Report of the Pilot Survey on Disaster-affected Households

Sex, Age, and Disability Disaggregated Data (SADDD) for Disaster Risk Reduction and Climate Change Adaptation

EmPower
Women for Climate-Resilient Societies

Sverige

UN WOMEN

Environment, Climate Change and Disaster Statistics (ECDS) Cell

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Prepared and published by

Environment, Climate Change and
Disaster Statistics (ECDS) Cell
Bangladesh Bureau of Statistics

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Graphic Design: Mr. Md. Emran, Nilmoni Printing Press, Mirpur

ISBN Number: 978-984-35-2691-5 **COMPLIMENTARY COPY**

Environment, Climate Change and Disaster Statistics (ECDS) Cell
Bangladesh Bureau of Statistics
Statistics and Informatics Division
Ministry of Planning
Government of the People's Republic of Bangladesh

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Ministry of Planning
Government of the People's Republic of Bangladesh

Message

Our prosperity and sustainable future depend largely on our ability to withstand any disaster where people have sustainable livelihoods, food security, health care services, and environment with its desired ecosystem services. As Chair of the Climate Vulnerable Forum (CVF), the Honorable Prime Minister of Bangladesh, H.E. Sheikh Hasina, has launched the "Mujib Climate Prosperity Plan" for Bangladesh, which is to be implemented by 2030. We have been working to achieve the targets of the 8th Five Year Plan and SDGs. Climate induced disasters and extreme events are increasing and hampering our development efforts. The relentless efforts of our government, led by our Hon'ble Prime Minister, have made Bangladesh a resilient country to natural disasters. Despite our reputation as one of the world's most disaster-prone countries, we must work together to strengthen the resilience of our people, institutions, and governance, with a particular focus on catastrophes and climate-related extreme occurrences.

It is a matter of immense pleasure to know that, for the first time in Bangladesh, a Report of the Pilot Survey on Disaster-Affected Households: Sex, Age, and Disability Disaggregated Data (SADDD) for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) has been prepared by BBS as part of the Bangladesh Government's efforts to develop a critical statistic on disaster risks, vulnerability, and adaptation. The report is going to be published by BBS in collaboration with UN-Women. It also marks another achievement of the present government for fulfilling its commitment to generate disaster statistics towards undertaking appropriate measures to address the environment, climate change and disaster management issues against the "Standing Orders on Disaster (SOD) 2019' of Bangladesh.

I take this opportunity to appreciate the efforts of the Secretary, Statistics and Informatics Division, Director General, BBS and Focal Point Officer, ECDS Cell, BBS; UN-Women Officials, Members of the Technical Working Committee, and Members of SADDD Team under ECDS Cell for bringing out this report in time.

Our efforts will be fruitful if the report is found to be useful in the context of the country.

Dhaka: May, 2022

M. A. Mannan. MP

Minister of State
Ministry of Planning
Government of the People's Republic of Bangladesh

Message

I am pleased to congratulate BBS for bringing out this Report of the Pilot Survey on Disaster-Affected Households: Sex, Age, and Disability Disaggregated Data (SADDD) for DRR and CCA. Our strength in the initiation of Agenda 2030 implementation is through the development approach of the 7th and 8th Five Year Plans by integrating the SDGs targets.

It also marks another achievement of the present government for fulfilling its commitment to generate gender responsive environmental statistics towards undertaking appropriate measures to address the environment, climate change, and disaster management issues. I would like to thank BBS for its collaboration with UN-Women in publishing the first-ever SADDD pilot survey report, which is expected to provide guidelines for collecting, analyzing and disseminating of gender responsive environmental data and information. It is also a great pleasure for us that Bangladesh has received global acclaim for its disaster resilience achievements, which have resulted in a significant reduction in catastrophe-related deaths and morbidity. I am also happy to know that BBS is planning a large-scale SADDD survey in the near future. I believe that this report will provide us with a tested survey methodology on SADDD for further research on resilience and prosperity.

The report will definitely create scope for gender responsive environmental (environment, climate change and disasters) investment, provide reference on adaptation and undertake mitigation measures for climate change and disaster management issues. The report will also be used for discussion and dialogue with the development partners, UN Agencies, and other relevant organizations.

I thank the Secretary, Statistics and Informatics Division; Director General, BBS and Mr. Md. Rafiqul Islam, Joint Director and Focal Point Officer, ECDS Cell, BBS, UN-Women officials, and distinguished members of the Inter-Ministerial Technical Working Committee and the ECDS Team for their efforts in bringing out this report to execution.

Special thanks are also due to distinguished stakeholders for playing a proactive role in implementing and improving the methodology and analytical framework for this report.

I hope the report will serve as a methodological guideline for conducting a full fledge large scale nationwide SADDD survey and that stakeholders will find it useful for further research and development in this area.

Dhaka: May 2022

Dr. Shamsul Alam

Secretary
Statistics and Informatics Division
Ministry of Planning
Government of the People's Republic of Bangladesh

Message

The Report of the Pilot Survey on Disaster-Affected Households: Sex, Age, and Disability Disaggregated Data (SADDD) for DRR and CCA" is our pioneering steps of BBS towards developing national level natural disaster risk statistics, including gender issues. By integrating the targets of SDGs, the SADDD methodology would enable BBS to generate gender responsive disaster risk statistics in accordance with our 8th Five Year Plan, Perspective Plans 2041, BCCSAP, SFDRR, etc. This report has been prepared as a part of the Bangladesh government's efforts to develop a pathway on disaster risk, vulnerability, and adaptation that takes gender perspective into account.

The primary goal of this pilot survey, the first of its kind, was to develop and establish a thorough methodology, guidelines, and theoretical and conceptual analytical framework that would assist BBS and other interested organizations in conducting a full-fledged, large-scale core survey for collecting gender responsive disaster-related data in the future. The pilot survey has also enabled BBS to identify potential problematic areas along with deficiencies in survey instruments and protocol prior to the implementation of a future full-scale survey on gender responsive climate and disaster-related statistics. I firmly believe that, in the future, the methodology and framework developed through this survey will provide a unique opportunity to conduct a full-blown climate change and disaster-related survey by BBS in alignment with SDG, SFDRR, the Paris Agreement, and the upcoming National Adaption Plan (NAP).

However, I take this opportunity to thank Director General, BBS and Focal Point Officer, ECDS Cell, BBS; and Members of the Inter-Ministerial Technical Working Committee, Monitoring Committee, Editors Forum of BBS and Report Review Committee of SID for providing all-out support in preparing this report and for their prudent guidance in bringing out this publication.

I offer my thanks and gratitude to our officials of SID and BBS, officials of the UN-Women Team and all concerned for their efforts in bringing out this report. I would also like to offer my thanks to the officials of the BBS field offices for providing their whole-hearted support in conducting this household-based pilot survey during the critical health emergency period across the country due to the COVID-19 pandemic.

Dhaka, May 2022

Dr. Shahanaz Arefin, *ndc*

Head of Office a.i
UN Women Bangladesh

Message

Bangladesh is set to graduate to developing country status by 2026. The remarkable economic growth and progress on human development indicators combined with improvements in disaster management and local investments in climate change adaptation over the last decade have played a significant role in this process. However, this successful trajectory remains vulnerable to climate induced disasters and is a key concern for sustainable development.

The Sendai Framework for Disaster Risk Reduction, Paris Agreement on Climate Change, CEDAW General Recommendation 37, and Beijing Declaration and Platform for Action commitments have been translated into national policies, action plans, and frameworks to advance gender equality dimensions into disaster prevention, preparedness, and recovery processes and systems.

The Agreed conclusions from the recently concluded 66th session of the Commission on the Status of Women reiterate the need to strengthen the capacity and coordination of national statistical and data production offices and government institutions to collect, analyze, disseminate and use data and statistics on climate change, environmental degradation and disasters, including data disaggregated by income, sex, age, race, marital status, migration status, disability, geographical location and other characteristics relevant in national contexts, while safeguarding privacy rights and data protection, in order to inform the design, implementation and tracking of climate change, environmental and disaster risk reduction policies and programmes, improve approaches to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, environmental degradation and disasters, and support developing countries in this effort, including through the mobilization of financial and technical assistance to ensure high-quality, reliable and timely disaggregated data and gender statistics" .

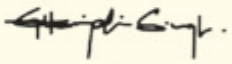
Since 2012, UN Women Bangladesh has been mainstreaming gender equality priorities into climate change and disaster risk reduction actions of the government. In partnership with the Bangladesh Bureau of Statistics (BBS) from 2019 onwards, UN Women has been working to support the generation of Sex, Age, and Disability Disaggregated Data (SADDD) for climate change adaptation and disaster risk reduction, a key element to advance gender mainstreaming. With our support, BBS produced a guideline for SADDD collection and used the tool to collect climate and risk data on a pilot basis. This report showcases the pilot and demonstrates "how" to integrate gender equality data into national surveys for climate

change and disaster statistics to bolster the nexus between gender equality, climate change and disaster risk reduction from the local to the national level.

This pilot survey report includes findings from data collected from the most at-risk groups including women, person with disability, elderly, people with different sexual orientation. This survey serves as a guide in addressing the varying needs and vulnerabilities of different group of people in climate induced disaster-prone areas. We hope the findings of the report will play an instrumental role in generating evidence-based gender statistics for further policy advocacy and reformulation. This tool is a reference document for relevant government ministries and departments for more inclusive and gender responsive data collection on climate change and disaster risk reduction.

I congratulate the Secretary, Statistics and Informatics Division; the Director General, Bangladesh Bureau of Statistics (BBS); and Mr. Md. Rafiqul Islam, Joint Director and Focal Point Officer, Environment, Climate Change and Disaster Statistics (ECDS) Cell, BBS for this ground-breaking work on SADDD. My sincere appreciation to officials of different ministries, divisions, departments, civil society organizations and communities consulted for their contributions to this unique report.

The climate crisis and gender inequality are two of the greatest global challenges of the twenty-first century. Without gender equality today, a sustainable future, and an equal future, remains beyond our reach. It is our hope that this initiative will further strengthen national and local capacity in both SADDD collection and use to reduce vulnerabilities, address risks, promote resilience and leverage women's leadership in disaster risk reduction and climate action.



Dhaka, May 2022

Gitanjali Singh

Director General
Bangladesh Bureau of Statistics
Ministry of Planning

Preface

The Pilot Survey on Disaster-Affected Households: Sex, Age, and Disability Disaggregated Data (SADDD) for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) has been prepared as part of the Bangladesh Government's efforts to develop disaster risk statistics with sound methodology in addressing gender issues.

A key priority of this intervention has been to apply the United Nations' required frameworks and protocols while mainstreaming gender considerations. The report was followed as far as possible depending on the disaster risk data production capability in Bangladesh. The objective of this report is to assist in the development, coordination, and organization of BBS methodological guidance, including that of the relevant data production and delivery agencies.

In close collaboration with UN-Women, BBS has taken the initiative to prepare the pilot survey report on time. It is a comprehensive guideline, analytic framework, and integrated platform for collecting, analyzing, and disseminating disaster-related risk data. This guideline and analytical framework are likely to support the SDGs, SFDRR, the Paris Agreement, BCCSAP, the 8th FYP, and other subsequent plans of Bangladesh. The SADDD, would serve as a guide or handbook for the stakeholders, as well as act as a guiding force for conducting a full-scale large sample SADDD survey at the national level in the future.

My sincere thanks and gratitude are due to Dr. Shahnaz Arefin, *ndc*, Secretary, Statistics and Informatics Division; Ms. Dilruba Haider, Programme Specialist of UN Women, and her team for providing wholehearted support in preparing this report.

Special thanks are also due to distinguished members of the Technical Working Committee, Monitoring Committee, Editors Forum of BBS and Report Review Committee of SID for their contribution to the analytical improvement of the report.

I would also like to offer my sincere appreciation and gratitude to the ECDS team led by Mr. Md. Rafiqul Islam, Joint Director and Focal Point Officer, who actively coordinated the whole process and got the final report prepared.

BBS efforts will be a success once the report is deemed applicable in Bangladesh. Suggestions and comments will be highly appreciated.

Dhaka: May 2022

Mohammad Tajul Islam

Joint Director
and
Focal Point Officer
ECDS Cell, BBS

Editorial

This report, based on the findings of the 'Pilot Survey on Disaster-Affected Households: Sex, Age, and Disability Disaggregated Data (SADDD) for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA)' has been prepared as part of the Bangladesh Government's efforts to capacity buildup of disaster risks, vulnerability, and resilience. We hope this will enable BBS to create detailed gender responsive disaster risk statistics in line with the Sendai Framework for Disaster Risk Reduction (SFDRR), Sustainable Development Goals (SDG) etc. indicators for mapping, tracking, and monitoring of progress towards sustainable environmental development and management.

This pilot survey report on 'Disaster-Affected Households: Sex, Age, and Disability Disaggregated Data (SADDD)' prepared by the Environment, Climate Change, and Disaster Statistics (ECDS) Cell, BBS is based on an analysis of household surveys conducted during the COVID-19 period (2021) with funding from UN-Women. This would equip BBS and the Government of the People's Republic of Bangladesh in formulating an integrated strategic action plan and guidelines for collecting, analyzing, and disseminating sex, age and disability disaggregated gender responsive climate change and disaster-related data and information on the basis of national priorities and future plans focused on the SDGs, SFDRR, the Paris Agreement, BCCSAP, the 8th FYP, and other successive plans of Bangladesh.

This pilot survey is to test the methodology and analytical framework so that future gender responsive disaster risk statistics can be collected on a regular basis, emphasizing disaster risk reduction (DRR), Disaster Risk Management (DRM), adaptation, resilience, and prosperity in Bangladesh under the four priorities of the SFDRR and SDG.

My deep gratitude and sincere thanks to Mr. M. A. Mannan, *MP*, Honourable Minister, Ministry of Planning; Dr. Shamsul Alam, Honourable Minister of State, Ministry of Planning; Dr. Shahnaz Arefin *ndc*, Secretary, Statistics and Informatics Division, Ministry of Planning and Director General, BBS for their interest, support and advice to the needs to bring out this important statistical methods and report on time.

My sincere thanks and deep gratitude to Mr. Shaikh Md. Kabedul Islam, Additional Secretary (Informatics), Mr. Rezaul Azam Faruqui, Additional Secretary (Development), Mr. Md. Shahabuddin Khan, Additional Secretary (Administration) Statistics and Informatics Division (SID), and Mr. Kazi Nurul Islam, Deputy Director General (Joint Secretary), BBS, for their outstanding support and continuous guidance in preparing the report on time.

I extend my gratitude and sincere thanks to Ms. Dilruba Haider, Programme Specialist, Climate Change Adaptation, Disaster Risk Reduction, and Humanitarian Action, Ms. Priodarshine Auvi, Programme Analyst, EmPower, Mr. Kausik Das, Programme Analyst, DRR, CCA&HA, UN-Women, Bangladesh for their continuous support and valuable suggestions on bringing out this report.

It would be an injustice if I do not acknowledge Dr. Abu Syed, Senior Consultant, SADDD Programme, ECDS Cell, BBS who took the main responsibility of writing the report and prepared the Analytical Framework of the report. I am also thankful to Mr. Atindra Kumar Ghosh, Senior Consultant, ECDS Project, BBS who provided valuable input towards technical integrity and completion of this report. I would like to express my sincere thanks to the Chairman and members of the Technical Committee, ECDS Cell, BBS, Monitoring Committee, Report Review Committee of SADDD, and Editors Forum of BBS for their participation, reviewing and providing feedback to finalize the report.

My heartfelt thanks and gratitude go to Mr. Md. Rezaul Karim, Consultant, SADDD Program, ECDS Cell, BBS for his outstanding assistance in effectively processing, tabulating and analyzing data available from the survey.

I would like to thank and extend my gratitude to Mr. Jahid Hossain, Deputy Director, Mr. Md. Sohel Rana, Statistical Officer, Mr. Md. Nazrul Islam, former Assistant Statistical Officer, BBS, and all members of the ECDS team, who took the responsibility in preparing and finalizing the publication with their sincerity and dedication. In addition, I also wish to thank them for arranging the inception and draft sharing workshop within the shortest timeline, which provided us an excellent opportunity for sharing and exchanging ideas that allowed us to complete this survey successfully.

I believe that this pilot report will serve as a guide as well as a handbook related to gender responsive disaster risk data for all stakeholders including the government and non-government organizations, policymakers, academics, researchers, among others.

Comments and suggestions on this report will be much appreciated.

Md. Rafiqul Islam

Dhaka: May 2022

Key findings[1]

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
01	**Household**	**91871**	**100.00**
	Teknaf, Cox's Bazar	16131	17.56
	Shyamnagar, Satkhira	53826	58.59
	Chilmari, Kurigram	21915	23.85
02	**Population**	**398693**	**100.00**
	Teknaf, Cox's Bazar	72657	18.23
	Shyamnagar, Satkira	230332	57.77
	Chilmari, Kurigram	95703	24.00
03	**Household Size**	**-**	**4.34**
04	**Sex composition of population**	**398693**	**100.00**
	Male	200074	50.18
	Female	198446	49.78
	Hijra	173	0.04
05	**Sex Ratio**		**100.73**
06	**Household Head by Sex**	**91871**	**100.00**
	Male	82102	89.37
	Female	9769	10.63
	Hijra	0	0.00
07	**Population by Age Group**	**398693**	**100.00**
	00 – 04	39889	10.00
	05 – 09	37614	9.43
	10 -19	74579	18.71
	20 – 29	70224	17.61
	30 - 39	58966	14.79
	40 - 49	45359	11.38
	50 - 59	34711	8.71

[1] All figure are weighted data related to selected to three disaster prone upazilas (sub-district), namely Shyamnagar, Chilmari and Teknaf of Bangladesh.

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	60 - 69	23900	5.99
	70 - 79	9527	2.39
	80 - 89	2981	0.75
	90 - 99	942	0.24
08	**Population by Religion**	**398693**	**100.00**
	Islam	322157	80.80
	Hindu	76535	19.20
	Buddhist	0	0.00
	Christian	0	0.00
	Others	0	0.00
09	**Marital Status (10 years +)**	**321189**	**100.00**
	Unmarried	85691	26.68
	Married	218403	68.00
	Widow and widower	14498	4.51
	Divorce	1477	0.46
	Separated	1119	0.35
10	**Highest Educational attainment of population**	358803	100.00
	No Education	76185	21.23
	Primary	137329	38.27
	Junior Secondary	84547	23.56
	Secondary	24129	6.72
	Higher Secondary	20774	5.79
	Graduation	8859	2.47
	Masters	5822	1.62
	Others	1158	0.32
11	**Disability Status of population at the age of 05 years and up**		
	a) Visual difficulty, even with glasses	**358803**	**100.00**
	No difficulty	324735	90.51

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Some difficulty	27105	7.55
	A lot of difficulty	6174	1.72
	Cannot do at all	746	0.21
	Don't know	43	0.01
	b) Hearing difficulty, even with a hearing aid	**358803**	**100.00**
	No difficulty	341610	95.21
	Some difficulty	13159	3.67
	A lot of difficulty	3516	0.98
	Cannot do at all	473	0.13
	Don't know	45	0.01
	c) Waking difficulty	**358803**	**100.00**
	No difficulty	339441	94.60
	Some difficulty	13250	3.69
	A lot of difficulty	5031	1.40
	Cannot do at all	1021	0.29
	Don't know	60	0.02
	d) Mental Illness	**358803**	**100.00**
	No difficulty	343946	95.86
	Some difficulty	11469	3.20
	A lot of difficulty	2910	0.81
	Cannot do at all	400	0.11
	Don't know	80	0.02
	d) Physical Disability	**358803**	**100.00**
	No difficulty	348712	97.19
	Some difficulty	6512	1.81
	A lot of difficulty	2799	0.78
	Cannot do at all	751	0.21
	Don't know	30	0.01

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	e) Speech impediment	**358803**	**100.00**
	No difficulty	349989	97.54
	Some difficulty	6121	1.71
	A lot of difficulty	2583	0.72
	Cannot do al all	81	0.02
	Don't know	30	0.01
12	**Main Occupation of the Household Head**	**91871**	**100.00**
	Agriculture	28190	30.68
	Business	12558	13.67
	Job	5654	6.15
	Day Labour	33437	36.40
	House Wife	4667	5.08
	Student	89	0.10
	Maid Servant	694	0.76
	Not in Work	407	0.44
	Unable to work	4465	4.86
	Not applicable	1710	1.86
13	**Employment Status of household head**	**91871**	**100.00**
	Employer	2560	2.79
	Self-employed (Agriculture)	28762	31.31
	Self-employed (Non-agriculture)	10047	10.94
	Unpaid family helper	2568	2.80
	Employee	5498	5.98
	Day labour	28114	30.60
	Internee/ Apprentice/Trainees (with pay)	45	0.05
	Domestic Worker	2745	2.99
	Family business without pay	2456	2.67
	Others	9075	9.87
14	**Activity of household**	**321189**	

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Production of fruits, vegetables and wooden trees	13247	4.12
	Poultry and livestock raring	69627	21.68
	Catching fish from open water bodies	4135	1.29
	Fish cultivation	17060	5.31
	Collection of wood/fuel/livestock Feed	5378	1.67
	Collection of drinking water	16004	4.98
	Collection of mineral resources	48	0.01
	Processing and drying of crops	7604	2.37
	Production/processing of livestock feed	426	0.13
	Picking, recycling, and management of waste Processing and drying of crops	0	0.00
	Production of Crop	0	0.00
	Others	4546	1.42
15	**Households who have changed jobs/ occupation in the last 12 months**	**91871**	**100.00**
	Yes	2264	2.46
	No	89607	97.54
16	**Household heads who worked at least one hour per week in the last 12 months**	**2264**	**100.00**
	Yes	1410	62.28
	No	854	37.72
17	**Households by their main source of drinking water.**	**91871**	**100.00**
	Pipe/Supply water	221	0.24
	Shallow Tube-well	41380	45.04
	Deep Tube-well	23976	26.10
	Pond/Dighi	10643	11.58
	River/Cannel	62	0.07
	Water fall	924	1.01
	Water pipe neighbor	2885	3.14
	Well, / Indra	216	0.24

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Rain Water	3004	3.27
	River/ Stream/ Dam /Lake/ Pond /Canal Irrigation channel	31	0.03
	Bottled water	7794	8.48
	Others	736	0.80
18	**Households based on where to find drinking water**	**91871**	**100.00**
	In the Room	957	1.04
	Within the premises	41106	44.74
	Elsewhere	44741	48.70
	Don't answer	5067	5.52
19	**Households' distribution based on collection time (in minutes) for drinking water**	**77998**	**100.00**
	00 – 09	30682	39.34
	10 – 19	17106	21.93
	20 – 29	9425	12.08
	30 – 39	13081	16.77
	40 – 49	5197	6.66
	50 – 59	942	1.21
	60 – 69	1193	1.53
	70 – 79	160	0.21
	80 – 89	100	0.13
	90 – 99	111	0.14
20	**Households broken down on the basis of water collectors according to gender and age**	**91871**	**100.00**
	Female child (under 15 years)	869	0.95
	Adult woman (age 15+ years)	76017	82.74
	Male child (under 15)	1571	1.71
	Adult man (age 15+ years)	13028	14.18
	Don't know	387	0.42

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
21	**Households by type of mode of transportation used for collecting drinking water**	**91871**	**100.00**
	Walking	78658	85.62
	Bicycle	5943	6.47
	Motorcycle	241	0.26
	Car/Bus/van/shared vehicle/Public transport	4662	5.07
	Not applicable	2368	2.58
22	**Households by type of purification of drinking water**	**91871**	**100.00**
	Boiling	1830	1.99
	Add Bleach/Chlorine	161	0.18
	Strain through a cloth	8072	8.79
	Utilization of a water filter	12507	13.61
	Solar disinfection	26	0.03
	Process of sedimentation	5294	5.76
	No treatment before drinking	52128	56.74
	Don't know	1732	1.89
	Others	1547	1.68
	Not applicable	8574	9.33
23	**Households by type preservation of purified Drinking Water**	**91871**	**100.00**
	Containers made of plastic, ceramic, or metal with small openings	39374	42.86
	Containers with large openings made of plastic, ceramic, or metal	12061	13.13
	Plastic, ceramic or metal container has no cover	8535	9.29
	Different types of Containers	9876	10.75
	No preservation for any drinking water	20974	22.83
	Don't know	1051	1.14
24	**Number of households where member(s) of the household became ill as a result of drinking water contaminated from common sources.**	**91871**	**100.00**

