



# **TRANS BOUNDARY RIVERS OF SOUTH ASIA**

**BASELINE SURVEY REPORT – NEPAL**  
MARCH 2022



**OXFAM**

# EXECUTIVE SUMMARY

This report presents the findings of the baseline survey for the Trans-Boundary Rivers of South Asia (TROSA) project in Nepal. The TROSA project aims to reduce poverty of marginalized and vulnerable river basin communities along the trans-boundary rivers of Bangladesh, India, Myanmar, and Nepal through increased access to, and control over water resources. Oxfam seeks to achieve this through increased participation of communities, especially women, in water governance processes. See the chapters on communities' participation in trans-boundary water governance and women's participation in trans-boundary water governance for detailed results on these themes. To participate in water governance, a certain level of trust and political efficacy is needed, which is described in the perception on institutions chapter. Increased participation in water governance should enable communities to influence decisions related to the use of water and river resources, contributing to less poverty and increased resilience. See the chapter on poverty and resilience for findings on the baseline conditions of communities in the study. This report presents findings for Nepal only. Separate country reports are also available for each country where the TROSA project is active, as well as one regional report summarizing findings across Bangladesh, India, and Nepal. For the baseline survey, 751 respondents were interviewed of whom 383 were in the target areas and 368 in the comparison areas. A snapshot of main findings is presented below.

## **Socio-economic overview:**

1. Education levels are quite low, with 47% of the respondents not having completed any form of formal education and 33% having finishing only primary school.
2. Most respondents are employed in agriculture (78%) and/or livestock farming (18%) and 14% of respondents earn income from short-term migration to India. Furthermore, 32% of respondents mentioned receiving remittances.
3. The portion of respondents that experience flooding, heavy rain, and drought is with less than 25% for all shocks rather small. However, those respondents that do experience these shocks experience them often and the shocks are severe which makes them very damaging. Additionally, among respondents who experienced flooding, 65% indicated that the flooding was severe enough to temporarily displace them from their homes.

## **Perceptions on institutions:**

4. Around two-third of the respondents generally do not trust institutions. Respondents are more likely to trust CBOs, NGOs, and the local government. They are less trusting of the private sector, national government, and provincial / state government.
5. Over half of the respondents state that it is only possible to change things in their community with great difficulty. And even though respondents see themselves as full and equal citizens, they often feel that politics and the working of the government are too complicated for them to understand.
6. Most respondents feel that leaders in state and government care very little about them.

## **Communities' participation in trans-boundary water governance:**

7. About half of all respondents are not aware of the shared nature of trans-boundary rivers. These respondents report that they do not know whether they have a common interest in or common responsibility for river basins with other actors.
8. Around 80% of the respondents rate themselves as not being knowledgeable about decision-making around flood and/or drought issues in their community.
9. Around one-third of the respondents are involved in the decision-making process around water, although around 50% of them want to be involved.

10. Only 20% of respondents have access to early warning systems for floods, with women (24%) being more likely to report having access than men (15%). Only in Darchula district do a higher share of respondents (38%) have access to early warning systems than in other target districts. Respondents mostly receive early warning information through the media (47%).
11. The majority of respondents think that loss of potable water, erosion, income loss, and crop damage caused by flooding would be a serious problem for them if a flood would occur.

**Women's participation in trans-boundary water governance:**

12. Nearly all respondents are aware of the fact that women have different needs than men and that women are affected differently than men by floods.
13. Most respondents state that women are as good leaders as men and are just as capable as men to make decisions around water issues.
14. Overall 60% of female respondents regularly attend meetings of CBOs compared to 40% among male respondents. More than half of respondents, however, are not at all involved in decision-making within CBOs. Additionally, around one third of the respondents participates in a water committee / co-management committee.

**Reduced poverty and increased resilience of communities:**

15. Most respondents report that over the past 12 months no change can be seen in the total value of combined savings (61%), loans (48%), and income (48%) of all household members.
16. Over 90% of respondents feel they would not be able to cope with crop loss, income loss, erosion, or drinking water loss due to flooding. Furthermore, most respondents feel they would not be able to draw on support to ensure they recover from adverse effects of flooding.

At baseline level we see that participation levels of community members in CBOs are already quite high (52%), while involvement in decision-making levels are low. This also holds for decision-making in water governance in general. However, participation levels in water committees are lower than in CBOs. High participation levels at CBOs can be linked to the higher trust levels of respondents towards CBOs. The lower participation levels in water committees can be related to the low knowledge levels of respondents regarding decision-making around flood issues. Furthermore, women more often participate in CBOs than men, but they have equal participation levels in water committees. This can be linked to the fact that gender equality is met to a certain extent, as a high percentage of respondents state that women are as good leaders as men are and are just as capable as men to make decisions around water issues (85% and 84% respectively). Even though community members participate in CBOs, this does not result in decreasing poverty levels for their own benefit. The results show that high participation levels are not leading to changes in savings, loans, and income neither in high resilience levels towards crop loss, income loss, erosion, and drinking water loss.

# ACKNOWLEDGEMENTS

This report was written with help from many people. This resulted in valuable information for the project implementation and will serve as baseline data for evaluating the impact of this project. We would like to thank especially the following people: community members for sharing their time to answer all of our questions; Rajan Subedi and Pragya Adhikari for leading the data collection process; the enumerators for collection data among community members; and lastly, Nimul Chun for his constructive criticism in all steps along survey process.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>II</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>IV</b>
<b>TABLE OF CONTENTS.....</b>	<b>IV</b>
<b>1 INTRODUCTION.....</b>	<b>1</b>
<b>2 INDICATOR FRAMEWORK .....</b>	<b>6</b>
<b>3 SOCIO-ECONOMIC OVERVIEW.....</b>	<b>9</b>
<b>4 PERCEPTIONS ON INSTITUTIONS .....</b>	<b>13</b>
<b>5 COMMUNITIES' PARTICIPATION IN TRANS-BOUNDARY WATER GOVERNANCE .....</b>	<b>15</b>
<b>6 WOMEN'S PARTICIPATION IN TRANS-BOUNDARY WATER GOVERNANCE</b>	<b>27</b>
<b>7 REDUCED POVERTY AND INCREASED RESILIENCE OF COMMUNITIES.....</b>	<b>30</b>
<b>8 RECOMMENDATIONS.....</b>	<b>32</b>
<b>9 REFERENCES.....</b>	<b>33</b>



# 1 INTRODUCTION

The Trans boundary rivers of South Asia (TROSA) project aims to achieve positive change in the lives of marginalized and vulnerable communities along the Ganges, the Brahmaputra-Meghna and the Salween river basins in Bangladesh, India, Myanmar, and Nepal. The ultimate goal (impact) of the project is: *reduced poverty of marginalized and vulnerable river basin communities through increased access to, and control over water resources.*

The objective of the report is to present insights into the current situation of community members in Oxfam Nepal's target areas in the TROSA project. This report provides a useful overview on poverty levels and participation in water governance among community members in targeted areas, especially women. Measuring at the start of the project (baseline) is essential for tracking the results achieved at the end of the project (end line). The recommendations aim to facilitate adaptive project management by demonstrating which activities are likely or unlikely to generate the desired impact.

River communities are confronted with a range of challenges that affect water quality, quantity, and availability. Causes are often unknown, or outside the sphere of influence of communities. Despite the importance of shared rivers for peoples' livelihoods, there is no effective shared governance or management. If water governance mechanisms do exist, they are very technical, largely bilateral and exclude key stakeholders such as civil society and people living in the river basins. Addressing the marginalization of key stakeholders is central to achieving effective water governance and will ultimately contribute to more resilient communities and poverty alleviation.

This chapter provides a brief overview of the key activities Oxfam in Nepal carries out for the TROSA project in section 1.1, followed by how these activities are linked to the pathways of change and the outcomes and impact the project aims to achieve in section 1.2. The geographical areas in which the project activities are implemented are presented in section 1.3. lastly, in section 1.4 we present the broader MEAL-framework of the project.

## 1.1 KEY ACTIVITIES IN TROSA PROJECT

This section provides an overview of the key activities the project carries out in Nepal. Through these activities and based on the pathways of change, the project aims to create positive changes on outcome and impact level (see section 1.2). The baseline focuses on changes in people's lives and is therefore only concerned with outcome 4.1, 4.2, 5, and the impact level (see Table 1). Outcome 1-3 are about changes at institutions and we will use different methods to measure the progress towards those outcomes (see Table 1 below). In Nepal the project team implements the following key activities:

- Establishing community-to-community linkages demonstrating good water governance in the Mahakali river basin – a sub-basin of the Ganges (for example community-based flood early warning system);
- Facilitating community to community dialogue in the Mahakali Sambad;
- Working directly with women and men's networks to strengthen their involvement in trans-boundary water governance;
- Action research and evidence-based advocacy for regional cooperation on inclusive and equitable water governance and responsible consumption of water;
- Cross-country learning (capacity building training, knowledge sharing events and exchange visits for key government officials relevant to trans-boundary river governance).

National partners included in the project are the Nepal Environment and Equity Development Society (NEEDS) based in Kanchanpur, the Rural Women's Development and Unity Centre (RUWDUC) based in Dadeldhura, Sankalpa Nepal which is based in Darchula, and the Rural Development and Environmental Management Society (RUDES) based in Baitadi.

Regional partners are Oxfam International, the International Centre for Integrated Mountain Development (ICIMOD), the World Wildlife Fund for Nature (WWF), the Stockholm International Water Institute (SIWI), International Rivers (IR), and International Union for Conservation of Nature (IUCN). The project is funded by the government of Sweden.

## 1.2 OUTCOMES, IMPACT AND THE PATHWAYS OF CHANGE

Project activities aim to change the lives of community members which are formulated on outcome and impact level in the theory of change<sup>1</sup>. In this section we explore how changes in the lives of community members come about and which consecutive steps need to take place before outcomes and impact can be achieved. These consecutive steps are explained in the pathways of change. In the baseline survey we focus on the following outcomes:

- Outcome 4.1: Local communities are better able to reduce their vulnerability to water resource related shock including from conflict & disasters.
- Outcome 4.2: Local communities have more secure access and control over their water resources.
- Outcome 5: Increased participation & influence of women in trans-boundary water governance, policies & processes.
- Impact: Reduced poverty and marginalisation of vulnerable river basin communities through increased access to, and control over, riverine water resources on which their livelihoods depend.

### **PATHWAY OF CHANGE OUTCOME 4.1 & 4.2**

This section presents the consecutive steps in both outcomes. As the steps are interlinked, we present them in this combined pathway of change. On the short term it is an absolute gain if communities can absorb (recurrent) shocks and stresses in and around the waters that are vital to them. At the same time, through early warning systems, communities will reduce the number of shocks they experience as they increase the time available to deal with floods. In their current situation they cannot do so, which impacts their basic needs such as crop and drinking water loss. In short, the communities have reduced their level of vulnerability to related water-shocks (outcome 4.1). Absorbing shocks however, does not mean they feel stable and secure in relation to water access and management. For that, communities have to get better access to scarce water under competing demands and be able to influence the decision making around it. This is all about getting control over their waters (Outcome 4.2).

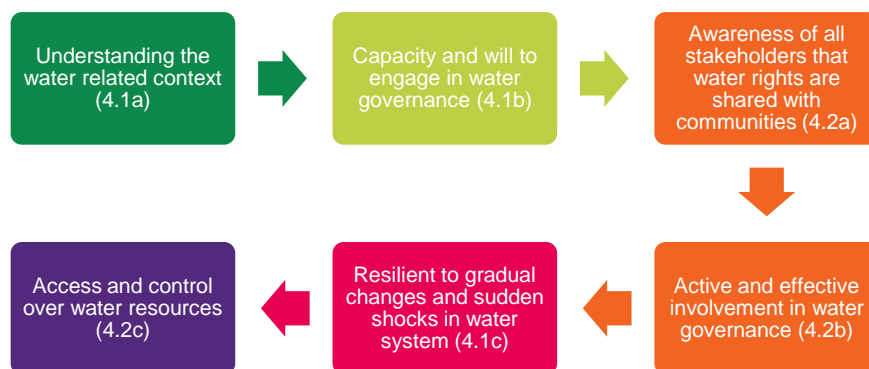
To bring about the desired change, a logical sequence of consecutive steps is assumed within each outcome: understanding comes before capacity, explicit will to engage and the capacity to do so are prerequisites to coming to action (see Figure 1) .

Outcome 4.2: outcome 4.1 and 4.2 are interlinked. More secure access and control over water (4.2) can only be achieved if the concepts “Understanding the context” and “Capacity and will to engage” (both in 4.1) are realized. Specifically, within Outcome 4.2, the assumed subsequent steps are: i) awareness of all stakeholders that water rights are shared with communities. Only after such mechanisms are in place, ii) active and effective involvement in water governance can commence. And from that iii) communities have more stable access and control over water resources.

This is depicted in the flowchart in Figure 1 below. The figure shows the pathway of change in the TROSA project. All steps in the pathway are important to reach the aim of access and control over water resources. However, especially steps 3 and 4 are critical for the TROSA project as they reflect the regional character (step 3) as well as the participation in decision-making process related to water (step 4).

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<sup>1</sup> In Annex A the theory of change for TROSA is presented. Outcome 4.1 & 4.2 are part of outcome 4: river basin communities increasingly influence in trans-boundary water governance policies and processes. The impact level is at the top of the theory of change and all outcomes will contribute to achieving the impact.



**Figure 1: Visual presentation of concepts and pathways of change Outcome 4.1 and 4.2**

### **PATHWAY OF CHANGE OUTCOME 5**

Water access and control comes with power, and power among different community members is unevenly distributed. Especially women are not able to benefit in the same way from water as men do. Improving opportunities for women and marginalized groups to meaningful participate in decision-making around water access and control is therefore vital, also to serve a larger women's empowerment agenda in the region. Importantly, women are the primary users of water as they use it to feed their families as well as work the land (Ray, 2007). And so, to ensure that women meaningfully participate, both female leaders as men need to support women in their participation. To this effect, we defined three different stages in the planned behavioral change: i) increased awareness that women are impacted differently than men regarding access and control over water resources. It is therefore, essential to understand what women's needs are related to water. When awareness is raised, ii) community norms related to the involvement of women in decision-making need to be challenged and adjusted. When these norms are changed, iii) behavior of both men and women will change so that men actively support women to participate in decision-making towards water issues. The pathway of change is visually presented in figure 2.



