

REACH Khulna Household Survey 2018

Methods Manual

1. Sampling strategy

The REACH Khulna Household Survey was conducted between December 2017 and February 2018 to collect quantitative data on various indicators of multidimensional poverty, the state of drinking water services and vulnerability to water-related hazards. The survey was carried out in Polder 29, one of the 139 polders (embanked islands) in southwestern coastal Bangladesh. Polder 29 has a land area of 80 km² and covers five unions (Tier-4 administrative boundary) across Dumuria and Batiaghata upazilas (sub-districts) of Khulna district in south-western coastal Bangladesh. The polder is further sub-divided into 77 mouzas (Tier-5 administrative boundary), with a total population of 58,000 and 17,000 households¹. Data from the 2011 National census was used to categorise the 77 mouzas in Polder 29 into low, moderate and high-risk profiles, based on selected water security and poverty indicators including drinking water stress, sanitation facilities, waterlogging, erosion, soil salinity, cropping intensity, and asset index (see Appendix A). Of the 77 mouzas, some were excluded due to lack of settlements.

The survey was administered to 2103 households in two phases. Phase 1 involved 10% of the total number of households in the high risk mouzas and 5% in the low/ moderate risk mouzas, resulting in a total of 978 households across 61 mouzas. Phase 2 incorporated an additional 20% households for the 16 high risk mouzas (Table 1).

Table 1. Summary of the two phases of the household survey

Survey Phase	No. of mouzas	No. of households	Risk profile of mouzas
Phase 1 - Focusing on communities with different risk profiles, ensuring spatial representation across the polder	61 of 77 mouzas in the polder	978 (10% of total HHs in high risk mouzas and 5% HHs in low/ moderate risk mouzas)	High – 12 Moderate – 19 Low - 30
Phase 2 - Focusing on communities with relatively higher risk profiles or diverse water services - Revision of questionnaire (if needed), based on results from phase 1.	16 of 61 mouzas included in phase 1	1125 (20% of total HHs in each selected mouza)	High – 9 Moderate – 6 Low - 1

As we did not have a sampling frame (that is, the list of all households within the mouzas), it was difficult to follow strict probabilistic sampling procedures in selecting the households. Instead a

¹ BBS (2011). Preliminary report on Household Income and Expenditure Survey 2010. Dhaka, Bangladesh Bureau of Statistics, Ministry of Planning.

‘random route/walk sampling’ technique was used, in which the enumerator was assigned a starting point in each mouza and asked to select households at certain intervals, which was determined by the total number of households in the mouza, the sample size per mouza, and the settlement patterns. Enumerators were instructed to select households of different wealth categories, often identified by the housing structure. They were also asked not to concentrate only on easily accessible households, such as those beside the roads, but to cover all areas within the mouza. Table 2 below shows the number of households surveyed in each mouza during the two phases and Figure 1 illustrates the locations of these households. During the survey, the sample size for some mouzas was revised, as the census data often did not match the settlement patterns on the ground. For example, only a small part of Arazi Sajiara mouza in Dumuria Union was located within Polder 29; hence, the sample size was reduced from 41 to 7 and the remaining households were allocated to other mouzas, especially the ones with missing census data.