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Sick more than three times	6841	7.45
	Sick one time	9029	9.83
	Not sick	69002	75.11
	Don't know	6999	7.61
25	**Risk of Drinking Water Source due to pollution, chemical, animal waste, and urine, etc.**	**91871**	**100.00**
	Water was collected from other source	12952	14.10
	Water was collected from same source	8946	9.74
	No risk for collecting water	60133	65.45
	Don't know	9840	10.71
26	**Households by type of toilet facilities**	**91871**	**100.00**
	Flush to Sewerage system and septic tank with water sealed	5688	6.19
	Pucca toilet with water sealed	18712	20.37
	Pucca toilet without water sealed	44121	48.02
	Kutcha Hanging Toilet	5757	6.27
	Open Space	533	0.58
	Flush to open drainage	504	0.55
	Flush to anywhere	1067	1.16
	Flush to pit latrine	11801	12.85
	Others	3688	4.01
27	**Households based on whether members of a household share a toilet with members of another household**	**91871**	**100.00**
	Not sharing with the members of other households	78788	85.76
	Share with members of other Households	12535	13.64
	Open for all	548	0.60
28	**Households by location of toilet facilities**	**91871**	**100.00**
	In the Room	8777	9.55
	Within the Premises	80063	87.15
	Elsewhere	3031	3.30

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
29	**Households with toilets have adequate lighting and other amenities.**	**91871**	**100.00**
	Yes, it is well illuminated and has a lock.	29266	31.86
	Yes, it is well illuminated but doesn't have a lock	27434	29.86
	Has a lock but not Well illuminated	8857	9.64
	No, it is neither illuminated nor has a lock	26313	28.64
30	**Households based on the types of toilets used**	**91871**	**100.00**
	A treatment plant	532	0.58
	Covered pit	77458	84.31
	Uncovered pit	10552	11.49
	Bush/Open space	429	0.47
	River/ Dam/ Lake/ Pond/ Stream/ Canal/ Irrigation channel	1104	1.20
	Others	1241	1.35
	Don't know	556	0.60
31	**Households by types of toiletries used for hand washing**	**91871**	**100.00**
	Soap/Detergent	57981	63.11
	Ash/Mud/Sand	29523	32.14
	None	4366	4.75
32	**Households by main types of Fuel used for cooking**	**91871**	**100.00**
	Electricity	70	0.08
	Liquefied petroleum gas (LPG)	4337	4.72
	Natural gas	2723	2.96
	Bio-gas	1068	1.16
	Kerosene	0	0.00
	Coal	107	0.12
	Wooden Coal/Charcoal	344	0.37
	Wood	56672	61.69
	Straw / Shrubs / Grass	14666	15.96

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Animal Dung	9110	9.92
	Agricultural Crop residue	2760	3.00
	No food cooking	0	0.00
	Others	14	0.02
33	**Households with windows in the kitchen for ventilation and access to natural light**	**91871**	**100.00**
	Cooking location has at least one window for ventilation and natural light.	64773	70.50
	Cooking location has at least one window for ventilation but no natural light	5793	6.31
	Cooking location has at least one window for natural light but no ventilation	5923	6.45
	No windows	15382	16.74
34	**Households by time spent on fuel collecting**	**71483**	**100.00**
	1 - 59 minutes	53963	75.49
	60 - 119 minutes	8600	12.03
	120 - 179 minutes	5500	7.69
	180 - 239 minutes	176	0.25
	240 - 299 minutes	49	0.07
	300 + Minutes	3194	4.47
35	**Household by types of cooks, classified based on their gender and age.**	**91871**	**100.00**
	Female child (under 15)	50	0.05
	Adult woman (age 15+ years)	90312	98.30
	Male child (under 15)	634	0.69
	Adult man (age 15+ years)	768	0.84
	Don't know	107	0.12
36	**Households by location of kitchen**	**91871**	**100.00**
	In a separate room	20417	22.22
	Within premises	60815	66.20
	Separate building/structure	9963	10.84

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Outside	578	0.63
	Others	98	0.11
37	**Households by types of collectors of cooking fuel based on gender and age**	**91871**	**100.00**
	Female child (under 15)	7	0.01
	Adult woman (age 15+ years)	61541	66.99
	Male child (under 15)	702	0.76
	Adult man (age 15+ years)	28525	31.05
	Nobody fetches fuel	29	0.03
	Don't know	18	0.02
	Not applicable	1050	1.14
38	**Household Affected by Natural Disaster in the Last 12 Months (Multiple Answer)**	**91871**	
	Flood	43930	47.82
	Cyclone	70511	76.75
	Strom/Tidal Surge	10100	10.99
	River/Coastal Erosion	23261	25.32
	Landslide	1784	1.94
	Salinity	39481	42.97
	Others	15436	16.80
39	**Households received Early Warning by types of natural disasters (Multiple Answer)**	**91871**	
	Flood	25090	27.31
	Cyclone	65208	70.98
	Strom/Tidal Surge	7187	7.82
	River/Coastal Erosion	12997	14.15
	Landslide	0	0.00
	Salinity	0	0.00
	Others	12301	13.39
40	**Households' disaster preparedness by types of disasters (Multiple Answer)**	**91871**	

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Flood	16906	18.40
	Cyclone	54967	59.83
	Strom/Tidal Surge	6936	7.55
	River/Coastal Erosion	12712	13.84
	Landslide	0	0.00
	Salinity	0	0.00
	Others	11194	12.18
41	**Households according to the mode of early warning received**	**91871**	
	Radio	6368	6.93
	Television	50273	54.72
	Making	89401	97.31
	Community	11396	12.40
	Local administration	39097	42.56
	Mobile/SMS	8862	9.65
	Internet/Media	7996	8.70
42	**Households by Mode of Disaster Preparedness (Multiple Answer)**	**91871**	
	Preserved drinking water	62264	67.77
	Preserved dry food	70840	77.11
	Preserved valuable goods	35214	38.33
	Preserved medicine	45119	49.11
	Preserved seeds	5256	5.72
	Move livestock to a safe place.	15400	16.76
	Raised bed	14833	16.15
	Preserved cereals	12873	14.01
	Stayed at a shelter	31881	34.70
	Took shelter on an embankment or on high ground	3483	3.79
	Took shelter in another area, temporarily.	2121	2.31

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Children or pregnant women were sent to a safe place.	4030	4.39
	Livestock was sent to a safe place.	11036	12.01
	Disinfect household/property	593	0.65
	No preparation was taken	0	0.00
43	**Households affected by natural disasters based on the types of afflictions (Multiple Answer)**	**91871**	
	Injury	2897	3.15
	Illness	14487	15.77
	Death	447	0.49
	Sickness	6694	7.29
	Missing	582	0.63
	Loss and Damage of the Residence	69806	75.98
	Dwellings destroyed	25071	27.29
	Personal income decreased	41639	45.32
	Loss and Damage of Crops	22286	24.26
	Loss/Illness of livestock	4986	5.43
	Lose/Illness of Fisheries	13394	14.58
	Personal property was damaged or destroyed.	557	0.61
	Children did not attend school.	26426	28.76
	Damaged of Water Source	12652	13.77
	Job Loss due to Natural Disaster	255	0.28
	Impact on Mental Health	40744	44.35
	Crime increased	2742	2.98
	Victims of violence	148	0.16
	Damage of Vehicles	300	0.33
44	**Households by type of assets owned by households**	**91871**	
	Radio	4840	5.27
	Television	25868	28.16

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Telephone	1235	1.34
	Mobile Phone/Smart hone	81103	88.28
	Bus/Truck	629	0.68
	Microbus/Car	261	0.28
	Computer/Laptop	2006	2.18
	Refrigerator (Freeze)	10717	11.67
	Mechanical Boat/Trollers	722	0.79
	Freeze/Deep Freeze	2666	2.90
	Motor Cycle	11637	12.67
	CNG/Auto Rickshaw	2002	2.18
	Rickshaw/Van	4556	4.96
	By-Cycle	36076	39.27
	Khat/Palanko	55606	60.53
	Sewing Machine	16173	17.60
	Chauki	53404	58.13
	Almirah/Ware Drop	44530	48.47
	Own Solar	45543	49.57
	Boat (without engine)	1630	1.77
45	**Households by type of dwelling ownership**	**91871**	**100.00**
	Individual ownership	72823	79.27
	Joint ownership	15189	16.53
	Rented	1001	1.09
	Did not own a dwelling, but did not pay rent either	2859	3.11
46	**Households by types of dwelling ownership documents**	**91871**	**100.00**
	Households have ownership documents.	71166	77.46
	Households do not have ownership documents.	18652	20.30
	Don't know	2053	2.24
47	**Households by land transfer rights**	**73219**	**100.00**

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Households have land transfer right	61949	84.61
	Households do not have land transfer right	9900	13.52
	Don't know	1370	1.87
48	**Households by types of agricultural land ownership documents**	**73219**	**100.00**
	Households have ownership documents.	49817	68.04
	Households do not have ownership documents.	21816	29.80
	Don't know	1586	2.16
49	**Households by ownership document category**	**73219**	
	Title Deed	36467	49.81
	Traditional Deeds of Ownership	20135	27.50
	Inherited Registered Deeds	50202	68.56
	Survey Records	54392	74.29
	Registered Rental Contact	1743	2.38
	Registered Lease Contact	3211	4.39
	Others	540	0.74
50	**Households based on the right to sell one's own agricultural land**	**73219**	**100.00**
	Have right to sell	34961	47.75
	Don't have right to sale	30723	41.96
	Don't know	993	1.36
	Respondents prefer not to answer	1624	2.22
	Not applicable	4917	6.71
51	**Households based on the right to transfer one's own agricultural land**	**73219**	**100.00**
	Have right to transfer	34503	47.12
	Don't have right to transfer	29807	40.71
	Don't know	1221	1.67
	Respondents prefer not to answer	1628	2.22
	Not applicable	6060	8.28

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
52	**Households by ownership of cultivated agricultural land by sex**	**73219**	**100.00**
	Male	45064	61.55
	Female	3333	4.55
	Hijra	0	0.00
	Not applicable	24821	33.90
53	**Households facing loss and damage to agricultural land by types of disasters (Multiple Answers)**	**73219**	
	Land erosion	14502	19.81
	Decrease fertility of land (not disaster)	22151	30.25
	Waterlogging	17687	24.16
	Salinity intrusion in agricultural land	23075	31.52
	No damage and loss	17706	24.18
54	**Households by type of awareness of the environmental risks of using excess fertilizer (and more, such as r pesticides, discuss)**	**77087**	**100.00**
	Have awareness	39093	50.71
	Don't have awareness	37994	49.29
55	**Households by types of measures taken to avoid using of excess fertilizer and pesticides as well as environmental risk (Multiple Answer)**	**77107**	
	Adherence to label directions for pesticide application	26115	33.87
	Adjustment of planting time	5720	7.42
	Application of crop spacing	5144	6.67
	Application of crop rotation	7775	10.08
	Application of mixed cropping	3079	3.99
	Application of inter-cropping	7594	9.85
	Perform biological pest control	11124	14.43
	Use of bio pesticides	12387	16.06
	Adopting pasture rotation to suppress livestock pest population	4039	5.24

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Automatic removal of plant parts attacked by pests	10803	14.01
	Maintenance and cleansing of spray equipment after use	13639	17.69
	Use one pesticide no more than two times (or in mixture) in a season to avoid pesticide resistance	3761	4.88
56	**Households by Pesticides used on the land for crops and animal husbandry last year (Multiple Answers)**	**91871**	
	Inorganic pesticides	39149	42.61
	Organic pesticides	11728	12.77
	Pest killer	68201	74.24
	Hormones	19288	20.99
57	**Households by type of awareness related to environmental and health hazards from using pesticides**	**91871**	**100.00**
	Have awareness	52886	57.57
	Don't have awareness	38985	42.43
58	**Households by the type of agricultural product they produce as their source of income (multiple answer)**	**91871**	
	Paddy	28823	31.37
	Jute	5524	6.01
	Potato	5411	5.89
	Wheat	3688	4.01
	Maize	5938	6.46
	Pulse	6162	6.71
	Vegetables	10714	11.66
	Oil seed	5149	5.60
	Fruits	5985	6.51
	Spices	171	0.19
	Flowers	169	0.18
	Milk	2063	2.25

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Fisheries	17943	19.53
	Poultry	16759	18.24
	Livestock	8334	9.07
	Others agricultural products	2764	3.01
59	**Household income from non-agriculture activities by category (Multiple answer)**	**91871**	
	Service	11820	12.87
	Business	13661	14.87
	Day Labour	28273	30.77
	Remittance	731	0.80
	Savings Interest	421	0.46
	Interest received from cooperatives	602	0.66
	Interest received from small financial savings	103	0.11
	Interest received from lending money	0	0.00
	Receipt from Life Insurance	202	0.22
	Share/Bond	39	0.04
	Social Security benefit	3097	3.37
	Others	1917	2.09
60	**Households by types of income from other selected sources (multiple answers)**	**91871**	
	Sale of Timber Trees	6287	6.84
	Sale of Fruit Trees	1513	1.65
	Sale of Tree Leaves	1196	1.30
	Sale of Straw/ Bichali/ Bhushi/ Kurha/ Husk	3102	3.38
	Sale of Organic Manure / Dung	416	0.45
	Land / Garden Mortgage / Lease	1870	2.04
	Rent of agricultural equipment's	134	0.15
	Shop/House Rent	931	1.01
	Others	2150	2.34
61	**Household engaged in fishing**	**91871**	**100.00**

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Engaged in fishing	7717	8.40
	Didn't engage in fishing	84154	91.60
62	Perception of Households about changing status of forest land, grazing land and other land	91871	100.00
	Forests and pastures / forest lands decreased	62408	67.93
	Forests and pastures / forest areas increased	950	1.03
	Didn't find the same kind of animals and plants	517	0.56
	Dryness	11942	13.00
	Polluted and not useable	3896	4.24
	Area was no longer exists (industrialization privatization or closure)	496	0.54
	Area was completely in danger due to flood / drought / other reasons	11664	12.70
63	**Households broken down by how they perceived the loss of income /property caused by natural disaster due to climate change (Multiple answers)**	**91871**	
	Insect attacks	34203	37.23
	Flood cyclone/ Flash flood	68432	74.49
	Increased temperature	54840	59.69
	Decreased temperature	10717	11.67
	Very hot	47024	51.18
	Very cold	21244	23.12
	Increased rainfall	28107	30.59
	Decreased rainfall	19567	21.30
	Increased in vector-borne Diseases	5634	6.13
	Lack of water availability	34033	37.04
	Extinction of biodiversity/endangered species on land	5562	6.05
	Extinction of biodiversity/endangered species under water	4441	4.83
	Increased air pollution	15914	17.32

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Increased sea level	13084	14.24
	Increasing disease germs	17251	18.78
	Increased spread of parasites	0	0.00
	Water pollution	27279	29.69
	Salinity	41754	45.45
	Others	33	0.04
	No problems encountered	0	0.00
64	**Households experienced mental/ physical harassment during and after natural disasters**	**91871**	**100.00**
	Experienced mental/ physical harassment	62	0.07
	Didn't experience mental/ physical harassment	87830	95.60
	Didn't known	3133	3.41
	Preferred not to answer	846	0.92
65	**Household members took shelter on temporary basis**	**91871**	**100.00**
	Took **temporary shelter**	34469	37.52
	Didn't take **temporary shelter**	57402	62.48
66	**Types of experience by household who took shelter on temporary basis**	**34469**	
	A certain distance could not be maintained in each room because there were so many people in the shelter	33063	95.92
	The shelter was not disabled-friendly	19890	57.70
	Lack of women-friendly sanitation facilities	25512	74.01
	No special arrangements for lactating and pregnant women	18410	53.41
	There was a risk of any kind harassment due to Lack of sufficient lighting	10103	29.31
67	**Decision-making in the household**		
	a) Expenditure	**91871**	**100.00**
	Household head	43351	47.19
	Husband or wife themselves	11076	12.06

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Husband and wife jointly	36628	39.87
	Didn't make any decision	816	0.88
	b) Purchasing of cereals	**91871**	**100.00**
	Household head	36900	40.17
	Husband or wife themselves	10143	11.04
	Husband and wife jointly	44150	48.06
	Didn't make any decision	679	0.73
	c) Purchasing of livestock and poultry	**91871**	**100.00**
	Household head	24992	27.20
	Husband or wife themselves	8988	9.78
	Husband and wife jointly	50104	54.54
	Don't make any decisions	7787	8.48
	d) Purchasing of agricultural products	**91871**	**100.00**
	Household head	33666	36.65
	Husband or wife themselves	8401	9.14
	Husband and wife jointly	31898	34.72
	Didn't make any decision	17905	19.49
	e) Purchasing of farm products	**91871**	**100.00**
	Household head	26413	28.75
	Husband or wife themselves	7267	7.91
	Husband and wife jointly	34581	37.64
	Didn't make any decision	23610	25.70
	f) Purchasing of patrol/gas/fuel	**91871**	**100.00**
	Household head	36370	39.59
	Husband or wife themselves	8759	9.53
	Husband and wife jointly	36057	39.25
	Didn't make any decision	10685	11.63
	g) Purchasing of medicine and health equipment	**91871**	**100.00**

Serial No.	Description	Number/ Value as of 2021	Percentage (%)
1	2	3	4
	Household head	30368	33.05
	Husband or wife themselves	9103	9.91
	Husband and wife jointly	50002	54.43
	Didn't make any decision	2398	2.61
	h) Waste Management	**91871**	**100.00**
	Household head	30224	32.90
	Husband or wife themselves	10945	11.91
	Husband and wife jointly	41932	45.64
	Didn't make any decision	8770	9.55
	i) Use of vehicle/transportation	**91871**	**100.00**
	Household head	38139	41.51
	Husband or wife themselves	9253	10.07
	Husband and wife jointly	32752	35.65
	Didn't make any decision	11728	12.77

ACRONYMS

ADB	Asian Development Bank
BBS	Bangladesh Bureau of Statistics
BCAS	Bangladesh Center for Advance Studies
BCCRF	Bangladesh Climate Change Resilient Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
CC	Climate Change
CCA	Climate Change Adaptation
CCGAP	Climate Change and Gender Action Plan
CCU	Climate Change Unit
CDM	Comprehensive Disaster Management
CDMP	Comprehensive Disaster Management Program
CSOs	Civil Society Organizations
DDM	Department of Disaster Management
DEBTEC	Development of Biotechnology and Environmental Conservation Centre
DFID	The Department for International Development
DMIC	Disaster Management Information Centre
DMB	Disaster Management Bureau
DPs	Development Partners
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DRSF	Disaster-related Statistics Framework
DWA	Department of Women Affairs
ECDS	Environment, Climate Change and Disaster Statistics
ENSO	El Niño-Southern Oscillation
FFWC	Flood Forecasting and Warning Center
FYP	Five Year Plan
GAD	Gender and Development
GDA	Gender Disaggregated Analysis
GDP	Gross Domestic Product
GGGR	Global Gender Gap Report
GFDRR	Global Facility for Disaster Reduction and Recovery
HHs	Households

ACRONYMS

IFRC	The International Federation of Red Cross and Red Crescent Societies
IOD	The Indian Ocean Dipole
IMDMCC	Inter-Ministerial Disaster Management Coordination Committee
IPCC	Inter-Governmental Panel on Climate Change
MCCP	Mujib Climate Prosperity Plan
MoDMR	Ministry of Disaster Management and Relief
MoEF	Ministry of Environment and Forest
MoF	Ministry of Food
MoP	Ministry of Planning
MoPME	Ministry of Primary and Mass Education
MoSW	Ministry of Social Welfare
MoWCA	Ministry of Women and Children Affairs
MoWR	Ministry of Water Resources
NAO	The North Atlantic Oscillation
NAP	National Action Plan
NAPA	National Adaptation Program of Action
NCB	National Coordinating Body
NDMC	National Disaster Management Council
NGO	Non-Governmental Organization
NPDM	National Plan for Disaster Management
NPWA	National Policy for Women's Advancement
NSAPR	National Strategy for Accelerated Poverty Reduction
NWDP	National Women Development Policy 2011
PID	Press Information Department
SADDD	Sex, Age and Disability Dis-aggregated Data
SFDRR	Sendai Framework for Disaster Risk Reduction
SOD	Standing Orders on Disaster'
WAD	Women and Development
WID	Women in Development
WEF	World Economic Forum

Executive Summary

Executive Summary

This pilot survey, first of its type, was conducted to capture sex, age, and disability disaggregated data (SADDD) on disaster affected households for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA). Besides, one of the main objectives of this pilot survey was to become familiar with a through methodology, guidelines, theoretical and conceptual analytic framework that would benefit BBS with concerned Government Agencies in conducting full-fledged, large-scale core surveys to collect disaster-related data disaggregated by age, sex, and disability in the future. This survey covered a total of three upazilas (sub-district), 180 disastrous mauzas, 91871 disastrous households and 398693 people. The samples consisted of 70 disaster-affected mauzas and 2800 households. This survey produced a wide range of disaster-related data disaggregated by sex, age and disability for three upazilas of Bangladesh. It should be emphasized that the data in this research only covers 180 devastating mauzas spread over three upazilas (Teknaf, Shyamnagar and Chilmari). The important findings available from this pilot survey are summarized below to give readers an overview and a clear understanding of the content along with the findings of the report.

The vulnerability and exposure of societies and ecological systems to climate-related hazards vary due to the changes in economic, social, demographic, cultural, institutional and governance circumstances. The findings have generated evidence to conclude that gender roles and responsibilities not only shape women's and men's differential access, ownership, and control over resources, but also influence their capacities and capabilities to respond to climate induced disasters and extreme events. Hence, addressing the gender issues in climate change and disaster risks related policies, practices and research is a priority.

Household and population characteristics

- *The total population was estimated at 398693 of which men accounted for 200074 (50.18%), women accounted for 198446 (49.77%) and hijras accounted for only 173 (0.04%).*
- *The age group 10 to 19 had the highest population (18.71%), followed by 20 to 29 (17.61 %), and 30 to 39 (14.79%).*
- *Around 52.49% of the total population of calamitous households was between the ages of 20 and 59. This information suggests that the disastrous households in the studied upazilas had been experiencing a demographic dividend.*
- *Four people made up the greatest proportion (30.15%) of the total 91871 disastrous households. On the other hand, 0.75 % of households had ten or more people. The average household size was estimated to be 4.34.*

Level of educational attainment

- *Approximately 21.23% of the total population (aged 5 and up) had no formal education, while 38.27% had either some primary level of education or had completed primary*

education. It is to be noted that the greater the non-schooling rate, the older the group. Clearly, people's enthusiasm for education has grown over time.