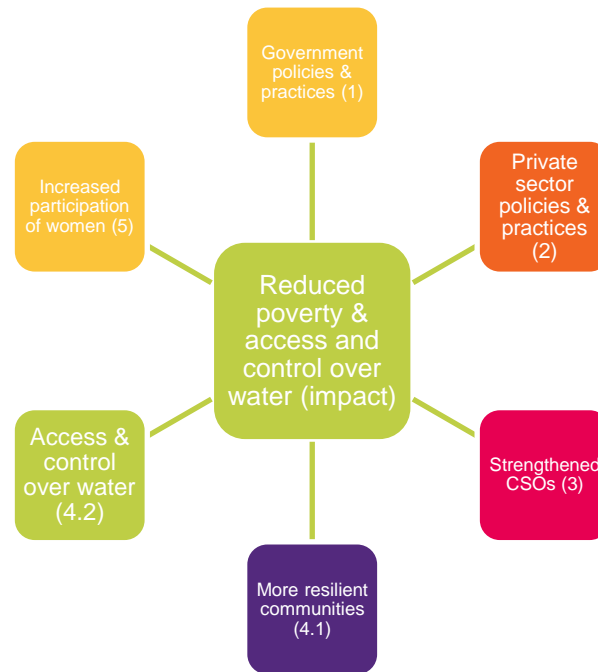
**Figure 2: Visual presentation of concepts and pathway of change Outcome 5**

### **PATHWAY OF CHANGE IMPACT LEVEL**

The ultimate goal of the project's interventions is to reduce poverty by increasing resilience of communities as well as increasing access and control over water. All outcomes will contribute to the ultimate goal of the project. Oxfam uses an inclusive approach by working with governments (outcome 1), the private sector (outcome 2), CSOs (outcome 3) and river basin communities (outcome 4.1, 4.2, 5). All these outcomes contribute to the ultimate goal of the project (see Figure 3). The survey is used to measure community members' perception on changes in their lives regarding outcome 4.1, 4.2, 5 and the impact level. We use other methods to measure our progress towards outcome 1-3 (see Table 1). However, community members' perceptions on institutions defines to a large extent whether the project could be successful in increasing participation in water governance. Therefore, to get a general sense of community member perceptions of institutions, we have incorporated questions in the survey on concepts like trust levels on institutions, and internal and external political efficacy.

Poverty will be measured using indicators for savings, income, and loans. Resilience will be measured using indicators for two of the resilience capacities Oxfam distinguishes: absorptive capacities and adaptive capacities. Absorptive capacity is the ability of people to deal with sudden shocks and stresses that happen occasionally (i.e. floods). Adaptive capacity is the ability of people to make incremental changes in their lives, so they can respond to shocks better and create more flexibility for themselves

(Oxfam, 2016). Access and control over water will be measured through questions about the availability and quality of water.



**Figure 3: Visual presentation of relation outcomes and impact**

The pathways of change as described above will be the common thread throughout the report. Successive steps as presented in Figure 1 and 2 match with the name of the sections in the results chapter, Figure 3 relates to the names of the chapters in this report. This enables the project team to define which activities are needed to generate the envisaged effects that result in positive, sustainable changes in the lives of community members. In Annex B.2 the conceptual framework is described in more detail.



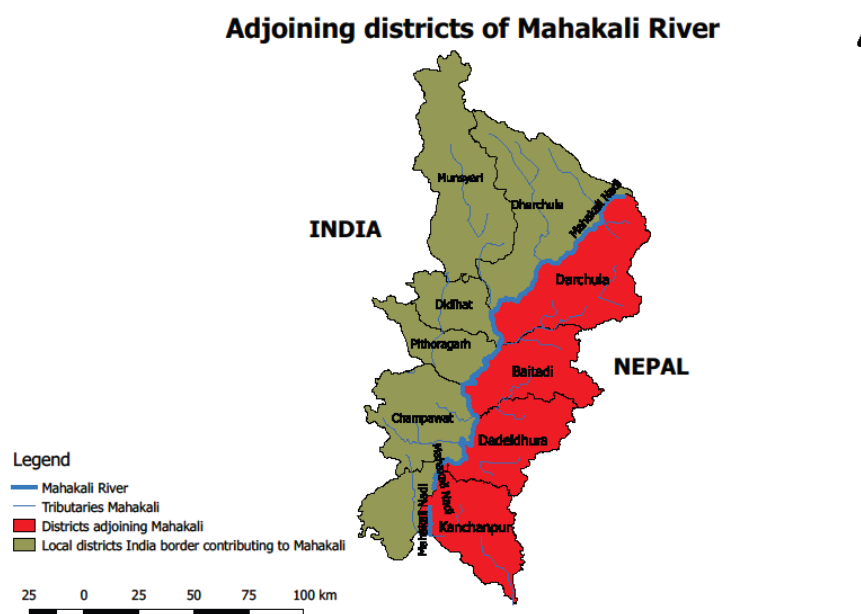
### 1.3 MAP OF PROJECT LOCATIONS

Figure 4 below depicts the area of study in Nepal: the dark green area in Western Nepal is the area where target households are located, the light green area in Eastern Nepal is the area where comparison households are located. Associated districts for the target area are Kanchanpur, Baitadi, Darchula, and Dadeldhura, and the district in the comparison area is Saptari. Both areas are suitable for comparison because they are river-based and transborder, share a frontier with India.



**Figure 4 Nepal Study Area: in dark green the target districts and in light green the comparison district**

In Nepal the main focus of project activities will be on the upper tributary of the Ganga River – the Mahakali / Sharda River shared by Nepal and India. This river has a catchment area of 14,871 km<sup>2</sup>. Figure 5 below zooms in on the adjoining districts of the Mahakali River.



**Figure 5 Adjoining Districts of the Mahakali River**

## 1.4 INTRODUCTION TO MEAL FRAMEWORK

The Monitoring, Evaluation, Accountability, and Learning (MEAL) framework of the TROSA projects provides an overview of the different MEAL-methodologies used to measure the effects of the project. The aim of the MEAL framework is threefold:

1. To ensure upwards and downwards accountability:
  - a. To the Swedish government and general public to account for the results of the project and the resources used.
  - b. To partners, community members and other key stakeholders to ensure their active implication in the results of the project.
2. To ensure support to the management of the project: providing suitable information that allows project teams and management to take effective and timely decisions and actions in order to assure quality results.
3. To ensure learning takes place at different levels:
  - a. Learning at the regional level (e.g. effects on trans-boundary level).
  - b. Learning at the project level (e.g. in the four different countries Bangladesh, India, Myanmar, and Nepal).

The MEAL framework is based on 5 outcome areas and the impact level that TROSA works on. The MEAL framework ensures that relevant, high quality, and comparable data is collected in all projects by specifying the methods used to track progress on the relevant outcome areas. Each outcome area therefore has one or more methodologies to measure these indicators. The outcome areas and the proposed methodology are summarised in

below. The conceptual framework forms the basis for the baseline survey focuses on measuring two of the five outcome areas as well as the impact level which are highlighted below.

**Table 1: Overview of outcome areas and MEAL-methodologies**

Outcome area	Methodology
Outcome 1: Government policies and practices in water resource management are more inclusive of community concerns and meet national and international standards.	Outcome Harvesting Policy maker ratings / tracking tools Policy analysis / tracking
Outcome 2: Policies and practices of private sector respect community access to water resources, actively contributing to reduced conflict.	Outcome Harvesting
Outcome 3: CSOs <sup>2</sup> increasingly participate in or influence trans-boundary water governance, women's inclusion and resolution of water conflicts.	Outcome Harvesting Civil Society Capacity Assessment Tool
Outcome 4.1: Local communities are better able to reduce their vulnerability to water resource related shock including from conflict & disasters.	Impact Measurement (Surveys)
Outcome 4.2: Local communities have more secure access and control over their water resources.	
Outcome 5: Increased participation & influence of women in trans-boundary water governance, policies & processes.	
Impact: Reduced poverty and marginalisation of vulnerable river basin communities through increased access to, and control over, riverine water resources on which their livelihoods depend.	

### METHODOLOGY: MEASURING OUTCOMES AND IMPACT

We track progress towards the outcomes 4.1, 4.2, 5, and impact-level (in green above) using household surveys. The baseline survey was fielded among a target (intended participants in the project) and a

<sup>2</sup> CSOs are organizations that are not involved in private sector or government. People organize themselves in CSOs to strive for a shared interest. Examples of CSOs are village associations, women's rights groups, farmers' associations, and faith-based organizations. This means CBOs are a type of CSO working in communities. See: <http://www.cn.undp.org/content/dam/china/docs/Publications/UNDP-CH03%20Annexes.pdf>

comparison group (a comparable group of people that do not participate in the projects' activities). At the end of the project the information from the target group will be benchmarked against the information from the comparison group. Comparing<sup>3</sup> these two groups allows changes in the lives of project participants (both positive and negative) to be attributed to the activities of the project.

## **BASELINE SURVEY**

The baseline survey for TROSA in Nepal was carried out between 22 February and 14 March 2018. The baseline survey reached 821 respondents in total: 383 in the target area and 368 in the comparison area in 17 municipalities. The conceptual framework and sampling strategy for the baseline survey is presented in Annex B. A mapping of TROSA indicators to concepts and questions used in the questionnaire is presented in Annex C. This report solely presents the survey findings for the target group.

This report presents the findings for women and men separately. This means that we have not only calculated the results separately for these groups but that we have also tested the differences between these findings for statistical significance, using chi-square tests for survey items collecting categorical responses. When differences in results between women and men are not statistically significant, we do not mention them in the text of the report. However, results that reveal a notable difference in responses by gender, and when those differences are statistically significant to conventionally-accepted levels ( $p < .05$ ), then these results are featured and discussed in the text of the report. Please note however that the term *significance* is solely a statistical appraisal of a difference observed, it is not to be confused with *substantial* differences between groups, or differences *meaningful* for further project implementation. Using the pathways of change described above, we determine which findings are statistically significant *and* substantial or meaningful in understanding the baseline conditions of the people living in the target area and important for steering the TROSA project for maximum positive impact over the timeline of the project.

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<sup>3</sup> Annex D provides a comparison of key socio-economic characteristics for both target and comparison groups.

## 2 INDICATOR FRAMEWORK

In this chapter we provide an overview of the current values, the baseline level, of TROSA's indicators. These values are created using averages of responses to the survey questions. In Annex C we present the construction of the values. These baseline values at the end of the project will be compared to the end line values using a difference-in difference approach to determine what changes may have occurred with these key indicators (see Table 2).

At impact level we see that even though 36,1% of the targeted people already have a certain level of knowledge and skills regarding their access and rights to water resources, only one-tenth are secure in their water-related livelihoods. Further, 20,4% of the targeted people understand their rights to water resources, 16,3% is aware of the interdependency of the shared base of their river basin and 37,7% implement measures to protect their physical assets. However, only 3,9% reports to be resilient towards water related events. At baseline level, few respondents (12,1%) reports CBOs adequately supporting them in water related issues, but they report more often (21,2%) that decision-makers have discussed their concerns/proposals and 28,1% reported successful appeals on private sector to change their undertakings. Lastly, only 9,5% of the women take active roles in decision-making in water governance which can be related to their low knowledge and skill levels and low support by men (11,3%).

**Table 2: Overview of indicators and values**

Outcomes / Impact	Ind. #	Indicator	Baseline Value (%)
<b>Impact:</b> Poverty reduction of marginalized and vulnerable river basin communities.	0.1	% of targeted people (M/F) living in the targeted communities perceived / claimed being more secure in their water-related livelihood(s) / occupation(s) / shocks	10,1
	0.2	% of affected people (M/F) in marginalized and vulnerable river basin communities using their enhanced knowledge and skills to advance, secure and/or defend their access and rights to (own, use, develop and/or control over) water resources.	36,1
<b>Outcome 4.1:</b> local communities are better able to reduce vulnerability to water resource-related shocks resulting from conflicts and disasters;	4.1.1	% of beneficiaries (men, women and youth) that claimed / perceived more resilience to the incidence of, and damaged by, water related events/disasters such as water disputes, flooding, casualties, water related disease, etc.	3,9
	4.1.2	% of beneficiaries (men, women and youth) understanding their pertaining rights to water resources	20,4
	4.1.3	% of beneficiaries (men, women and youth) aware of cross-border interdependency of having a shared base (historical, ethnical, cultural and the river) and shared interests	16,3
	4.1.4	% of beneficiaries (men, women and youth) having a clear organizational set-up in place in their community with unambiguous responsibilities (response chain) as well as action protocols on water governance	12,9
	4.1.5	% of beneficiaries (men, women and youth) in marginalized and vulnerable community having timely access (via ICT or channels) to communication/information on floods and disasters (for both receiving and spreading information)	12,4
	4.1.6	% of beneficiaries (men, women and youth) taking actions to protect their physical assets or /implementing measures to spread their risks of being affected by shocks.	37,7
	4.1.7	Evidence/cases of program affected communities (men, women and youth) being meaningfully engaged/participated in cross-border reduction/mitigation of water-related shocks' effects.	10,8
	4.1.8	Evidences/cases of community members' active participation/engagement in water conflict resolution and grievance mechanism.	11,6
<b>Outcome 4.2:</b> Local communities have more secure access and control over their water resources	4.2.1	% of beneficiaries (men, women and youth) reported that influential/decision makers have discussed their community's concerns/proposals and incorporated them in their ruling	21,2
	4.2.2	% of beneficiaries (men, women and youth) reporting that their CBOs adequately support them in water governance issues	12,1
	4.2.3	% of beneficiaries (men, women and youth) reporting joint action/petitioning on shared waters, undertaken by cross-boundary communities	12,4
	4.2.4	% of beneficiaries (men, women and youth) reporting successful appeals on private sector to adapt/modify their undertakings	28,1
<b>Outcome 5:</b> Increased participation and influence of women in trans-boundary water governance, policies and processes	5.1	% of women (disaggregated by marginalized and discriminated groups) taking actively key roles in decision making at significant levels and influencing water governance across/beyond river basin they belong to.	9,5
	5.2	% of women and women leaders that have increased knowledge, skills and influence in water resource discussions and groups.	7,2
	5.3	% of men proactively supporting women's leadership in water governance.	11,3

## 3 SOCIO-ECONOMIC OVERVIEW

In chapter 3-7 we present the findings of the baseline survey. In chapter 3 we show the socioeconomic overview of respondents, which gives us a general idea about the situation in which respondents are living. Findings related to communities' participation in water governance are presented in chapter 5 and 6. To participate in water governance, community members need a certain level of trust in institutions and political efficacy is also needed. This is described in chapter 4. Increased participation enables communities to influence decisions related to their water situation. Increased participation and engagement should ultimately decrease poverty and increase resilience which is described in chapter 7.