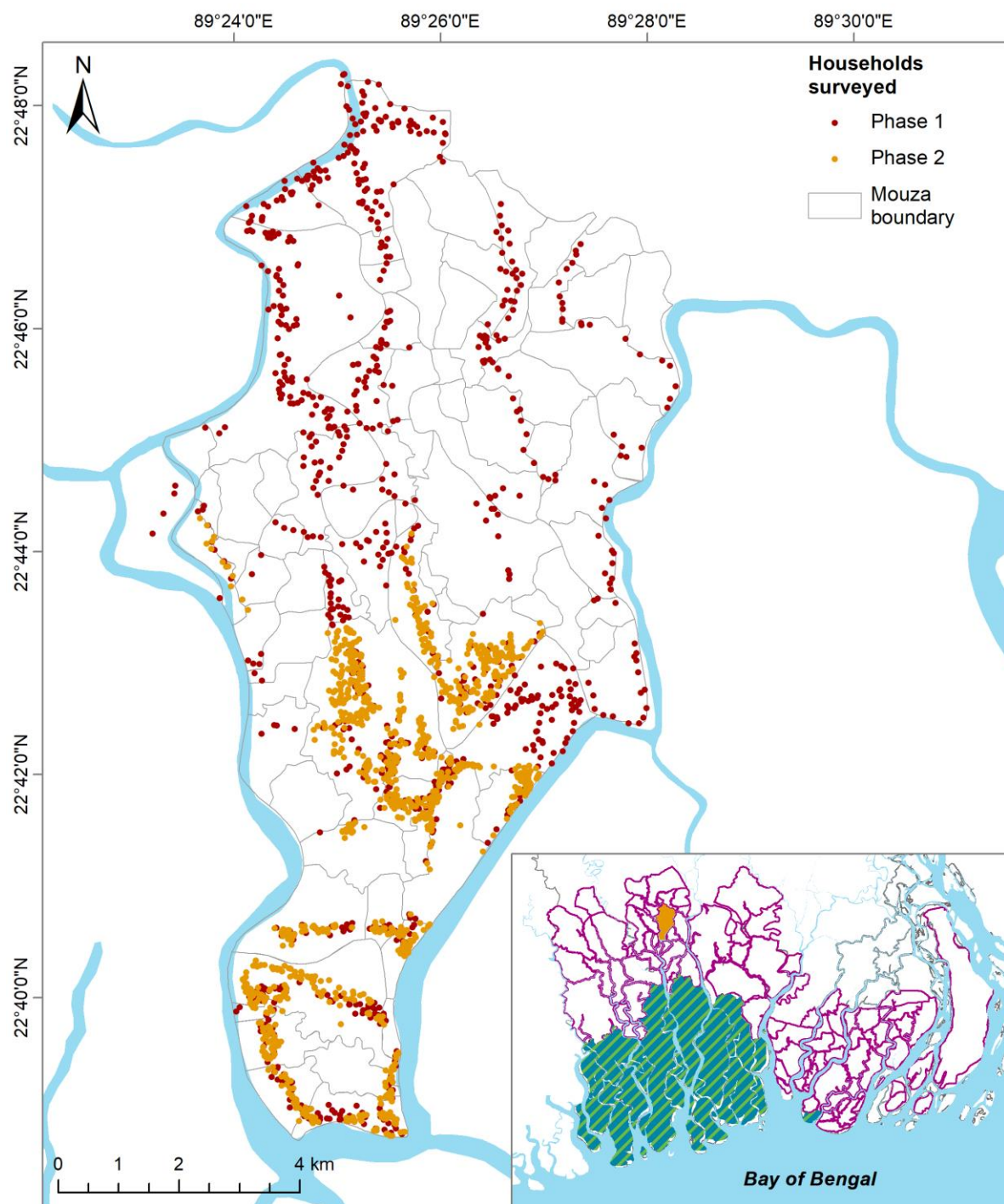


Figure 1. Map of Polder 29 showing the households surveyed in Phase 1 and 2

Table 2. List of mouzas and sample size

Mouza	Risk profile	Total HHs	Phase 1 (5% of low/moderate risk and 10% of high risk)	Phase 2 (20%)	Total sample
Bhandarpara Union					
Bakultala	Moderate	92	5		5
Banda	Low	476	17		17
Banda Raghunatpur	Low	7			0
Barabhandh	Low				0
Bhandar Para	Low	462	23		23
Britti Kanaidanga	Low	3			0
Chak Angarkata	Low				0
Chak Chatraghona	Low				0
Chak Sonadanga	Low	21	1		1
Dakshin Mahal	Low	84	4		4
Dhanibunia	Moderate	198	11		11
Ghona	Low	196	18		18
Ghona Taltala	Low	153			0
Hajibunia	Low	201	10		10
Hula	Low		1		1
Jabra	Low	96	5		5
Kharibunia	Low	161	8		8
Kusarhula	Low	50	3		3
Lahaidanda	Low	182	10		10
Maikhali	Low	126	7		7
Nalghona	Low				0
Orabunia	Low	86	4		4
Pakhirbadal	Low				0
Perikhali	Low	92	5		5
Podekhali	Moderate	6			0
Purba Andhar Manik	Low	9			0
Purba Kanaidanga	Low	11			0
Purba Kanchan Nagar	Moderate	40	3		3
Rajibpur	Low	94	5		5
Rajnagar	Low	87	4		4
Sitarampur	Low				0
Talian	Low	27	1		1
Taltala	Moderate	6	8		8
Telikhali	Moderate	283	14		14
Ula	Low	823	41		41
Dumuria Union					
Arazi Sajiara	Low	826	7		7
Dumuria	Low	1867	94		94
Sahas Union					
Baghdari	High	74	7		7
Bhagabatipur	Low				0
Char Kapalidanga	Low		1		1
Charchari	Low	99	5		5
Chhota Banda	Low	25	2		2
Dighalia	High	66	7	13	20
Gajendrapur	Moderate	726	35	153	188
Golaimari	High	13	2		2
Kagaji Para	Low	204	10		10

Kapalidanga	Moderate	306	18	62	80
Kazir Hula	Moderate	60	3		3
Kharsanda	Moderate	245	12		12
Khutakhali	Moderate	8			0
Kukhia	Low	358	18		18
Lashmipur	Low				0
Latabunia	Moderate	104	5		5
Noakhati	Moderate	565	28		28
Sahas	Low	1617	82		82
Tengramari	Low				0
Sarappur Union					
Akra	High	193	19	39	58
Asannagar	Moderate	74	4		4
Bahir Akra	High	93	9	20	29
Bazeafti Bhulbaria	Low	16	1		1
Bhulbaria	Moderate	277	14	58	72
Britti Bhulbaria	High	373	37	79	116
Chandgarh	High	195	20	42	62
Jaliakhali	High	91	10	18	28
Jhaltala	Moderate	67	3		3
Kalikapur	Low	1317	67	275	342
Kalikapur Badhurghachha	Low		1		1
Keakhali	Low	64	4		4
Ratankhali	Moderate	68	3	16	19
Sarappur	Moderate	1047	69		69
Taiabpur	Moderate	243	12	58	70
Surkhali Union					
Bara Aria	High	426	43	91	134
Kodla	High	195	20	41	61
Mathbari	High	52	5		5
Ruhitmara	Moderate	31	6		6
Sambhunagar	Moderate	105	19	21	40
Sundar Mahal	High	659	68	139	207
Total		16821	978	1125	2103

Logistics and Quality control

The survey was administered in an electronic form developed in ONA (<https://ona.io/>), a Mobile Survey Platform that provided a hosted server for uploading, editing, viewing and submitting forms. The questionnaire was first programmed in English and then translated to Bangla. A total of 15 male and female enumerators were recruited and trained over a five-day period. The training involved two pilot exercises carried out in two separate villages with differential risk profiles. Each enumerator was asked to survey one household in each village, so that they understood the various issues they could face during the survey. The survey commenced in mid-December 2017 and was completed by early February 2018. The enumerators were supervised by two field officers who reported to the researchers on a regular basis. To ensure quality control, the data was accessed remotely from the

server and checked daily by the researchers, who communicated with the field supervisors to settle any queries. In addition, the enumerators were asked to note down their comments separately at the end of each survey. At the end of each day, the enumerators shared the issues (if any) they faced with the field supervisors, who in turn kept a log of the discussion.

2. Questionnaire

The aim of the household survey was to collect quantitative data on various indicators of multidimensional poverty and water security risks, in terms of drinking/domestic water services and the impacts of water-related hazards on livelihoods and wellbeing. The household heads or their spouses were the target respondents; however, since the survey contained detailed questions on agricultural activities, the presence of male respondents proved to be necessary at times. The survey questionnaire (see Appendix B and C) comprised of four core sections (section 2 – 5), which were designed to aid comparison across the REACH observatories, and one observatory specific section (section 6) that addresses the specific research questions of the coastal observatory. In addition, there were introductory and concluding sections, leading to a total of seven sections.

Section 1 (Introduction and identifiers) contained the consent and confidentiality agreement, which were read out to all respondents before commencing the survey; and the identification information, which includes the enumerator ID, the names of the union and the mouza where the household is located, and the duration for which the household has been residing in that area. The GPS coordinates of the household was also included as part of this section, ensuring that the accuracy level was at least 20m. However, as this process required a few minutes, this question was moved to the end of the survey so that the respondent was not kept waiting.

Section 2 (Household demographics) collected basic demographic information on all household members, including questions on name, age, sex, relation to household head, education, and possession of personal mobile phone. While the total number of mobile phones possessed by the household is an important indicator of wealth, individual ownership reflects gender dimensions of resource use and control.

Section 3 (Water and Sanitation) comprised of five sub-sections: **3.1 Drinking water Source and Payments** - The respondent was first asked to mention all the sources of drinking water used by the household in the past one year. If more than one source was mentioned, separate sets of questions were asked about the main and the secondary sources of drinking water. These questions focused on the time taken for collection, the mode of transportation, the gender and age of the person(s) responsible for collection, any challenges faced in fetching water, the amount and frequency of

payments made (if any) and the reasons for using the secondary source (if applicable). If any type of tubewell (deep/shallow tubewell with handpump or motor pumps) was mentioned, the respondent was asked to specify who owned the tubewell and whether the tubewell was located. **3.2 Drinking water Intervention and maintenance** - This sub-section included questions on the types of drinking water interventions made by the government/development organisations in the past 5 years and whether the household has contributed any cash/ labour for this purpose. This is followed by questions on private investments made by the household for installing new water related infrastructure, such as new tubewells, pipes and motors to existing handpumps, and storage tanks. **3.3 Drinking water Quality** - Assessment of the water quality involved questions on the respondent's perception about the safety of their drinking water and whether the household treated the water in any way to make it safer to drink. **3.4 Water for cooking and domestic uses** - The respondent was then asked to mention all the sources of water used by the household for cooking, bathing and laundry/ dish washing in the past 1 year. **3.5 Sanitation and hygiene** - This sub-section focused on the types of toilet facilities used by adults and children of the household, whether the toilet was shared with other households, and the place and cleansing materials used for handwashing purposes. Questions on sharing toilet with other households were included to assess the extent of contamination and disease spreading, as well as the household's wealth status. If the respondent mentioned soap or other cleansing material, the enumerator asked him/her to show it for validation.

Section 4 (Poverty) assessed the households' wealth status through objective indicators such as possession of durable assets, land, and livestock, sources of energy for lighting and cooking, and building materials for roof, walls and floor, and through subjective perception of wellbeing at present and about five years prior to the survey. Previous experience in rural Bangladesh suggests that housing materials may not always reflect wealth adequately, and it is often necessary to judge the condition of the house as well. Hence, the enumerators were asked to take an image of the exterior of the house, such that the roof, wall and floor were clearly visible (section 7.1 of the questionnaire).