- *Approximately 23.56 % of the total population had either some junior secondary level of education or completed junior secondary level of education. On the other hand. 12.51 % of the total population completed secondary, or higher secondary level of education. Around 4.0 % completed graduate or postgraduate education.*
- *Even among disaster-affected households, data on education levels broken down by sex reveals no significant gender differences except at the graduate and postgraduate levels.*

Gender inequality

- *Men made up 89.40% of those working in compensated occupations (agriculture, business, service, day labor, and domestic service), while women made up only 10.60%. This data demonstrates considerable differences in access to resources, status, and well-being between men and women.*
- *Of the total population that individually owned agricultural land, men accounted for 93.11% and Women accounted for only 6.89%. Women's rights to land are clearly marked by discrimination, deprivation, and eviction.*
- *Of the total population that had individual ownership of dwelling 90.82 were men while 9.18% were women. Housing ownership rights are highly unequally distributed, and women's socioeconomic empowerment is being hampered by unequal housing ownership rights.*
- *Around 80.69% of the total male household heads had ownership documentation, compared to just 66.81% of the female household heads. Despite their efforts to secure their rights in the family, society, and the state, Bangladeshi women continue to experience substantial discrimination and hardship, according to these statistics.*
- *Of the total number of housewives and house husbands who were responsible for accomplishing household chores, only 1.46 % house husbands and 98.54 % housewives were primarily responsible for household chores.*
- *Women aged 15 years and up used to collect firewood for 67.80% of households, while men of the same age group used to collect firewood for 31.42% of households.*
- *Women aged 15 years and up used to prepare food for 98.30%, while men of the same age group used to prepare food for 0.84% of households. This information indicates that women (age 15 and up) were mainly responsible for preparing food to meet their needs.*

Disability status of population

- *Around 7.55 % of people (aged 5 and up) had vision impairments, even with glasses; 1.72 % had severe vision problems, even with glasses; and 0.21 percent were completely blind.*

- *Even with hearing devices, 3.67% of people had some hearing impairment. Even with hearing aids, 0.98 percent of people had significant hearing impairments, and 0.13 percent were completely deaf.*
- *Approximately 3.69% had some difficulty walking. About 1.40 % of people had difficulty walking, and another 0.29% were not able to walk at all.*
- *Around 3.20% of people were experiencing some form of mental disorder (having difficulty remembering or concentrating). As many as 0.81% of people had severe mental disorders. As few as 0.11% of people were unable to work due to mental illness.*
- *Approximately 1.81% had some difficulty with self-care, such as washing all over or dressing. As many as 0.78 % of people had significant difficulty with self-care, and another 0.21% of people were completely unable to self-care.*
- *As many 1.71% of people reported some difficulty speaking and using common (customize) language. Around 0.72% of people reported significant difficulty speaking and using a common (customize) language, while 0.02% was completely unable to do so.*

Marital Status

- *Out of the total population aged 10 to 19, approximately 11.67% were currently married. The information suggests that child marriage (for both boys and girls) is still a deeply ingrained* norm in our society.

Main source of drinking water

- *Shallow tube-wells were the main source of drinking water for 45.04 percent of households, and deep tube-wells were the main source for 26.10 percent of households, which suggests that groundwater is still the main source (71.14%) of drinking water in three selected upazilas studied.*
- *Around 3.38% of households had access to drinking water supplied by WASA/Municipalities. Approximately 11.92% of households were mainly dependent on surface water, such as ponds, rivers, and canals.*

Sanitation and toilet

- *Of total households, approximately 6.19% had flush toilets, 20.37% had pucca toilets with water sealed, and 48.02 had pucca toilets without water sealed. The remaining 25.42 percent of households used other types of latrines, such as open defecation.*
- *Around 23.23%, 87.15% and 3.30% of households, respectively, had toilets in the room, on the premises, or elsewhere (outside of the premises).*
- *Of total households, as many as 63.11% of households had soap or other type of detergent for washing their hands after a trip to the toilet, and as many as 32.14% of households used ash, mud, or sand for their hand washing after using the toilet. The rest, 4.75 percent of households did not use anything to wash their hands after using the toilet.*

- *As many as 36.89 % of the total households lacked adequate and effective toiletries for washing their hands after using the restroom.*

Cooking fuel used by households

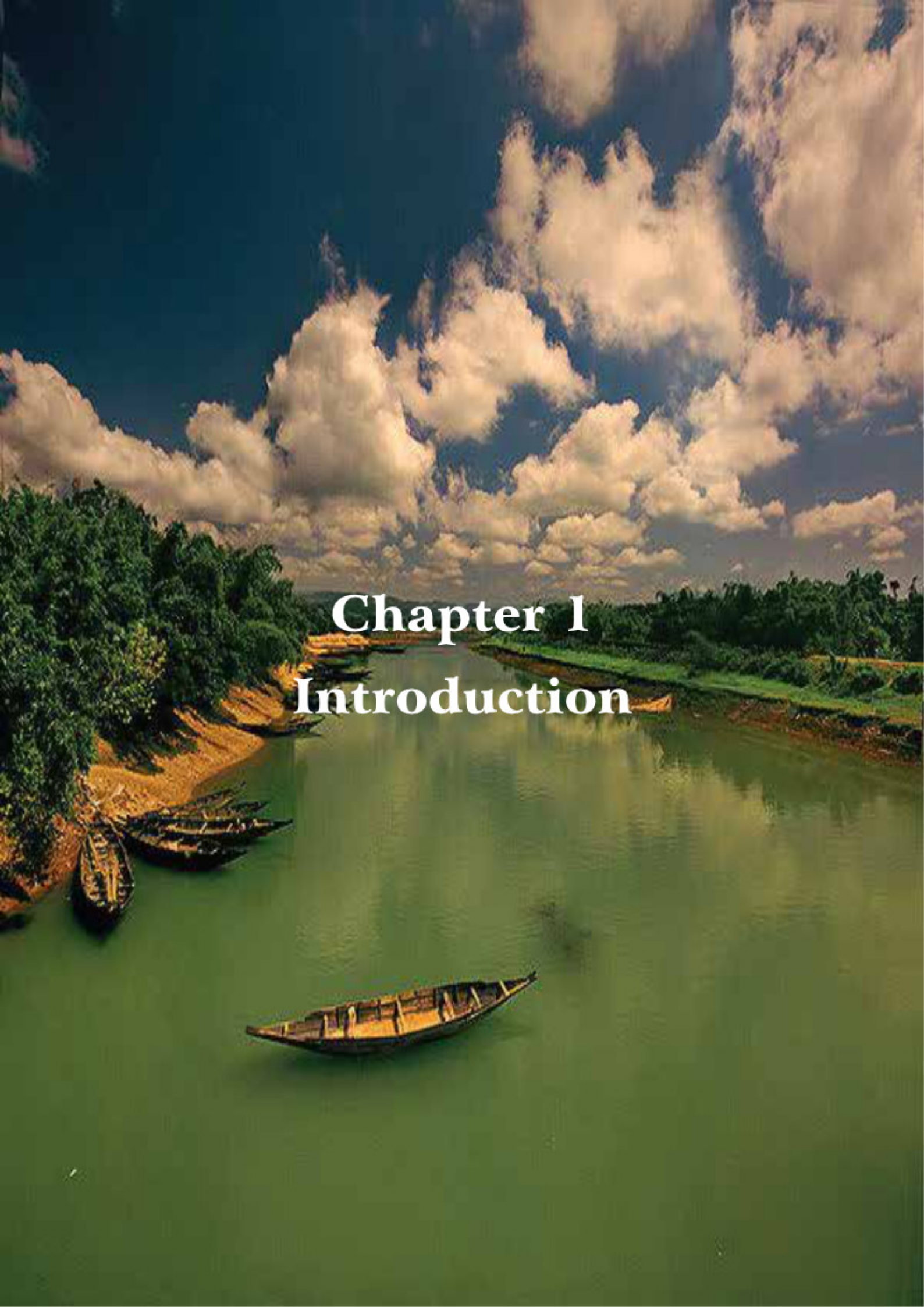
- *Wood, wooden coal and charcoal were used by 62.06% of households. About 8.85% of households consumed gas, LPG, or biogas as their cooking fuel. Around 0.12% used kerosene as their cooking fuel.*
- *As few as 0.08% of households used electricity as their cooking fuel. It is clear from the survey results that most households (90.95%) in disaster areas used solid fuels as their primary cooking fuel. The remaining 9.05% of households used modern fuels such as gas, LPG, kerosene, and electricity as their cooking fuel.*

Incidence of natural disaster

- *Cyclone, flooding, and river erosion affected 76.38%, 47.82%, and 25.32% of total households in three upazilas, respectively.*
- Teknaf upazila was largely devastated by the cyclone (91.98%), followed by flooding (63.77%). Shyamnagar upazila was severely affected by cyclones (99.59%) and saline intrusion (69.81%). Chilmari upazila was mainly affected by flooding (99.95%) and river erosion (33.47%).

Decision-making in the household

- Among household members, the head of the household, either the husband or wife or the husband and wife together, made 47.19%, 12.06%, and 39.87% of the total number of decisions about the expenditure of money.
- Among household members, the head of the household, either the husband or wife or the husband and wife together, made 40.71 %, 11.04 %, and 48.06 % of the total number of decisions about the expenditure on food.
- Among household members, the head of the household, either the husband or wife or the husband and wife together, made 27.20%, 9.78%, and 54.53. % of the total number of decisions about the expenditure related to the purchase of domestic animals.
- Among household members, the head of the household, either the husband or wife or the husband and wife together, made 36.64 %, 9.14 %, and 34.72. % of the total number of decisions about the expenditure related to the purchase of agricultural equipment.



Chapter 1
Introduction

Chapter 1
Introduction

1.0 Background

Bangladesh has a small area of 147,470 square kilometers, but a large population of 168.22 million people (as of July 2020), yielding a population density of 1140 people per square kilometer[2]. It has a tropical monsoon climate characterized by wide seasonal variations in rainfall, high temperatures, and high humidity. Bangladesh, the world's largest delta system (GBM Delta) draining into the Bay of Bengal carrying estimated 2.4 billion tons of sediment, which is also rendering the region among the most fertile globally. The country has common borders with India and Myanmar, and crisscrossed by over 405 rivers[3] and tributaries primarily of the Ganges, Brahmaputra and Meghna rivers.

The geographical location, land characteristics, numerous rivers, the monsoon climate, and socio-economic conditions put communities in Bangladesh highly vulnerable to natural disasters. Its location at the put hill of Hindu Kush Himalayan Mountain system and the coastal morphology of Bangladesh influences the level of impacts from natural disasters in the country[4]. Bangladesh experiences floods (seasonal, flash flood and recurring floods), cyclones, storm surges, river/coastal erosion, drought, salinity intrusion and ingression etc. All of these disasters have caused massive damages to lives, assets and livelihoods of the people in Bangladesh. Again, during dry season many parts of the country faces serious shortage of surface and ground water. These adverse phenomena greatly hinder the development of the country in lost lives, livelihoods, assets and infrastructure[5].

The high level of poverty along with low infrastructure base and high population density exacerbates vulnerability to catastrophic events that affect lives and livelihoods[6]. Changing patterns of rainfall and melting snow and ice are altering freshwater systems, affecting the quantity and quality of water available in the South Asia and Bangladesh where we have "the Third Pole" the Himalayan mountains mostly governs Bangladesh is divided into eight administrative divisions viz., Dhaka Division (where the capital city is located), Chattogram, Barisal, Mymensingh, Khulna, Rajshahi, Rangpur and Sylhet. Under them, there

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[2] Bangladesh Sample Vital Statistics 2020 by Bangladesh Bureau of Statistics (BBS), Ministry of Planning, Dhaka

[3] Bangladesh Water Development Board (2020). Trend of Water Level of Major River in Bangladesh during the last six year (2014 to 2019), Analysis of Water Level along the Brahmaputra-Jamuna, Ganga-Padma & Surma-Meghna River System, Surface Water Processing Branch BWDB, 72, Green Road, Dhaka

[4] Krishnan, Raghavan. Shrestha, Arun B. Ren, Guoyu. Rajbhandari, Rupak Sajjad, Saeed. Sanjay, Jayanarayanan. Syed, Md. **Abu.** Vellore, Ramesh. Qinglong You Ying Xu and Yuyu Ren (2019) Unravelling Climate Change in the Hindu Kush Himalaya: Rapid Warming in the Mountains and Increasing Extremes. In: Wester P., Mishra A., Mukherji A., Shrestha A. (eds) The Hindu Kush Himalaya Assessment. Springer, Cham; https://doi.org/10.1007/978-3-319-92288-1_3

[5] Hoque MAA, Phinn S, Roelfsema C, Childs I. 2018. *Assessing tropical cyclone risks using geospatial techniques. Appl Geogr. 98:22–3*

[6] Arfanuzzaman, M. and Syed, M.A. Water Demand and Ecosystem Nexus in the Transboundary *River Basin: A Zero-sum Game, Environment, Development and Sustainability, Springer* (Africa, Asia & Europe), doi:10.1007/s10668-017-9915-y

are 64 districts which consist of 492 sub-districts (Upazila), 12 City Corporations and 330 Municipalities.

The World Risk Index 2021 (WRI 2021) assesses 181 countries according to their disaster risk. This encompasses almost all of the world's population. In a global assessment of disaster risk, Asia ranks fourth with a median of 5.80 for 45 nations. The WRI 2021 also reveals that in Asia, five nations – Brunei Darussalam (WRI 22.77), the Philippines (WRI 21.39), Bangladesh (WRI 16.23), Cambodia (WRI15.8), and Timor-Leste (WRI 15.75) – fall into the highest risk group. It is to be noted that the World Risk Index (WRI) is based on a total of 27 indicators.

The government has aimed to increase the localization of risk governance within the sub-districts, unions, mauzas, villages and localities by implementing the Standing Orders on Disaster[7] (SOD) plan, in which roles and responsibilities for each stakeholder and relevant party are identified in efforts to better manage disasters at the grassroots level (Ministry of Disaster Management and Rehabilitation).

The Bangladesh Bureau of Statistics (BBS), like many other national statistical organizations across the world, mainly collects data at the national, subnational, and regional levels. The aggregate data primarily provides information on specific national or subnational targets. This aggregate data, on the other hand, does not provide enough information to determine whether specific segments of our country's population, such as boys and girls, men and women, the elderly, and the young, have made significant progress or are falling behind in terms of development. According to numerous research documents, women, the aged, and the disabled are more vulnerable and the impact of disaster is not neutral for them. Disaggregated data on sex, age, and disability is very critical to identify the most vulnerable members of society and to design appropriate and effective plans for their development. Without sex, age, and disability disaggregated data, it is not possible to know if policies and interventions are leaving the most vulnerable people even further behind.

The governments of Bangladesh take the major lead in reducing overall risk through effective response, rehabilitation, and recovery efforts from major disasters, as well as by providing emergency humanitarian assistance to the most vulnerable members of the society. Due to lack of sex, age, and disability disaggregated data (SADDD) for humanitarian assistance to the people of the country is expected to be limited. If sex, age, and disability disaggregated data (SADDD) is accessible, our government and other non-government organizations can better determine and respond to vulnerabilities and their needs.

It has long been felt by the BBS, along with all concerned stakeholders, that all surveys and studies should be designed in a way that we can get as much sex, age, and disability disaggregated data (SADDD) as feasible. In this context, BBS has planned to conduct all upcoming surveys in this way to be able to provide disaggregated data based on sex, age, and

[7] Ministry of Disaster Management and Relief (MoDMR) 2019. Standing Orders on Disaster 2019, Dhaka 1000

disability in the future, in response to user demand and in order to allow gender analysis and gender-based policymaking. As a result, it was critical to perform a pilot survey in order to obtain a clear picture of the methodological issues of collecting disaggregated data by sex, age, and disabilities.

With this background, this pilot survey on disaster affected household: sex, age, and disability disaggregated data (SADDD) aimed to better understand how to collect sex, age and disability disaggregated data. Besides, this pilot survey enabled us to test the survey tools, including the questionnaire, survey structure, and distribution channels.

1.2 Objective of the pilot survey

The major goals of this household-based pilot survey were to identify issues and challenges that could hinder 'Sex, Age, and Disability Disaggregated Data' collection processes for Disaster Risk Reduction (DRR) and Climate Change Adaption (CCA) during the main large-scale sample survey. In fact, this pilot survey was initiated as a rehearsal for an upcoming original large sample survey to collect SADDD, and this pilot survey can serve as a tool for the successful implementation of the future full-blown survey. However, the specific objectives of the survey were:

- *To collect 'Sex, Age, and Disability Disaggregated Data (SADDD) from disaster-affected households for disaster risk reduction (DRR) and climate change adaptation (CCA) as a rehearsal and preparation for conducting a full-fledged survey in the future, and to analyze gendered situations;*
- *To become acquainted with a thorough methodology, guidelines, and theoretical and conceptual analytic framework that would aid BBS and other interested organizations in conducting full-fledged, large-scale core surveys to collect disaster-related data disaggregated by age, sex, and disability in the future;*
- *To increase the knowledge base on how to collect age, sex, and disability disaggregated data in line with the global standard;*
- *To analyze difficulties that might arise during the main survey, with the goal of collecting sex, age, and, disability disaggregated data (SADDD) for disaster risk reduction and climate change adaptation;*
- *To test the survey instruments, including the questionnaire, so that they could be revised and restructured based on the lessons learned from this pilot survey to further use in the main upcoming large sample survey;*
- *To test the survey functionalities related to sex, age and disabilities segregated data at different touch of points;*
- *To identify and correct errors that may harm the overall data collection process during the main survey, and to take the necessary measures to address the problems;*

- *To know the appropriate time required to fill in the questionnaire by the interviewers*
- *To evaluate the ability and willingness of the respondents to understand the questions;*
- *To determine the quantitative range of different variables that can be used in the future to construct questionnaires;*
- *To test the appropriateness regarding logical flow or sequence of the questions;*

1.3 The significance of sex, age, and disability disaggregated data (SADDD)

The importance of sex, age, and disability disaggregated data is given below.

1. *The availability of sex, age, and disability disaggregated data (SADD) can strengthen efficient monitoring of the Sendai Framework;*
2. *Specific impacts of disaster on vulnerable group can be clearly visible and understood through sex, age and disability disaggregated data (SADDD);*
3. *We can use SADDD to inform the priorities and practice to shape a rights-based and evidence-based approach to DRR across all sectors;*
4. *SADDD can provide us a unique opportunity for measuring the differences between men and women, the elderly and young, the disabled and able-bodied people on various social and economic dimensions;*
5. *Sex, age, and disability disaggregated data, (SADDD) can be used to perform gender and age and disability analysis;*
6. *Using SADDD, we can gather data on person with disabilities and understand their proportion in the population to identify potential policy needs and impacts. It also provides a variety of disability rates for various age groups.*
7. *Women and girls with disabilities are more likely than women and girls without disabilities to be victims of violence, sexual abuse, and exploitation. SADDD can count the number of women and girls with disabilities, which helps us develop policies for women and girls with disabilities;*
8. *Data on people with disabilities also answers the question of how many people with disabilities can fully participate in their respective jobs as well as society;*
9. *As long as the data is collected, analyzed, and used properly, SADDD can help us to develop support and programming tailored to the individual's needs;*
10. *To help promote gender equality and social inclusion while building resilience, the SADDD collection can inform policy development and provide a monitoring tool related to the Sendai Framework.*

11. *To advance women's equality and economic and social development, gender-disaggregated data analysis can provide a robust evidence base for use by governments, the private sector, academic researchers, and others.*

1.4 Organization of the pilot survey

This pilot survey was implemented by Bangladesh Bureau of Statistics (BBS). The funding for the survey was provided by UN Women. An Inter-Ministerial Technical Working Committee (TWC) consists of relevant experts from both BBS and outside the BBS, and was established. This committee provided overall technical support regarding survey methodology, sample design, and questionnaire development. An in-house ECDS team was also formed with representatives from different wings of the BBS. This team reviewed the scope, objectives and draft questionnaire of the survey and recommended several survey items to include and exclude from the survey.

1.5 Output of the pilot survey

The output of this pilot survey is the availability of and accessibility to sex, age, and disability disaggregated data (SADDD) on disaster affected households for disaster risk reduction (DRR) and climate change adaptation (CCA). It is to be noted that the data presented in this report relates to only 180 disastrous mauzas within three upazilas of Bangladesh.

1.6 Experience gathered and lessons learned from the pilot survey

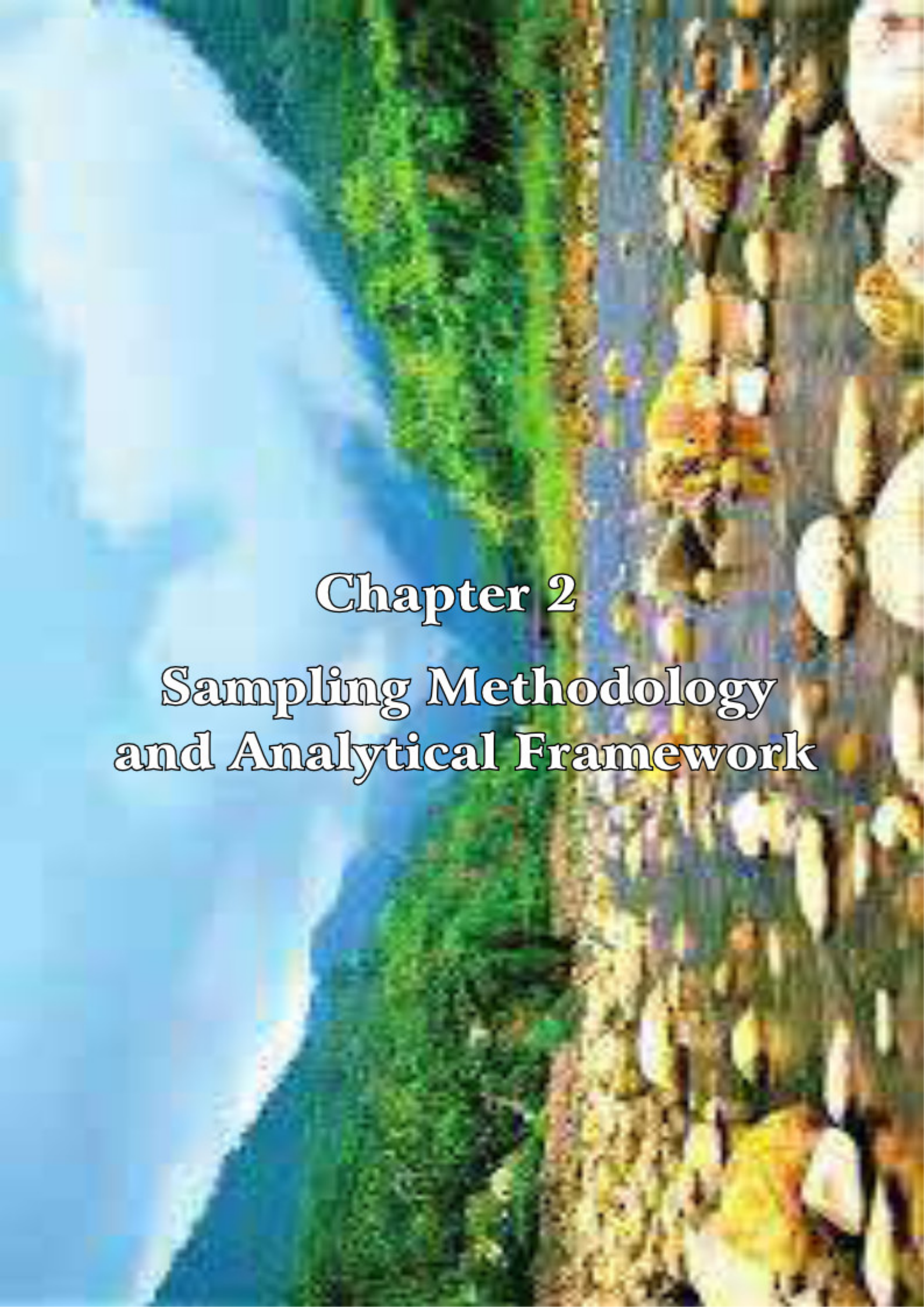
This pilot survey was conducted to collect disaggregated sex, age, and disability data (SADDD) in preparation for a future main sample survey and to determine how it will be planned. Experience gathered and lessons learned from this pilot survey may act as a guiding force for conducting a full-blown survey smoothly in the future. The following are the lessons learned from this pilot survey:

- *Due to time constraints and adverse conditions caused by COVID-19, some deficiencies and weaknesses remained in the questionnaires constructed for collecting sex, age and disability disaggregated data.*
- *The size of the questionnaire was too large to be answered by the respondents.*
- *Answers to the questions related to a person were taken from the proxy respondent. That may have caused bias in the answer. Proxy respondents should be avoided as far as possible. However, if the respondent is unable to answer for any reason, then proxy responses can be used. and*
- *In many cases, due to the weakness of the questionnaire design, collected data could not be tabulated based on sex, age, and disability disaggregated data.*

1.7 Limitation of the pilot survey

All methodological and sampling aspects were properly followed and used with a high level of professional integrity and technical accuracy to effectively conduct this pilot survey. Even then, the survey has some issues and limitations, as described below.