### GENERAL CHARACTERISTICS

There are slightly more female respondents 57% over male respondents (43%). The men that were interviewed are slightly older (45 years old) than the women (38 years old). Furthermore, 3% of the respondents is between 18 and 20 years old<sup>4</sup>.

Education levels are quite low, with 47% of the respondents not having completed any form of formal education and 33% completed only primary school. Education levels for women are even lower, among whom 61% have not finished any form of education compared to 25% for men. This is also reflected in the literacy rates for women and men, which are 45% and 76% respectively. The literacy rate for women in the target area is much lower than the national literacy rate (76%), while the opposite holds for the literacy rate of men (the national average is 53%)<sup>5</sup>. By district, functional literacy rates ranged from a high of 72% in Kanchanpur to a low of 50% in Baitadi.

### INCOME SOURCE

Most respondents mention having income through agriculture (78%) and/or livestock farming (18%). Other income sources mentioned are short term migration to India (14%) and receiving remittances (32%). However, it should be noted that respondents might receive (small amounts of) remittances for only four to five months a year. This induces that remittances not always constitute a major part of income of household members. There are some significant variations by district however. Agriculture is a source of income for a strong majority of respondents in all districts except for Dadeldhura where only 41% report this as an income source. Dadeldhura district reports the highest rate of short term migration to India (31%). Livestock is a source of income for nearly one in four respondents in Baitadi and Darchula but of only one in twenty respondents Kanchanpur. Short-term labour migration to India is a source of income for 31% of respondents in Dadeldhura but of only 3% of respondents in Darchula.

**78% OF RESPONDENTS**  
derive **income** from **agriculture**



We have incorporated a couple of key indicators regarding food security, health and life satisfaction to provide a snapshot about the poverty status of community members in the project.

### FOOD SECURITY

Food security has several dimensions, including dietary diversity and both size and frequency of meals. Our survey used a single question that has been found to be highly predictive of a household's food insecurity (Bjørnøy Urke et al., 2014). The results show that on average 48% of the respondents face

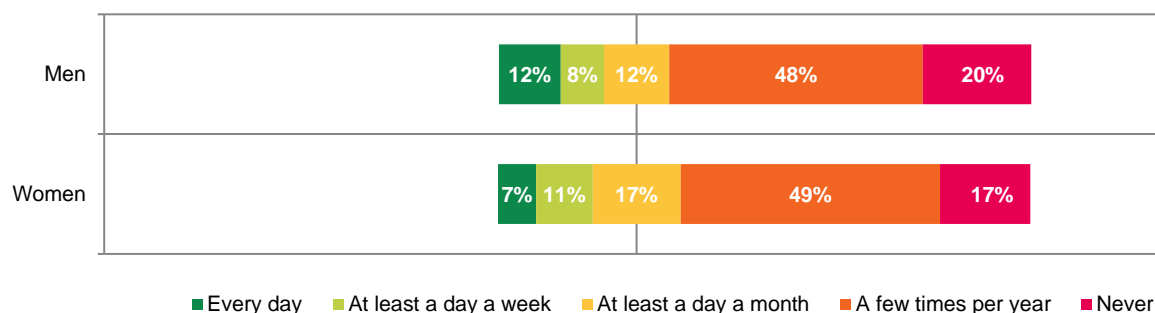
<sup>4</sup> In TROSA we define youth as beneficiaries between 15-24. As we used age categories (18-20 & 21-29) in the survey, we were not able to present the total number of youth in the sample.

<sup>5</sup> The World Factbook. *Nepal*. Washington, DC: Central Intelligence Agency. Retrieved 2018-05-14 from <https://www.cia.gov/library/publications/the-world-factbook/geos/np.html>



a shortage of food a few times per year (women more often than men). Around 18% of respondents never face a shortage of food. Respondents in Kanchanpur and Dadeldhura were more likely to say they never faced food shortages in the past year than respondents in other districts. However, occasional or even regular food shortages are the norm for a majority of respondents in all districts.

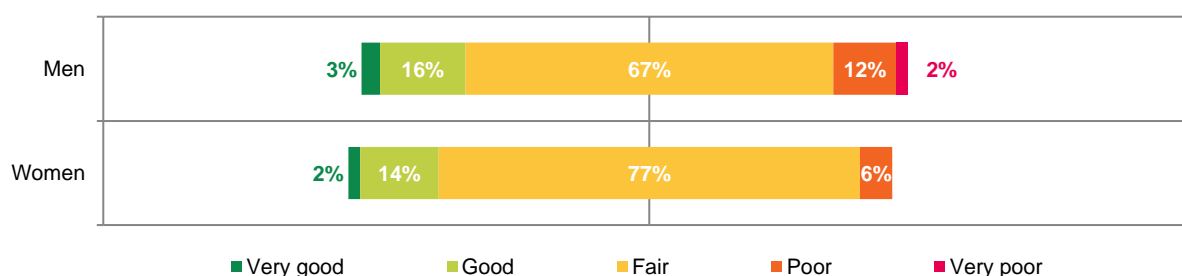
*In the last 12 months, were there times when you ran out of food for you and your family and there was no money to buy more?*



## HEALTH

Health is important at both an individual and societal level. There is a high correlation between income per capita of a country and average levels of health, measured with life expectancy for example. There is also a correlation between someone's health and their level of income (Weil, 2014). Most of the respondents (73%) reported to be in fair health, while on average only 9% reported to have poor to very poor health.

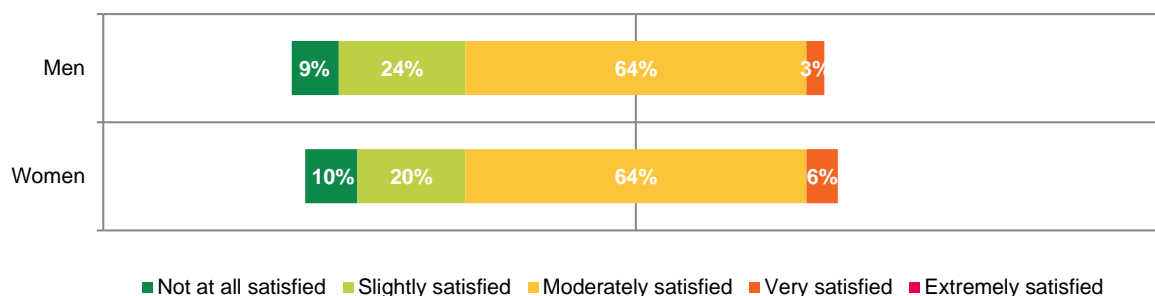
*All in all, how would you describe your state of health these days?*



## LIFE SATISFACTION

Wellbeing is an important aspect in measuring quality of life. It is one of the few quantitative indicators that cannot be measured objectively; unlike education level for example. Measuring wellbeing has increasingly been taken up in both academia and at government level (OECD, 2013). This indicator would provide information about the overall impact of the project, it is a single indicator in which all other indicators are included. Most respondents from our target group are moderately satisfied with their lives, while around one third of the respondents is slightly satisfied or not at all satisfied. Men report the same levels of life satisfaction as women.

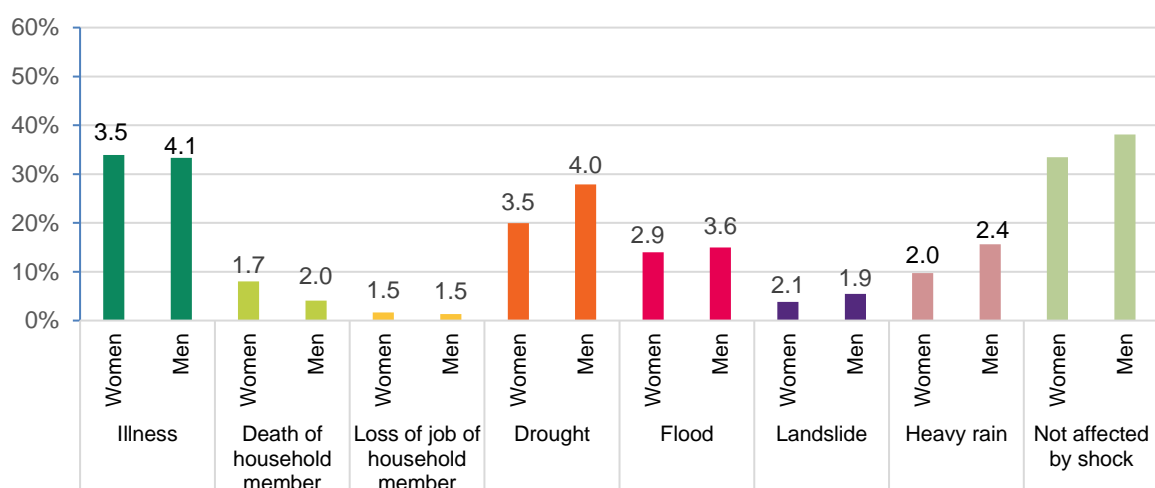
Overall, how satisfied are you with life as a whole these days?



## EXPOSURE TO SHOCKS

We asked respondents if in the past five years they have been negatively affected by shocks such as floods, droughts, and illness or death of household members. If this was the case, we also asked how many times this happened. About one third of respondents reported never facing any shock. For those respondents that did experience shocks, the most common were the illness of a household member (34%) and droughts (23%). In these cases, the average number of times being negatively affected by this shock if the past five years was around four times.

*In the past five years, was your household affected negatively by the following shocks? And if this was the case, how many times were you affected negatively by these shocks?*



Striking is that only a small portion of the respondents experienced a flood, drought or heavy rains. Among the respondents (14%) who reported experiencing flooding, 65% of them nevertheless also reported being temporarily displaced from their homes because of flooding. This percentage was as high as 84% and 65% in Kanchanpur and Darchula (respectively) although far lower in the other two districts in the target area.

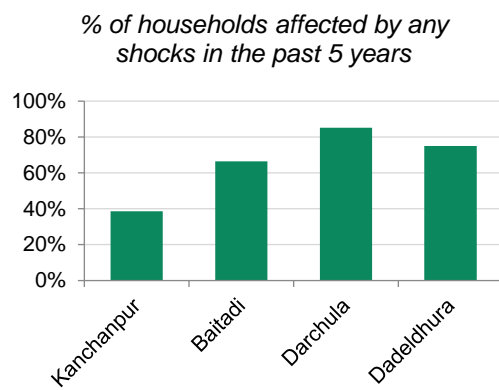
## 65% OF RESPONDENTS WHO EXPERIENCE FLOODING

mention to be temporarily displaced from their home because of flooding



In Kanchanpur a majority of respondents (61%) indicate that they had *not* been affected by any kind of shock in the past five years. Drought affected 34% of respondents in Baitadi and Dadeldhura but only 1% of respondents in Kanchanpur. Floods affected 34% of respondents in Darchula but only 2% of respondents in Baitadi. Landslides were reported by 14% of households in Darchula but fewer than 10% of respondents in all other districts. Heavy rains were actually most frequently reported by respondents in Kanchanpur (39% of respondents), but by fewer than 6% of respondents in other

districts. The differences in prevalence of shocks between the different districts might be explained by geographic location: Kanchanpur lies in a plain area, whereas the other three districts lie in hilly areas.



