilience. Photo credit: SNV/Shova Chhetri.

- see the value of inclusive decision-making;

- feel empowered and that their action can make a difference;

- feel climate change adaptation is not an insurmountable problem for government;

- not feel that their department has a strong mandate to address climate change;

- not perceive addressing climate change is a formal part of their job responsibility; and

- have WASH responsibilities that are more technical in nature, such as engineering.

Based on these attributes, the research team judged that the motivation and confidence of these government staff members could be leveraged to act on technical WASH resilience matters. However, they first required a sense of responsibility that climate action was within the remit of their department and their personal roles.

The team noted that people belonging to Persona #3 tended to:

- hold a good level of knowledge about the causes of climate change and its biophysical impacts;

- feel government is the most influential authority for addressing climate change impacts at local levels;

- be concerned about the local impacts of climate change on WASH;

- believe individuals, communities, and governments all have a responsibility to act on climate change;

- lack awareness on how women and marginalised groups are affected differently by climate impacts on WASH compared to more powerful groups;

- see less value in including women in decision-making compared to Persona #1;

- hold a more senior position/role within local government compared to other research participants from Nepal.

Hence, the research team judged that an intervention should seek to support people in this persona to articulate their vision for climate resilient WASH within their districts, while building their knowledge and awareness of social dimensions of climate vulnerability and the value of inclusion.

Dailekh district government staff inspecting a water source. Photo credit: Herman Paneru

Providing targeted support to local government to act on climate change and inclusive WASH

SNV held a one-day workshop with local government staff members in each of Dailekh and Sarlahi districts in June and July 2022 to build their knowledge on:

- causes of climate change and how it affects rural water services in Nepal;
- how gender and social inclusion are related to climate resilient WASH;
- policies and strategies by the Government of Nepal that give a mandate and guidance to local government for acting on climate change; and
- low-cost, community-based methods for addressing climate resilient rural water services.

These knowledge areas were chosen based on the barriers and motivations of local government that the research team identified from the Q-methodology process.

At the workshop, SNV staff delivered presentations and videos on the causes and impacts of climate change in Nepal. Through participatory activities, local government staff members deliberated on the different ways that climate hazards could affect rural water access and which groups are most vulnerable.

To learn more about gender and social inclusion, local government staff members participated in the 'Power Walk' game. In this game, each staff member role played a member of a community (e.g., a pregnant woman, an elderly person with a disability, etc.) and were presented with scenarios of different climate events (e.g., a flash flood). For each scenario, staff members would take a step forward or a step backward depending on whether their role play character was in an advantageous position or disadvantaged. At the end of the activity, participants discussed why they moved in different directions and discussed the differentiated impacts of climate hazards on WASH behaviours of vulnerable groups, as well as who the decision-makers and influencers are in the community.

SNV then presented the national climate change policies and strategies to the local government staff. Finally, the local government staff discussed different community-based methods for addressing climate resilient rural water services, such as climate resilient water safety planning and community mapping of climate hazards, and how these could be incorporated into ongoing government support services.

Putting lessons learned into practice

Four motivated local government staff in each of Dailekh and Sarlahi districts were chosen as 'Climate Heroes' who agreed to demonstrate how considerations of climate change could be incorporated into their water services work.

First, the Climate Heroes visited a community in their district and conducted focus group discussions in which they talked to community members about how climate hazards affect their water access and how the impacts are felt differently across diverse social groups. With the support of SNV, they also carried out a sanitation inspection of the water source to assess the level of risk that flooding poses to the source.

The Climate Heroes aligning with Persona #1 then carried out technical interventions. In Dailekh, they worked with community members to implement risk control measures that they identified during the sanitation inspections. This included building a spring box around a spring source, planting trees around the spring, and constructing a small check dam to prevent erosion around the spring. In Sarlahi, the Persona #1 Climate Heroes mapped out the areas of a community that are most acutely affected by floods or water shortages to identify suitable places to site tubewells.

The Climate Heroes aligning with Persona #3 focused on strategic policy improvements. They examined Nepal's National Adaptation Plan and identified which objectives of the Plan pertaining to water services were most relevant for their district or working area and hence should receive resourcing to implement. They also discussed and listed changes to rules, practices, and narratives within their own departments that would create an enabling environment for climate resilient water services. For example, they proposed making climate change a standing agenda item during regular team meetings and starting a climate action committee at the rural municipality level.