- *The survey frame could not be obtained from any survey or census. The survey frame (list frame) was newly built by officials from the Upazila (sub-district) statistical offices through a quick count. This list (list frame) of mouzas or mahallas affected by natural disasters was used for conducting this pilot survey. Therefore, this (list) frame may be slightly deficient regarding its exhaustiveness.*
- *This household-based pilot survey was conducted during a nationwide health emergency due to the COVID-19 pandemic. As a result, quality rapport between interviewers and interviewees was lacking, which may have hampered the quality of data gathered in the field.*
- *This pilot survey did not collect data on the number of people injured or died by sex, age, or disability, which was crucial for sex, age, and disability analyses.*
- *The pilot survey did not collect data related to job losses due to disasters disaggregated by sex, age, and disability.*
- *The pilot survey did not collect information on the effects of catastrophic events on schooling for boys and girls. and*
- *Furthermore, sampling error exists in this survey, just as it does in any other sample survey.*



Chapter 2

Sampling Methodology and Analytical Framework

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A. Sampling Methodology

The appropriateness of survey methodology as well as the sampling scheme have a significant impact on the data quality of a survey. In fact, the survey methodology and sampling scheme are central to a survey. Survey methodology is the in-depth study of selected sample units from a population. It includes processes that ask different types of questions to a pre-defined sample in order to collect data and increase survey response rates. It also entails studying the methods used in the survey as well as the theories or principles behind them in order to develop an approach that is appropriate for the planned survey.

On the other hand, the purpose of a sampling scheme in a survey is to obtain sufficient samples that are representative of the target population. Since it is often impractical to obtain data from the total population of interest, a subset or sample of the population is used to estimate population responses. The sampling technique is very critical in order to make reliable conclusions about the population. The use of an appropriate sampling technique allows us to include samples with characteristics that are similar to those of the population. This chapter provides an overview of the survey methodology and sampling strategy, including sample size determination.

2.1 Sampling Design

A sampling design is the framework, or road map, that serves as the basis for the selection of samples and affects many other important aspects of a survey as well. The sample design provides the basic plan and methodology for selecting the sample. It is to be noted that the target population of this pilot survey had not been accurately identified in any previous survey or studies, and a sampling frame for this pilot survey could not be constructed immediately owing to a lack of sufficient information. As a result, the key actions of the survey were to identify the study population and design the sampling frame through a pre-survey census. For this reason, before the pilot survey was carried out, a complete count and rapid assessment were carried out to identify the disastrous mouzas in three upazilas (Teknaf, Shyamnagar, and Chilmari). This count, as well as rapid assessment, produced comprehensive data on the disastrous status of the mauzas. The list of all of these disastrous mauzas served as a list frame for this pilot-survey. A total of 180 mauzas were identified as those that were affected at least once by disasters.

2.2 Universe of the pilot survey

The population/universe of this pilot survey consisted of all households that were significantly devastated at least once by natural disasters.

2.3 Primary sampling unit (PSU)

All mouzas (well-defined geographical units) that were affected by the negative repercussions of natural disasters were treated as primary sampling units (PSU). For the following reasons, mouzas were chosen as Primary Sampling Units (PSU). The number of PSUs (devastated mouzas) was estimated to be 181.

- Have clearly identifiable boundaries that remain unchanged over time; and
- The target population is completely covered

2.4 Ultimate sampling unit (USU)

For this survey, the ultimate sampling units (USU), the subject of sample selection, were the households that were affected by natural disasters.

2.5 Stratification

A total of 181 disastrous mauzas was divided into following six mutually exclusive stratums. Stratification was done based on the type of disaster that mostly affected the mauzas. The following table shows the distribution of mauzas stratified by type of disasters.

Table 2.1: Type of stratum

Type of stratum	Type of disaster	Disaster code	Number of disasters affected Mauzas
Stratum I	Flood	2	25
Stratum II	Cyclone	4	42
Stratum III	Storm/Tidal Surge	6	4
Stratum IV	River/Coastal Erosion	8	35
Stratum V	Landslides	9	2
Stratum VI	Salinity	10	73
Total			**181**

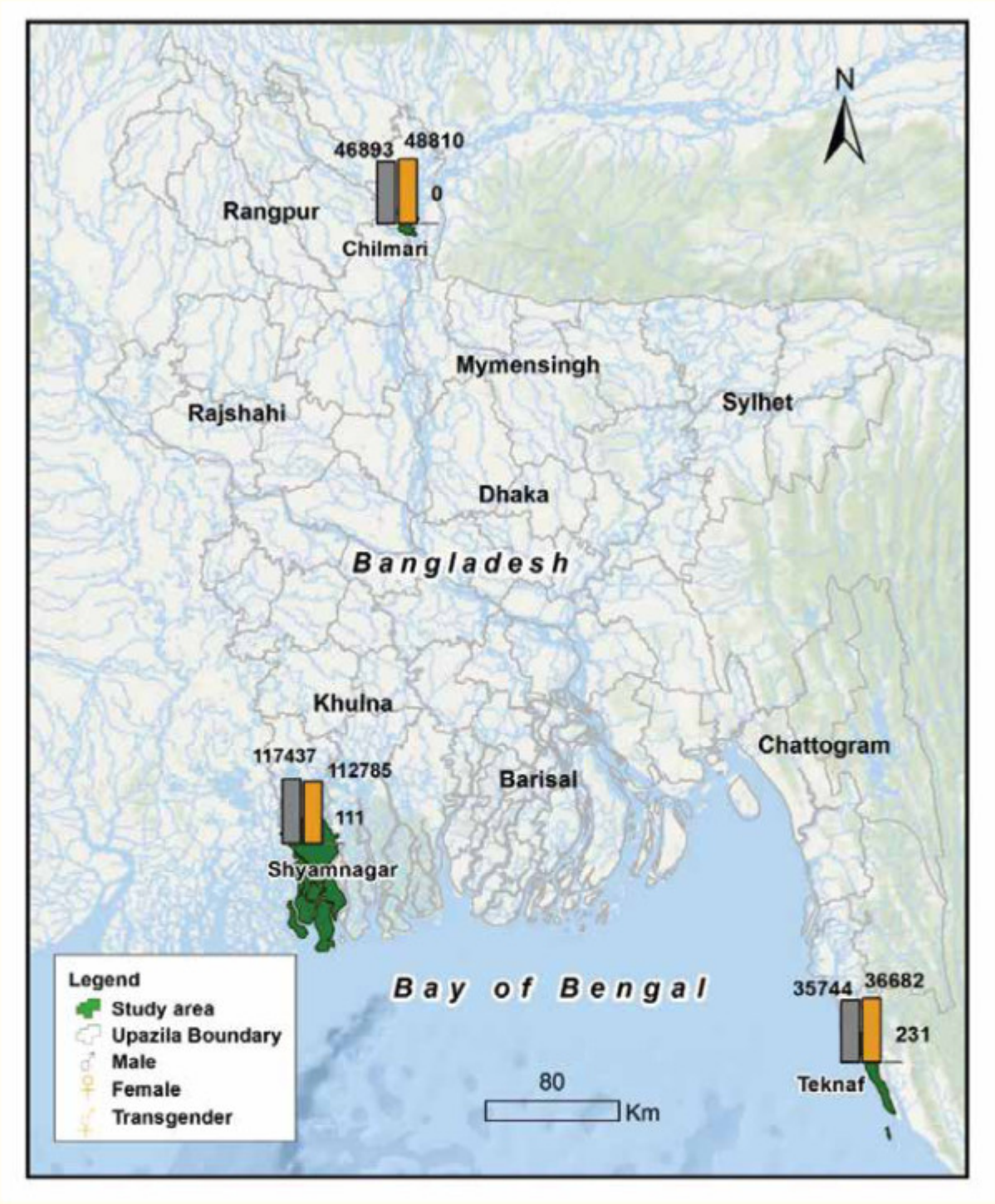

Figure 2.1 Survey a map showing the spatial distribution of sample HHs

2.6 Selection and allocation of mauzas in stratum

It was decided to select 16 mauzas from each stratum if the number of disasters affected mauzas was more than 16, and all mauzas if the disaster affected mauzas were less than or equal to 16. On this principle, a total of 70 mauzas out of 180 mauzas were selected for investigation. It is to be noted that stratum III and stratum V, respectively, had only 4 and 2 disaster-affected mauzas, and all disaster mauzas were chosen as sample mauzas.

Table 2.2: Type of stratum

Type of stratum	Type of disaster	Number of disaster affected mauzas in three upazilas	Number of sample mauzas
Stratum I	Flood	25	16
Stratum II	Cyclone	42	16
Stratum III	Storm/Tidal Surge	4	4
Stratum IV	River/Coastal Erosion	35	16
Stratum V	Landslides	2	2
Stratum VI	Salinity	73	16
	Total	**181**	70

2.7 Segmentation of mauzas

If the selected mauzas (primary sampling unit) had around 150 households, then the whole mauza was treated as one enumeration area (EA). For larger mauzas (based on the number of households), each mauza was divided into different segments in such a way that each segment consists of around 150 households. Then one segment was randomly selected and that selected segment was treated as an enumeration area (EA) to conduct a household-based pilot survey for capturing disaster-related data disaggregated by sex, age, and disability. Thus, 70 selected mauzas (PSUs) contained a total of 70 enumeration areas (EA). Segmentation of mauzas required a full procedure entailing a visit to mauzas and preparing a sketch map using a quick count and mapping of the dwellings. Another visit to the selected mauzas was required to obtain the current list of the households in the selected segment of the sample mauza.

2.8 Selection of households (ultimate sampling unit)

A complete and comprehensive list of households in each enumeration area (EA) was developed with little ancillary information. From the constructed list, a total of 40 households was selected for interviewing. The total number of sample households was 2800 (40 households from each of 70 EAs). A relatively large number of households from each selected enumeration area was taken with the view of including people with disabilities as much as possible. A total of forty households were selected by using systematic sampling.

Table 1.3 Distribution of sample households by stratum

Stratum	Disaster Name	Number of mauzas	Selected Number of mauzas	Selected number of households
Stratum I	Flood	25	16	640
Stratum II	Cyclone	42	16	640

Stratum	Disaster Name	Number of mauzas	Selected Number of mauzas	Selected number of households
Stratum III	Storm/Tidal Surge	4	4	160
Stratum III	River/Coastal Erosion	35	16	640
Stratum IV	Landslides	2	2	80
Stratum V	Salinity	73	16	640
Total		**181**	**70**	**2800**

2.10 Sample size determination

The sample size is usually determined at the domain level, from which separate estimates will be derived. From general theory, the minimum required sample size is determined by the usual sample size determination formula for estimating proportion, which is given by

$$n = \frac{n_0}{1+\frac{n_0}{N}} \times \text{deff} \quad , \qquad (1)$$

with

$$n_0 = p(1-p)\left[\frac{z(\alpha/2)}{d}\right]^2 \times f \qquad (2)$$

where P is an apriori proportion of the required characteristics in the population, the value of the standard normal variate allowing probability of bad samples, the allowable margin of error, is the population size, and is the design effect used for complex surveys using multi-stage cluster sampling.

Conventionally α can be taken as .05 and f can be taken as 1.5-2.0 for most socio-economic surveys in Bangladesh. Theoretically, an apriori $p = 0.5$ gives the safest sample size since $p(1-p)$ takes the highest value for $p = 0.5$. A common choice for the value of the absolute allowable margin of error is $d = 0.05$. This value doesn't seem to be realistic for scenario where the true value of p is outside the range $0.2 \le p \le 0.8$. The equation (1) is used to revise the sample size in equation (2) for the population size N. It is observed in the theory that for $N \ge 8000$, equation (2) is not much influenced or improved. That is why, equation (2) is straight forwardly used for large population sizes and there is no necessity for increasing the sample size for population becoming any larger.

In this particular Survey under interest, the minimum number of households required in each stratum will be focused and since the number of households in population is fairly larger than 8000, no adjustment for population size will be suggested. The conventional choice of $\alpha = 0.05$ will be considered which would give $z(\alpha/2) = 1.96$. For safer sample size

design effect will be chosen as $f = 1.6$. Taking $p = 0.5$, the minimum required sample size can be obtained to be 616 which can be approximated to 640 HH per domain. Considering 40 HH at the second stage from each of the selected PSUs, the required minimum number of PSUs from each disaster type becomes 16.

2.11 Estimating formula

Since the method of selection is the same for each stratum, following estimating formulae will be applicable to each stratum:

Let y_{ij} be the measure of a variable Y, for j^{th} HH in i^{th} PSU $(j = 1, 2..., N_{2i};\ i = 1, 2..., n_1)$. Let $Y = \sum_{i=1}^{N_1}\sum_{j=1}^{N_{2i}} y_{ij}$ be total of values of Y for all HH in the whole stratum, where N_1 is the number of PSUs in the stratum and N_{2i} is the number of HH in the i^{th} PSU.

Estimate of population total, Y

The estimated total is given by

$$\hat{Y} = \sum_{i=1}^{n_1}\sum_{j=1}^{n_{2i}} w_i y_{ij}\ , \qquad (2.1)$$

where $w_i = \frac{N_1}{n_1} \times \frac{N_{2i}}{n_{2i}}$ is the weight for the measure y_{ij} introduced due to two-stage cluster sampling, n_1 is the number of selected PSUs in the stratum and n_{2i} is the number of HH in the i^{th} selected PSU. Considering weighted measure $z_{ij} = w_i y_{ij}$, the estimator $\hat{Y}$ in (2.1) can be re-written as

$$\hat{Y} = \sum_{i=1}^{n_1}\sum_{j=1}^{n_{2i}} z_{ij}\ . \qquad (2.2)$$

This is an unbiased estimate of population total Y of variable Y, since sampling fraction is small, the variance of $\hat{Y}$ can be estimated by with replacement formula. This is as follows:

$$V(\hat{Y}) = \frac{N_1^2}{n_1}\sum_{i=1}^{n_1}\frac{\left[\hat{y}_i - \hat{Y}\right]^2}{n_1 - 1} + \frac{N_1}{n_1}\sum_{j=1}^{n_{2i}}\frac{N_{2i}^2}{n_{2i}}\frac{\left[y_{ij} - \hat{y}_i\right]^2}{n_{2i} - 1}\ , \qquad (2.3)$$

with $\hat{y}_i = \sum_{j=1}^{n_{2i}} z_{ij}$. Standard error of $\hat{Y}$ is obtained from (3) as

$$SE(\hat{Y}) = \sqrt{V(\hat{Y})} \qquad (2.4)$$

$2 \times SE(\hat{Y})$ is the error of the estimate, $\hat{Y}$, which means that population total, Y, is expected to lie within this error of the estimate in 95% of the cases.

B. Analytical Framework

Bangladesh has been widely acclaimed for its effective Disaster Risk Reduction (DRR), Disaster Risk Management (DRM) implementation activities and its achievement in reducing disaster related mortality and morbidity. The Constitution of Bangladesh plays an essential role in the effective DRR and DRM[8]. The articles, particularly Article 18A of the Bangladesh Constitution, present a holistic approach to the national response to climate change risks. The Constitution of Bangladesh has a positive impact on different phases of disaster risk reduction and management as shown in a matrix (see Annex).

2.1 The legal provisions for DM, DRR and Resilience

As the Constitution supports disaster management and basic rights of protection of its citizens then the management of natural disasters becomes concrete. This enables all the concerned authorities of the government work under obligation of the supreme law of the land. BBS has been endowed with the responsibility to conduct the censuses, surveys, compilation, process and analyze, disseminate reports timely[9] through the Section 6 of the Statistics Act 2013.

The Government emphasized establishing equal rights of women and men in state and public life and ensuring their full and equal participation as declared in the National Women Development Policy 2011 (NWDP) in light of the Constitution and relevant international commitments. Bangladesh has already completed implementation of its National Plan for Disaster Management (NPDM) 2010-2015 when the SFDRR was instituted in 2015 at the United Nations' 3rd World Conference on Disaster Risk Reduction in Sendai, Japan. Bangladesh is a signatory to the SFDRR and has built corresponding priorities into its national context. Further, the NPDM 2016-2020 which is successor of the NPDM 2010-2015, follows the approach of the SFDRR along with global and regional frameworks and a focused hazard-based approach to the integration of disaster management planning and programming focused on risk reduction and resilience in agencies and sectors across the country[10]. The SFDRR is the global blueprint and fifteen-year plan to build the world's resilience to natural disasters. The SFDRR 2015- 2030 outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks. In addition to these, the following key national policy documents guides process of DRR.DRM, Adaptation and resilience:

- National Adaptation Plan of Action (NAPA) 2005
- Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009 –currently under review and update process of final stage
- National Adaptation Plan - currently under formulation final stage

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[8] Hossain, M.N., Nayeem, A.R. and Hassan, M.R. (2020). The Role of the Constitution in Effective Disaster Management of Bangladesh. *Grassroots Journal of Natural Resources*, 3(2): 57-69. Doi: https://doi.org/10.33002/nr2581.6853.03025

[9] Government of the People's Republic of Bangladesh, Ministry of Planning, Statistics & Informatics Division, the Statistics Act 2013

[10] Government of the People's Republic of Bangladesh Ministry of Disaster Management and Relief. National Plan for Disaster Management 2016-2020. 27 March 2017. https://modmr.portal.gov.bd/sites /default/files/files/ modmr.portal.gov.bd/ policies/ 0a654dce_9456_46ad_

- Bangladesh Climate Change Trust Fund

National Plan for Disaster Management (NPDM) 2021-2025 Action for disaster risk reduction[11]: was prepared under the leadership of MoDMR and is aligned with national, regional and international frameworks including Delta Plan 2100, international frameworks

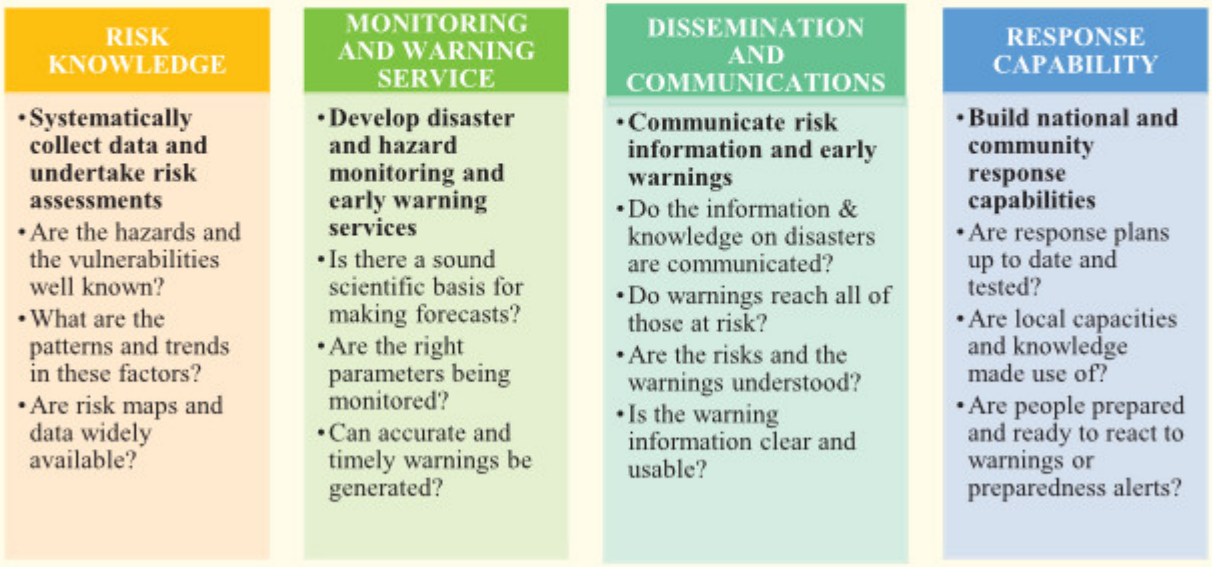


Figure 2.2 the four key elements of risk to resilience

including Delta Plan 2100, 8th 5 Year Plan of Government of Bangladesh, SFDRR, Asia Regional Plan for Implementation of the SFDRR, Dhaka Declaration 2015 Plus for Disability Inclusive Disaster Risk Management. The plan places importance for disaster risk management linking with rapid urbanization and climate change, and the necessity of DRR for sustainable development, and is flexible and adaptive in cognizance of the changing nature of risks in Bangladesh.

This is in line with the Bangladesh Environmental Statistics Framework (BESF) 2016-2030, first of its kind, to develop a methodology for collecting disaster data and create national statistics on disasters SDGs, Sendai Framework for Disaster Risk Reduction (SFDRR), the Paris Agreement, BCCSAP and upcoming National Adaptation Plan (NAP). The BBS may use these disaster statistics in monitoring the implementation of SFDRR, the Paris Agreement, BCCSAP and 8th Five Year Plan, the BBS has to develop a tested methodology for the availability, authenticity and reliability of disaster risk data and related information. So that other government agencies and stakeholders can use both the methodology and data for their own monitoring purpose as well.

2.2 Faces of risks and vulnerability to disasters

Disaster risk "is the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society, or a community in a specific period, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity" (UNDRR, 2017) There are four basic elements risks where each part must function efficiently for the system to be successful in building resilience: i) Risk knowledge builds the baseline understanding

[11] Government of the People's Republic of Bangladesh Ministry of Disaster Management and Relief (MoDMR). National Plan for Disaster Management (2021-2025) Action for Disaster Risk Management Towards Resilient Nation, November 2020. https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/page/a7c2b9e1_6c9d_4ecf_bb53_ec74653e6d05/NPDM%202021-2025%20Draft.pdf

about risks (hazards, disasters and vulnerabilities) and priorities at a given level. ii) Monitoring is the logical follow-on activity to keep up-to-date on how those risks and vulnerabilities change through time. iii) Dissemination and communication of risks knowledge which may be in the information of disaster and its associated risks along with the means to reduce the risks. iv) Response capability insists on each level being able to reduce risk once trends are spotted and announced—this may be through pre-season mitigation activities, evacuation or duck-and-cover reflexes, depending on the lead-time of a warning[12]. Here is the importance of developing a continuous data collection, analyzing, archiving and monitoring on disaster risks and vulnerabilities faced by the people of the country. The author attempted to analyzed the findings keeping these four risk elements in mind while focus on bringing gender (women, men and *Hijra*) differentiated respondent's perceived disaster risk and vulnerability.

Figure 2.3: Understanding the dynamic nature of risk and vulnerability to disasters

Figure 3 shows a conceptual representation dynamic nature of climate risk as a function of hazard, exposure and vulnerability based upon the IPCC SREX report[13]

2.3 Physical Vulnerability

The risks emanate from climate-related hazards (climate trends and extremes) and the vulnerability of exposed societies, communities or systems (in terms of livelihoods, infrastructure, ecosystem services and governance systems)[14]. Effective measures to adapt to climate change and reduce the risks associated with climate change can address all three aspects of risk: hazard, vulnerability and exposure. However, it is important to note that adaptation has limits. The vulnerability and exposure of societies and ecological systems to climate-related hazards vary constantly because of changes in economic, social,

[12] UNDRR (2019). Global Assessment Report on Disaster Risk Reduction, Geneva, Switzerland, United Nations Office for Disaster Risk Reduction (UNDRR), pp. 158–164.