## THE MOST REPORTED WEATHER RELATED SHOCK:



Kanchanpur



Baitadi & Dadeldhura



Darchula

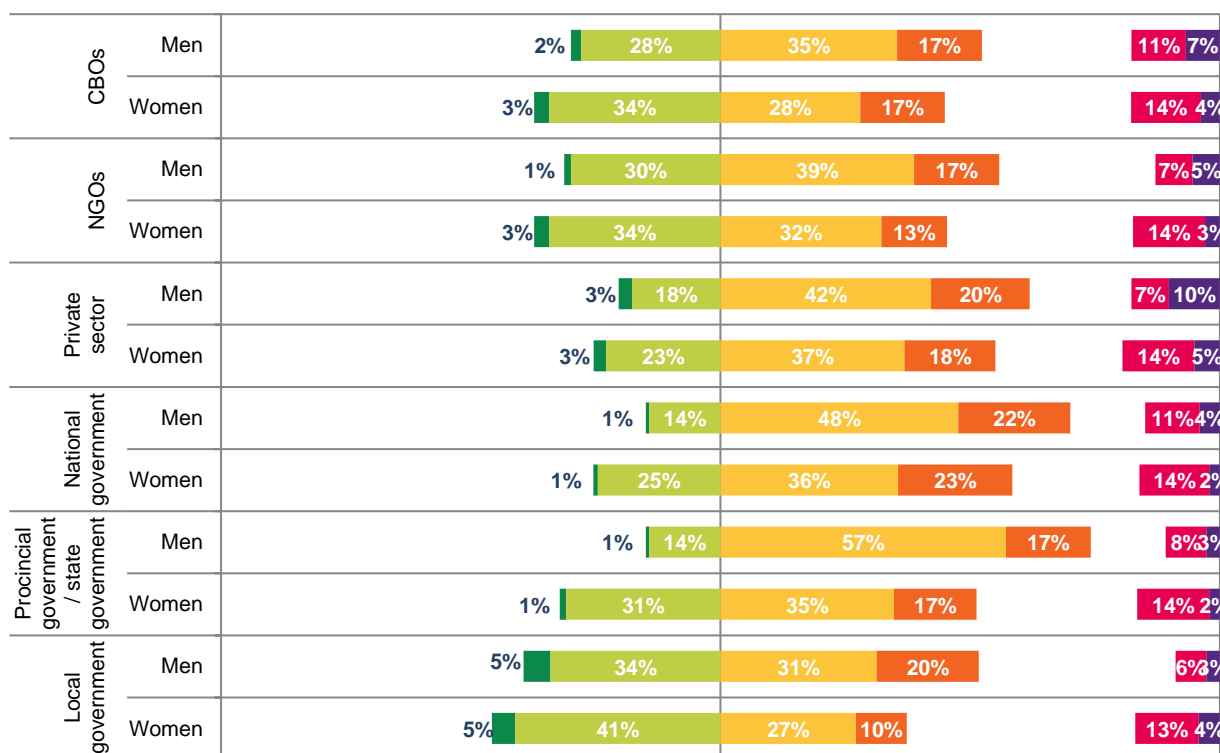
## 4 PERCEPTIONS ON INSTITUTIONS

The survey is used to measure community members' perception on changes in their lives. As described above, we use other methods to measure our progress towards outcome 1-3. However, community members' perceptions on institutions defines to a large extent whether the project could be successful in increasing participation in water governance. We consider trust in institutions, political efficacy, and attitudes and norms towards CSOs as key enablers or barriers to community members to participate in water governance. Political attitudes and civic engagement is very likely to influence the extent to which the project succeeds in increasing participation. At the same time, these characteristics may indirectly also be influenced by the project itself. Take trust as an example: individuals with higher levels of trust in local CSOs may be more inclined to engage with the project and take actions promoted by the project, whilst at the same time participation in the project may lead to higher levels of trust in local CSOs or even in political institutions.

### 4.1 TRUST IN INSTITUTIONS

Trust – the belief that others will not deliberately or knowingly do you harm, try their best to avoid harm, and look after your interests – is important for triggering the willingness to actively engage with institutions (Fennema and Tillie, 1999). We asked respondents how often they trust CBOs, NGOs, the private sector, the national government, the provincial / state government, and the local government. The most frequent answer given was 'not very often'. On average respondents trust CBOs, NGOs, and the local government more often than the private sector, national government, and provincial / state government. Women report higher levels of 'don't know' for trust in the local government or provincial/state government.

*Thinking about each of the following institutions and civil society organisations, how often do you trust each of them to do the right thing?*



■ All the time ■ Most of the time ■ Not very often ■ Never ■ Don't know ■ Refuse to answer

## 4.2 POLITICAL EFFICACY

The TROSA project aims to increase participation in water governance. To increase political participation a certain level of political efficacy is necessary. By internal political efficacy we mean a citizen's "feeling that political and social change is possible and that the individual citizen can play a part in bringing about this change" (Campbell, Gurin and Miller, 1954, p. 187). It thus primarily refers to the individual – the concept is about the individual's feelings on how much impact they have specifically due to their own personal knowledge and abilities. Perceived political internal efficacy is expected to influence citizen engagement with the topics covered by this project, since people must believe they have something meaningful to contribute in order to actually do so.

A strong majority (85%) of respondents feel that it is possible to change things in their community. District analysis suggests that respondents in Dadeldhura are the most optimistic on this topic. However, the majority (60%) feels that this is only possible with great difficulty. Most respondents (86%) agree or strongly agree that they are full and equal citizens in the country with all rights and protections that other people have. But 85% of respondents also agree or strongly agree with a statement about politics and the workings of government seem too complicated for them to understanding. Internal political efficacy could be increased through outreach to citizens to help demystify the political process and show them how they can meaningfully participate in decision-making at the local level.

External political efficacy is defined as political responsiveness: how an individual feels his or her government responds to his or her needs, and how well the political system and government reflect on his or her needs and concerns. Respondents took a very negative view of the responsiveness of government at all levels to their needs. On average 84% of respondents agree or strongly agree that leaders in state government care very little about people like them. This percentage is even larger when it comes to leaders in national government: 89% of respondents agree or strongly agree that these leaders care very little about them. These results, which are similar to the findings on trust shown above, suggest that citizens in the target area feel very distant from state and national government. As it might be rather difficult to change the leaders in government, the project should take into account this rather negative attitude regarding external political efficacy when they try to increase participation of respondents in water governance processes.

## 4.3 ATTITUDES AND NORMS TOWARDS NGO'S

Citizens will be more likely to engage with an association that they have a positive view of. When asking respondents how they would feel if the government took measures to limit the work of NGOs that defend human rights, they most frequently (38%) answer they would think that NGOs must have done something to deserve it. 20% of respondents would be concerned, and 10% would be outraged. Furthermore, respondents are quite positive about their community's norms towards participation in the work of NGOs; 66% argue their community members would see it as a good thing if they would be actively involved in the work of an NGO.



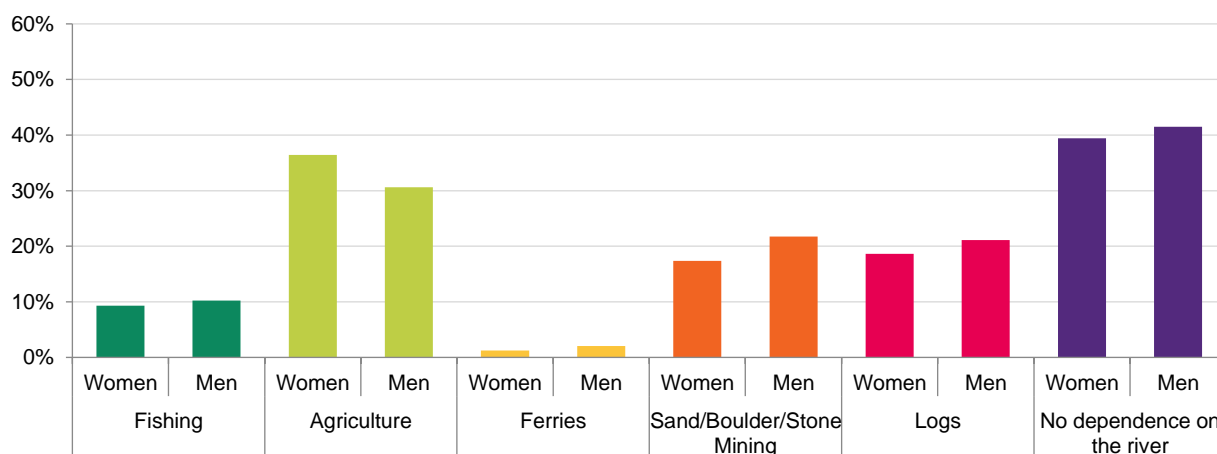
# 5 COMMUNITIES' PARTICIPATION IN TRANS-BOUNDARY WATER GOVERNANCE

## 5.1 UNDERSTANDING THE WATER RELATED CONTEXT

At the base of the pathway of change envisioned by the TROSA project lies understanding of the water related context. The river can be in important part of a household's livelihood strategy, Respondents have been asked to mention ways in which their livelihood depends on the river. Around 60% of respondents depend on the river for their livelihood. The other 40% who mention that their livelihood does not depend on the river are more likely to be employed in unskilled labour and government employment. However, 78% of these respondents do mention agriculture as an income source. This might indicate that these respondents have access to another water source than the river, or that they cultivate types of crops which are less water intensive. Another possibility would be that these respondents are day labourers in agriculture, and, thus, do not really depend on the river for their income in the way people that grow cash crops do.

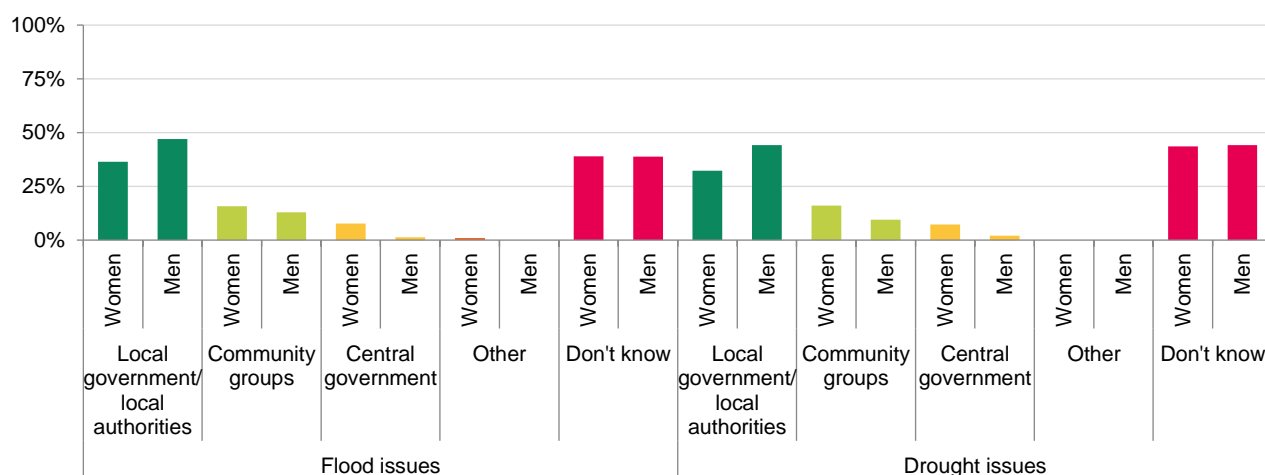
Livelihood strategies dependent on the river which are most frequently mentioned are agriculture (34%), logs flooded by the river (20%), and sand, boulder, and/or stone mining (19%). By district, we note that all these activities are more frequently reported by respondents in Kanchanpur than in other districts. Fishing, reported as a river-dependent livelihood for only 10% of respondents, is most commonly practiced in Baitadi (reported by 14% of respondents there).

*How does your livelihood depend on the river?*



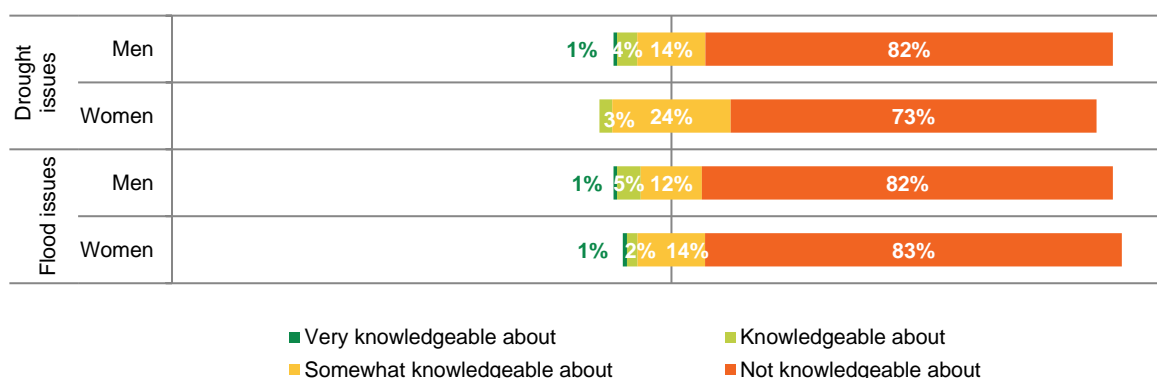
In order to get greater insight into whether respondents understand the water related context around them, one survey question asked respondents who makes the main decisions about responding to floods or droughts in the community. Around 40% of both male and female respondents were unable to answer this question. Local governments and local authorities are mentioned most often for making the main decisions about floods and droughts issues (41% and 37% respectively). Women and men both give different answers to these questions.

### Who makes the main decisions about flood / drought issues in your community?



When respondents rate their own knowledge about decision-making around floods and droughts issues in the community, on average around 80% of them rate themselves as not being knowledgeable. This finding, together with the previous finding that around 40% of respondents are unable to mention the main decision-maker, indicate that there is much room for improvement in terms of increasing the understanding the decision-making process in droughts and floods.

### To what extent do you have knowledge of decision-making around flood / drought issues in your community?



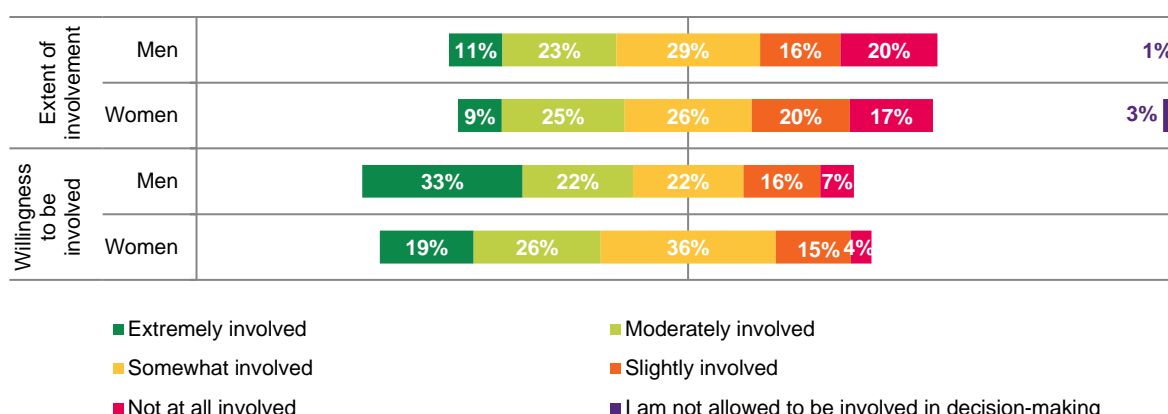
## 5.2 CAPACITY AND WILL TO ENGAGE IN WATER GOVERNANCE

Capacity and will to engage in water governance are assumed to contribute to reduced vulnerability to water resources related shocks. As presented in the section above on political efficacy, most respondents think it is possible to change things in their community but with a great deal of difficulty. Moreover, most respondents do not frequently trust leaders in government. The findings in this section need to be considered against that background.