Conclusions and next steps

The Q-methodology process revealed high levels of motivation among local government staff in Dailekh and Sarlahi districts to tackle climate, albeit with barriers to overcome. A limited sense of mandate amongst some staff, and lower prioritisation of gender and social inclusion in climate resilience planning, were identified. The subsequent interventions aimed to address these barriers and inspire local government staff to integrate climate action into their rural water service responsibilities.

Due to staff turnover as a result of a local election that happened during the project, only 14 participants completed both a pre- and post-intervention survey. The participants reported increased motivation to address climate change in WASH and higher knowledge and confidence in explaining climate risks.

Figure 3: Changes in motivation among local government staff in Nepal to take action to address climate change before and after project
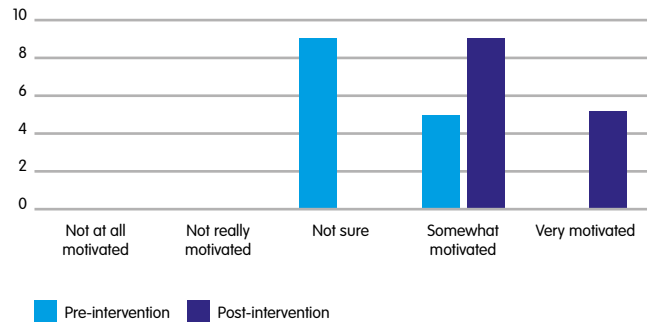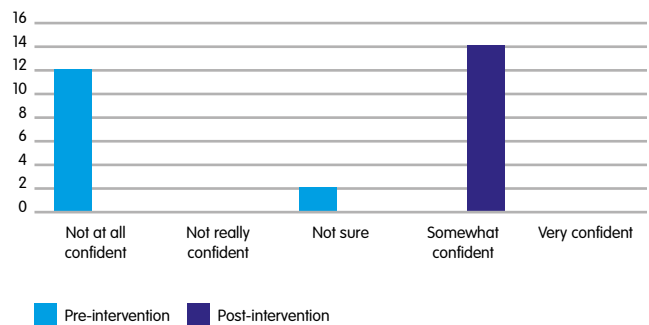

Figure 4: Changes in confidence and knowledge of local government staff in Nepal in explaining climate change issues to others before and after project

SNV and UTS-ISF will be placing renewed focus on supporting the Government of Nepal to deliver climate resilient rural water services in the extension phase of Water for Women (2023-2024) through work with the local governments in four rural municipalities in the districts of Dailekh and Sarlahi. This will strengthen coping mechanisms, improve inclusive WASH governance and service provider capacities, and embed a water resource management perspective within rural water supply strategies. Action research will be carried out in the spaces of institutional leadership and community adaptation in support of greater climate resilience.

Case study #2: Local governments in Savannakhet province, Lao PDR

Lao PDR has experienced an increase in seasonal and annual rainfall, and an increase an extreme rainfall events, over the last 40 years.[6] Although there is considerable uncertainty in future precipitation trends, most climate models indicate an increase in extreme rainfall events and annual average rainfall that could contribute to an increase in flooding events.[7]

The Q-methodology was carried out by SNV in Laos, NUoL, and UTS-ISF with local government staff in Savannakhet province, Lao PDR to learn about local government staff members' beliefs and perceptions about climate change and inclusive WASH. Data collection for the Q-methodology was carried out from November to December 2021. Participants included 22 local government staff from seven different government agencies and one person from an organisation of people with disabilities (a total of 12 men and 11 women). All had responsibilities related to WASH, including implementation of Community-led Total Sanitation (CLTS) in their district or province.

Results of the individual Q-sorts were run through the 'Q Method Software' platform (along with Q-sorts from a parallel case study in Nepal) which found that the Lao PDR local government participants tended to cluster around two of four broad sets of perceptions and beliefs. In the project, these were called Persona #2 and Persona #4 (Personas #1 and #3 are covered in the Nepal case study).

Local government personas – The common shared sets of beliefs and perceptions about climate change

Following the Q-sort analysis, 12 local government staff members were found to share the set of perceptions and beliefs characterised by Persona #2. Nine local government staff members aligned most strongly with Persona #4. Boxes 6 and 7 show the top five (tend to agree more) and bottom five (tend to agree less) Q-statements that people within Persona #2 and Persona #4 respectively ranked.