[13] Understanding the dynamic nature of risk in climate change assessments—A new starting point for discussion, Atmospheric Science Letters, Volume: 21, Issue: 4, DOI: (10.1002/asl.958), John Wiley & Sons Ltd for the Royal Meteorological Society 2020

[14] IPCC (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Summary for Policymakers p55-60)

demographic, cultural, institutional and governance circumstances. The projected changes in climate will lead to a range of impacts across different sectors. These include increases in floods, landslides, sedimentation, droughts, heat waves, and shifts in water availability. A 1.5 or 2.0 °C scenario would already lead to significant impacts. The weather and climate of South Asia region is influenced by climate drivers of tropical and extra-tropical origins such as the El Niño-Southern Oscillation (ENSO), the North Atlantic Oscillation (NAO), the Indian Ocean Dipole (IOD), the Madden-Julian Oscillation (MJO), and the Arctic Oscillation. The South Asia region and Bangladesh is sensitive to climate change and variability.

Figure 2.4[15]

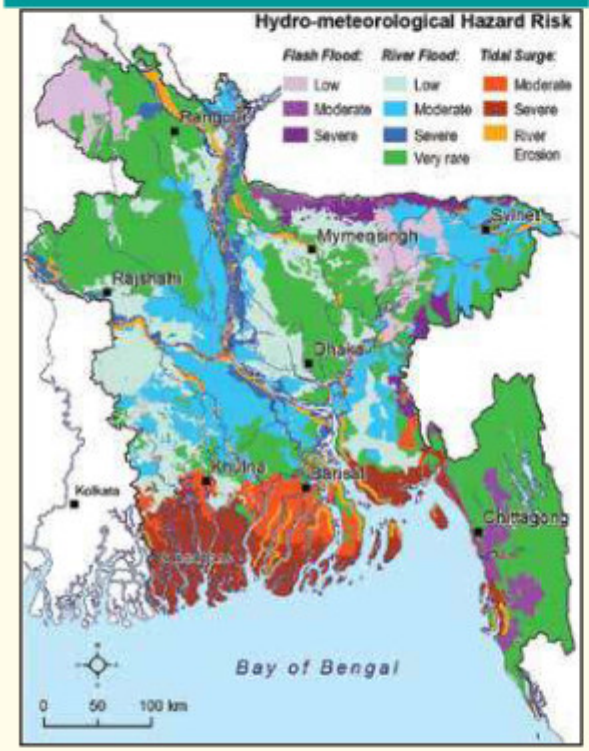
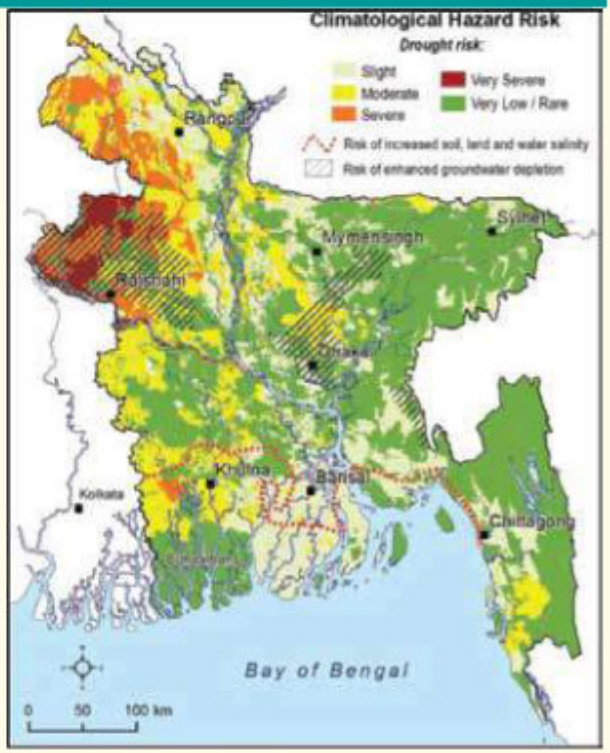


Figure 2.5



The above Map showing rapid-onset hydro-meteorological (e.g., flash floods, river floods, tidal surges, and river erosion) hazard risks. Map shows the slow-onset climatological (e.g., drought, soil, land and water salinization), and climate-driven but anthropogenic (e.g., depletion of groundwater storage) hazard risks.

2.4 Disaster Risk Profile

Bangladesh is considered as among the countries most vulnerable to the impacts of disasters and climate change due to the presence of frequent hydro-meteorological hazards[16]. People of Bangladesh among the most impacted countries between in the Climate Risk Index, experiencing the frequent impacts of cyclones, storms surges, flooding, flash

[15] Sammonds, Peter. Shamsudduha, M. and Ahmed, Bayes 2021. Climate change driven disaster risks in Bangladesh and its journey towards resilience *Journal of the British Academy*, 9(s8), 55–77, DOI: https://doi.org/10.5871/jba/009s8.055, October 2021

[16] CFE-DM. Liaison Journal. Volume X, Spring 2018. Stronger Together: HADR Expert Working Groups. https:// www.cfe-dmha.org/Portals/0/liaison/Liaison-2018-X-1.pdf

flooding, river bank erosion and periodic droughts depending on the season. Annual rainfall can reach 2,000 mm during the monsoon, which can lead to significant water logging and flooding on improperly managed wetland areas on the delta regions[17]. Other hazards include earthquakes, landslides, lighting strikes, possible tsunamis, epidemics as well as riverbank erosion which constitutes to the high flood risks and increasing vulnerabilities across the settlements across the flood plains and coasts. Bangladesh is located in the nexus of Indian, Eurasian and Burmese plates, where collision of the two formerly mentioned are driving the Himalayan orogeny, complex fault systems of which have the potential of generating large-scale seismic activity, increasing the country's significant risk to seismic hazards. Human-induced hazards cannot be overlooked either; urban fires, building collapses, chemical spills and health hazards created by the use of formalin and other industrial chemicals also constitute to the high risks present in the country[18] (Ministry of Disaster Management and Relief, 2017).

Seasonal flooding and riverbank erosion are common on the GBM Delta, following heavy monsoon rains and the synchronization of flood-peaks of the major rivers[19]. The parallel processes contribute to the increased impacts and risk of flooding and erosion, including sea-level rise, sediment accumulation on flood plains, soil erosion due to unmanaged tilling, deforestation of the upstream areas as well as damming of rivers causing river bed aggradation. More recently, the glacier melt on the Hindu-Kush Himalayan (HKH) region has been estimated to increase the flooding impacts on lives due to large numbers of people residing within HKH region in eastern Bangladesh[20],[21].

2.5 Disaster Risks from Floods

Observed pattern already indicates more erratic weather, significant increase in rainfall north and northwest. Conversely, however, the rainy season has become shorter and heavy rainfall occurs within a shorter period in other areas[22]. Rain has highly regional characteristics, which will contribute to the high variability of climate change impacts depending on the locality. The temperature has already increased approximately 0.07° C per

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[17] Ibid

[18] Government of the People's Republic of Bangladesh Ministry of Disaster Management and Relief (MoDMR). National Plan for Disaster Management (2021-2025) Action for Disaster Risk Management Towards Resilient Nation, November 2020. https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/page/a7c2b9e1_6c9d_4ecf_bb53_ec74653e6d05/NPDM%202021-2025%20Draft.pdf

[19] Wesselink, A.; Warner, J.F.; Syed, M.A.; Chan, F.; Tran, D.D.; Huq, H.; Huthoff, F.; Thuy, N. Le; Pinter, N.; Staveren, M.F. van; Wester, P.; Zegwaard, A. International Journal of Water Governance 3 (2015) 4. ISSN 2211-449, p. 25 - 46.

[20] Elalem, S. & Pal, I., 2015. Mapping the vulnerability hotspots over Hindu-Kush Himalaya region to flooding disasters. *Weather and Climate Extremes,* Volume 8, pp. 46-58.

[21] Krishnan, Raghavan. Shrestha, Arun B. Ren, Guoyu Rajbhandari, Rupak Sajjad, Saeed. Sanjay, Jayanarayanan. Syed, Md. Abu. Vellore, Ramesh. Qinglong You Ying Xu and Yuyu Ren (2019) Unravelling Climate Change in the Hindu Kush Himalaya: Rapid Warming in the Mountains and Increasing Extremes. In: Wester P., Mishra A., Mukherji A., Shrestha A. (eds) The Hindu Kush Himalaya Assessment. Springer, Cham; https://doi.org/10.1007/978-3-319-92288-1_3

[22] Syed, M.A.; Al Amin, M. Geospatial Modeling for Investigating Spatial Pattern and Change Trend of Temperature and Rainfall. *Climate* 2016, *4*, 21. http://www.mdpi.com/2225-1154/4/2/21

decade during the monsoon, and up to 0.12° C during early winters[23]. Similarly, annual sea-level rise of 4 to 8 mm has been measured annually across the country[24].

2.6 Disaster Risks from River bank and Coastal Erosion

Low elevation, high population density near the coastline and inadequate infrastructure (such as for embankment, coastal-zone protection, and erosion control) combined with sea level rise, increasing salinization and agricultural losses could lead to increased migration and the displacement of over 22 million people, loss of safe water and food security among other impacts[25]. Landslides could also become more common due to change in regional rainfall patterns, which could also prolong droughts outside the monsoon season. Annual cyclones could also grow more severe, which can worsen inundation, prolong spells of extreme temperature, and may lead to increased prevalence of vector-borne diseases (malaria, dengue, cholera) as well as diarrheal diseases (cholera, typhoid, E. coli) where access to sanitation is lacking.

2.7 Climate induced displacement

Climate induced disasters contribute to the loss of property (cattle, houses and seeds), agricultural land, reduce availability of firewood and thus reduce the opportunities available for income generation in a setting where nearly half of the population is engaged with subsistence agriculture. This could increase not only displacement migration, but also conflicts over resources, property, and increase the risk of gender-based violence[26].

As explored in earlier sections, the level of exposure varies depending on the local topography, seismic conditions, regional rainfall patterns and the proximity of flood plains. Millions of people are inhabiting the GBM Delta, hosting a wide network of rivers which are also cornerstones of livelihoods for fishermen, subsistence farmers and other potentially vulnerable groups[27]. Impacts of cyclones and flooding primarily affecting this area can then cause significant and long-term disruption to the safety of populace, housing and food security[28], as was seen in the aftermath of cyclones *Sidr* in 2007 and subsequent Aila in 2009. Cyclone impacts are often significantly (and disproportionately) higher along the coastal GBM Delta due to the shallow continental shelf, high tidal range of the region, low topography as well as high population density[29]. Also, catastrophic flooding occurs on 5 to 10-year intervals

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[23] Ibid

[24] Environmental Justice Foundation (EJF) 2018. https://ejfoundation.org/reports/climate-displacement-in-bangladesh

[25] Ibid

[26] Ahmed, S. & Eklund, E., 2019. Rural Accessibility, Rural Development, and Natural Disasters in Bangladesh. Journal of Developing Societies, 35(3), pp. 391-411.

[27] Arfanuzzaman, M. and Syed, M.A. Water Demand and Ecosystem Nexus in the Transboundary River Basin: A Zero-sum Game, Environment, Development and Sustainability, Springer (Africa, Asia & Europe), doi:10.1007/s10668-017-9915-y

[28] Syed, M.A. 2015. Impacts of climate change induced sea level rise and salinity on the biological diversity of the Sundarbans Ecosystems, Palli Karma-Sahayak Foundation (PKSF), PKSF Bhaban, Plot: E-4/B,Agargaon Administrative Area, Sher-e-Bangla Nagar Dhaka-1207

[29] Khan, S. R. & Damen, M., 1995. Cyclone Hazards in Bangladesh. Bangkok: ADPC

on average, impacts of which are exacerbated due to riverbank erosion[30], and inadequate funding for maintaining protective embankments[31].

Displacement due to flooding and coastal erosion are also found in rural areas, as people losing their land are forced to move to *chars* - shoal islands or sandy land created during floods in the river, other marginal lands, or less densely populated areas such as hillsides, as well as hazard prone and climate- stressed coastal zone. Though the rural people are reluctant to move or migrate unknown urban set up, migrants seeking income earning opportunities in mega cities such as Dhaka, Chittagong, and Khulna have resulted in increased densely-populated slum areas with poor quality of housing without proper utilities and unhygienic living condition (UNFPA, 2016). These exacerbate flood risks and associated health risks, especially the cities located in geographically flood-prone areas or flood plains.

2.8 Disaster Risks in Public health and well being

Additionally, the incidence of vector-borne and diarrheal diseases often increases in correlation with increased precipitation in Bangladesh. For example, the cases of cholera have been suggested to increase in association with high rainfall (which may bring humans to contact with waste during flooding) and conversely, during low rainfall when the access to safe water is reduced. Vector-borne diseases such as dengue, malaria and visceral leishmaniasis have highly seasonal characteristics as well, often occurring in association with the monsoon (Ministry of Health and Family Welfare, 2018). We have already experienced that Bangladesh, like other countries, the COVID-19 pandemic has constrained economic activities and reversed some of the gains achieved in the last decade, slowed down almost all development activities. The COVID-19 pandemic decelerated economic growth in 2020.

2.9 Social Impacts of Disasters

Climate change poses risks to human and natural systems[35] Disasters also have pervasive impacts on the society and have the potential not only to destabilize the economy, but also the access to education, livelihood opportunities, food security, housing and service provision (including healthcare). In Bangladesh, the impacts of flooding, cyclones, storm surges, landslides and droughts to a geographically unique and highly vulnerable ecological and human systems have led to a large-scale destruction of housing, land and property, and loss of livelihoods alongside increasing displacement and disaster-driven migration[32]. On the GBM Delta, climate change, increased storm surges, flooding and the impacts of uncontrolled or poorly managed infrastructure development are also decreasing the availability of freshwater. Increasing saline intrusion, pollution and prolonged droughts may then have

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[30] Ministry of Disaster Management and Relief, 2017. *National Plan for Disaster Management (2016-2020). Dhaka: Government of Bangladesh.*

[31] Brammer, H., 2016. Floods, Cyclones, Drought and Climate Change in Bangladesh: A Reality Check, International Journal of Environmental Studies, 73(6), pp. 865-886.

[32] Arthur. F. Lutz, Herbert W. ter Maat, René R. Wijngaard, Hester Biemans, Abu Syed, Arun B. Shrestha, Walter W. Immerzeel 2018. South Asian River basins in a 1.5 °C warmer world, Regional Environmental Change, Springer, https://doi.org/10.1007/s10113-018-1433-4

adverse impacts on irrigation and fishing, followed by potential food insecurity and lack of drinking water (Bernier, et al., 2016). Given these stressors and challenges, prioritizing water availability for the upcoming decades should be high on the government's agenda to mitigate water-related social impacts.

Recent growth in urbanization and infrastructure in Bangladesh, disasters like landslides, storms, flooding and earthquakes have the influence to disrupt road communication infrastructure. This affects the ability of the people to access shelters, healthcare, education and on a wider scale which have implications on reducing poverty as disrupted access to markets associated logistics and services are the cornerstones of livelihood generation[33]. Destroyed and damaged educational institutions and relevant other logistics; or disruptions to school service also have the potential to discontinue the education alongside the inability of teachers to teach or students to go to class[34]. These may lead to significant gaps in education among children. Loss of routine drastically changes ways of living and trauma related to disasters are also among the social impacts of disasters in Bangladesh[35].

2.10 Socio-Economic Vulnerability to Disaster and Climate Change

Impact of climate induced disasters and extreme events are obvious with fragile natural environment. The impact of changing climate varies among people in throughout the country due to differential socioeconomic status. The Global Multidimensional Poverty Index (MPI) 2021 by the UNDP and the Oxford University postulated that as many as 24.1% of Bangladesh's population, or around 3.92 crore people, lives in multidimensional poverty, which means they experience deprivations in their daily lives such as poor health facilities, insufficient education and a low standard of living[36]. Patriarchy being prominent among the majority of the population, gender disparities on resource and asset ownership are high, which shapes the gendered impact of changing climate and disasters. Though biophysical conditions of a locality and severity of climate change stresses are the primary causes of risks, the socio-cultural setting plays crucial role on multiplying the effect of climatic stressors and disasters shaping vulnerability. Vulnerabilities emerging from climatic stressor like natural disaster are thus the result of a complex set of drivers and interactions of conditions.

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[33] Ahmed, I., 2019. The National Plan for Disaster Management of Bangladesh: Gap between Productionand Promulgation. *International Journal of Disaster Risk Reduction*, Volume 37.

[34] Plan International Asia-Pacific Regional Hub, 2021. *Disaster and Gendered Impact in a Changing Climate towards Girl's Education Research Report. Report by Peuvchenda Bun, Dhruba Gautam, Zakia Haque, and Tamara Curtis.*

[35] Akhter, Syeda Rezwana. Sarkar, Ratan Kumar. Dutta, Mitul. Khanom, Roxana. Akter, Nasima.Chowdhury, M. Raihan and Sultan, Mainus. 2015. Issues with families and children in a disaster context: A qualitative perspective from rural Bangladesh, International Journal of Disaster Risk Reduction, Volume 14, Part 2, 2015, Pages 140-151, ISSN 2212-4209, https://doi.org/10.1016/j.ijdrr.2015.10.009

[36] Alkire, S., Kanagaratnam, U., and Suppa, N. 2021. "The Global Multidimensional Poverty Index (MPI) 2021." OPHI MPI Methodological Note 51. University of Oxford, Oxford Poverty and Human Development Initiative, Oxford, UK. This paper has a section on each country detailing the harmonization decisions on each dataset. More extensive data tables, including disaggregated information, are available at www.ophi.org.uk.

There is a general consensus among the social science community about some of the major factors that influence social vulnerability. The IPCC (2014)[37] suggests that differences in vulnerability and exposure arise from many non-climatic factors. Factors like lack of access to resources including information, knowledge, and technology; limited access to political power and representation; social capital, including social networks and connections; beliefs and customs; age; health; and type and density of infrastructure and networks are identified as factors shaping vulnerabilities. Though, there is a general consensus about some of the major factors that influence social vulnerability, this pilot study observed that context specific multidimensional understanding in Bangladesh is limited. Nevertheless, review of literature on social vulnerability in three climate hotspots (salinity and cyclone prone coastal region, drought prone regions and flood plain area) revealed differential vulnerability of people in different regions. These include a need to capture the interaction of multiple stressors and incorporate longer-term socioeconomic trends into vulnerability analysis. Moreover, there are gaps in data, and knowledge related to the role of 'social structures (stratification e.g., gender, class, caste, ethnicity age, etc. in revealing social vulnerability. These are imperative for preparing eco-specific and social context specific adaptation programs and policies targeted to the most vulnerable in particular space and time.

The most vulnerable to climate induced disasters and extreme event livelihoods are those of the subsistence farmers, sharecroppers and landless wage earners[38]. The complex fabrics of interaction of the environment, hazards, political and social in Bangladesh put people and infrastructure disproportionately vulnerable to disaster impacts due to lack of access to resources or information, social capital, or due to physical or social characteristics. Poverty is often associated with high vulnerability due to the fact that it creates conditions where the adaptive capacity is low in terms of physical and financial capital, which may then lead to lack of coping mechanisms, or force people inhabit unsafe sites which may provide some income generation opportunities as discussed earlier. In Bangladesh, the poor are more likely to inhabit structurally weak houses closer to the shoreline, and lack access to risk transfers and employment opportunities[39]. Disasters can have devastating impacts on food security, and food insecurity increases the impact of disasters in many ways. Again, poor families cannot afford to farm crops or other livelihood, which decreases their income. These may then force people to migrate or sink further into poverty[40].

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[37] IPCC (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Summary for Policymakers p55-60)

[38] Dilshada, Tanzina. Mallicka, Dwijen . Udasb, Pranita B. Goodrichb,, Chanda G. Prakashb, Anjal. Gortic, Ganesh, Suruchi Bhadwalc, Muhammad Zubair Anward, Khandekar, Neha. Hassan, S.M. Tanvir. Habibd, Nusrat. Abbasid, Saqib Shakeel. Syed, Md. Abu and Rahman, Atiq 2019. Growing social vulnerability in the river basins: Evidence from the Hindu Kush Himalaya (HKH) Region, Environmental Development 31 (2019) 19 – 33; https://doi.org/10.1016/j.envdev.2018.12.004

[39] Akter, S. (2019). Impact of drinking water salinity on children's education: Empirical evidence from coastal Bangladesh. Science of The Total Environment, Elsevier, https://doi.org/10.1016/j.scitotenv.2019.06.458

[40] Food and Agriculture Organization (FAO) of the United Nations, 2017 The future of food and agriculture Trends and challenges, FAO, Rome, https://www.fao.org/3/i6583e/i6583e.pdf accessed on December 20, 2021

2.11 Gender Responsive Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM)

This gender discrepancy has come to light in a range of major disasters, including the cyclones Sidr, Aila, etc. in recent times. The vulnerability of women, men, Hijra, children, differently abled people to disasters are differential depending on its ecosystem and local contexts. Post-disaster, women are usually at higher risk of being placed in unsafe, overcrowded shelters, due to lack of assets, such as savings, property or land. In the context of cyclones, floods, and other disasters that require mobility, cultural constraints on women's movements may hinder their timely escape, access to shelter or access to health care. Exacerbating this effect, women often avoid using shelters out of fear of domestic and sexual violence, and become even less mobile as primary family care-givers.

Dwelling on the seven global targets sets out for the prevention and reduction of disaster-related losses by the Sendai Framework is an instrument of pivotal for the achievement of the Sustainable Development Goals despite the risks and vulnerability to disasters described in the above cited sections. The SADDD survey and analysis has been carried out devise policy guidance on to plan for national to local level through sub-national resilient communities and infrastructure with required attentional to women, men, Hijra, children, differently abled people and societies It represents a paradigm shift from an understanding of disaster risk to an approach to risk management as an inherent part of economic, social and environmental activity. Its seven global targets are paired with a long list of guiding principles for reducing the impact of disasters while addressing underlying disaster risk factors (hazards and vulnerabilities) and for safeguarding the benefits of development for current and future generations.

Individuals with disabilities are disproportionately affected in disaster, emergency, and conflict situations due to inaccessible evacuation, response (including shelters, camps, and food distribution), and recovery efforts. Climate change is disproportionally harsh on vulnerable groups, a large majority among them members of rural communities, particularly women, old age and differently able people. The reasons therefore are manifold but fall broadly within the stated vulnerability characteristics.

Women and girls are often poorer, receive less education, and are excluded from political, community and household decision-making processes that affect their lives. Such economic and social inequities translate into women possessing fewer assets and meagre means to cope with the negative effects of the changing climate. The tendency of women and girls to depend more on natural resources for their livelihoods also lends itself to increased vulnerability. For instance, climatic stress on water and forest resources often leads to women and girls having to travel longer distances for a longer time to fetch water or wood, exposing them to health risks and limiting their prospects for engaging in high-return ventures such as education, politics and business. Similarly, while disasters pose threats to everyone in their paths, they often have disparately harsher impacts on women.

In another context, the persons with disabilities are more likely to be left behind or abandoned during evacuation in disasters due to a lack of preparation and planning, as well as inaccessible facilities, services and transportation systems. Most shelters and camps are not accessible and people with disabilities are many times even turned away from shelters and camps due to a perception that they need "complex medical" services. Disruption to physical, social, economic, and environmental networks and support systems affect persons with disabilities much more than the general population. There is also a possible for discrimination based on disability when resources are scarce.

2.12 CEDAW, Beijing +95

The United Nations Convention on the Elimination of All Forms of Discrimination Against Women, CEDAW in short, was adopted in 1979, and came into force in 1981. Pursuant to article 21 (1) of the Convention on the Elimination of All Forms of Discrimination against Women (the Convention), the present general recommendation provides guidance to States parties on the implementation of their obligations under the Convention in relation to disaster risk reduction and climate change. In their reports submitted to the Committee under article 18, States parties are to ensure substantive equality between women and men in all areas of life, as well as specific guarantees in relation to those Convention rights that may be particularly affected by climate change and disasters. This includes extreme weather events such as floods and hurricanes, as well as slow-onset phenomena, for example, the melting of polar ice caps and glaciers, droughts and sea level rise.[41]

The general recommendation has also underscored the urgency of mitigating climate change and to highlight the steps that need to be taken to achieve gender equality as a factor that will reinforce the resilience of individuals and communities globally in the context of climate change and disasters. It also seeks to contribute to coherence, accountability and the mutual reinforcement of different international agendas on disaster risk reduction and climate change adaptation by focusing on the impact of climate change and disasters on women's human rights.