On average 63% of respondents mention that they occasionally discuss water issues with their friends and family, whereas 31% have these discussions frequently and 11% never do. A large share of respondents (40%) argues that their household has poor capacity to discuss transboundary water issues with the local government; 37% argues they have fair capacity.

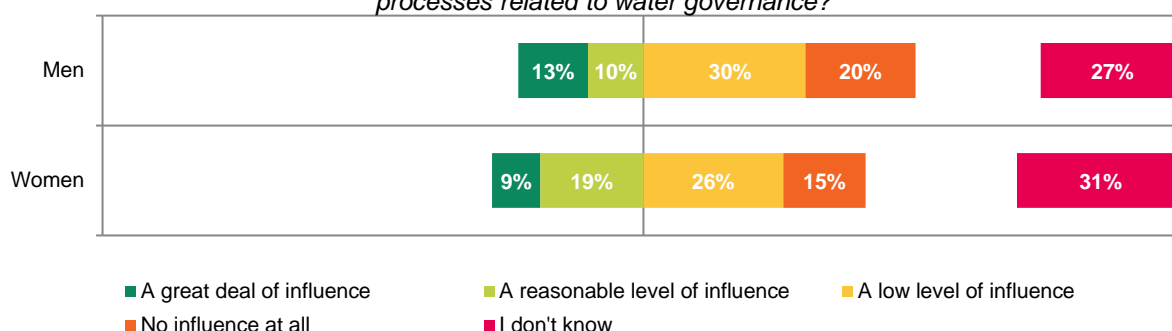
On average 10% of respondents indicate that they are extremely involved in decision-making processes related to water governance. This result starkly stands out against the 24% of respondents who are willing to be extremely involved. Around 18% of respondents report being not at all involved in decision-making processes related to water governance.

*How involved do you feel in the decision-making processes related to water governance, and how much would you like to be involved?*



Participation in water governance is only meaningful when respondents also feel they actually have influence in decision-making. On average 28% of women argue they have a reasonable to great deal of influence, compared to 23% of men. Furthermore, around 30% of respondents are unsure about their level of influence. As only a third of the respondents trust CBOs, it is not surprising that around a quarter feels that they have influence in community level decision-making.

*How much influence do you feel you have in community level decision-making processes related to water governance?*



Only 8% of respondents report knowing Civil Society Network (CSN) in their community that discusses transboundary water issues. A CSN in this context means e.g. the Indo Nepal Joint Action Forum (INJAF)<sup>6</sup>, which is a loose network of Civil Society Organizations (CSOs). Among these respondents, 61% feel the CSN has fair capacity in working on these issues. Furthermore, only a few respondents (8%) are part of a group that discusses transboundary water issues. The respondents that are part of a water governance group most frequently feel that their group has fair capacity (47%).

**ONLY 8% OF RESPONDENTS**  
are part of a **group** that discusses  
**transboundary water issues**



On average 49% of respondents think their local government has not allocated budget for transboundary water issues; 43% do not know. When asking respondents about their local government's capacity to discuss transboundary water issues, 40% feel that it has poor capacity. Only 6% think their local government has good or very good capacity. Therefore, there is room for improvement in the functioning of the local government regarding transboundary water issues. The project needs to collaborate with local governments to increase their budget and capacity regarding trans boundary issues.

<sup>6</sup> For details see <http://indonepal.net/>

Lastly, 52% of respondents state that their local government does not have their own platform to discuss transboundary water issues with stakeholders; the second-largest group of respondents, 42% of the total, do not know whether a platform exists or not. These findings indicate that platforms should be made more widely known for community members, which also increases accessibility of these platforms.

### 5.3 AWARENESS OF ALL STAKEHOLDERS THAT WATER RIGHTS ARE SHARED WITH COMMUNITIES

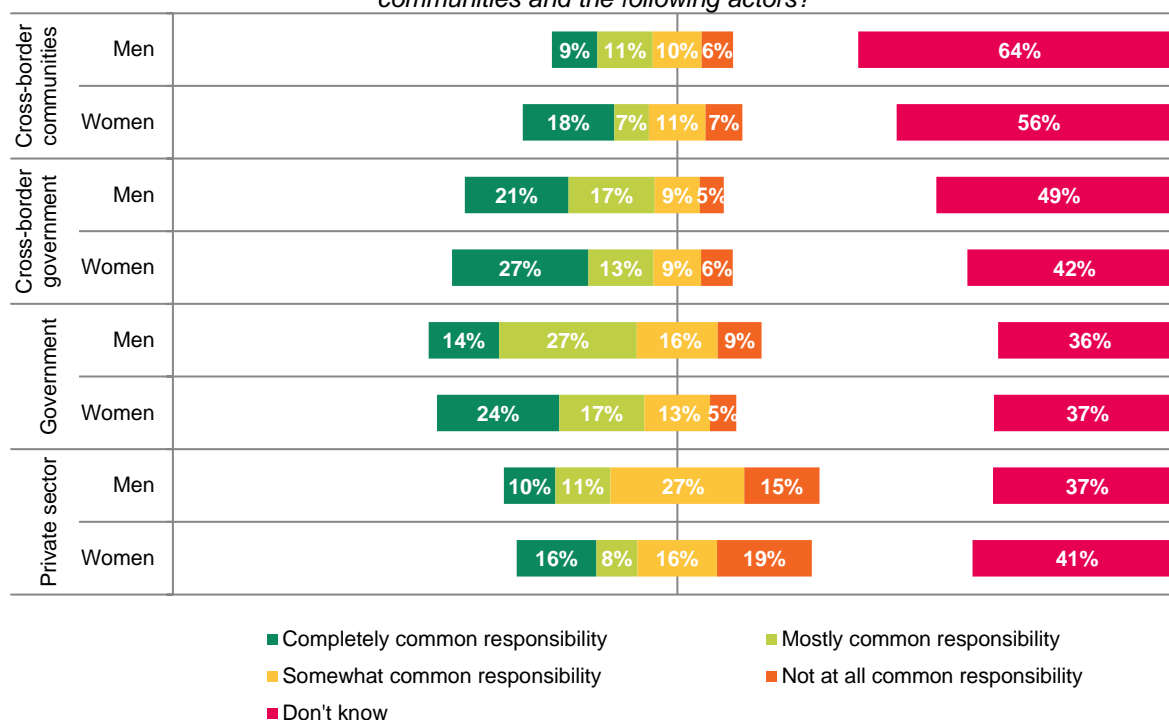
Sustainable water governance starts with the recognition by all stakeholders that rivers are shared. We have asked respondents to what extent they think that river basins are shared with them and various actors. Interesting is the fact that for all these actors on average (more than) 37% of respondents did not know whether this is the case. Furthermore, from these actors the (cross-border) government is recognized as having a common interest in the river most often. The answers of women and men differ for the common interest with the government, and the private sector.

*To what extent do you feel that river basins are a common interest of communities and the following actors?*



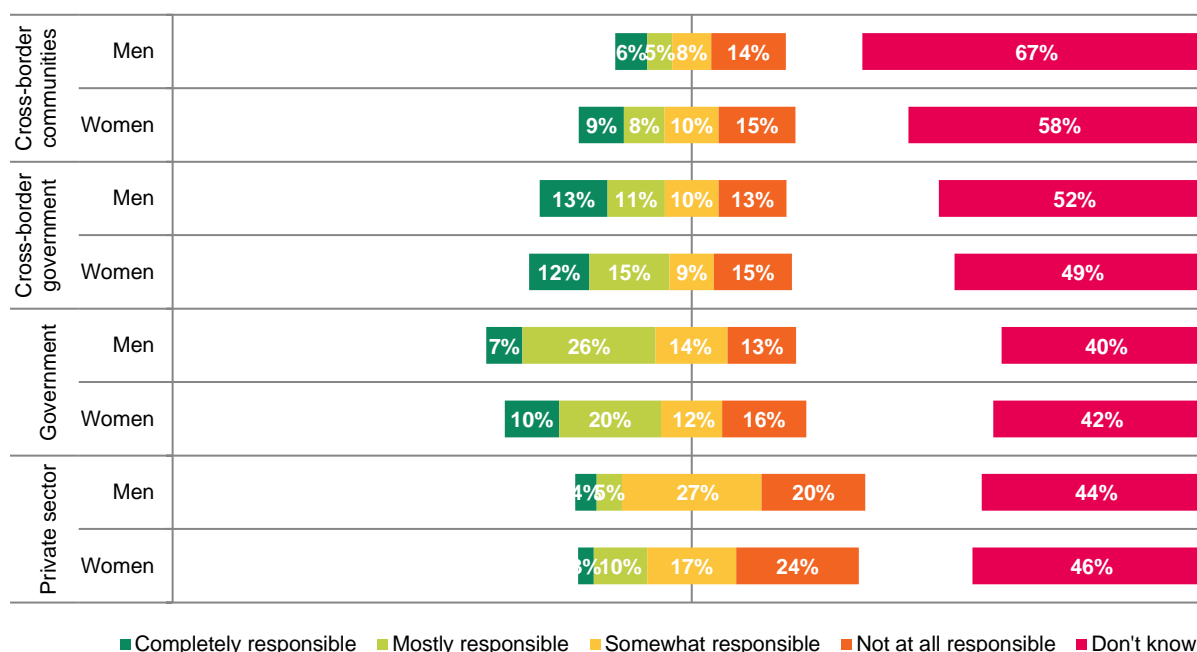
In terms of common responsibility, a similar figure emerges. On average (more than) 37% of the respondents did not know to what extent they themselves and cross-border communities, the cross-border government, the government, and the private sector have a common responsibility in the river basins. The (cross-border) government is mentioned most often as having a common responsibility. The answers of women and men differ for the common interest with the government.

*To what extent do you feel that river basins are a common responsibility of communities and the following actors?*



We also asked respondents to what extent cross-border communities, the cross-border government, the government, and the private sector are responsibly dealing with river basins. On average (more than) 41% did not know. Respondents are mostly unsure about the responsible behaviour of the private sector. Furthermore, the government is recognized most often as responsibly dealing with river basins. This is followed by the cross-border government. The private sector was mentioned most often as dealing not at all responsible with river basins (on average 22%).

*To what extent do you feel that the following actors are responsibly dealing with river basins?*

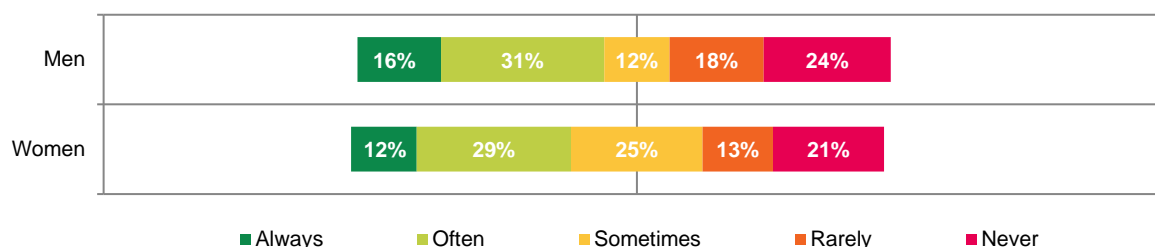


Households also have a role to play in mitigating water-related risks. When households take preventive measures for protecting their key productive and physical assets (like, land, animals, and houses),



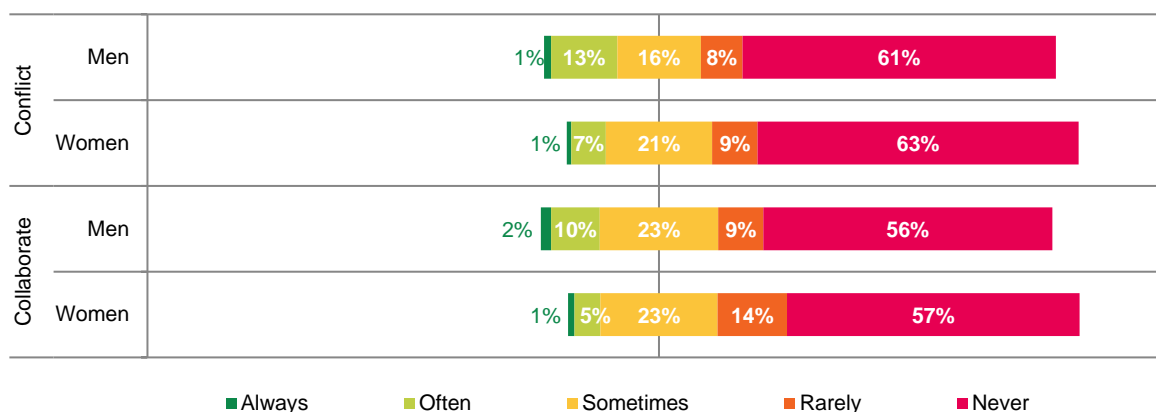
potential harm posed by water shocks can be reduced. Figures for the frequency of taking these prevention measures are quite dispersed: 14% of respondents mentioned that they always take prevention measures, while 22% never takes prevention measures. By district, only in Darchula and Dadeldhura do a majority of respondents take prevention measures “often” or “always”.