Section 5 (Priority Concerns) identified the general concerns related to the socio-economic development of the area, and the concerns related to water used for drinking/domestic needs and the natural environment. The respondents were first asked to rank the top three concerns that they think the government could help to solve. The enumerators were instructed to read out a few examples from the list if needed, but not mention anything regarding water. The purpose was to understand how people prioritised water security in relation to other development agendas. The respondents were then asked to rank the top three concerns (if any) regarding the water they drink and use for domestic needs, followed by concerns regarding the natural environment. For this section,

enumerators were instructed to use their judgment whether a response was a genuine concern or whether it was just mentioned for the sake of giving a response.

Section 6 (Livelihoods and water-related risks) comprised of five sub-sections: **6.1 Land ownership and agriculture** - This sub-section included questions on ownership of agricultural and homestead land, types of crops/fisheries cultivated, and the sources, methods and challenges related to irrigating crops in each land parcel in the three different seasons. A parcel is a contiguous piece of land with a single operator or owner. **6.2 Aquaculture and Livestock** – This involved aquaculture in homestead ponds for subsistence and/or sale, not shrimp/fish farming in agricultural land that were captured in section 6.1. The numbers of cows, goats and hens/ducks owned by the household were also recorded. **6.3 Income sources and gender division of labour** – Whether or not the household was involved in farming, the respondent was asked to mention all sources of income, both in cash and in-kind, for the household over the past 1 year. If fishing in rivers/canals or casual labour was mentioned, there were further questions on who conducted these activities and where. The respondent was also asked to state their current welfare situation based on their subjective judgment and how it compares to the situation about 5 years ago. **6.4 Water-related risks and impacts on livelihoods** – In this sub-section the respondent was asked to mention all the water related risks faced by the household in the past 5 years, followed by separate questions on the when the event occurred, what impacts it had on the household, and how the household coped with the event. Six types of water-related risks were included, namely, waterlogging/drainage congestion, embankment breaching/ erosion, increased salinity, tidal flooding, cyclones/ storms and rainfall variability. While some of these risks are likely to be concurrent, for example, breaching of the embankment can lead to flooding and subsequent increase in salinity, the questions on time, impact and coping were repeated for each event. **6.5 Water management group** – The purpose of this sub-section was to identify the effectiveness of water management groups in controlling the sluice gates as per the needs of the community. The respondents were asked to give their opinions on whether they think the group is effective, the extent to which the household can influence the decisions of this group and whether anyone in the household is included as a member in this group.

Section 7 (Closing Questions) included: **7.1 Images** – At the end of the survey, the enumerators took photos of the rainwater harvesting system (if any), the respondent's house; and the toilet both from outside and inside. These pictures helped to cross-check the accuracy of data in previous sections, and provide a subjective understanding of the wealth status of the household. **7.2 Enumerator feedback and contact information** - This sub-section was for the enumerators only, where they rated their overall satisfaction with the interview process, the respondents' understanding of the questions and the accuracy of the responses. In the end, the enumerators collected the mobile numbers for

contacting the respondent or the household head for further questions/clarification if needed. The enumerators also provided their perception of the wealth status of the household so that this subjective data can be used to validate the quantitative wealth indices derived from the asset data collected by the survey.

Appendix A. Risk profile of all mouzas in Polder 29

Mouza	Risk profile	Drinking water stress	Water logging	Erosion	Soil Salinity	Sanitation	Asset	Cropping intensity
Bhandarpara Union								
Bakultala	Moderate							
Banda	Low							
Banda Raghunatpur	Low							
Barabhandh	Low							
Bhandar Para	Low							
Britti Kanaidanga	Low							
Chak Angarkata	Low							
Chak Chatraghona	Low							
Chak Sonadanga	Low							
Dakshin Mahal	Low							
Dhanibunia	Moderate							
Ghona	Low							
Ghona Taltala	Low							
Hajibunia	Low							
Hula	Low							
Jabra	Low							
Kharibunia	Low							
Kusarhula	Low							
Lahaidanda	Low							
Maikhali	Low							
Nalghona	Low							
Orabunia	Low							
Pakhirbadal	Low							
Perikhali	Low							
Podekhali	Moderate							
Purba Andhar Manik	Low							
Purba Kanaidanga	Low							
Purba Kanchan Nagar	Moderate							
Rajibpur	Low							
Rajnagar	Low							
Sitarampur	Low							
Talian	Low							
Taltala	Moderate							
Telikhali	Moderate							
Ula	Low							
Dumuria Union								
Arazi Sajara	Low							
Dumuria	Low							
Sahas Union								
Kamalpur	Low							
Tiabunia	Low							
Baghdari	High							

Bhagabatipur	Low							
Char Kapalidanga	Low							
Charchari	Low							
Chhota Banda	Low							
Dighalia	High							
Gajendrapur	Moderate							
Golaimari	High							
Kagaji Para	Low							
Kapalidanga	Moderate							
Kazir Hula	Moderate							
Kharsanda	Moderate							
Khutakhali	Moderate							
Kukhia	Low							
Lashmipur	Low							
Latabunia	Moderate							
Noakhali	Moderate							
Sahas	Low							
Tengramari	Low							
Sarappur Union								
Akra	High							
Asannagar	Moderate							
Bahir Akra	High							
Bazeafti Bhulbaria	Low							
Bhulbaria	Moderate							
Britti Bhulbaria	High							
Chandgarh	High							
Jaliakhali	High							
Jhaltala	Moderate							
Kalikapur	Low							
Kalikapur Badhurghachha	Low							
Keakhali	Low							
Ratankhali	Moderate							
Sarappur	Moderate							
Taiabpur	Moderate							
Surkhali Union								
Bara Aria	High							
Kodla	High							
Mathbari	High							
Ruhitmara	Moderate							
Sambhunagar	Moderate							
Sundar Mahal	High							

Legend	
	High risk
	Moderate risk
	Low risk
	No data

Appendix B. Survey Questionnaire (Phase 1)

Start date and time of the survey	
End date and time of the survey	
Section 1. Introduction and Identifiers	
1.1 Identification number of enumerator	
1.2 Consent and confidentiality agreement <i>I am working with the University of Dhaka and BUET as part of a research programme. I want to carry out a survey, where I will be asking questions about you and your household members. The survey is expected to take approximately 45 minutes to complete. If you agree to participate, the information you provide will be used for research purposes only. Your responses to these questions will remain strictly confidential and your name will not appear in any data that is made publicly available. You may withdraw from the study at any time and if there are questions that you would prefer not to answer then we respect your right not to answer them. We would like to write down your contact information in case some issues in the questionnaire are unclear and we need to follow up with you for more information or clarification. Do you consent to participate in and provide information for this study?</i>	
1.3 Is the respondent happy to continue with the survey? <i>If no, thank the respondent for their time and move on to the next survey</i>	SELECT ONE Yes No
Household location	
1.4 Please select the UNION where this interview is occurring	SELECT ONE Dumuria Bhandar para Sahas Sarappur Surkhali
1.5 Please select the MOUZA where this interview is occurring	<i>Choice filter based on option selected in 1.4</i>
1.6 How long have you been living in this area? <i>Area refers to the broader study site selected above, not the particular house in which the respondent is staying at present</i>	SELECT ONE Less than 1 year 1 - 2 years 2 - 5 years 5 - 10 years More than 10 years
Section 2. Household demographics	
2.1 How many people live in this household?	INSERT INTEGER
To be repeated for each household member mentioned in 2.1	
2.2 Name of household member	INSERT TEXT
2.3 What is X's relationship to HH Head?	SELECT ONE Head Spouse Son or daughter