The general recommendation focuses on the obligations of States parties and non-State actors to take effective measures to prevent, mitigate and respond to disasters and climate change and, in this context, to ensure that the human rights of women and girls are respected, protected and fulfilled in accordance with international law. The General Recommendation identifies three different but mutually reinforcing areas for action by stakeholders centered on: (i) the general principles of the Convention applicable to disaster risk and climate change; (ii) specific measures to address disaster risk reduction and climate change; and (iii) specific areas of concern.

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[41] Government of the People's Republic of Bangladesh Ministry of Women and Children Affairs Comprehensive National Review Report, for Beijing + 25 Implementation of the Beijing Declaration and Platform for Action 1995, JULY 22, 2019; https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/CSW/64/National-reviews/Bangladesh-en.pdf

The Global Gender Gap Report (GGGR 2021) by the World Economic Forum (WEF) reported that Bangladesh has closed 71.9% of its gender gap so far, from Afghanistan, which has only closed 44.4% of its gap. India is the third-worst performer in the region, having closed 62.5% of its gap. Bangladesh adopted its National Women Development Policy 2011 guiding the actions of government and civil society for ensuring gender equality and women's empowerment. To implement this a National Action Plan (2013-2025) was approved and is under implementation. The priority areas are: a. Women's Human Rights and Fundamental Rights; b. Development of Girl Children; c. Elimination of all kinds of Children Abuse ; d. Armed Conflicts and the State of Women; e. Education and Training; f. Sports and Culture; g. Participation in Economic Activities and economic empowerment; h. Elimination of Poverty of Women; i. Employment of Women; j. Gender Responsive Budget and Gender Disaggregated Database; k. Support Services ; l. Women and Technology; m. Food Security of Women; n. Women and Agriculture; o. Political Empowerment of Women; q. Administrative Empowerment of Women; r. Health and Nutrition; s. Housing and Shelter; t. Women and Environment; u. women in Disasters; v. Women of Backward and Small Ethnic Groups; w. Program for Disabled Women; x. Women and the Mass Media; and y. Other Vulnerable Women Groups. Currently the Action Plan is being updated incorporating actions and targets until 2030 aligning with the targets of SDGs. These policy documents and implementation have been prepared incorporating commitments under Beijing + 25 Implementation of the Beijing Declaration and Platform for Action 1995 by the Ministry of Women and Children Affairs, Government of the People's Republic of Bangladesh in 2019.

2.13 Sustainable Development Goals and the Paris Climate Agreement

The Paris Agreement acknowledged[42] that "climate change is a common concern of humankind. Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity". The SDG-5 states "Achieve Gender Equality and Empower all women and girls"[43]. Disasters affect women, men, boys and girls in different ways. Gender inequalities increase women's and girls' vulnerability because they limit women's and girl's access to information and resources. Women and girls suffer higher levels of mortality and morbidity in disaster situations due to various socio-cultural norms, folkways, beliefs, customs, and practices. However, women and girls also have tremendous potential to reduce disaster and climate risks and to strengthen community resilience and response to disasters. Acknowledging these the Article 27 of Disaster Management Act-

[42]The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. The United Nations, United Nations Framework Convention on Climate Change, https://unfccc.int/sites/default/files/english_paris_agreement.pdf

[43] The 2030 Agenda for Sustainable Development with its 17 SDGs was adopted at the UN Sustainable Development Summit in New York in September 2015. Resolution adopted by the General Assembly on 3 June 2015, United Nations, A/RES/69/283

[44]Assistance for the person affected and vulnerable by the disaster, given preference "on protection and risk reduction for ultra-poor and under privileged community especially the older persons, women, children and handicapped persons while providing assistance." [45] By identifying synergies among major international agreements, as well as looking into co-benefits, non- regret measures, and cost savings for coherent action, it is possible to reduce overlapping responsibilities and doubled efforts through improved policymaking, informed by integrated data collection and information systems. However, due to the nature of rapidly evolving "best practice" and country needs, policies are often formed on ad-hoc basis which leaves gaps among these three dimensions.

Bangladesh has made impressive progress in recognizing these linkages between development and disasters within the country's key legislative, policy and development planning pieces. An assessment of national adaptation planning highlights Bangladesh's Vision 2021 and Vision 2041 as key documents for leveraging climate change as a core guiding vision/plan, supported by the Ministry of Environment, Forest and Climate Change (MoEFCC) as the national-level coordinating entity for climate change while MoDMR plays coordinating role in DRR, DRM.This is supported by various policies and action plans, including the National Adaptation Program of Action (NAPA) which was recognized as the first sector-specific document, drawing upon international development goals, to finalize the eight thematic areas of climatechange adaptation in Bangladesh[46].

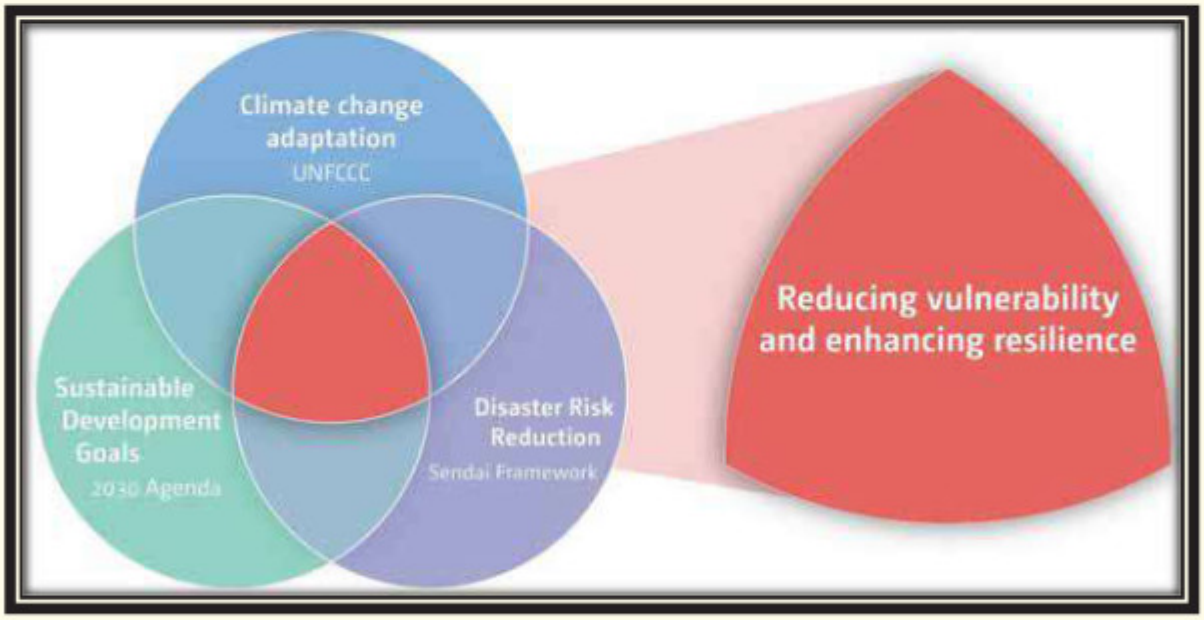

Figure 2.6 Elastration of the intricate relationship UNFCC processes on ARR and SDGs 2030 in reducing vulnerability and enhancing resilience

[44] Disaster Management Act- Bangladesh Gazette, Act No. 34 of the year 2012, September 24, 2012

[45] UN Women, BCAS (2014). Baseline Study on the Socio-Economic Conditions of Women in Three Eco-Zones of Bangladesh. Dhaka

[46] Fatemi, Md. Nawrose Okyere, Seth Asare . Diko, Stephen Kofi. Kita , Michihiro, Michihiro. Shimoda, Motoki and Matsubara, Shigeki 2020. Physical Vulnerability and Local Responses to Flood Damage in Peri-Urban Areas of Dhaka, Bangladesh Sustainability 2020, 12, 3957; doi:10.3390/su12103957

While the NPDM for 2016 to 2020 is based on SFDRR, it also recognizes that DRR for resilience is the foundation for achieving the SDGs, and that mitigating the impacts of climate change to limit the increased severity of hydro-meteorological hazards must be further enhanced through joint action as mandated by the Paris Climate Change Agreement (Ministry of Disaster Management and Relief, 2017). The efforts in the future will be supported by promoting policy coherence, by encouraging private sector engagement, capacity building and by improving social protection, in recognition of the fact that social inclusions and vulnerability reduction is another requirement for resilience.

The SDGs have been integrated into the 7th Five Year Plan and 8th Fiver Year Plan, supported by a comprehensive financing strategy and "whole of society" approach – however, more data, investments, support and harmonizing of targets is required to guarantee the successful graduation by 2030. The 4th core theme of the 8th Five Year Plan "a Sustainable Development Pathway that is resilient to disaster and climate change"[47]. For combatting climate change, the government devised the Climate Change Strategy and Action Plan of 2009 (BCCSAP), which is among the first of its kind in the world. In recognition of the fact that climate change is happening here and now, the BCCSAP (currently under review) was developed for a 10-year period to build capacity and resilience against climate and disaster risks.

2.14 The Paradigm shift in disaster management in Bangladesh

As the disaster management framework in Bangladesh is developing, we must acknowledge by the two significant speeches delivered by the Father of the Nation of Bangladesh Bangabandhu Sheikh Mujibur Rahman in 1970 following the devastating cyclone that made landfall in Bangladesh in 12 November claiming the lives of approximately 5 lakh people. The speech of 26 November is considered as the foundation of disaster management in Bangladesh. Bangabandhu made disaster preparedness an integral part of the governance of the administration of independent Bangladesh formed under his leadership. One of the

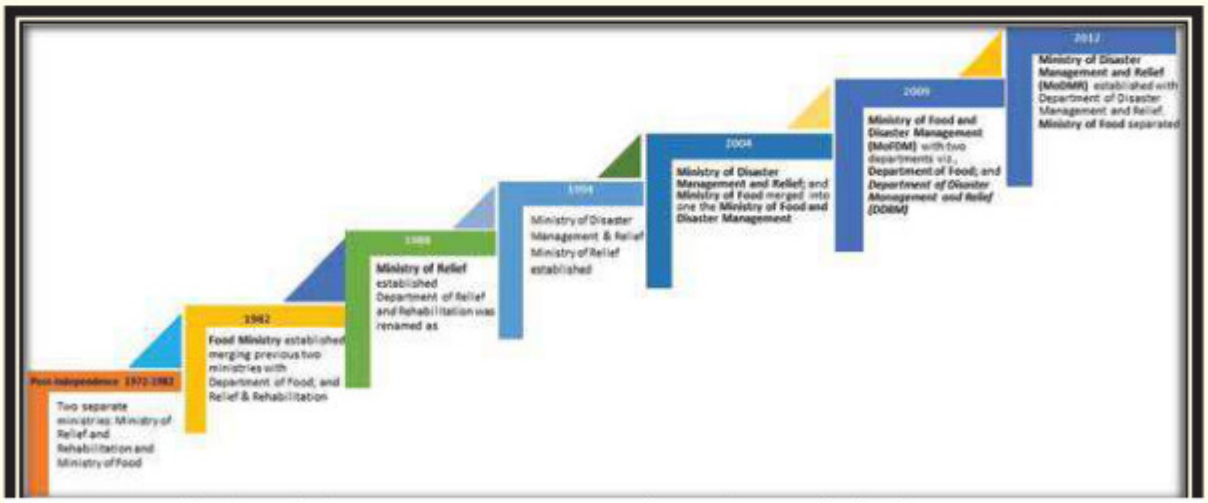

Figure 2.7 Evolution of Disaster Management and DRR in Bangladesh

[47] Government of the People's Republic of Bangladesh 2020. 8th Five Year Plan General Economics Division (GED) Bangladesh Planning Commission Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh

best examples of his disaster governance is inauguration of the Cyclone Preparedness Programme (CPP) in 1972. Higher grounds (popularly known as 'Mujib Killa') in flood plains were built to protect people and their livestock at that time. Since then, the disaster Management in Bangladesh had gone through a process of significant changes. Following independence, the focus was limited to relief and rehabilitation activities. The devastating floods of 1988 and the cyclone of 1991, which created a massive destruction in the economy and loss of lives hundreds of thousand human lives, shifted the focus towards adoption of a holistic approach that embraces processes of hazard identification and mitigation, community preparedness and integrated response efforts[48] (Habib et al, 2012). As a result, a short-term project entitled "Assistance to Ministry of Relief in Coordination of Cyclone Rehabilitation: BGD/91/021" was initiated after the killer cyclone of 29 April 1991. In April 1993, the Government of Bangladesh (GoB) established the Disaster Management Bureau (DMB) as the successor to the Disaster Coordination and Monitoring Unit and renaming of the Ministry of Relief and Rehabilitation as the Ministry of Disaster Management and Relief (MDMR) and established the Disaster Management Councils and Committees from the national down to the field level.

The Disaster Management Bureau was assigned responsibility to perform specialist support functions, working in close collaboration with District and Upazila level authorities and the concerned ministries, under the overall authority of a high-level Inter-Ministerial Disaster Management Co-ordination Committee (IMDMCC). The DMB also has the responsibility to create public awareness regarding the severity and risks associated with natural and human-induced hazards and to formulate programs and projects that will better prepare at-risk communities and public officials to mitigate their consequences.

The Government has gradually shifted the paradigm in the disaster management approach from conventional post event response and relief to a more comprehensive risk reduction culture and to promote livelihood and food security as an important factor in ensuring the resilience of communities to hazards. The ultimate goal of the government disaster management in integration with other sectoral departments/agencies to achieve prosperity through enhancing resilience. The disaster management operation has gone through a continuous change as shown in the schematic diagram Fig. 7.

As a continuation of the paradigm shift process, the Comprehensive Disaster Management Programme (CDMP), designed as a long-term programme of the Ministry of Food and Disaster Management with multi-agency involvement, was launched in November, 2003 to optimize the reduction of long-term risk and to strengthen operational capacities for responding to emergencies and disaster situations, including actions to improve recovery from these events. The CDMP was a strategic institutional and programming approach designed to optimize the reduction of long-term risk and to strengthen the operational

48 Habib, A., Shahidullah, M. &Ahmed, D. (2012). The Bangladesh cyclone preparedness program. A vital component of the Nation's multi-Hazard early warning system. In M. Golnaraghi (Ed.), Institutional partnerships in multi-Hazard early warning systems. Berlin, Heidelberg:Springer. https://doi.org/10.1007/978-3-642-25373-7_3.

capacities for responding to emergencies and disaster situations. CDMP initiated steps to developing and establishing an appropriate DRM mechanism in the country through appropriate policy and institutional arrangements. Over a decade cell phone operators were integrated into dissemination system (along with conventional ones) of flood early warning to the community free of cost using their network.

2.15 The Analytical Framework used

The analytical framework used has considered the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015–2030, Sustainable Development Goals (SDGs) and national perspectives plans during the analysis SADDD pilot survey data analysis in holistic approach and iterative manner. The SADDD pilot survey analysis focused on women's risks and vulnerability, in tandem with men's susceptibilities; promoting gender sensitive emergency responses; and enlisting women as key environmental actors in natural disaster management decision-making processes, alongside men, tapping on women's skills, resourcefulness and leadership in adaptation efforts.

The Sendai Framework sets out seven global targets for the prevention and reduction of disaster-related losses and is an instrument for the achievement of the SDGs. It represents a paradigm shift from an understanding of disaster risk to an approach to risk management as an integral part of broader development through economic, social and environmental activity. The seven global targets are paired with a long list of guiding principles for reducing the impact of disasters while addressing underlying disaster risk factors (hazards and vulnerabilities) and for safeguarding the benefits of development for current and future generations. Within this context, the transition to resilient, sustainable societies is seen as hinging upon responsible DRR and DRM. The Sendai Framework sets four specific priorities for action.

1. Understanding disaster risk;
2. Strengthening disaster risk governance to manage disaster risk;
3. Investing in disaster risk reduction for resilience;
4. Enhancing disaster preparedness for effective response, and to "Building Back Better" in recovery, rehabilitation and reconstruction.

At global level, by 2030 Agenda for Sustainable Development the Goal five (5) of the 17 SDGs includes "Achieve Gender Equality and Empower all women and girls"[49]. Women, men, girls, and boys experience disaster, and climate risks differently. Wage inequality, cultural and religious norms regarding women and girl's mobility, social practices, child marriage, dowry, unequal opportunity for women and girls, unequal resource distribution are the major social factors leading them to be in vulnerable situation, which get worse

[49] The 2030 Agenda for Sustainable Development with its 17 SDGs was adopted at the UN Sustainable Development Summit in New York in September 2015. Resolution adopted by the General Assembly on 3 June 2015, United Nations, A/RES/69/283

during and after disaster period[50]. Men and women and boys and girls prepare for, respond to and recover from disaster and climate hazards differently too[51].

Gender-responsive disaster risk reduction and management refer to analyze and take into account the needs, opportunities, roles and relationships of women, men, boys and girls formed by gender norms within a given culture and society. It requires specific attention to women's rights and gender equality as part of a proactive and people-centered approach to reducing risks and vulnerabilities. Disasters affect women, men, boys and girls in different ways. Gender inequalities increase women's and girls' vulnerability because they limit women's and girl's access to information and resources. This makes it more difficult for them to be resilient and recover from disasters. The international community has recognized and committed to a strong focus on gender equality and women's rights in disaster risk reduction.

This requires:

- gender-responsive governance and policy-making,
- gender-responsive programming, monitoring and evaluation,
- integration of gender into vulnerability, risk and capacity assessments,
- the collection and use of sex- and age-disaggregated information and data,

However, many women and girls experience greater risks, burdens and impacts of disaster than men and boys. They suffer with higher levels of mortality and morbidity in disaster situations due to various socio-cultural norms, believes and practices. A 2007 statistical analysis on the outcomes of disasters in 141 countries found women are more likely to die, and die sooner, than men in disasters and that this is because of socio-economic inequalities, including gender inequality[52]. However, women and girls also have tremendous potential to reduce disaster and climate risks and to strengthen community resilience and response to disasters. In Disaster Risk Management, the 2016 World Humanitarian Summit called for gender equality, women's empowerment and women's rights to become pillars of humanitarian action, including in disaster preparedness and response[53]. In Disaster Risk

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[50] Tanzina Dilshada, Dwijen Mallicka, Pranita B. Udasb, Chanda G. Goodrichb, Anjal Prakashb, Ganesh Gortic, Suruchi Bhadwalc, Muhammad Zubair Anward, Neha Khandekar, S.M. Tanvir Hassana, Nusrat Habibd, Saqib Shakeel Abbasid, Md. Abu Syed and Atiq Rahman, 2019. Growing social vulnerability in the river basins: Evidence from the Hindu Kush Himalaya (HKH) Region, Environmental Development 31 (2019) 19 – 33; https://doi.org/10.1016/j.envdev.2018.12.004

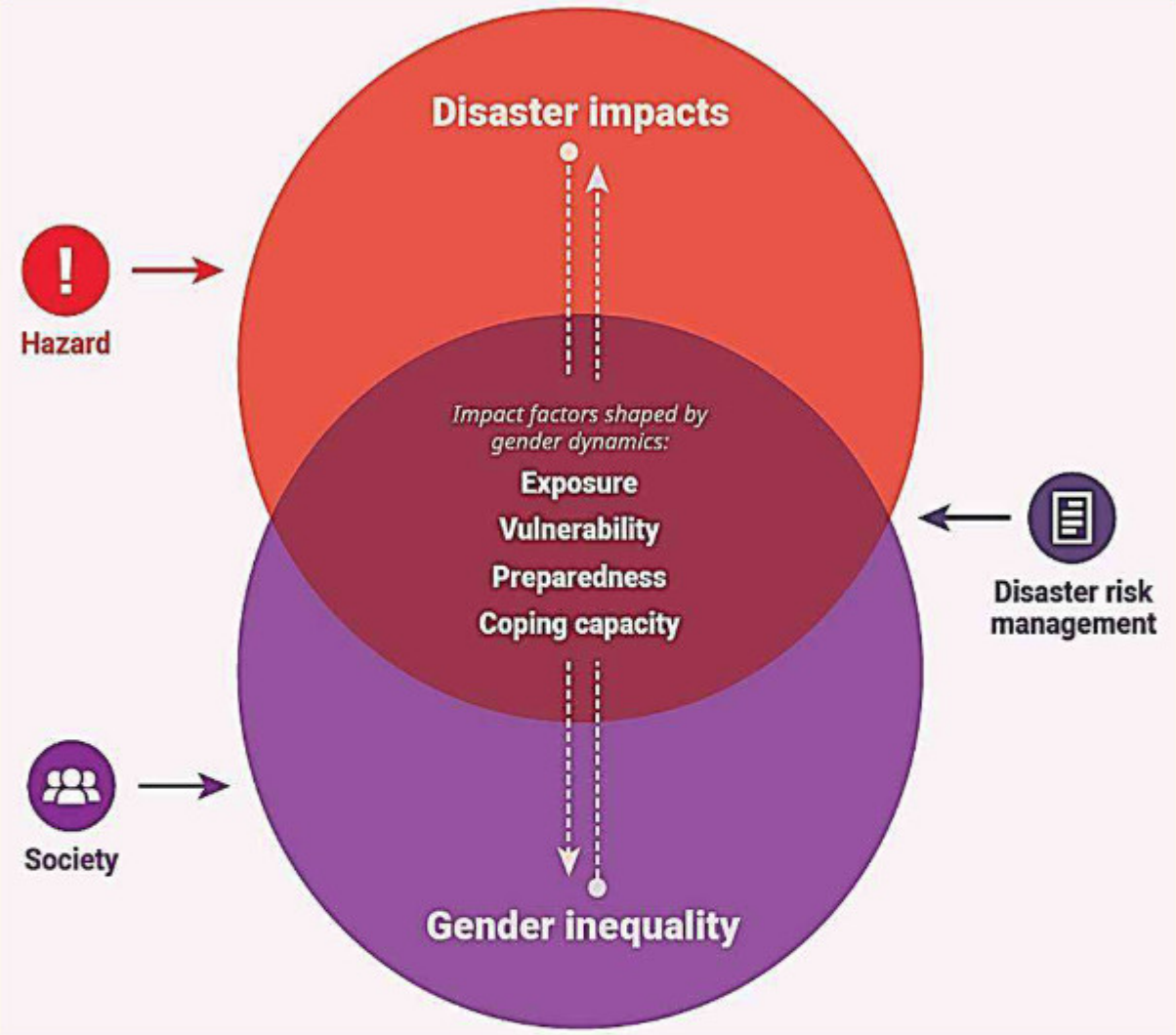
[51] General recommendation No. 37 (2018) on the gender-related dimensions of disaster risk reduction in the context of climate change, Convention on the Elimination of All Forms of Discrimination against Women, United Nations, CEDAW/C/GC/37, 2018

[52] The 2030 Agenda for Sustainable Development with its 17 SDGs was adopted at the UN Sustainable Development Summit in New York in September 2015. Resolution adopted by the General Assembly on 3 June 2015, United Nations, A/RES/69/283

[53] General recommendation No. 37 (2018) on the gender-related dimensions of disaster risk reduction in the context of climate change, Convention on the Elimination of All Forms of Discrimination against Women, United Nations, CEDAW/C/GC/37, 2018

Reduction (DRR), the Sendai Framework on Disaster Risk Reduction (SFDRR) 2015-2030 has acknowledged the role of women in DRR[54].