*How often do you take prevention measures for protection key productive and physical assets to water shocks?*



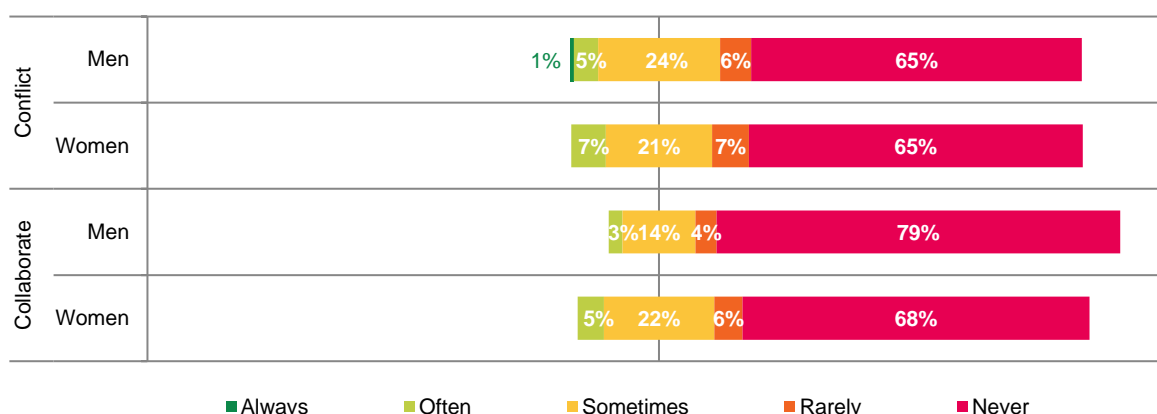
A majority of respondents (62%) indicate they never have *conflicts* with the local government on the use of river basins. Furthermore, on average 60% of respondents report that they never *collaborate* with the local government. Among respondents that do have at least occasional conflicts with the local government, half of them indicate they collaborate with the government sometimes. Moreover, 21% of these respondents indicate they never collaborate with the local government. These findings point to considerable room for improvement; even when community members have conflicts with the local government, cooperation which might contribute to solving these conflicts remains limited. Most of those respondents that never or rarely have conflicts with the local government (71%) also never or rarely collaborate (85%). This can be related to the low knowledge levels of community members regarding flood/drought issues in their community. Because of this lack of knowledge, they cannot judge the government’s plans and therefore simply agree on those plans.

*How often do you have conflicts / collaborate with your local government on the use of river basins?*



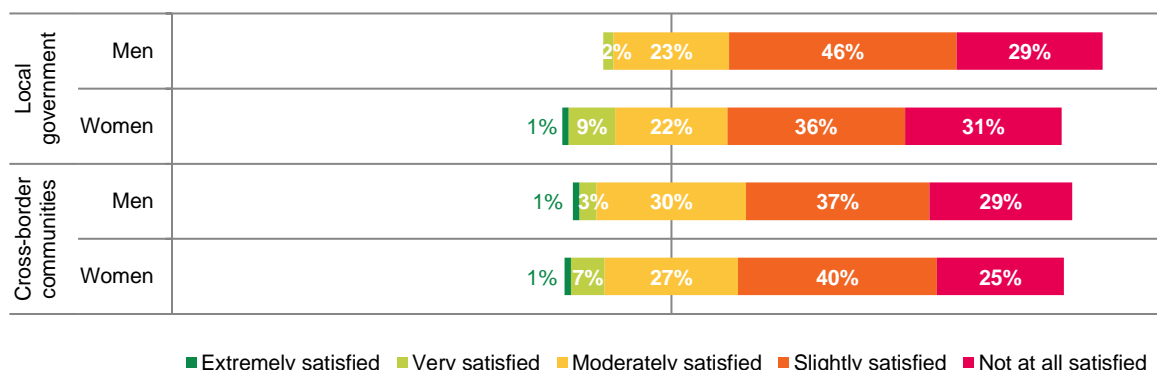
Furthermore, most respondents (65%) indicate they never have conflicts with cross-border communities on the use of river basins or river basin resources. On average 72% never collaborate with other cross-border communities. Similar patterns hold for collaboration with cross-border communities as for collaboration with the local government: 44% of those respondents that at least sometimes have conflicts also indicate they sometimes collaborate. However, 38% of these respondents indicate they never collaborate with cross-border communities. Here we see again room for improvement: by collaborating with cross-border communities conflicts might be resolved faster and/or conflicts might be prevented from happening at all. Most of those respondents that never or rarely have conflicts with cross-border communities (72%) also never or rarely collaborate (85%). It seems that communities start collaborating after they experience a conflict.

*How often do you have conflicts / collaborate with cross-border communities on the use of river basins?*



On average only a very small proportion of respondents (7%) is very or extremely satisfied with the collaboration with the local government or cross-border communities. Figures are only slightly more positive when we focus only on those respondents that do at least sometimes collaborate: 15% indicate that they are very or extremely satisfied with the collaboration with the local government, whereas this 19% are similarly satisfied with collaboration with cross-border communities. The previous graph showed that generally there is no collaboration. If there is collaboration, people are dissatisfied with the collaboration. These findings indicate that room for improvement remains in terms of improving both the quantity and quality of collaboration.

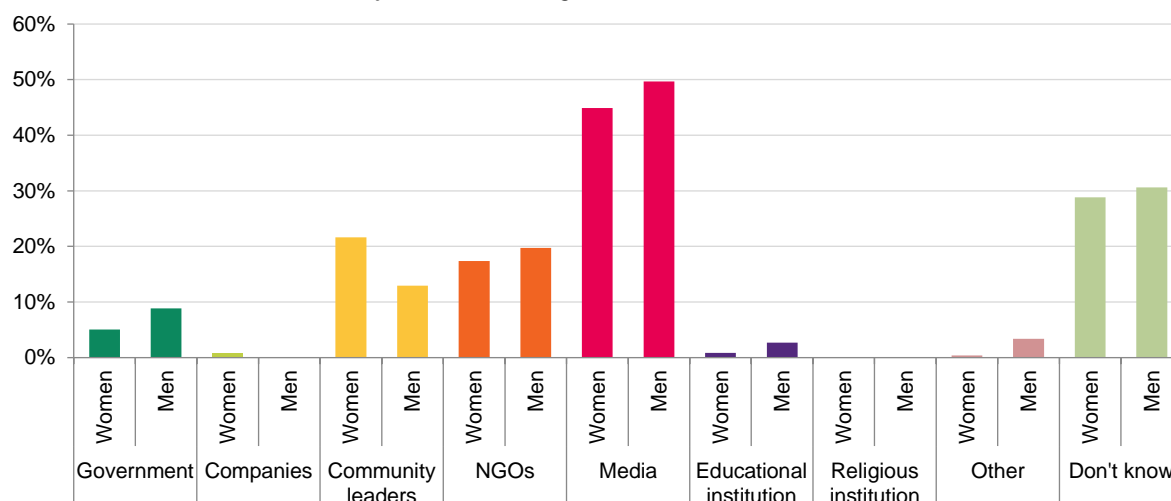
*How satisfied are you with the collaboration with the local government / cross-border communities on the use of river basins?*



## 5.4 ACTIVE AND EFFECTIVE INVOLVEMENT IN WATER GOVERNANCE

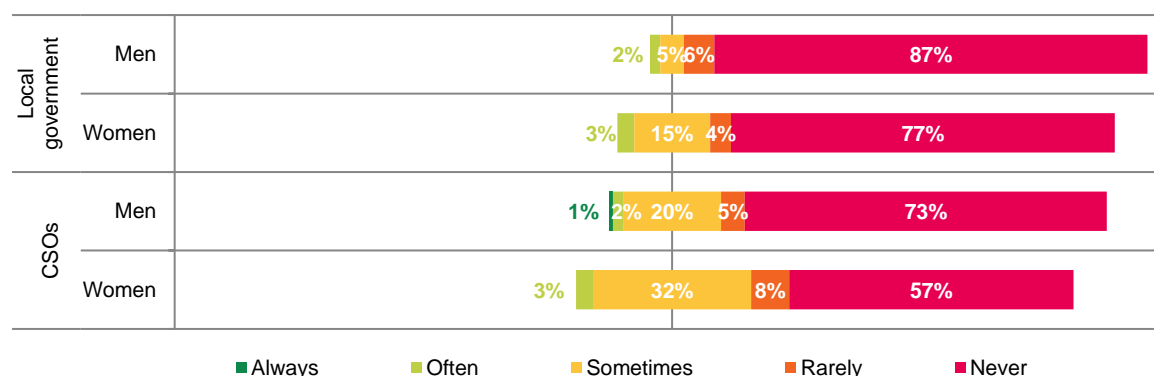
Knowing about water issues is essential for acting upon these issues. When asking respondents from what sources they get information on water issues, the media (47%) is most frequently mentioned. This is followed by NGOs and community leaders (both 18%). Interesting is the finding that 30% of respondents do not know where they get information from around water issues. This finding suggests that these respondents are either unaware of the source of their information, or that they do not get information around water issues at all. Most respondents (78%) say that it is difficult or very difficult to get information related to water in their community.

What are the sources your household gets information from around water issues?



Most male and female respondents indicate they are never consulted by either local government or CSOs around transboundary water issues. Overall women perceive to be more often consulted than men. Interesting is the fact that only very few women and men argue they are either always or often consulted. These findings point to considerable room for improvement in terms of inclusive decision-making around transboundary water issues.

How often are the following actors consulting you about transboundary water issues?



Early warning systems provide households with early warning information on risks e.g. related to floods and disasters. When knowing whether floods and disasters are forecasted to occur in the near future, households can timely respond and prepare for the adverse event. This should minimize the negative impact of floods and disasters. On average only 20% of respondents states they have access to this information although female respondents are significantly more likely to answer positively than male respondents (24% compared to 15%, respectively). This finding is in line with the percentage of respondents indicating having access to early warning information which prepares them for threats posed by flood: only 21% agrees or strongly agrees with this statement. Among districts, Darchula is the only one with a considerably higher share of respondents (38%) reporting access to early warning systems. The most mentioned source of early warning information is the media (47%). This is followed by community leaders (15%) and NGOs (14%). These mentioned sources are also the main sources which provide households with information about water issues in general (see section 6.5).

## 24% OF WOMEN AND 15% OF MEN

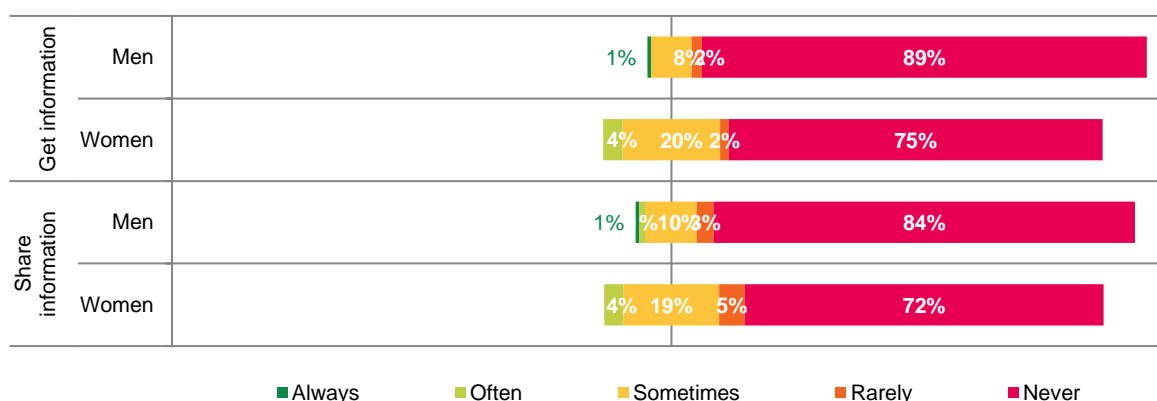
state they have access to information through **early warning systems** on floods and disasters



From the 20% of respondents that receive early warning information (EWI), 54% indicate that they receive this information on time only occasionally and/or sometimes while 19% say that they never receive early warning information on time. These findings point to considerable room for improvement in terms of actually making these warning systems *early*.

Furthermore, most respondents never get or share Early Warning Information on floods and/or disasters with *cross-border communities* (80% and 77% respectively). Respondents indicating that they at least sometimes collaborate with cross-border communities are more positive in terms of getting and sharing EWI: 52% of them indicate that they get EWI from cross-border communities sometimes; 45% of them also share EWI with cross-border communities sometimes. Still around 35% of these respondents never collaborate with cross-border communities in terms of EWI.

*How often do you get/share Early Warning Information on floods and/or disasters with cross-border communities?*



Part of active and effective involvement in water governance is standing up for one's rights related to water. Therefore, respondents are asked several questions about their ability to lodge complaints about water governance, and whether they feel something is done with their input. When households face problems in water governance, they mostly raise their concerns with local government and/or local authorities (56%); community groups are mentioned 17% of the time. On average 26% of respondents do not know who they would complain to if they face problems. Slightly more than half of all respondents (57%) feel they are capable or very capable of making a complaint about water governance. When asking to what extent respondents feel confident that their complaints will be heard, many state they are neither confident nor unconfident (43%). A similar proportion feels uncertain about how confident they are that their community's concerns and proposals will be heard. On average women are more confident than men that their complaints will be heard.