	Son-in-law or daughter-in-law Father or mother Father-in-law or mother-in-law Grandchild Brother or sister Adopted/foster child /step child Other relative Not related Others
2.4 Sex of X	SELECT ONE Male Female
2.5 X's age	SELECT ONE 5 years and below 6 - 12 years 13 - 18 years 19 - 50 years 51 and above
2.6 What is the highest grade X completed? <i>Relevant if age>5</i>	SELECT ONE No education Can sign name Pre-school/ kindergarten Class 1 Class 2 Class 3 Class 4 Class 5 (PSC) Class 6 Class 7 Class 8 (JSC) Class 9 Class 10 (SSC) Class 11 Class 12 (HSC) Bachelors/diploma or higher Don't know
2.7 Does X have a personal mobile phone? <i>Relevant if age>13</i>	SELECT ONE Yes No
Section 3. Water and sanitation	
3.1 Drinking water - Source and Payments	
3.1.1 Name ALL the sources of DRINKING water used by your household in the past 1 year	SELECT MULTIPLE Public tap/ stand pipe Deep tubewell 1 Deep tubewell 2 Shallow tubewell 1 Shallow tubewell 2 Rainwater (roof catchment) Rainwater (community source)

	Water vended through pick-up truck Water vended through nossimon/van Bottled water River/Canal Lake Pond Pond sand filter Others (specify)
3.1.1 (a-d) Who owns this tubewell? <i>Relevant if Deep/Shallow tubewell is selected in 3.1.1</i>	SELECT ONE Own immediate family/ Extended family (cousin, brother, etc.) Another unrelated family (neighbor) Group of families (collective) Community/ government (Public) School/ Mosque/ Other institutes Others
3.1.1 (e-h) Where is the tubewell located? <i>Relevant if Deep/Shallow tubewell is selected in 3.1.1</i>	SELECT ONE Near - Inside own/ neighbour's yard Bit far, but within the village Very far, outside the village
3.1.1 (i-l) What type of tubewell is this? <i>Relevant if Deep/Shallow tubewell is selected in 3.1.1</i>	SELECT ONE Handpump operated Motorised pump operated Don't know/ No response
3.1.2 These questions are applicable for the MAIN source only	
3.1.2 (a) Of the sources mentioned above, which one is your MAIN drinking water source?	<i>Choice filter based on options selected in 3.1.1</i>
3.1.2 (b) Do you share this water source with other households?	SELECT ONE Yes No
3.1.2 (c) How many households share this water source?	SELECT ONE Less than 5 Between 5 and 10 More than 10
3.1.2 (d) How much time does it take to go to the source, get water, and come back?	SELECT ONE Inside dwelling/yard Less than 15 minutes 15-30 minutes 30 minutes – 1 hour 1 - 2 hours More than 2 hour Don't know
3.1.2 (e) Who usually goes to this water source to fetch the water for your household? <i>Not relevant if 'Rainwater (roof catchment)', 'Water vender through pick-</i>	SELECT MULTIPLE Adult men Adult women Boys (<16 years) Girls (<16 years)

<i>up truck', or 'Water vended through nossimon/ van' is selected in 3.1.2 (a)</i>	
3.1.2 (f) Has this person(s) ever faced any challenges while fetching water?	SELECT MULTIPLE No challenges Quarrels/ conflicts with neighbours Verbal abuse Felt uncomfortable in using someone else's source Felt unsafe Eve teasing Physical/ sexual assault Physical burden associated with carrying heavy water containers Other (Specify)
3.1.2 (g) Have you taken any measures to address these challenge(s)?	SELECT MULTIPLE Remained silent/ No action Improve mutual understanding Protect oneself/ not travel unaccompanied Reconciliation with the help of village elders Others [specify]
3.1.2 (h) How is this water usually transported? <i>Not relevant if 'Rainwater (roof catchment)', 'Water vended through pick-up truck', or 'Water vended through nossimon/ van' is selected in 3.1.2 (a)</i>	SELECT ONE Not Applicable Carried by individual Sliding cart Bicycle/ van Nossimon Motorcycle Trawler/ Boat/ Raft Others (specify)
3.1.2 (i) Do you or someone in your house pay for this water? <i>This includes payment for electricity to pump water, costs of transporting water and price of water itself; NOT infrastructure repair or maintenance costs</i>	SELECT ONE Yes No
3.1.2 (j) How often do you pay?	SELECT ONE Monthly (Fixed amount) Variable amount (One-off payment/ for transport) Per container
3.1.2 (k-l) How much do you pay? <i>Relevant if payment frequency is 'monthly/variable' in 3.1.2(j)</i>	INSERT INTEGER
3.1.2 (m) What is the size of the container? <i>Relevant if payment frequency is 'per container' in 3.1.2(j)</i>	INSERT INTEGER

3.1.2 (n) How much do you pay per container? <i>Relevant if payment frequency is 'per container' in 3.1.2(j)</i>	INSERT INTEGER
3.1.3 These questions are applicable for the SECONDARY source <i>Relevant if number of sources>1 in 3.1.1</i>	
3.1.3 (a) Of the sources mentioned above, which one is your SECONDARY drinking water source?	<i>Choice filter based on options selected in 3.1.1, and not selected in 3.1.2 (a)</i>
3.1.3 (b) Why did you use this source instead of your main source?	SELECT ONE Infrastructure not working Easier access Alternative source is cheaper Alternative source has better quality Unreliable supply (in case of piped water only) New infrastructure installed Not enough water (source dried up) When cash is available/ there is no one to carry water Other (Specify)
3.1.3 (c) For how long did you have to use this secondary source? <i>Record cumulative number of days in the past one year</i>	SELECT ONE Less than 5 days Between 5 and 30 days Between 1-2 months More than 2 months Don't know
3.1.3 (d) Do you or someone in your house pay for this water? <i>This includes payment for electricity to pump water, costs of transporting water and price of water itself; NOT infrastructure repair or maintenance costs</i>	SELECT ONE Yes No
3.1.3 (e) How often do you pay?	SELECT ONE Monthly (Fixed amount) Variable amount (One-off payment/ for transport) Per container
3.1.3 (f-g) How much do you pay? <i>Relevant if payment frequency is 'monthly/variable' in 3.1.3(e)</i>	INSERT INTEGER
3.1.3 (h) What is the size of the container? <i>Relevant if payment frequency is 'per container' in 3.1.3(e)</i>	INSERT INTEGER
3.1.3 (i) How much do you pay per container?	INSERT INTEGER

Relevant if payment frequency is 'per container' in 3.1.3(e)	
3.1.3 (j) Did you face any additional challenges as a result of switching from your MAIN source to this SECONDARY source?	SELECT MULTIPLE No challenges Felt uncomfortable in using someone else's source Higher costs Poor water quality Women and girls spent more time/ effort in collecting water Women and girls felt unsafe collecting water Other (Specify)
3.2 Drinking water - Intervention and maintenance	
3.2.1 In the past 5 years, has there been any development intervention that has improved your drinking water situation? <i>This refers to community level interventions by the government or private sector, NOT by individual households for their private use</i>	SELECT ONE Yes No Don't know/ No response
3.2.2 What type of intervention has been implemented? <i>Relevant if 'yes' is selected in 3.2.1</i>	SELECT MULTIPLE Installation of deep/shallow tubewell Piped water system (new/expansion) Water vending (new/ expansion) Rain water harvesting system Public Pond excavation Installation of Pond Sand Filter (PSF) Managed aquifer recharge Other (specify)
3.2.3 Has your household contributed any money/ labour to this installation? <i>Relevant if 'yes' is selected in 3.2.1</i>	SELECT MULTIPLE Yes - Cash Yes - Labour Yes - Materials Yes - Space/ land No Don't know
3.2.4 How much cash did you contribute at the time of installation? <i>Relevant if 'cash' is selected in 3.2.3</i>	INSERT INTEGER
3.2.5 In the past 5 years, did your household install any new water related infrastructure? <i>This refers to installation of new tubewell or new motor/pipes, NOT repair or maintenance work</i>	SELECT ONE Yes No Don't know/ No response
3.2.6 What did you install? <i>Relevant if 'yes' is selected in 3.2.5</i>	SELECT MULTIPLE New shallow tubewell (handpump/motorised) New deep tubewell (handpump/motorised)