Box 6: Top and bottom five Q-statements for Persona #2

Top five Q-statements (tend to agree more)

1. Climate change will have a large impact on the people in my community.

2. Local government should take more action to address climate change impacts on WASH.

3. In regard to WASH, marginalised people are affected worse than others when there is extreme weather.

4. I am worried about the impacts of climate change on WASH.

5. Climate change is primarily caused by air pollution from humans.

Bottom five Q-statements (tend to agree less)

30. Addressing climate change impacts on WASH is part of my job responsibility.

31. My department knows how to plan for WASH systems that are resilient to climate change.

32. My department has the authority to plan activities to address climate change impacts.

33. My individual action can make a big difference in addressing climate change impacts on WASH.

34. There is sufficient funding available for us to start working on climate change adaptation for WASH.

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[6] Lao PDR, 'Second National Communication to the UNFCC, Vientiane, Government of Lao People's Democratic Republic, 2013, https://unfccc.int/sites/default/files/resource/Laonc2.pdf (accessed 5 September 2022).

[7] World Bank Group and Asian Development Bank (ADB), 'Climate risk country profile: Lao PDR', OKR - Open Knowledge Repository, 2021, https://openknowledge.worldbank.org/handle/10986/36366 (accessed 5 September 2022).

Box 7: Top and bottom five Q-statements for Persona #4

Top five Q-statements (tend to agree more)

1. Community members should participate in decision making about addressing climate change impacts on WASH.

2. I always pay attention to marginalised groups in coming up with solutions.

3. The effects of climate change are not always predictable for planning or investment in WASH.

4. Climate change creates uncertainty for existing WASH services.

5. In order to reach everybody, local government needs to focus first on those who are poor and marginalised.

Bottom five Q-statements (tend to agree less)

30. There is sufficient funding available for us to start working on climate change adaptation for WASH.

31. The seriousness of climate change is exaggerated.[8]

32. My department knows how to design WASH infrastructure that is resilient to climate change.

33. My department knows how to plan for WASH systems that are resilient to climate change.

34. My district is already feeling the effects of climate change on WASH.

Distinguishing statements (statements that distinguish people in this persona from the other three personas in the dataset) for Persona #2 include:

- I am worried about the impacts of climate change on WASH (more likely to agree)

- My individual action can make a big difference in addressing climate change impacts on WASH (less likely to agree)

- Addressing climate change impacts on WASH is part of my job responsibility (less likely to agree)

Distinguishing statements for Persona #4 include:

- Community members should participate in decision-making about addressing climate change impacts on WASH (more likely to agree)

- Local government should take more action to address climate change impacts on WASH (less likely to agree)

- My district is already feeling the effects of climate change on WASH (less likely to agree)

In interviews, local government participants belonging to Persona #2 explained that they feel climate change will have large impacts on their communities because community members directly depend on the natural environment for livelihoods and because they have already observed the effects of severe weather. However, they also explained that climate change feels like an overwhelming problem that their individual contributions are too small to make a difference to.

Participants in Persona #4 explained that involving community members in decision-making about addressing climate impacts is critical for successful climate resilience-building because solutions cannot be implemented without their agreement. Yet, they also felt that they had not experienced effects of climate change in their districts, so climate change does not feel like a high priority in community development.

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[8]   After data analysis, it was noted that this statement was mistranslated to Lao as 'climate change impacts are worse than normal'.

Enablers and barriers for local governments in Savannakhet

To characterise Personas #2 and #4, the SNV, NUoL, and UTS-ISF research team analysed the quantitative Q-sort data and qualitative interview notes and reflected on SNV staff's experience of working with the local government staff. The team concluded that people belonging to Persona #2 tended to:

- be deeply concerned about the consequences of climate change for their district;

- believe that climate change will have profound impacts on communities, especially for the most marginalised people;

- believe it is important to engage community members in addressing climate impacts on WASH;

- feel they have few resources and capabilities for addressing climate impacts;

- not feel that their department has a strong mandate to address climate change;

- not perceive addressing climate change is a formal part of their job responsibility.

The research team assessed that people in this persona are convinced that climate change is a problem in their communities but feel disempowered, so they would benefit from learning how they can support meaningful adaptation efforts at the local level. The team also judged that local government would benefit from having a stronger sense of authority to act on climate change within their jobs.

Local government participants in Persona #4 tended to:

- value community engagement and include diverse community members in local decision-making;

- place importance on meeting the needs of the most marginalised groups;

- see climate change as a distant problem removed from more pressing concerns of community members;

- feel their department is poorly resourced to address climate impacts on WASH;

- perceive climate change could become a greater problem in the future, but feel unsure about this at present.