## MORE THAN HALF OF RESPONDENTS

feels able to **complain** about water governance



They mostly complain to the **local government** and/or **local authorities**



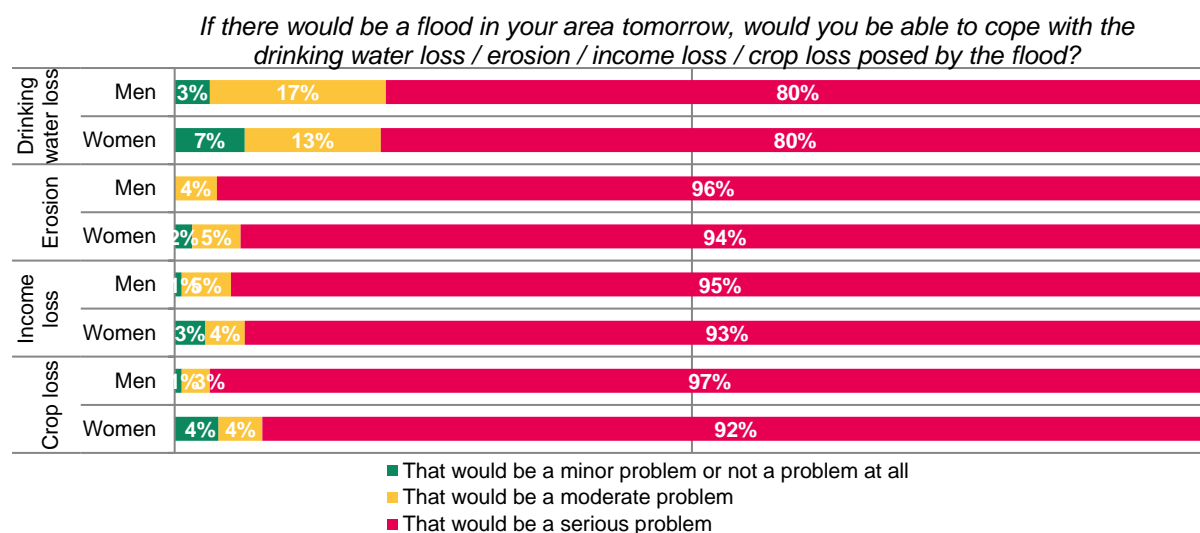
Participation in conflict resolution and/or grievance mechanisms indicate participation levels of community members in water governance. Only very few respondents (7%) indicate that they participate in these mechanisms often or always. 40% never participate whereas 40% participate sometimes.

Although 99% of respondents experience barriers that prevent them from using water resources, 30% never has experienced a removal of any of these barriers. 26% of respondents experiences a removal of these barriers often. An example of a barrier is a political one: India's Central Armed Police Forces (i.e. Sashastra Seema Bal (SSB)) tries to limit the activities of communities in Nepal, while the Nepalese government is not able to protect the rights of community members. Another example of a barrier is the fact that the Nepalese government has not developed any specific plan to use river basin resources. Furthermore, the fact that the government might have limited knowledge and understanding about the needs of communities could also be considered as a barrier.

## 5.5 RESILIENT TO GRADUAL CHANGES AND SUDDEN SHOCKS IN WATER SYSTEM

The likelihood of a river bursting its banks and flooding is influenced by context-specific such as the amount of vegetation, the steepness of the river valley, and the presence of heavy rains (i.e. monsoon rains) and/or considerable snow and glacier melts. Often, little can be done to influence the prevalence of flooding although households can take steps to increase their preparedness and resilience to flooding and other water-related disasters. In this section we explore to what extent households are having absorbing capacities to deal with floods. In section 7.2 we explore to what extent households have adaptive capacities to deal with floods.

Households are considered to be resilient to the negative impacts of floods when they are able to cope with the drinking water loss, erosion, income loss, and crop loss posed by the flood. We asked respondents to state whether coping with each of these impacts would be a problem for them. Even though not many respondents experienced flooding in their community in the past five years, on average over 90% of respondents reported that this flooding would pose a serious problem for them, especially regarding erosion, income loss, and crop loss caused by the flood. Otherwise 80% say coping with drinking water loss would be a serious problem. These findings suggest that there is much room for improvement in terms of the resilience of households to floods.

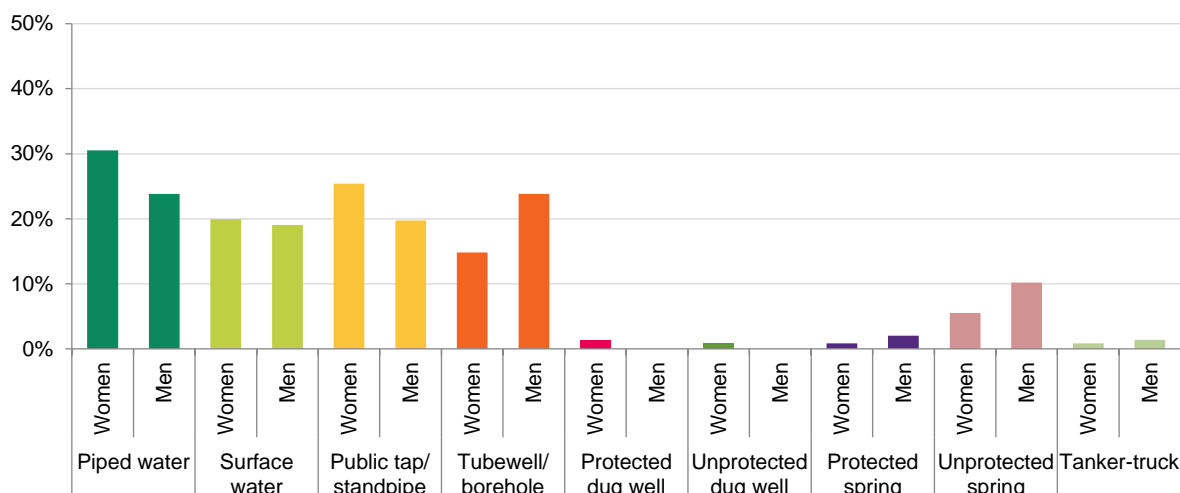


## 5.6 ACCESS AND CONTROL OVER WATER RESOURCES

Some households have access to water for drinking, cooking, and washing through piped water (28%) or public tap water (23%). Also surface water (20%) and tube wells and/or boreholes (18%) are frequently mentioned main water sources. By district, piped water is most prevalent in Darchula (primary source for 42% of respondents), surface water is most used in Baitadi (primary source for 36% of respondents), public taps most common in Dadeldhura (for 75% of respondents) and tube wells most common in Kanchanpur (by 72% of respondents). When water is not available on the premises, it takes on average 11 minutes to go to the main water source, get water, and come back. Most of the time it is adult women who fetch water for the household (75%).

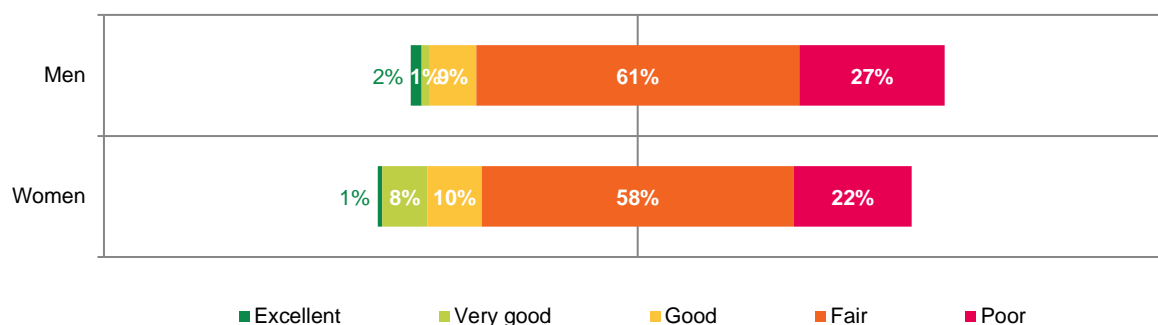


*What is the main source of water (drinking, cooking & washing) for members of your household?*



Most respondents mention having fair (59%) or poor (24%) quality drinking water from the principal source. Very few mention having good, very good or excellent quality water from the principal source. However, only 44% of men and 28% of women mention treating water to make it safer to drink. The most frequently used methods for treating water are boiling (53%) and letting it stand and settle (39%).

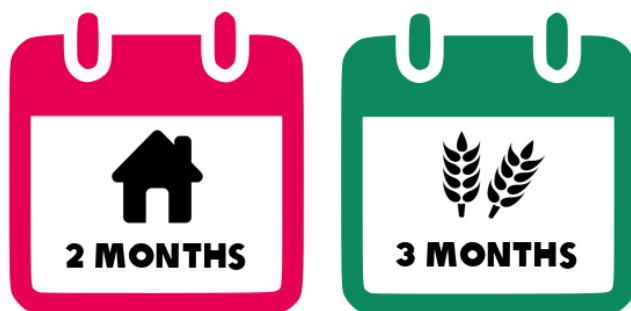
*What is the quality of drinking water from the principal source?*



Water is essential for every form of life, for all aspects of socio-economic development, and for the maintenance of healthy ecosystems (FAO, 2017). Community members could be affected by an absence or poor quality of water. The main focus of TROSA is on water use for agricultural purposes, as the flooding and drought issues impact them in their agricultural activities the most. However, flooding and drought also impacts the access and quality of drinking water, although to a smaller extent and we therefore also report on those questions. Access to water in sufficient quantity, therefore, is necessary for meeting personal and household needs, including facilitating agriculture.

On average, respondents have 2 months insufficient water for domestic purposes and 3,5 months insufficient water for agricultural purposes. On average 38% of respondents mention that the availability of water for drinking, cooking, and washing (i.e. domestic purposes) was sufficient throughout the whole past year. Only 19% indicated that water was available for agriculture for the entire year. This can be linked to the 23% of respondents that mentioned experiencing and being negatively affected by droughts (i.e. 98% of those respondents experiencing drought also mention having insufficient water for agriculture). Most of those respondents with insufficient water for agriculture do mention agriculture as income source (80%). Furthermore, 40% of them is dependent on the river for agriculture. Respondents that experience insufficient water for domestic purposes on average mention 2 months of the year where this was the case. For agricultural water users the average deficiency lasted 3 months. Months where water scarcity is highest are March, April, and May.

*How many months of the year water for domestic / agricultural purposes was not sufficient?*



# 6 WOMEN'S PARTICIPATION IN TRANS- BOUNDARY WATER GOVERNANCE

## 6.1 AWARENESS OF IMPORTANCE OF WOMEN'S MEANINGFUL PARTICIPATION

Access and control over water resources plays an essential role in communities living around river basins. Water access and control comes with power, and power among different community members is unevenly distributed. Especially women are not able to benefit in the same way from water as men do. Improving opportunities for women to meaningful participate in decision-making around water access and control is therefore vital in women's empowerment. Further, women are the primary users of water as they use it to feed their families as well as work the land (Ray, 2007).

When both women and men recognize that women and men have different needs when it comes to water and are impacted differently regarding access and control over water resources, we assume that this contributes to increased participation and influence of women in water management. Therefore, we asked respondents to react on several statements related to women and men in the water related context.

Nearly all respondents (99%) agree that women and men have different needs when it comes to the use of water (the other 1% does not know). Furthermore, most respondents agree that women are affected differently than men by both the absence and presence of floods (99% and 93%) respectively. Except for the statement about the presence of floods, no differences are found between women and men. It is interesting to note that nearly all respondents are aware of the fact that women have different needs than men and that women are affected differently than men by floods. Referring to the theory of change underlying the TROSA project, this is essential for changing norms in the community related to the involvement of women in decision-making.

### 99% OF BOTH MEN AND WOMEN

state that women have **different needs** than men when it comes to the use of water

### 99% OF BOTH MEN AND WOMEN

state that women are **affected differently** than men by **absence** of water



### 88% OF MEN AND 96% OF WOMEN

state that women are **affected differently** than men by **presence** of floods

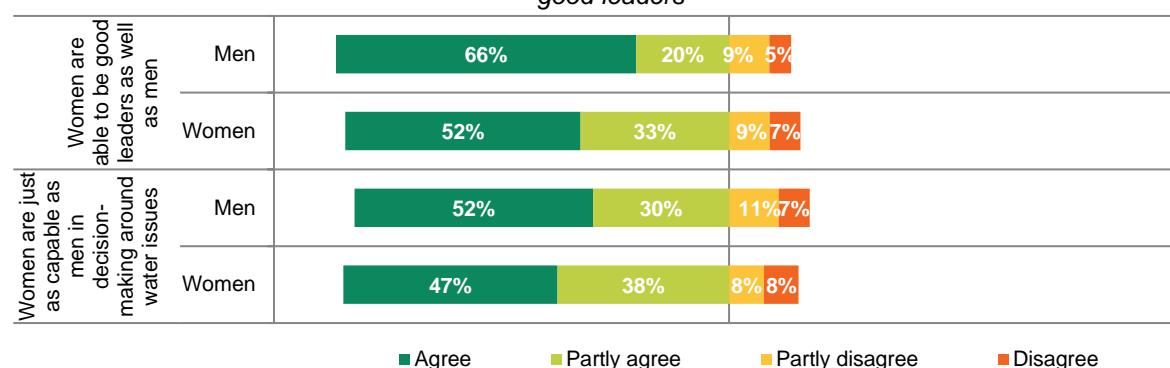
Women have several needs related to water. On average 98% of respondents mention the need for water for domestic purposes (more women than men do). Water for livestock and agriculture is mentioned 83% of the time, which is the same for water for hygiene (83%). Men more often than women report women's need of water for livestock and agriculture (88% compared to 79%). Interestingly water for either transport, fishing, or logs is mentioned on average no more than 2% of the time. For the other

needs no significant differences are found between the answers of male and female respondents, indicating that both women and men have quite similar views on what women's needs are related to water.

## 6.2 ATTITUDES TOWARDS WOMEN'S PARTICIPATION IN DECISION-MAKING

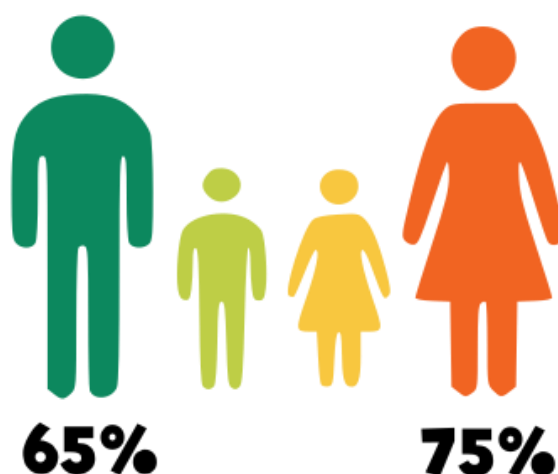
Positive attitudes towards women's participation in decision-making are needed to increase participation and influence of women. On average most respondents agree that women can be as good leaders as men (57%), and that women are just as capable as men in decision-making around water issues (49%). Men slightly more often than women agree that women are good leaders. By district, respondents in Kanchanpur were most likely to agree with both statements whereas respondents in Darchula were most likely to disagree.