	Electric/diesel motor to existing tubewell Pipes/Storage tank to existing tubewell Storage tank for rainwater harvesting Other (Specify)
3.2.7 How much money did your household spend/contribute to this installation?	INSERT INTEGER
3.2.8 In the past 1 year, did you/anyone else conduct any maintenance or repairs to the water source? <i>This involves replacing washers, buckets, pipes, or handles of tubewells; electric parts of pump motor; or cleaning/replacing sand layer of PSF</i>	SELECT ONE Yes No Don't know/ No response
3.2.9 How much money did your household spend/contribute to this maintenance/repair work? <i>Relevant if 'yes' is selected in 3.2.8</i>	INSERT INTEGER
3.3 Drinking water - Quality and storage	
3.3.1 Do you think that the water you drink is safe?	SELECT ONE Yes No Don't know/ No response
3.3.2 If not, why? <i>Relevant if 'no' is selected in 3.3.1</i>	SELECT MULTIPLE Water has Arsenic Water has Iron Water is saline Water has germs Water doesn't taste/ smell/ look good Other (Specify)
3.3.3 Do you do anything to the water to make it safer to drink?	SELECT ONE Yes No
3.3.4 What do you usually do to make the water safer to drink? <i>Relevant if 'yes' is selected in 3.3.3</i>	SELECT MULTIPLE Boil Add bleach/chlorine Add alum Add halotab Strain through a cloth Water filter (Bio sand/composite/ceramic filter) Solar disinfection Let it stand and settle Other (specify)
3.4 Water for domestic uses	
3.4.1 What are your household's source(s) of water for the following purposes?	

Cooking and food preparation	SELECT MULTIPLE Public tap/ stand pipe Deep tubewell 1 Deep tubewell 2 Shallow tubewell 1 Shallow tubewell 2 Rainwater (roof catchment) Rainwater (community source) Water vended through pick-up truck Water vended through nossimon/van Bottled water River/Canal Lake Pond Pond sand filter Others (specify)
Washing clothes and dishes	
Bathing	
3.5 Sanitation and hygiene	
3.5.1 What kind of toilet facility do ADULTS of your household use?	SELECT ONE Flush to septic tank Pour flush to pit latrine Ventilated improved pit latrine Pit latrine with slab Pit latrine without slab/open pit Hanging toilet/waste discharged directly into waterbodies No facility/bush/field
3.5.2 Where is this toilet located?	SELECT ONE Inside own dwelling Within yard/ plot Inside someone else's dwelling/plot
3.5.3 Where do you dispose of your child's waste? <i>Relevant if a child (under 5) uses a potty/re-usable cloth</i>	SELECT ONE Not applicable (no child under 5) In the toilet On dry open ground/ bush Into waterbodies (pond/ river) Other (specify)
3.5.4 Do you share this toilet facility with other households?	SELECT ONE Yes No
3.5.5 How many households share this toilet facility?	SELECT ONE Less than 5 Between 5 and 10 More than 10
3.5.6 Where do you or other members of your household most often wash your hands?	SELECT ONE Fixed facility (tap/tubewell) in dwelling/yard Mobile object (bucket/jug) No specific handwashing place Other (specify)
3.5.7 What do you wash your hands with?	SELECT ONE Only water

	Soap/ Detergent Ash Mud/ Sand Other (specify)
Section 4. Poverty	
4.1 Assets	
4.1.1 What is your current occupancy status?	SELECT ONE Owner Tenant Free accommodation (public land/embankment) Other (specify)
4.1.2 Does your household have any of the following assets?	
Television	SELECT ONE for each Yes No
Radio/CD player	
Computer/ laptop	
Bicycle	
Motorcycle	
Autobike/tempo/CNG	
Car/truck/microbus	
Rickshaw/van/animal cart	
Almirah/wardrobe/ showcase	
Electric fan	
Refrigerator	
Power tiller/tractor	
Electric/diesel pump	
IPS/ Generator	
4.2 Power sources and housing material	
4.2.1 What is the power source for lighting and electronics?	SELECT MULTIPLE Grid supply electricity Generator Solar panel Kerosene Other (specify)
4.2.2 What type of fuel does your household mainly use for cooking?	SELECT MULTIPLE Electricity Natural gas (piped supply/ cylinder) Animal dung Kerosene Wood/fuel sticks Straw/shrubs/grass Other (specify)
4.2.3 Main material of the floor of house	SELECT ONE Earth/mud Wood/ bamboo Brick or Cement Tiles/ Mosaic Other (specify)

4.2.4 Main material of the roof of house	SELECT ONE Leaves/straw/ plastic Wood/bamboo Tin/corrugated iron Brick/ Cement Other (specify)
4.2.5 Main material of the exterior walls of house	SELECT ONE Leaves/ straw/ cardboard/ plastic Earth/mud Wood/ bamboo Tin/ corrugated iron Brick/Cement Others (specify)
4.2.6 How many rooms do members of this household usually use for sleeping?	INSERT INTEGER
Section 5. Priority concerns	
5.1 Socio-economic concerns	
5.1.1 Now I am going to go through a list of CONCERNS that some families in this area have expressed. Suppose that the government could help your area with just THREE of these issues, which would YOUR FAMILY choose? <i>Rank in order of importance</i>	
Concern #1	SELECT ONE for each Healthcare Erosion and flood protection Canal dredging Transportation and roads Sanitation Drinking water services Clean environment Security and crime Employment Education Electricity Gas supply Financial services Agricultural support No concerns/ Don't know Others (Specify)
Concern #2	
Concern #3	
5.2 Concerns regarding water	
5.2.1 Do you have any concerns regarding the WATER you drink and use for domestic purposes?	SELECT ONE Yes No
Rank in order of importance (Do not Prompt)	
Concern #1	SELECT ONE for each

Concern #2	Water is unsafe to drink Water supply is too costly Water source is too far Water for domestic use is dirty Water supply is unpredictable	
Concern #3	Not enough No concerns/ Don't know Other (Specify)	
5.3 Concerns regarding the natural environment		
5.3.1 Do you have any concerns regarding your NATURAL ENVIRONMENT?	SELECT ONE Yes No	
Rank in order of importance (Do not Prompt)		
Concern #1	SELECT ONE for each Increasing water salinity Waterlogging Tidal flooding Cyclones/ storms Embankment breaching/ river erosion Decline of fisheries population Forests and vegetation are decreasing Rivers/canals are dirty or polluted No/ inadequate rubbish collection or cleaning People commonly defecate in public spaces No concerns/ Don't know Other	
Concern #2		
Concern #3		
Section 6. Livelihoods and water-related risks		
6.1 Land ownership and agriculture		
6.1.1 Is your household involved in any type of farming for subsistence and/or sale? <i>This includes farming in agricultural land (own/ leased in or leased out), NOT homestead land</i>	SELECT ONE Yes No	
6.1.2 How many land parcels do you own or operate? <i>A parcel is a contiguous piece of land with a single operator or owner. This also includes agricultural land that are left fallow throughout the year, due to land degradation.</i>	INSERT INTEGER	
To be repeated for each land parcel mentioned in 6.2.1		
6.1.3 Size of Parcel X	INSERT INTEGER	
6.1.4 Ownership status of Parcel X	SELECT ONE Owner Leased in/sharecropping (for whole year) Leased in/sharecropping (for part of the year)	