Figure 2.8 A conceptual framework for considering gender dynamics and disaster impacts. Sources: Adapted from World Bank 2012 and Hallegatte et al. 2017 cited by[34]



The Figure illustrates the conceptual framework that "disaster impacts (orange circle) depend on hazard type and intensity, who and what is exposed, levels of vulnerability and preparedness, and coping capacity. Floods, droughts, earthquakes and other natural hazards are gender neutral. Gender inequality (purple circle in figure 2.8) arises from the expected roles of men and women in a society, which influence socioeconomic status, level of agency, and the way men and women prepare for, react to, are impacted by, and recover from, disasters. In the overlay (maroon area) between gender inequality and disaster impacts are the factors that drive disaster impacts and are influenced by gender dynamics."[55] The SFDRR 2015-2030 highlights the fundamental role of women in risk management and in disaster

[54] Resolution adopted by the General Assembly on 3 June 2015, United Nations, A/RES/69/283

[55] World Bank and Global Facility for Disaster Reduction and Recovery (GFDRR) 2021. Existing Evidence Erman, Alvina. Robbé De Vries, Sophie Anne. Fabian, Stephan. Kabir, Thies Kayenat and Maruo, Mirai, The World Bank and the Global Facility for Disaster Gender Dimensions of Disaster Risk and Resilience, 1818 H Street NW, Washington, DC 20433

preparedness, response and recovery: "Women and their participation are critical to effectively managing disaster risk and designing, resourcing and implementing gender-sensitive disaster risk reduction policies, plans and programme; and adequate capacity building measures need to be taken to empower women for preparedness as well as to build their capacity to secure alternate means of livelihood in post-disaster situations" (Sendai Framework - Paragraph 36 (a) i).

In addition, priority 4: Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction of the SFDRR, states that "Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases".

Under the Paris Agreement acknowledged[56] that "climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity". In 2019, Conference of Parties (COP) 25 brought gender equality and the empowerment of women to the fore by adopting the enhanced Lima work programme on gender and its five-year gender action plan (2020–2024)[57].

Gender in existing global, national regulatory/ policies/ frameworks/ guidelines: Globally, gender has been mainstreamed into the Paris Agreement and the SFDRR but less so in the Comprehensive in collecting data and analyzing those for gender responsive planning. The Government of Bangladesh (GoB) has made significant achievements in mainstreaming gender into the National Plan for Disaster Management (NPDM) 2021-2025[58] and BCCSAP - 2009.

In 2014 the COP established the first Lima work programme on gender (LWPG) (Decision 18/CP.20) to advance gender balance and integrate gender considerations into the work of Parties and the secretariat in implementing the Convention and the Paris Agreement so as to achieve gender responsive climate policy and action. COP 22 decided on a three-year extension of the LWPG, with a review at COP 25 (Decision 21/CP.22), and the first gender

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[56] The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. The United Nations, United Nations Framework Convention on Climate Change, https://unfccc.int/sites/default/files/english_paris_agreement.pdf

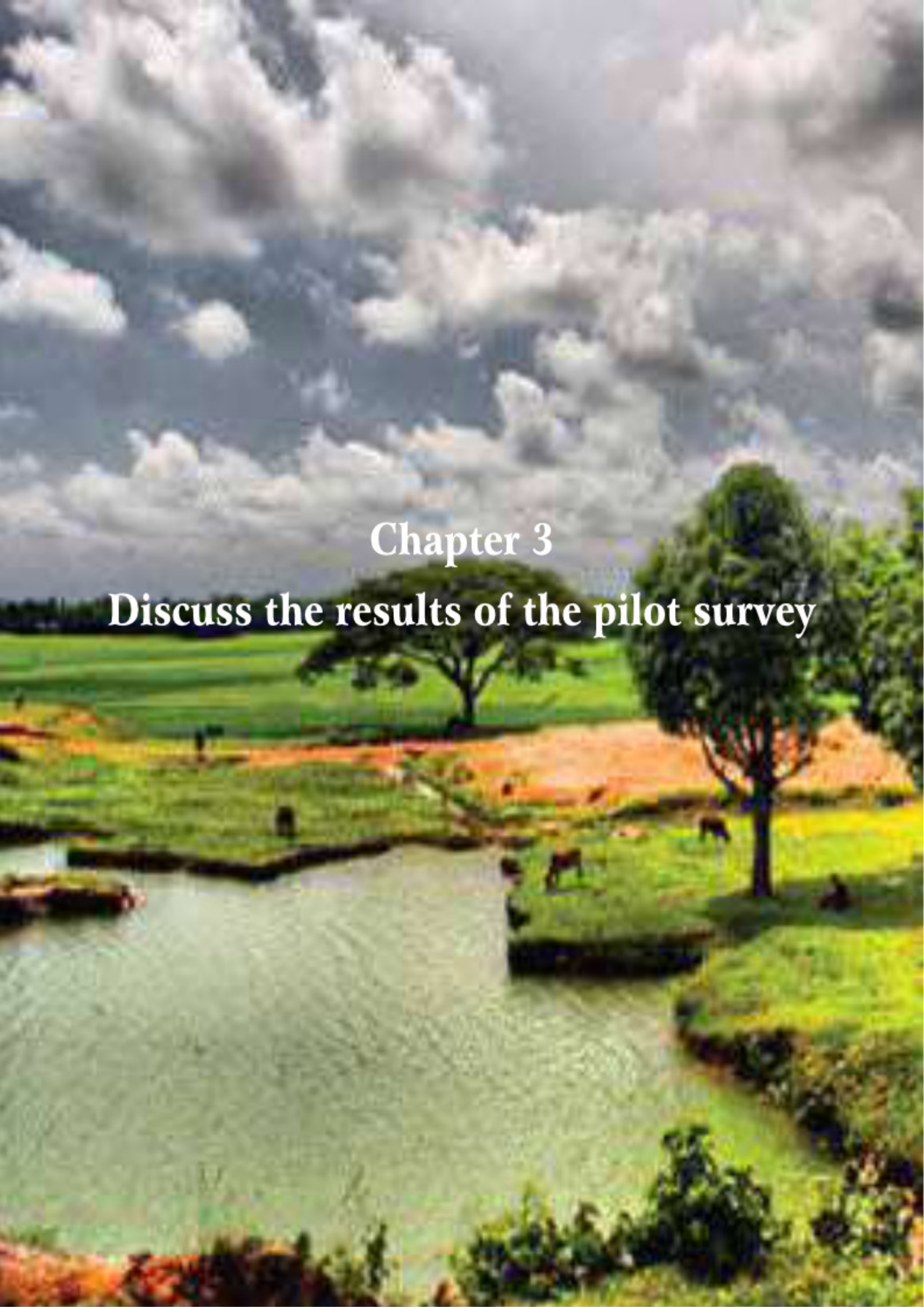
[57] UNICEF, 2019. *Climate change threatens lives and futures of over 19 million children in Bangladesh.* Accessed on November 20, 2021 Available at: https://www.unicef.org/press-releases/climate-change-threatens-lives-and-futures-over-19-million-children-bangladesh

[58] Government of the People's Republic of Bangladesh Ministry of Disaster Management and Relief (MoDMR). National Plan for Disaster Management (2021-2025) Action for Disaster Risk Management Towards Resilient Nation, November 2020. https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/page/a7c2b9e1_6c9d_4ecf_bb53_ec74653e6d05/NPDM%202021-2025%20Draft.pdf

action plan (GAP) under the UNFCCC was established at COP (Conference of Parties) 23[59] and at COP 25 Parties agreed a 5-year enhanced Lima work programme on gender and its gender action plan (The Gender Action Plan)[60]. It is noteworthy that in January 2005, 168 Governments adopted a 10-year plan to make the world safer from natural hazards at the World Conference on Disaster Reduction, held in Kobe, Hyogo, Japan. The Hyogo Framework is a global blueprint for disaster risk reduction efforts during the next decade. Its goal has been to substantially reduce disaster losses by 2015 - in lives, and in the social, economic, and environmental assets of communities and countries. The Framework offers guiding principles, priorities for action, and practical means for achieving disaster resilience for vulnerable communities. Attention has been given to find the linkages between Gender and Development (GAD) in analyzing the disaster risks and related data.

[59] UNFCCC Conference of Parties (COP 23) 2017 Gender Action Plan, https://unfccc.int/topics/gender/ workstreams/ the-gender-action-plan

60 UNFCCC Conference of Parties (COP 23) 2019 Gender Action Plan https://unfccc.int/documents/210471



Chapter 3
Discuss the results of the pilot survey

Chapter 3
Discussion on the pilot survey findings

This chapter basically, presents a rudimentary overview of the important findings and essential aspects that were visible through this household-based pilot survey. The survey conducted with a pre-structured questionnaire and a face-to-face interview with the respondents. A total of 2800 disaster-affected households (taken as sample) homed in 70 disastrous mauzas under three upazilas (sub-districts), namely, Teknaf, Shyamnagar, and Chilmari, respectively, under the Cox's Bazar, Satkhira, and Kurigram districts of Bangladesh were investigated. It is to be noted that there was a total of 180 disastrous mauzas in the selected three upazilas. Sample data available from the pilot survey was blown up across the total of 180 calamitous mauzas of the above mentioned three upazilas. The blown-up (weighted) data of 91871 affected households living in 180 mauzas under three upazilas are presented in a tabular format with the necessary observations and do not attempt to rationalize any socioeconomic theory or phenomenon.

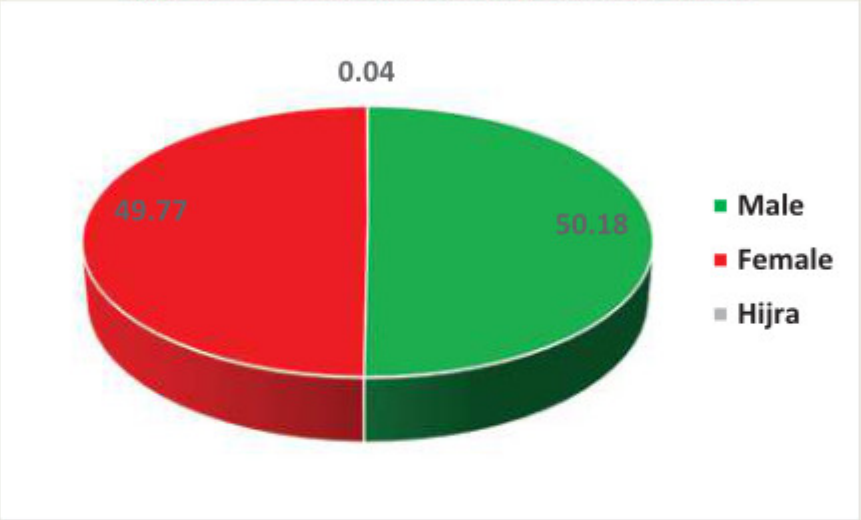
3.1 Distribution of population by sex

Table 3.1 presents the distribution of the population of disaster-affected households (not all households) of three selected disaster-prone upazilas by sex. The Shyamnagar upazila had the largest population of 230332 (57.77%), followed by Chilmari upazila with 95703 (24.00%) and Teknaf upazila with 72657 (18.22%). It is also seen that out of a total of 398693 population (of disaster affected households), men accounted for 200074 (50.18%), women accounted for 198446 (49.77%), and then hijra (neither male nor female) accounted for 173 (0.04%).

Table 3.1: Distribution of population by sex

Upazila	Population				Population (%)			
	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	398693	200074	198446	173	100.00	50.18	49.77	0.04
Teknaf	72657	35744	36851	62	100.00	49.20	50.72	0.09
Shyamnagar	230332	117437	112785	111	100.00	50.99	48.97	0.05
Chilmari	95703	46893	48810	00	100.00	49.00	51.00	0.00

Figure: 3.1 Distribution of population by sex



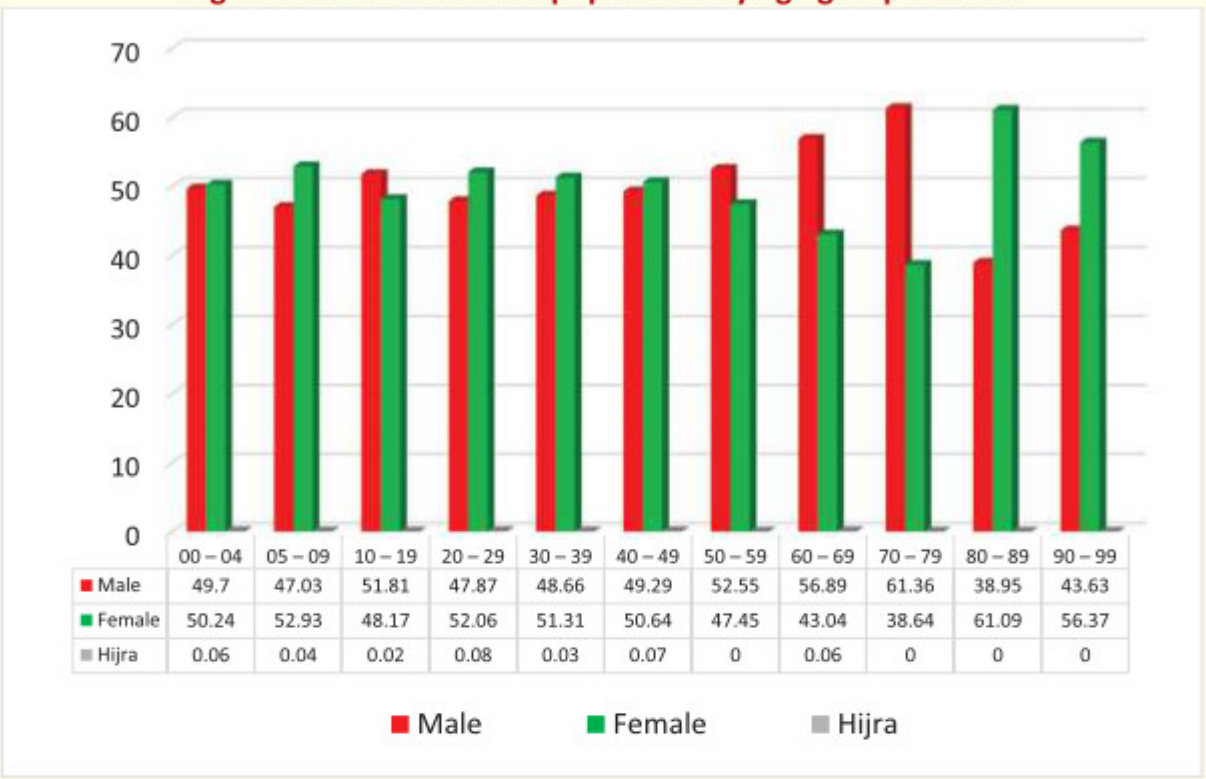
3.2 Age distribution of population

According to the table below, the largest population (18.71%) in 91871 disaster-affected households in Teknaf, Shyamnagar, and Chilmari upazilas was aged 10 to 19, followed by the age group 20 to 19 (17.61 %), and then the age group 30 to 39 (14.79 %). The table below also shows that 52.49% of the population in the total calamitous households in the three upazilas (Teknaf, Shyamnagar, and Chilmari) were between the ages of 20 and 59. This information suggests that the disastrous households in the studied upazilas have been experiencing a demographic dividend, because of the fact that the working age population (15 to 64) for both male and female is obviously meaningfully larger than the non-working age share of the population (14 and younger, and 64 and older).

Table 3.2: Distribution of population by age group and sex

Age Group	Population by Sex				Population by Sex (%)			
	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	398693	200074	198446	173	100.00	50.18	49.77	0.04
00 – 04	39889	19826	20039	25	100.00	49.70	50.24	0.06
05 – 09	37614	17691	19909	14	100.00	47.03	52.93	0.04
10 – 19	74579	38640	35923	15	100.00	51.81	48.17	0.02
20 – 29	70224	33613	36556	55	100.00	47.87	52.06	0.08
30 – 39	58966	28693	30255	18	100.00	48.66	51.31	0.03
40 – 49	45359	22357	22972	31	100.00	49.29	50.64	0.07
50 – 59	34711	18239	16472	0	100.00	52.55	47.45	0.00
60 – 69	23900	13597	10287	15	100.00	56.89	43.04	0.06
70 – 79	9527	5846	3681	0	100.00	61.36	38.64	0.00
80 – 89	2981	1161	1821	0	100.00	38.95	61.09	0.00
90 – 99	942	411	531	0	100.00	43.63	56.37	0.00

Figure 3.2 Distribution of population by age group and sex



	00 – 04	05 – 09	10 – 19	20 – 29	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89	90 – 99
Male	49.7	47.03	51.81	47.87	48.66	49.29	52.55	56.89	61.36	38.95	43.63
Female	50.24	52.93	48.17	52.06	51.31	50.64	47.45	43.04	38.64	61.09	56.37
Hijra	0.06	0.04	0.02	0.08	0.03	0.07	0	0.06	0	0	0

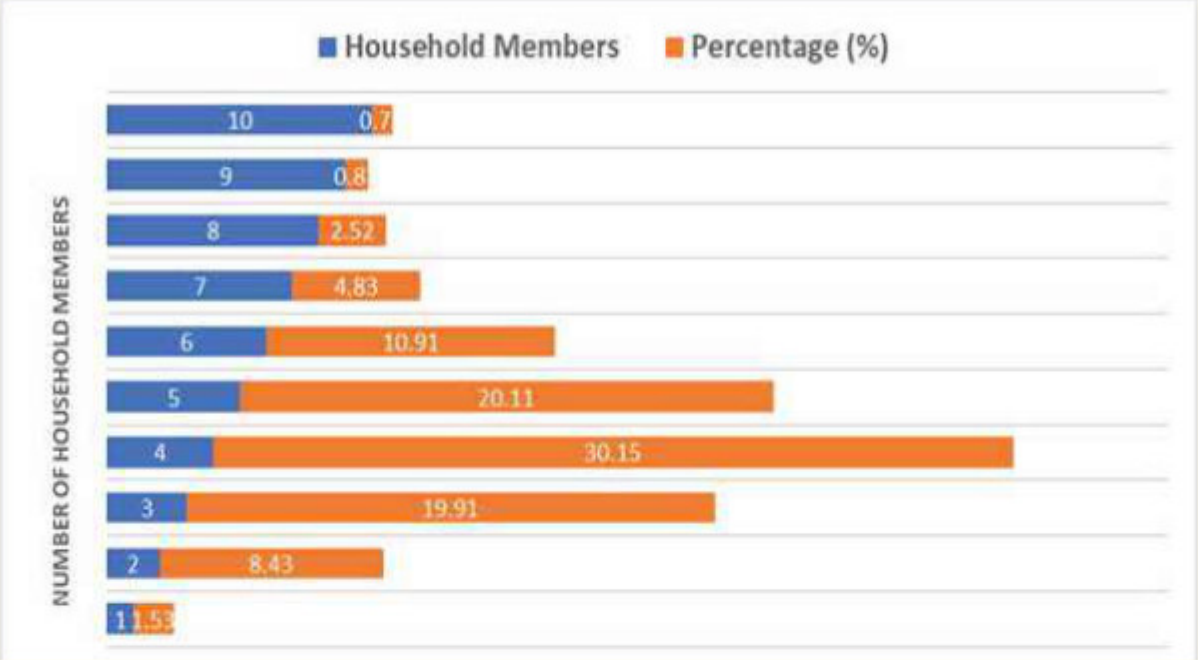
3.3 Households broken-down by the number of members (person)

The following tables show the distribution of households affected by natural disasters, broken down by the number of persons in the households. It is seen that out of a total of 91871 households, the highest percentage of households (30.15%) were constituted of four persons. Approximately 20.11% of total households had an average of five household members, and 19.91% of households had three household members. On the other hand, 0.75 percent of the total 91871calamitous households had ten or more members on average. It is also clear that 1.94% of households in Teknaf had 10 or more individuals, followed by Chilmari (0.92%) and Shyamnagar (0.32%) of the total households.

Table 3.3: Percentage Distribution of Household by number of persons (members)

Upazila	Number of people in the household									
	1	2	3	4	5	6	7	8	9	10+
Total	1.53	8.43	19.91	30.15	20.11	10.91	4.83	2.52	0.87	0.75
Teknaf	0.28	9.43	16.68	32.01	19.11	11.21	4.97	3.05	1.31	1.94
Shyamnagar	1.35	8.44	19.97	31.78	20.04	10.79	4.62	1.98	0.7	0.32
Chilmari	2.89	7.64	22.16	24.76	21	10.97	5.23	3.48	0.95	0.92

Figure: 3.3 Distribution of household by number of members (person)



3.4 Educational attainment of the population

The education level of the population in three selected upazilas (Teknaf, Shyamnagar and Chilmari) is shown in table 3.4. According to the data in the table below, 21.23 % of the total population (age 5 and up) had no formal education, while another 38.27 % had either some primary education or completed primary education. Alongside, 23.56 % of the total population had either some junior secondary education or completed junior secondary education, 12.51 % of the total population completed secondary, or higher secondary or diploma, while only 4.09% completed graduate and postgraduate education. It is particularly noticeable that the greater the non-schooling rate, the older the group. This illustrates that People's enthusiasm for education has grown over time.

Table 3.4: Distribution of male population by level of education

Age Group	Total	No Schooling	Primary (Grade I to V)	Junior secondary (Grade VI to VIII)	Secondary /Higher secondary /Diploma (grade IX to XII)	Completed graduate / Post graduate	Others
Total	358803	76185	137329	84547	44904	14681	1158
05 - 09	37614	9823	27453	18	0	0	320
10 - 19	74579	1604	26477	33433	12249	349	467
20 - 29	70224	3587	20556	19540	19116	7285	142
30 - 39	58966	9188	24353	15189	6158	3998	81
40 - 49	45359	15348	17910	7277	3102	1692	31

Age Group	Total	No Schooling	Primary (Grade I to V)	Junior secondary (Grade VI to VIII)	Secondary /Higher secondary /Diploma (grade IX to XII)	Completed graduate / Post graduate	Others
50 - 59	34711	16113	10689	4760	2262	888	0
60 +	37349	20522	9891	4331	2018	470	118
Percent distribution							
Total	100.00	21.23	38.27	23.56	12.51	4.09	0.32
05 - 09	100.00	26.12	72.99	0.05	0.00	0.00	0.85
10 - 19	100.00	2.15	35.50	44.83	16.42	0.47	0.63
20 - 29	100.00	5.11	29.27	27.82	27.22	10.37	0.20
30 - 39	100.00	15.58	41.30	25.76	10.44	6.78	0.14
40 - 49	100.00	33.84	39.48	16.04	6.84	3.73	0.07
50 - 59	100.00	46.42	30.79	13.71	6.52	2.56	0.00
60 +	100.00	54.95	26.48	11.60	5.40	1.26	0.32

3.5 Educational attainment of the male population

The education level of the male population in three selected upazilas (Teknaf, Shyamnagar and Chilmari) is shown in table 3.5. According to the data in the table below, 18.43 % of the total male population (age 5 and up) had no formal education, while another 38.86 % had either some primary education or completed primary education. Concurrently, 21.87 % of the total population had either some junior secondary education or completed junior secondary education, 14.75 % of the total male population completed secondary, or higher secondary or diploma, while only 5.65 % completed graduate and postgraduate education. It is particularly noticeable here that the higher the age group, the lower the literacy rate. This demonstrates that as time passes, an increasing number of people are enrolling in educational institutions.