*Statements about women being capable in decision-making and women being good leaders*



In order to participate in water governance, women often lack time as they have to take care of their children. To increase participation rates of women in water governance, men also need to take care of the children. We found that most respondents (71%) spend time on child care while doing other activities at the same time. The percentage is higher for female than for male respondents (75% compared to 65%). However, the average number of hours spend on child care does not differ by gender among respondents who are involved in child care: it equals 5 hours for both women and men. The amount of time spend on child care has increased for on average 28% of respondents since 2015. For 37% of respondents it has stayed the same. No differences between women and men are found.

*Percentage of women and men spending time on child care while doing other things at the same time.*

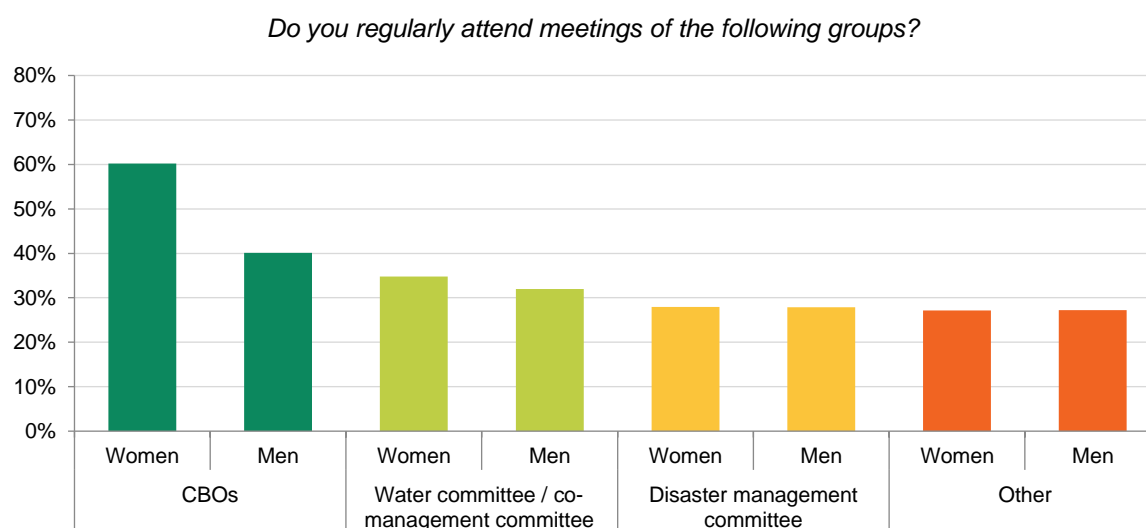


We asked respondents to react on two statements related to participation of women in decision-making. On average 70% of respondents agree or partly agree that they know how to help women in their community get involved in decision-making around water issues. Only 1% of respondents stated that they do not want to help. Men are more positive than women regarding this statement (76% vs 66%). Furthermore, 81% suggest that they either agree or partly agree that they are willing to support women in their community to get involved in decision-making around water issues. Only 2% do not want to help. Again, men are more positive than women (85% vs 79%).

### 6.3 BEHAVIOUR RESULTING IN MORE WOMEN'S INVOLVEMENT IN DECISION-MAKING

The TROSA project aims to increase women's involvement in meaningful participation in decision-making, which entails that women are actually involved in decision-making and are able to express their personal ideas and interests.

Community-Based Organizations (CBOs) are the decision-making institutions that women and men in the target area interact with most frequently; 60% of female respondents regularly attend CBO meetings compared to only 40% of male respondents. Although in general trust levels are quite low (see section 5.1), CBOs are among those institutions that are most often trusted. By district, regular CBO meeting attendance is most common in Baitadi (73% attend regularly) and Dadeldhura (59%) do and much lower in the other two districts. For other types of groups, on average 30% of respondents regularly attend meetings.



Participation in groups is only meaningful if respondents are also involved in making important decisions. More than half of respondents (54%) mention they are not at all involved in the decision-making in CBOs. This number is slightly lower for the other groups (35%, 36%, and 29% respectively). The percentage of respondents that say they are involved to a large extent in the decision-making is highest for 'other' groups (38%).

What barriers exist to participation in CBOs and other groups? Respondents most frequently mention lacking the knowledge to participate (on average 38%). The second most important reason for not attending meetings of the abovementioned groups is not being interested enough to participate (on average 24%). However, the majority of respondents who do not attend meetings of the abovementioned groups also indicate lacking knowledge in flood and drought issues (91% and 89% respectively). Then again, the extent of knowledge in the sample at large is generally very low (see section 6.1). To lift the barriers, the project needs to increase knowledge levels among respondents, so they feel more confident to participate in CBOs and other groups. Secondly, the project needs to raise awareness among respondents what benefits respondents could achieve when participating in CBOs and other groups.

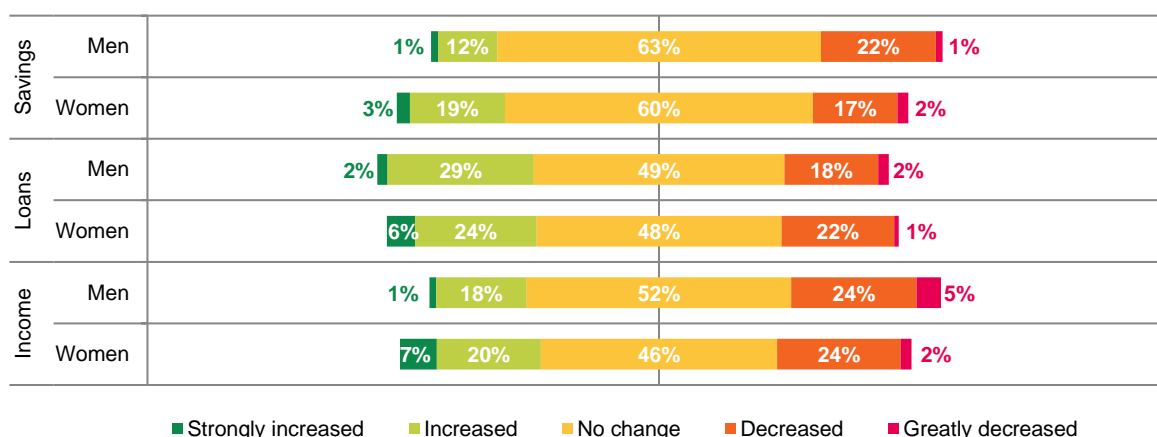
## 7 REDUCED POVERTY AND INCREASED

## RESILIENCE OF COMMUNITIES

### 7.1 POVERTY

The overall aim of the TROSA project is reduced poverty for the target population. As poverty is multi-dimensional, we track changes in several variables (i.e. not just income). Most respondents report that over the past 12 months no change can be seen in the total value of combined savings (61%), loans (48%), and income (48%) of all household members. On average 18%, 30%, and 24% of all households saw (strong) increases in the mentioned categories respectively. Furthermore, on average only a maximum of 3% of households experienced a great decrease in total value of any of these categories.

*In the past 12 months, has there been a change in the total value of the combined savings / loans / income of all members in your household?*

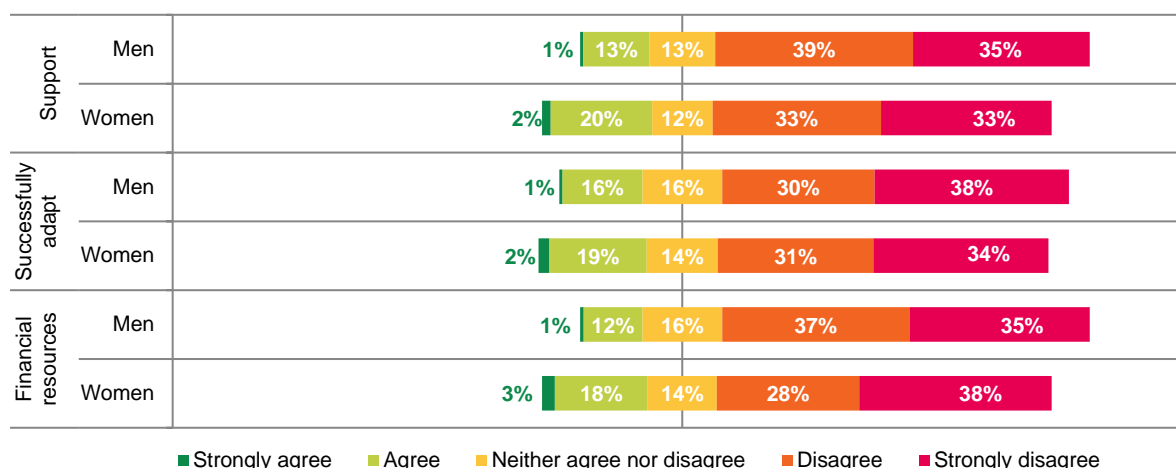


### 7.2 RESILIENCE

We envision that TROSA's project activities will increase the resilience of river basin community members to climate-related extreme events. In section 5.5 we described the what extent respondents have absorbing capacities to deal with shocks that happen to them. In this section we take one step further and explore to what extent respondents have adaptive capacities to deal with shocks. When testing for this, we focus on the extreme weather events like heavy flooding (which was the most often mentioned shock by which households were negatively affected).

Therefore, several questions have been asked related to heavy flooding. If heavy flooding was to occur tomorrow, most households (69%) would not be able to draw on support to ensure they would recover from threats posed by floods. Furthermore, most households (68%) would not have access to sufficient financial resources. If the rate and intensity of flooding was to increase significantly in the next years, most households (66%) not feel they would be able to successfully adapt to the changing threats posed by the flood. These percentages indicate that the majority of households say they do not have the adaptive and absorptive capacity to deal with extreme weather events like heavy flooding now and in future. However, between a quarter and one third of respondents either agree or neither agree nor disagree with the statement about preparedness for heavy flooding. Female respondents are more optimistic than male respondents about their ability to absorb and adapt to heavy flooding. The project needs to collaborate with communities to define what necessary actions need to be implemented to make them better able to deal with extreme weather events.

### Statements about heavy flooding



The following questions were used for the above graph:

1. **Support:** *If heavy flooding was to occur in my area tomorrow, my household would be able to draw on support to ensure that we recover from the threats posed by the floods.*
2. **Successfully adapt:** *If the rate and intensity of flooding was to increase significantly in the next 5 years, my household would have the ability to successfully adapt to the changing threats posed by the floods.*
3. **Financial resources:** *If heavy flooding was to occur in my area tomorrow, my household would have access to sufficient financial resources to ensure that we fully recover from the threats posed by the floods.*

On average 41% of respondents agree or strongly agree with the statement that lessons learned from dealing with floods in the past are crucial for successfully dealing with future floods. However, when disaggregating the data by district, only in Darchula and Dadeldhura are majorities positive on this statement. In Baitadi strong majorities either disagree or strongly disagree, and in Kanchanpur the opinions are dispersed. The project should seek to better understand what makes respondents in Darchula and Dadeldhura more positive on this front to see what lessons can be learned and shared with their neighbours in Baitadi and Kanchanpur.

In section 6.5 we presented the resilient levels of respondents regarding coping with crop loss, income loss, erosion, and drinking water loss. Over 90% of the respondents stated that they are not able to cope with these losses. This is in line with the findings that more respondents report lower resilient levels regarding support, adaptation, and financial resources. As described in section 4.1, we expect to see absorptive capacities (outcome level) come before adaptive capacities (impact level).



## 8 RECOMMENDATIONS

In this final section we present several recommendations based on the findings of the baseline study for how the project can maximize its impact in the years ahead. The main conclusions of this report are presented in the executive summary and are not repeated here. We have specified the following eight recommendations for the project activities and arranged them per outcome.

### **Socio-economic overview:**

1. Relatively small shares of the respondents experience shocks like flooding, heavy rain, and drought. As these were defined as main shocks in the project description, the project should investigate which needs are really most pressing for respondents and act upon those.

### **Perceptions on institutions:**

2. Feeling that political and social change is possible and that respondents can play a part in bringing about this change is critical for meaningful participation of respondents in decision-making around water. Reaching out to citizens to help demystify the political process and show them how they can meaningfully participate in decision-making at the local level is therefore crucial.

### **Communities' participation in trans-boundary water governance:**

3. As many water processes have a regional, trans-boundary character, it is essential that communities are aware of this. Currently, awareness of the shared nature of trans-boundary rivers is low. Increasing knowledge levels of respondents regarding interest and responsibility of river basins should be incorporated in the project activities.
4. Knowledge levels of respondents about decision-making around flood and drought issues in their community are also low. Increasing knowledge about decision-making processes and how citizens can get involved should be incorporated in the project activities.
5. Respondents want to be more involved in decision-making processes around water than they currently are. Communities, and especially women, need support to enable them to participate in decision-making processes around water.
6. Only one-fifth of the respondents have access to early warning systems. Increased access to early warning systems is needed so respondents can anticipate floods and take steps to protect themselves, their households and their livelihoods.

### **Women's participation in trans-boundary water governance:**

7. Respondents report high levels of awareness that women and men have different needs regarding the use of water. In addition, women are perceived as good leaders as well as men. Although the attendance rate of participating in CBO meetings is higher for women than for men, still around half of them are not involved in the decision-making process. The project could therefore focus on involving and communicating with women and men to understand which factors hinder women's participation in water governance decision-making, and subsequently, how these factors can be tackled to increase women's meaningful participation.

### **Reduced poverty and increased resilience of communities:**

8. Resilience levels of respondents are quite low. Involve and communicate with communities is needed to define what necessary actions need to be implemented to make them better able to deal with extreme weather events.

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