	Leased out/sharecropping (receiving rent/crops) OR mortgaged Govt/Khas land Don't know Others (specify)
6.1.5 How many crops do you grow in Parcel X in a year? <i>This refers to the number of seasons (out of 3) in which the household conducts agriculture and/or aquaculture on their own/leased in land</i> <i>Not relevant if 'Leased out' is selected in 6.1.4</i>	INSERT INTEGER
6.1.6 In which of the following seasons, do you grow crops/ fisheries in Parcel X?	SELECT MULTIPLE Kharif – I (March - July) Kharif – II (July/Aug - Dec) Rabi (Dec - Feb)
Kharif – II (July – Nov/Dec) <i>Relevant if 'kharif -II' is selected in 6.1.6</i>	
6.1.7 (a) What types of crops/ fisheries did you cultivate in Parcel X during Kharif – II?	SELECT MULTIPLE Paddy (Local/HYV) Wheat/ Maize Fiber crops (Jute/ Bamboo) Pulses (Lentils/Peas/Beans) Oil seeds (Mustard/ Soybean/ Sesame) Vegetables Fruits Galda prawn Bagda shrimp White fish Crabs Sugarcane/ Date / Palms Others (Specify)
6.1.7 (b) Do you irrigate the crops grown in Parcel X during Kharif – II?	SELECT ONE Yes No
6.1.7 (c) What is the source of water for irrigating your crops in Parcel X during Kharif – II? <i>Relevant if 'yes' is selected in 6.1.7(b)</i>	SELECT ONE Ground water Surface water from river/ canals Surface water from pond/ stagnant source Others (specify)
6.1.7 (d) What is the method of irrigation? <i>Relevant if 'yes' is selected in 6.1.7(b)</i>	SELECT ONE Low lift pump Shallow tubewell Deep tubewell Others (specify)

6.1.7 (e) Do you face any challenges in irrigating your crops in Parcel X during Kharif – II? <i>Relevant if 'yes' is selected in 6.1.7(b)</i>	SELECT ONE Yes No
6.1.7 (f) If YES, what is the main challenge? <i>Relevant if 'yes' is selected in 6.1.7(e)</i>	SELECT MULTIPLE Lack of water in river/ canal Fall in groundwater level High salinity of surface/ ground water Waterlogging/ Drainage congestion Problems with gate operation (infrastructure leakage/ management issues) Could not access irrigation pumps/ tubewells (conflicts, power failure, financial constraints) Others (specify)
Kharif – I (Feb – June) <i>Relevant if 'kharif -I' is selected in 6.1.6</i>	
6.1.8 (a) What types of crops/ fisheries did you cultivate in Parcel X during Kharif – I?	SELECT MULTIPLE Paddy (Local/HYV) Wheat/ Maize Fiber crops (Jute/ Bamboo) Pulses (Lentils/Peas/Beans) Oil seeds (Mustard/ Soybean/ Sesame) Vegetables Fruits Galda prawn Bagda shrimp White fish Crabs Sugarcane/ Date / Palms Others (Specify)
6.1.8 (b) Do you irrigate the crops grown in Parcel X during Kharif – I?	SELECT ONE Yes No
6.1.8 (c) What is the source of water for irrigating your crops in Parcel X during Kharif – I? <i>Relevant if 'yes' is selected in 6.1.8(b)</i>	SELECT ONE Ground water Surface water from river/ canals Surface water from pond/ stagnant source Others (specify)
6.1.8 (d) What is the method of irrigation? <i>Relevant if 'yes' is selected in 6.1.8(b)</i>	SELECT ONE Low lift pump Shallow tubewell Deep tubewell Others (specify)
6.1.8 (e) Do you face any challenges in irrigating your crops in Parcel X during Kharif – I? <i>Relevant if 'yes' is selected in 6.1.8(b)</i>	SELECT ONE Yes No
6.1.8 (f) If YES, what is the main challenge?	SELECT MULTIPLE

<i>Relevant if 'yes' is selected in 6.1.8(e)</i>	Lack of water in river/ canal Fall in groundwater level High salinity of surface/ ground water Waterlogging/ Drainage congestion Problems with gate operation (infrastructure leakage/ management issues) Could not access irrigation pumps/ tubewells (conflicts, power failure, financial constraints) Others (specify)
Rabi (Dec - Feb) <i>Relevant if 'Rabi' is selected in 6.1.6</i>	
6.1.9 (a) What types of crops/ fisheries did you cultivate in Parcel X during Rabi?	SELECT MULTIPLE Paddy (Local/HYV) Wheat/ Maize Fiber crops (Jute/ Bamboo) Pulses (Lentils/Peas/Beans) Oil seeds (Mustard/ Soybean/ Sesame) Vegetables Fruits Galda prawn Bagda shrimp White fish Crabs Sugarcane/ Date / Palms Others (Specify)
6.1.9 (c) Do you irrigate the crops grown in Parcel X during Rabi?	SELECT ONE Yes No
6.1.9 (d) What was the source of water for irrigating your crops in Parcel X during Rabi? <i>Relevant if 'yes' is selected in 6.1.9(b)</i>	SELECT ONE Ground water Surface water from river/ canals Surface water from pond/ stagnant source Others (specify)
6.1.9 (e) What was the method of irrigation? <i>Relevant if 'yes' is selected in 6.1.9(b)</i>	SELECT ONE Low lift pump Shallow tubewell Deep tubewell Others (specify)
6.1.9 (f) Did you face any challenges in irrigating your crops in Parcel X during Rabi? <i>Relevant if 'yes' is selected in 6.1.9(b)</i>	SELECT ONE Yes No
6.1.9 (g) If YES, what was the main challenge? <i>Relevant if 'yes' is selected in 6.1.9(e)</i>	SELECT MULTIPLE Lack of water in river/ canal Fall in groundwater level High salinity of surface/ ground water Waterlogging/ Drainage congestion Problems with gate operation (infrastructure leakage/ management issues)

	Could not access irrigation pumps/ tubewells (conflicts, power failure, financial constraints) Others (specify)
Homestead land	
6.1.10 Does your household own any homestead land?	SELECT ONE Yes No
6.1.11 How much homestead land do you own? <i>Relevant if 'yes' is selected in 6.1.10</i>	INSERT INTEGER
6.1.12 What types of crops do you grow in your homestead land? <i>Relevant if 'yes' is selected in 6.1.10</i>	SELECT MULTIPLE Not enough land Vegetables Fruits Paddy (Local/HYV) Wheat/ Maize Fiber crops (Jute/ Bamboo) Pulses (Lentils/Peas/Beans) Oil seeds (Mustard/ Soybean/ Sesame) Sugarcane/ Date / Palms Others (Specify)
6.2 Aquaculture and Livestock	
6.2.1 Do you own or operate any pond?	SELECT ONE Yes No
6.2.2 Do you cultivate fisheries in this pond? <i>Relevant if 'yes' is selected in 6.2.1</i>	SELECT ONE Yes, for subsistence only Yes, for subsistence and sale Yes, for sale only No
6.2.3 What fisheries do you cultivate in your pond? <i>Relevant if 'yes' is selected in 6.2.2</i>	SELECT MULTIPLE Galda prawn Bagda shrimp Crab White fish (Rui, Ayer, Boal etc.) Others
6.2.6 Does your household own any livestock or poultry?	SELECT ONE Yes No
6.2.5 No. of Cow/buffalo 6.2.6 No. of Goat/sheep 6.2.7 No. of hens/duck <i>Relevant if 'yes' is selected in 6.2.6</i>	INSERT INTEGER
6.3 Income sources and gender division of labour	
6.3.1 In the past 1 year, what were the main sources of income for your household?	SELECT MULTIPLE Agriculture Aquaculture Fishing