Hence, the research team reflected that local government staff within this persona would benefit from more awareness on how climate change is likely to evolve in the future and its local implications for Lao PDR. The team also felt that local government staff would appreciate interventions with a focus on community-based activities that would enable community members to identify climate risks and potential solutions.

Providing targeted support to local government to act on climate change and inclusive WASH

SNV, with support from NUoL and UTS-ISF, held a workshop with 52 local government staff members from Atsaphone, Champhone and Palanxay districts and from Savannakhet province in August 2022. Workshop attendees included people who had participated in the Q-methodology data collection, and others who had not. The workshop aimed to:

- raise awareness of how climate change effects are likely being felt everywhere in Lao PDR;

- establish a sense of mandate and responsibility among local government to act on climate change; and

- build the confidence of local government participants to take incremental actions to address climate change impacts on rural sanitation within their CLTS programming.

Local government staff trialling the Impact Diagram in Savannakhet workshop. Photo credit: UTS-ISF/Avni Kumar.

Local government piloting workshop lessons in community. Photo credit: SNV/Bart Verweij

These objectives were chosen by the research team based on the motivations and barriers of local government in Lao PDR identified during the Q-methodology process.

The workshop included presentations from environmental science lecturers from NUoL who explained how climate change is locally affecting the environment in Lao PDR. The lecturers also facilitated local government participants to share their personal experiences with climate impacts in their communities. A representative from a local disabled people's organisation was also invited to share how people with disabilities experience extreme weather.

National policies and strategies from the Government of Lao PDR that outlined government responsibilities for addressing climate change were shared with the participants. These included the Climate Change Adaptation and Health Strategy and the National Strategy on Climate Change of Lao PDR that explicitly prioritise adaptation actions for WASH. Local government participants identified actions they could take to achieve objectives of the strategy locally.

Finally, the workshop participants learned and discussed ways that they could identify and address climate impacts on rural sanitation. UTS-ISF demonstrated how climate risks could be integrated in CLTS triggering activities like community mapping and transect walks and presented other community-based activities from the Climate Change Response for Inclusive WASH project.[9] This was followed by a participatory activity in which local government staff practiced the Climate Change Response for Inclusive WASH Impact Diagram activity. SNV then facilitated the participants to consider how flooding and drought risks could be accounted for in sanitation marketing activities.

Putting lessons learned into practice

Following the workshop, local government participants visited two communities to pilot some of the community-based activities they had learned about in the workshop. One set of local government participants went to a community to carry out CLTS triggering activities that incorporated the identification of climate risks. For example, using a community map, local government staff facilitated community members to identify where flooding most frequently occurs in their community and how this affects the spread of faeces to water sources and people's homes.

Another set of local government participants visited a community to conduct sanitation marketing activities and include messaging around climate risks. Using a community map, the local government staff encouraged the community members to identify the low-lying areas in the village that are most impacted during floods, and to consider the experiences

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[9]   UTS-ISF, 'Climate Change Response for Inclusive WASH', UTS-ISF Water for Women projects, Sydney, UTS-ISF, 2020, https://waterforwomen.uts.edu.au/climate-change-response/ (accessed 27 September 2022).

of households who live in these areas and how their sanitation needs are impacts during floods. This was followed by a presentation of different toilet design and cost options and how integration of flood risk considerations can help in constructing resilient toilets. The session concluded with the village committee members preparing an open defecation free action and monitoring plan for their village, incorporating climate risk considerations with support from the local government staff.

Conclusions and next steps

The Q-methodology process was useful in identifying a split in perspectives among the participating local government staff (those deeply concerned about climate change impacts and those who view it as a distant problem), their barriers (a sense of lacking mandate and resourcing), and their motivations (valuing community inclusion in decision-making and prioritising the needs of marginalised people). The workshop and pilot activities, which built on early engagement by SNV with local governments in Savannakhet province on climate change, represent initial steps for inspiring local government in Lao PDR to build on their strengths and overcome barriers to climate action.

Survey results indicate the local government participants increased their understanding of climate risks and how to plan for climate resilient WASH.