	Livestock/ poultry Full-time/part-time job (fixed income) Skilled labour Casual labour Remittances Cash transfers Business Property rent Others (specify)
6.3.2 Do women in your household engage in open-access fishing? <i>Relevant if 'fishing' is selected in 6.3.1</i>	SELECT ONE No, not at all Yes, sometimes on their own Yes, sometimes along with men Yes, always on their own Yes, always along with men
6.3.3 Who works as a casual labour? <i>Relevant if 'casual labour' is selected in 6.3.1</i>	SELECT MULTIPLE Adult men Adult women Boys (<16 years) Girls (<16 years)
6.3.4 Where do the women of your household usually go to work as a casual labour? <i>Relevant if 'women' is selected in 6.3.3</i>	SELECT ONE Inside village/ Nearby Outside village/ Far away
6.3.5 Where do the men of your household usually go to work as a casual labour? <i>Relevant if 'men' is selected in 6.3.3</i>	
6.3.6 Do women in your household engage in farm activities? <i>Relevant if 'yes' is selected in 6.1.1</i>	SELECT ONE Yes No
6.3.7 If so, which of the following types of work do they engage in? <i>Relevant if 'yes' is selected in 6.3.6</i>	SELECT MULTIPLE Land preparation (Ploughing/Harrowing/Leveling) Planting (Seeding/Transplanting) Irrigation (Channel maintenance) Harvesting Threshing/drying
6.3.8 How would you describe the current welfare situation of your household?	SELECT ONE Doing well Doing just OK Struggling Unable to meet household needs Don't know/ No response
6.3.9 How would you describe the welfare situation of your household about FIVE years ago?	SELECT ONE Better than present situation Same as present situation Worse than present situation Don't know/ No response

6.4 Water-related risks and impacts on livelihoods	
6.4.1 In the past 5 years, has your household been affected by any of the following water-related risks?	SELECT MULTIPLE No risks Waterlogging/ Drainage congestion Embankment breaching/ river erosion Tidal flooding Increased salinity Cyclones/ storms Untimely/ Heavy rainfall
6.4.2 Waterlogging/ drainage congestion This refers to waterlogging (ranging from a week to a few months) caused due to heavy rainfall and/or drainage congestion in internal canals; NOT flooding due to embankment breaching <i>Relevant if 'waterlogging' is selected in 6.4.1</i>	
6.4.2 (a) When was the last time you were affected by waterlogging?	SELECT ONE 2017 2016 2015 2014 2013 Don't know/ No response
6.4.2 (b) How long did this waterlogging persist? <i>Relevant if 'waterlogging' is selected in 6.4.1</i>	SELECT ONE 1 - 2 weeks 2 weeks - 1 month 1 - 2 months 3 - 6 months More than 6 months
6.4.2 (c) How did this waterlogging affect your household? <i>Relevant if 'waterlogging' is selected in 6.4.1</i>	SELECT MULTIPLE Decline in crop/ vegetable yield Decline in fish/ shrimp yield Higher cost of production Land degradation / Decline in soil fertility Loss of agricultural/ homestead land Decline in fish population/ diversity Decline in labouring opportunities Death of livestock/ poultry Damage to house or belongings Health problems of household member Others [specify]
6.4.2 (d) What type of illness did you/ your household members suffer from?	SELECT MULTIPLE Skin diseases Diarrhoea/ Dysentery High blood pressure Stomach cramps/ Ulcer Eye infection Menstrual cramps/ Reproductive health problems Others (Specify)
6.4.2 (e) What did you do to cope with this waterlogging?	SELECT MULTIPLE Nothing

<p><i>Relevant if 'waterlogging' is selected in 6.4.1</i></p>	<p>Survived on relief Took loan from NGO/relative Bought food items on credit Sold/mortgaged land Sold livestock/ poultry Sold asset (e.g. jewellery) Ate less/ lower quality food to reduce expenses Reduced spending on health care Disruption in education of children Household member took job elsewhere temporarily Sent non-working household member to work Others (specify)</p>
<p>6.4.3 Embankment breaching/ river erosion <i>Relevant if 'embankment breaching' is selected in 6.4.1</i></p>	
<p>6.4.3 (a) When was the last time this embankment breaching/erosion occurred?</p>	<p>SELECT ONE 2017 2016 2015 2014 2013 Don't know/ No response</p>
<p>6.4.3 (b) How did this embankment breaching/erosion affect your household?</p>	<p>SELECT MULTIPLE Decline in crop/ vegetable yield Decline in fish/ shrimp yield Higher cost of production Land degradation / Decline in soil fertility Loss of agricultural/ homestead land Decline in fish population/ diversity Decline in labouring opportunities Death of livestock/ poultry Damage to house or belongings Health problems of household member Others [specify]</p>
<p>6.4.3 (c) What type of illness did you/ your household members suffer from?</p>	<p>SELECT MULTIPLE Skin diseases Diarrhoea/ Dysentery High blood pressure Stomach cramps/ Ulcer Eye infection Menstrual cramps/ Reproductive health problems Others (Specify)</p>
<p>6.4.3 (d) What did you do to cope with it?</p>	<p>SELECT MULTIPLE Nothing Survived on relief Took loan from NGO/relative Bought food items on credit</p>

	Sold/mortgaged land Sold livestock/ poultry Sold asset (e.g. jewellery) Ate less/ lower quality food to reduce expenses Reduced spending on health care Disruption in education of children Household member took job elsewhere temporarily Sent non-working household member to work Others (specify)
6.4.4 Increased salinity <i>Relevant if 'salinity' is selected in 6.4.1</i>	
6.4.4 (a) What do you think was the cause of this increased salinity?	SELECT MULTIPLE Sluice gate not functioning properly Issues with gate management Other farmers brought in saline water Tidal flooding/ cyclone Embankment breaching Don't know Others (specify)
6.4.4 (b) How did this increased salinity affect your household?	SELECT MULTIPLE Decline in crop/ vegetable yield Decline in fish/ shrimp yield Higher cost of production Land degradation / Decline in soil fertility Loss of agricultural/ homestead land Decline in fish population/ diversity Decline in labouring opportunities Death of livestock/ poultry Damage to house or belongings Health problems of household member Others [specify]
6.4.4 (c) What type of illness did you/ your household members suffer from?	SELECT MULTIPLE Skin diseases Diarrhoea/ Dysentery High blood pressure Stomach cramps/ Ulcer Eye infection Menstrual cramps/ Reproductive health problems Others (Specify)
6.4.4 (d) What did you do to cope with this increased salinity?	SELECT MULTIPLE Nothing Survived on relief Took loan from NGO/relative Bought food items on credit Sold/mortgaged land Sold livestock/ poultry