Figure 5: Changes in confidence in local government staff in Lao PDR in explaining climate risks to others before and after project
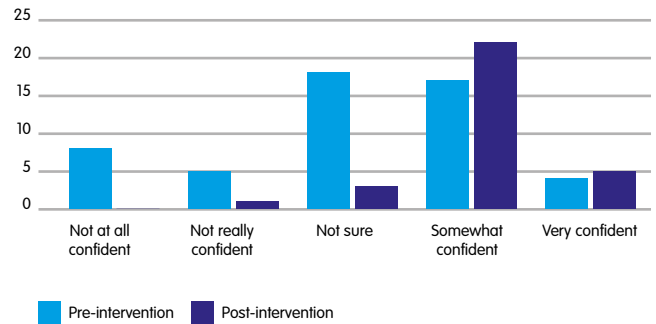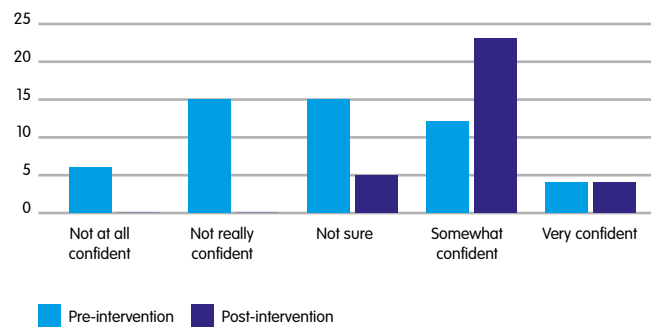
Figure 6: Changes in confidence in local government staff in Lao PDR in planning for climate resilient WASH before and after project

Preparedness is key to reduce the impact of flooding in the low lands of Savannakhet Lao PDR. Photo credit: SNV/Bart Verweij

Further, a majority of post-workshop respondents reported feeling they have a responsibility to address climate change impacts in their work. However, a substantial proportion of respondents still feel unsure about the future of climate change in their districts.

In the 2023-2024 period, SNV and UTS-ISF will be placing renewed focus on supporting the Government of Lao PDR to deliver climate resilient rural WASH services as part of the Water for Women extension phase. Action research will be carried out in the spaces of institutional leadership, financing, and technologies in support of greater climate resilience. SNV will further work with local governments in Savannakhet province to strengthen their leadership on climate resilient and inclusive WASH.

Figure 7: Levels of agreement with the statement, 'I have a responsibility to address climate change in my work' from local government staff members in Lao PDR

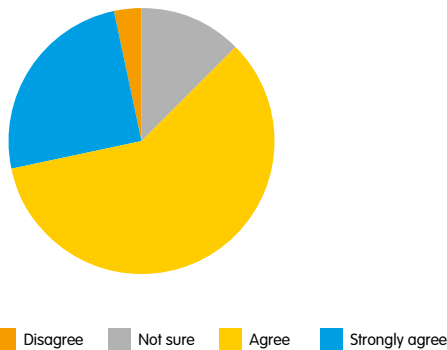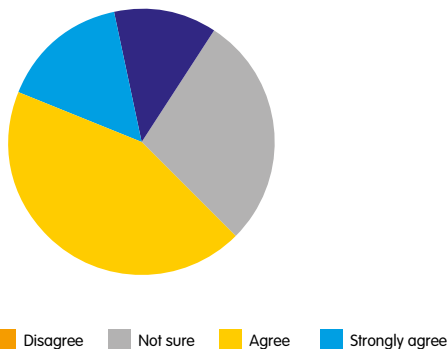Strongly disagree Disagree Not sure Agree Strongly agree

Figure 8: Levels of agreement with the statement 'My area will face the effects of climate change in the near future' from local government staff members in Lao PDR

Strongly disagree Disagree Not sure Agree Strongly agree

Key takeaways

People working in local governments hold diverse perspectives on climate change that influence how they respond to it and how they situate climate change adaptation among their other responsibilities. Understanding these perspectives can shed light on motivators or barriers that should be addressed before or while climate resilient WASH solutions are implemented.

As the Nepal and Lao PDR case studies illustrate, perspectives of local government staff on climate change can vary widely between and within countries. It should not be taken for granted that local government staff with WASH responsibilities will see climate adaptation as a necessary part of their work. Motivators that can be leveraged for change can also vary across individuals and contexts.

Taking the time to understand how local government staff perceive the challenge of climate change, which is complex and new for many, is worthwhile because it will lead to more sustainable solutions in the WASH sector. Supporting local government staff to recognise and commit to their role in building climate resilient WASH for communities is a prerequisite for implementing successful climate change adaptations. Ultimately, local government are duty-bearers for ensuring WASH services are sustainable, including under a changing climate.

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