	Sold asset (e.g. jewellery) Ate less/ lower quality food to reduce expenses Reduced spending on health care Disruption in education of children Household member took job elsewhere temporarily Sent non-working household member to work Others (specify)
6.4.5 Tidal flooding This refers to water overtopping the embankment; NOT flooding due to embankment breaching <i>Relevant if 'tidal flooding' is selected in 6.4.1</i>	
6.4.5 (a) When was the last time your household was affected by tidal flooding?	SELECT ONE 2017 2016 2015 2014 2013 Don't know/ No response
6.4.5 (b) How did this tidal flooding affect your household?	SELECT MULTIPLE Decline in crop/ vegetable yield Decline in fish/ shrimp yield Higher cost of production Land degradation / Decline in soil fertility Loss of agricultural/ homestead land Decline in fish population/ diversity Decline in labouring opportunities Death of livestock/ poultry Damage to house or belongings Health problems of household member Others [specify]
6.4.5 (c) What type of illness did you/ your household members suffer from?	SELECT MULTIPLE Skin diseases Diarrhoea/ Dysentery High blood pressure Stomach cramps/ Ulcer Eye infection Menstrual cramps/ Reproductive health problems Others (Specify)
6.4.5 (d) What did you do to cope with this tidal flooding?	SELECT MULTIPLE Nothing Survived on relief Took loan from NGO/relative Bought food items on credit Sold/mortgaged land Sold livestock/ poultry Sold asset (e.g. jewellery) Ate less/ lower quality food to reduce expenses

	Reduced spending on health care Disruption in education of children Household member took job elsewhere temporarily Sent non-working household member to work Others (specify)
6.4.6 Cyclones/ storms <i>Relevant if "cyclones/storms" is selected in 6.4.1</i>	
6.4.6 (a) When was the last time your household was affected by cyclones?	SELECT ONE 2017 2016 2015 2014 2013 Don't know/ No response
6.4.6 (b) How did this cyclone affect your household?	SELECT MULTIPLE Decline in crop/ vegetable yield Decline in fish/ shrimp yield Higher cost of production Land degradation / Decline in soil fertility Loss of agricultural/ homestead land Decline in fish population/ diversity Decline in labouring opportunities Death of livestock/ poultry Damage to house or belongings Health problems of household member Others [specify]
6.4.6 (c) What type of illness did you/ your household members suffer from?	SELECT MULTIPLE Skin diseases Diarrhoea/ Dysentery High blood pressure Stomach cramps/ Ulcer Eye infection Menstrual cramps/ Reproductive health problems Others (Specify)
6.4.6 (d) What did you do to cope with the impacts of this cyclone?	SELECT MULTIPLE Nothing Survived on relief Took loan from NGO/relative Bought food items on credit Sold/mortgaged land Sold livestock/ poultry Sold asset (e.g. jewellery) Ate less/ lower quality food to reduce expenses Reduced spending on health care Disruption in education of children Household member took job elsewhere temporarily Sent non-working household member to work

	Others (specify)
6.4.7 Rainfall variability This refers to lack of, untimely and/or heavy rainfall <i>Relevant if 'rainfall variability' is selected in 6.4.1</i>	
6.4.7 (a) When was the last time your household was affected by rainfall variability?	SELECT ONE 2017 2016 2015 2014 2013 Don't know/ No response
6.4.7 (b) How did this rainfall variability affect your household?	SELECT MULTIPLE Decline in crop/ vegetable yield Decline in fish/ shrimp yield Higher cost of production Land degradation / Decline in soil fertility Loss of agricultural/ homestead land Decline in fish population/ diversity Decline in labouring opportunities Death of livestock/ poultry Damage to house or belongings Health problems of household member Others [specify]
6.4.7 (c) What did you do to cope with this rainfall variability?	SELECT MULTIPLE Nothing Survived on relief Took loan from NGO/relative Bought food items on credit Sold/mortgaged land Sold livestock/ poultry Sold asset (e.g. jewellery) Ate less/ lower quality food to reduce expenses Reduced spending on health care Disruption in education of children Household member took job elsewhere temporarily Sent non-working household member to work Others (specify)
6.5 Water management group	
6.5.1 Is there any water management group in your community?	SELECT ONE Yes No Don't know
6.5.2 How much do you think this group influences water management in your community? <i>Relevant if 'yes' is selected in 6.5.1</i>	SELECT ONE Not at all A little A lot

6.5.3 Do you feel you can influence the decisions made by this group? <i>Relevant if 'yes' is selected in 6.5.1</i>	SELECT ONE Not at all A little A lot
6.5.4 Is anyone in the household a member of this group? <i>Relevant if 'yes' is selected in 6.5.1</i>	SELECT ONE None Adult male Adult female Both
Section 7. Closing Questions	
7.1 Images	
7.1.1 If the respondent mentions soap/detergent, please request to show it, to validate the answer. Is soap present? <i>Relevant if 'soap' is selected in 3.5.7</i>	SELECT ONE Yes No
7.1.2 Please take a photo of the rainwater harvesting system <i>Relevant if 'rainwater harvesting (roof catchment)' is selected in 3.1.1</i>	
7.1.3 Take a picture of the house so that the roof, wall and floor materials are clearly visible.	
7.1.4 Please show me your toilet. Take photo of the outside of the toilet	
7.1.5 Take photo of the inside of the toilet	
7.2 Enumerator feedback and contact information	
7.2.1 Did the respondent understand the majority of the questions?	SELECT ONE Understood all the questions well Understood most of the questions, but not all Understood some of the questions (roughly half) Did not understand many questions (less than half) Understood very few questions
7.2.2 How would you rate the accuracy of the respondent's answers?	SELECT ONE Accurate Satisfactory Average Poor
7.2.3 Contact phone number 1	INSERT TEXT
7.2.4 Name of person for contact number 1	INSERT TEXT
7.2.5 Contact phone number 2	INSERT TEXT
7.2.6 Name of person for contact number 2	INSERT TEXT
7.2.7 GPS Location: Stand directly in front of the main entrance of the house. Accuracy level must be 20m or below.	
7.2.8 According to your judgment, how would you rate the socio-economic status of this household?	SELECT ONE Rich Upper Middle Lower Middle Poor Extreme Poor

Appendix C. Survey Questionnaire (Phase 2)

In phase 2, the questionnaire was modified slightly to have a greater focus on households' consumption of water vended through vans/ nossimons. As outlined below, there was an additional section, which was applicable for households that mentioned using vended water in Q3.1.1. To avoid duplication Q3.1.2 (i-l) and Q3.1.3 (d-g) were skipped if vended water was selected as the main and secondary source, respectively, and Q3.1.2(m-n) were omitted altogether. Moreover, Q6.4.2(d), 6.4.3(c), 6.4.4(c), 6.4.5(c), and 6.4.6(c) were also excluded in Phase 2, based on findings from Phase 1.

3.1.4 These questions are applicable for VENDED WATER	
<i>Relevant if 'Water vended through nossimon/van' is selected in 3.1.1</i>	
3.1.4(a) For how many months of the year do you purchase water from the vendor?	SELECT ONE Always, for the whole year 6 - 9 months 3 - 6 months Less than 3 months Other [Specify]
3.1.4(b) At what interval, do you usually purchase this water? OR What is the frequency of water delivery?	SELECT ONE Almost every day Twice/Thrice a week Once a week Once every two weeks Other [Specify]
3.1.4(c) How many containers do you purchase \${frequency_purchase}?	INSERT INTEGER
3.1.4(d) What is the size of the container? <i>Record in litres</i>	INSERT INTEGER
3.1.4(e) What is the price per container? <i>Record in Taka</i>	INSERT INTEGER
3.1.4(f) Since when have you been purchasing water from a water vendor?	SELECT ONE One year or less 1-2 years 3-5 years 6-10 years More than 10 years
3.1.4(g) Do all members of your household drink this water? <i>Ask whether the water is specifically purchased for certain members, like children</i>	INSERT TEXT