Table 3.5: Distribution of male population by level of education

Age group	Total	No Schooling	Primary (Grade I to V)	Junior secondary (Grade VI to VIII)	Secondary /Higher secondary /Diploma (grade IX to XII)	Completed graduate / Post graduate	Others
Total	180248	33215	70040	39418	26588	10187	801
05 - 09	17691	4358	13088	18	0	0	227
10 - 19	38640	1151	15128	15498	6409	79	375
20 - 29	33613	2289	9821	6746	10114	4531	111

Age group	Total	No Schooling	Primary (Grade I to V)	Junior secondary (Grade VI to VIII)	Secondary /Higher secondary /Diploma (grade IX to XII)	Completed graduate / Post graduate	Others
Total	180248	33215	70040	39418	26588	10187	801
30 - 39	28693	3650	11209	7042	3708	3034	50
40 - 49	22357	6425	8546	3750	2392	1213	31
50 - 59	18239	6891	5718	2824	1948	859	0
60 +	21015	8451	6531	3541	2016	470	7
	Percent distribution						
Total	100.00	18.43	38.86	21.87	14.75	5.65	0.44
05 - 09	100.00	24.63	73.98	0.10	0.00	0.00	1.28
10 - 19	100.00	2.98	39.15	40.11	16.59	0.20	0.97
20 - 29	100.00	6.81	29.22	20.07	30.09	13.48	0.33
30 - 39	100.00	12.72	39.07	24.54	12.92	10.57	0.17
40 - 49	100.00	28.74	38.23	16.77	10.70	5.43	0.14
50 - 59	100.00	37.78	31.35	15.48	10.68	4.71	0.00
60 +	100.00	40.21	31.08	16.85	9.59	2.24	0.03

3.6 Educational attainment of the female population

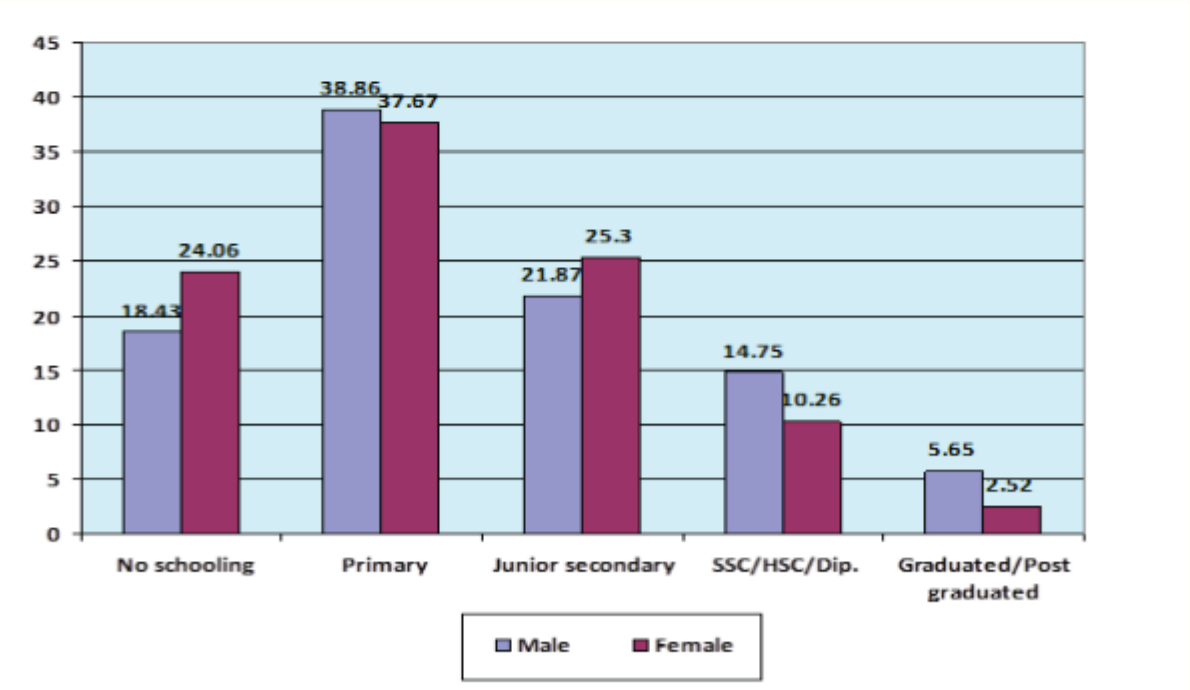
The education level of the female population in three selected upazilas (Teknaf, Shyamnagar and Chilmari) is shown in table 3.6. According to the data in the table below, 24.06 % of the total female population (age 5 and up) had no formal education, while another 37.67 % had either some primary education or completed primary education. Concurrently, 25.30 % of the total female population had either some junior secondary education or completed junior secondary education, 10.26 % of the total female population completed secondary, or higher secondary or diploma, while only 2.52 % completed graduate and postgraduate education. It is obvious that the literacy rate is specifically low in older age groups. Even in disaster-affected households, data on education levels split down by sex reveals no substantial gender inequalities.

Table 3.6: Distribution of female population by level of education

Age group	Total	No Schooling	Primary (Grade I to V)	Junior secondary (Grade VI to VIII)	Secondary /Higher secondary /Diploma (grade IX to XII)	Completed graduate / Post graduate	Others
Total	178407	42917	67212	45129	18298	4494	357
05 - 09	19909	5459	14358	0	0	0	92

Age group	Total	No Schooling	Primary (Grade I to V)	Junior secondary (Grade VI to VIII)	Secondary /Higher secondary /Diploma (grade IX to XII)	Completed graduate / Post graduate	Others
10 - 19	35923	453	11334	17935	5839	270	92
20 - 29	36556	1297	10698	12794	8983	2753	31
30 - 39	30255	5538	13126	8146	2450	964	31
40 - 49	22972	8892	9364	3528	709	478	0
50 - 59	16472	9222	4971	1936	314	28	0
60 +	16319	12056	3361	790	2	0	111
	Percent distribution						
Total	100.00	24.06	37.67	25.30	10.26	2.52	0.20
05 - 09	100.00	27.42	72.12	0.00	0.00	0.00	0.46
10 - 19	100.00	1.26	31.55	49.93	16.25	0.75	0.26
20 - 29	100.00	3.55	29.26	35.00	24.57	7.53	0.08
30 - 39	100.00	18.30	43.38	26.92	8.10	3.19	0.10
40 - 49	100.00	38.71	40.76	15.36	3.09	2.08	0.00
50 - 59	100.00	55.99	30.18	11.75	1.91	0.17	0.00
60 +	100.00	73.88	20.60	4.84	0.01	0.00	0.68

Figure 3.4: Distribution of female population by level of education



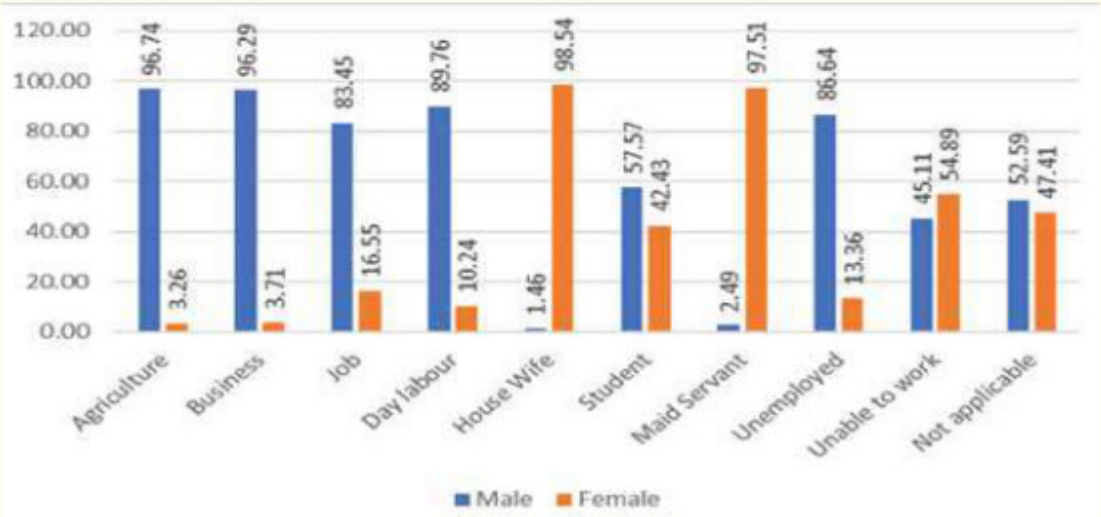
3.7 Main Occupation of population by sex (10 years and above)

The following table shows the distribution of population (age 10 years and up) by type of occupation and sex. A close examination of the table reveals that men make up 89.40 % of those work in compensated occupations (agriculture, business, service, day labour, and maid servant), while women make up only 10.60 %. On the other hand, in the case of non-compensated occupation constitute (subtotal II) 22.41% and women constitute 77.59% This data reveals that there are significant disparities between men and women's access to resources, status, and well-being.

Table 3.7: Distribution of population by main occupation (compensated or non-compensated) and sex (ten years and up)

Main Occupation	Population			Percent distribution		
	Total	Male	Female	Total	Male	Female
Total (I+II)	**289590**	**146269**	**143321**	**100.00**	**50.51**	**49.49**
Subtotal (I)	**120389**	**107628**	**12761**	**100.00**	**89.40**	**10.60**
Agriculture	36797	35598	1199	100.00	96.74	3.26
Business	16264	15661	603	100.00	96.29	3.71
Service/job	14446	12055	2391	100.00	83.45	16.55
Day labour	49268	44224	5044	100.00	89.76	10.24
Maid Servant/ male domestic servant	3614	90	3524	100.00	2.49	97.51
Subtotal (II)	**169201**	**38641**	**130560**	**100.00**	**22.41**	**77.59**
House wife/ House husband	104746	1533	103213	100.00	1.46	98.54
Student	64455	37108	27347	100.00	57.57	42.43

Figure 3.5: Distribution of population by main occupation (compensated or non-compensated) and sex (ten years and up)



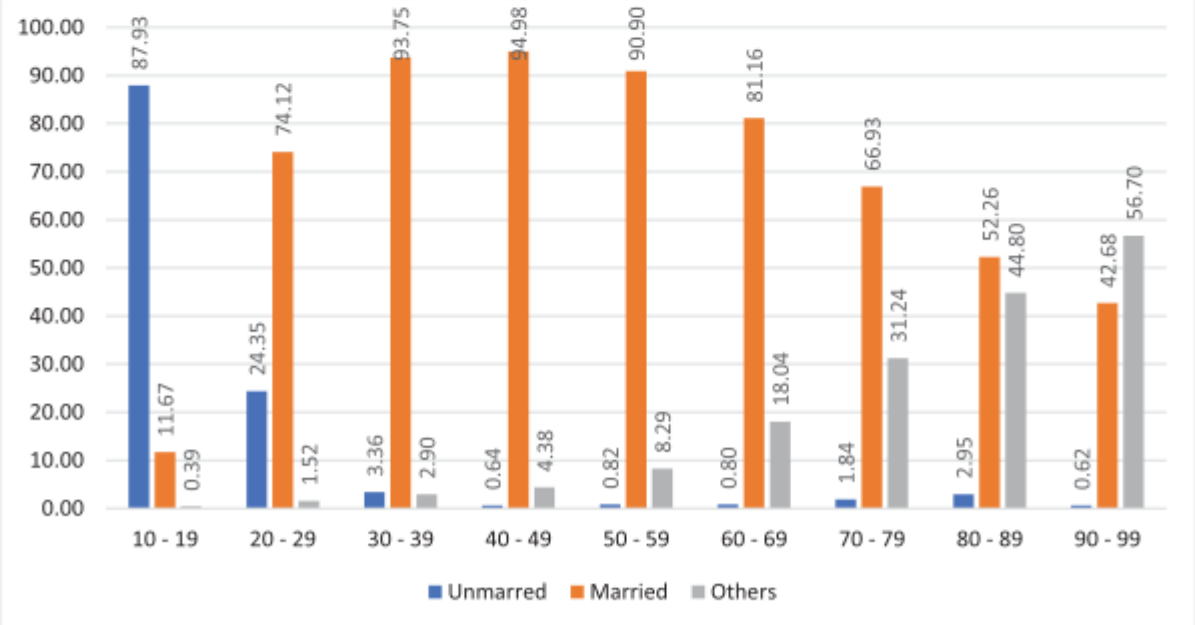
3.8 Currently married population by age group

The following data set contain the currently married population (ten years and up) in three selected upazilas. It is evident from the table that out of the total population aged 10 to 19; approximately 11.67% are currently married. In Bangladesh the legal age for marriage is 21 for boys and 18 for girls. However, the Child Marriage Restraint Act of 2017 permits girls under the age of 18 to marry with parental consent and permission. The information available from this pilot survey suggests that child marriage (for both boys and girls) is still a deeply ingrained norm in our society. It is worth noting that people aged 70 and up are neither divorced nor separated, they are included in the other categories of marital status.

Table 3.8: Percentage distribution of population (age 10 years and above) by marital status and age group

Age Group	Unmarred	Married	Widow	Divorce	Separated
10 - 19	87.93	11.67	0.02	0.16	0.21
20 - 29	24.35	74.12	0.61	0.53	0.38
30 - 39	3.36	93.75	1.59	0.67	0.64
40 - 49	0.64	94.98	2.85	1.04	0.49
50 - 59	0.82	90.90	8.05	0.19	0.05
60 - 69	0.80	81.16	17.50	0.21	0.33
70 - 79	1.84	66.93	31.24	0.00	0.00
80 - 89	2.95	52.26	44.80	0.00	0.00
90 - 99	0.62	42.68	56.70	0.00	0.00

Figure 3.6: Percentage distribution of population (age 10 years and above) by marital status and age group



3.9 Disability status of population

Any condition that makes it more difficult for a person to undertake specific activities or successfully engage with the environment around them is referred to as a person with disability (socially or materially). The disabled community is diverse, with various types and levels of disability as well as varying requirements. Data on disability status is necessary to assess the proportion of the population with disabilities and the potential scope of policy demands and consequences. Furthermore, disability data allows us to determine how the disability rates differ for different ages and groups of people in society. The following tables show the distribution of the population by type and level of disability.

(a) Population with visual difficulty, even with glasses

According to the table below, 324735 (90.51%) of the total 358803 people (age 5 and up) had no vision problems. Even with warred glasses, 27105 (7.55 %) people had some visual issues. On the other hand, 6174 people (1.72 %) had severe vision problems, even with glasses, and 746 people (0.21 %) were entirely blind.

Table 3.9 Distribution of the population with visual difficulty by level of difficulty (age 5 years and up)

Level of visual difficulty	Total population (5 years and up) in disaster affected households in selected three upazilas	Persons (5 years and up) with vision disability as a percent (%) of total population of disaster affected households in selected three upazilas
Total population (age 5 years and up)	358803	100.00
No difficulty	324735	90.51
Some difficulty	27105	7.55
A lot of difficulty	6174	1.72
Cannot do at all	746	0.21
Don't know	43	0.01

(b) Hearing difficulty, even with a hearing aid

It is revealed from the following table that of a total of 358803 people (age 5 years and up), as many as 341610 people (95.21%) had no hearing problems. Even with hearing devices, 13159 (3.67 %) people had some hearing impairment. However, even with hearing aids, 3516 people (0.98 %) had significant hearing impairments, and 473 people (0.13 %) were completely deaf.

Table 3.10: Distribution of the population with hearing difficulty by level of difficulty (age 5 years and up)

Level of visual difficulty	Total population (5 years and up) in disaster affected households in selected three upazilas	Persons (5 years and up) with hearing disability as a percent (%) of total population of disaster affected households in selected three upazilas
Total population (age 5 years and up)	358803	100.00
No difficulty	341610	95.21
Some difficulty	13159	3.67
A lot of difficulty	3516	0.98
Cannot do at all	473	0.13
Don't know	45	0.01

(c) Walking difficulty

As shown in the table below, 339441 people (94.60 %) out of a total of 358803 people (age 5 years and up) had no difficulties walking. However, approximately 13250 people (3.69 %) had some difficulty walking. Furthermore, 5031 (1.40%) people had significant difficulties waking up, and another 1021 (0.19%) people were completely unable to walk.

Table: 3.11 Distribution of the population with walking difficulty by level of difficulty (age 5 years and up)

Level of visual difficulty	Total population (5 years and up) in disaster affected households in selected three upazilas	Persons (5 years and up) with hearing disability as a percent (%) of total population of disaster affected households in selected three upazilas
Total population (age 5 years and up)	358803	100.00
No difficulty	339441	94.60
Some difficulty	13250	3.69
A lot of difficulty	5031	1.40
Cannot do at all	1021	0.29
Don't know	60	0.02

(d) Mental illness (having difficulty remembering or concentrating)

A total of 343946 people (95.86%) had perfect mental health. On the other hand, around 11469 (3.20 %) people were experiencing some form of mental disorder. At the same time, there were 2910 people (0.81%) with severe mental disorders. Due to mental disease, as few as 400 people (0.11%) were unable to do anything.

Table: 3.12: Distribution of the population with mental illness by level of difficulty (age 5 years and up)

Level of visual difficulty	Total population (5 years and up) in disaster affected households in selected three upazilas	Persons (5 years and up) with hearing disability as a percent (%) of total population of disaster affected households in selected three upazilas
Total population (age 5 years and up)	358803	100.00
No difficulty	343946	95.86
Some difficulty	11469	3.20
A lot of difficulty	2910	0.81
Cannot do at all	400	0.11
Don't know	80	0.02

(e) Difficulty with self-care such as washing all over or dressing

As shown in the table below, 348712 people (97.19 %) out of a total of 358803 people (age 5 years and up) had no difficulties with self-care such as washing all over or dressing. . However, approximately 6512 people (1.81 %) had some difficulty with self-care. Furthermore, 2799 (0.78%) people had significant difficulties with self-care, and another 751 (0.21%) people were completely unable to take self -care.

Table: 3.13: Distribution of the population with physical disabilities by level of difficulty (age 5 years and up)

Level of visual difficulty	Total population (5 years and up) in disaster affected households in selected three upazilas	Persons (5 years and up) with hearing disability as a percent (%) of total population of disaster affected households in selected three upazilas
Total population (age 5 years and up)	358803	100.00
No difficulty	348712	97.19
Some difficulty	6512	1.81
A lot of difficulty	2799	0.78
Cannot do at all	751	0.21
Don't know	30	0.01

(f) Speech impediment (difficulty using common/ customize language and communicating)

As stated in the table below, 349989 people (97.54 %) out of a total of 358803 people (age 5 and up) had no trouble speaking and utilizing the common language. However, 6121

people (1.71%) reported difficulty speaking and using common language. In addition, 2583 people (0.72 %) had significant difficulties, while 81 people (0.02%) were completely unable to do so.

Table: 3.14 Distribution of the population with speech impediment (difficulty using common language and communicating, age 5 years and up)

Level of visual difficulty	Total population (5 years and up) in disaster affected households in selected three upazilas	Persons (5 years and up) with hearing disability as a percent (%) of total population of disaster affected households in selected three upazilas
Total population (age 5 years and up)	358803	100.00
No difficulty	349989	97.54
Some difficulty	6121	1.71
A lot of difficulty	2583	0.72
Cannot do at all	81	0.02
Don't know	30	0.01

3.10 Incidence of natural disaster by upazila

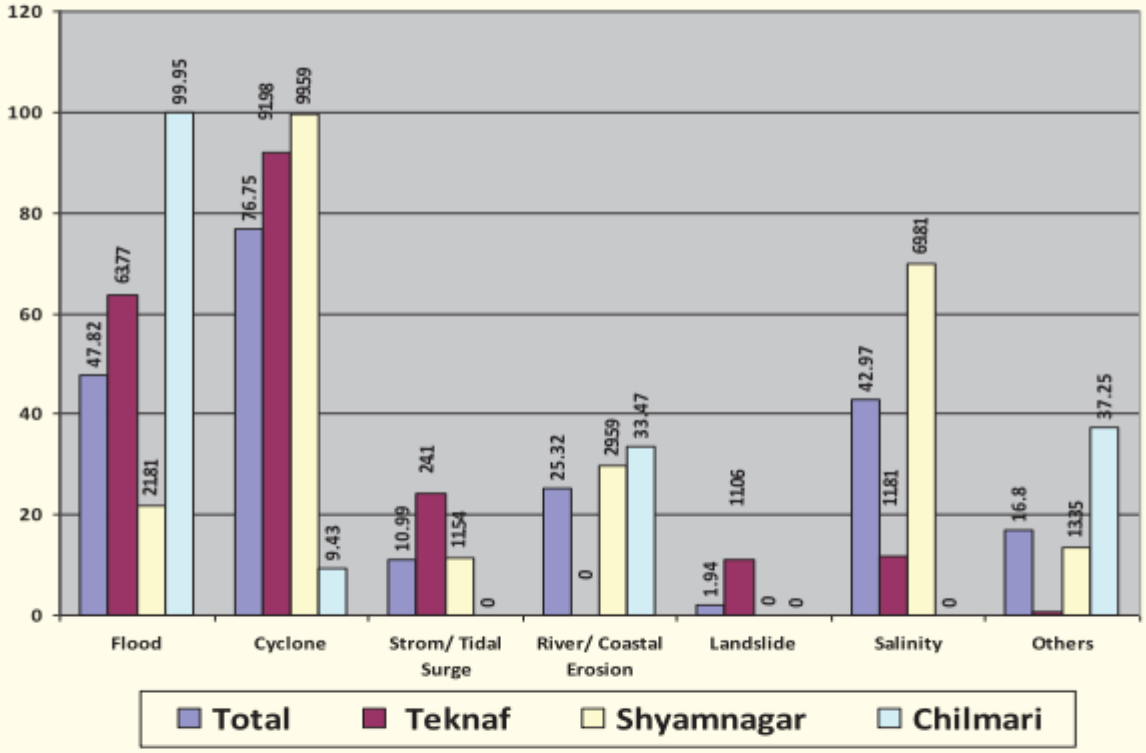
The table below depicts the number and percentage distribution of households based on the type of disaster that struck them. A closer look at table 3.14 shows that out of a total of 91871 affected households in the three selected upazilas, as many as 76.75% of households were affected by the cyclone. Flooding and river or coastal erosion, on the other hand, affected 47.82% and 25.32% of total disaster-affected households, respectively. It is obvious from available data that most of the households located in the selected three upazilas were devastated by cyclones, flooding and saline intrusion. Upazila to upazila analysis shows that Shyamnagar upazila was largely devastated by the cyclone (99.59%), followed by flooding (99.95%) of Chilmari upazila. At the same time, Teknaf upazila was affected by Flood (63.77%) and saline intrusion (69.81%) of Shyamnagar upazila. Chilmari upazila was affected by river or coastal erosion (33.47%).

Table 3.14: Number and Percentage Distribution of household affected by natural disaster (multiple answer)

Upazila	Household affected by Natural Disaster							
	Total	Flood	Cyclone	Strom/Tidal Surge	River/Coastal Erosion	Landslide	Salinity	Others
Total	91871	43930	70511	10100	23261	1784	39481	15436
Teknaf	16131	10287	14837	3888	0	1784	1905	87

Upazila	Household affected by Natural Disaster							
	Total	Flood	Cyclone	Strom/Tidal Surge	River/Coastal Erosion	Landslide	Salinity	Others
Shyamnagar	53826	11740	53607	6213	15926	0	37577	7186
Chilmari	21915	21904	2067	0	7335	0	0	8163
Percentage (%)								
Total		47.82	76.75	10.99	25.32	1.94	42.97	16.80
Teknaf		63.77	91.98	24.10	0.00	11.06	11.81	0.54
Shyamnagar		21.81	99.59	11.54	29.59	0.00	69.81	13.35
Chilmari		99.95	9.43	0.00	33.47	0.00	0.00	37.25

Figure 3.7: Percentage distribution of Household affected by Natural Disaster



3.11 Ownership of agricultural land by sex

Out of a total population of 48397, 45064 men (93.11%) and 3333 women (6.89 %) owned agricultural land. Hijras (neither male nor female) had no agricultural land. Teknaf upazila has the greatest percentage of land-owning women (19.61 %) among the three upazilas studied, followed by Chilmari upazila (7.35 %). The percentage of land-owning women in Shyamnagar upazilas was the lowest, at 3.48 %. It is obvious that women's rights to land are clearly marked by discrimination, deprivation, and eviction in the data below. It is also common knowledge that securing women's land rights has always been difficult.

Table 3.16: Sex distribution of those who owned agricultural land

Upazila	Ownership Agricultural Land		
	Total	Male	Female
Total	48397	45064	3333
Teknaf	7558	6076	1482
Shyamnagar	29719	28685	1034
Chilmari	11120	10303	817
	Percent distribution		
Total	100.00	93.11	6.89
Teknaf Coxs Bazar	100.00	80.39	19.61
Shyamnagar	100.00	96.52	3.48
Chilmari	100.00	92.65	7.35

Figure 3.8: Distribution of ownership agricultural land by sex and Upazila

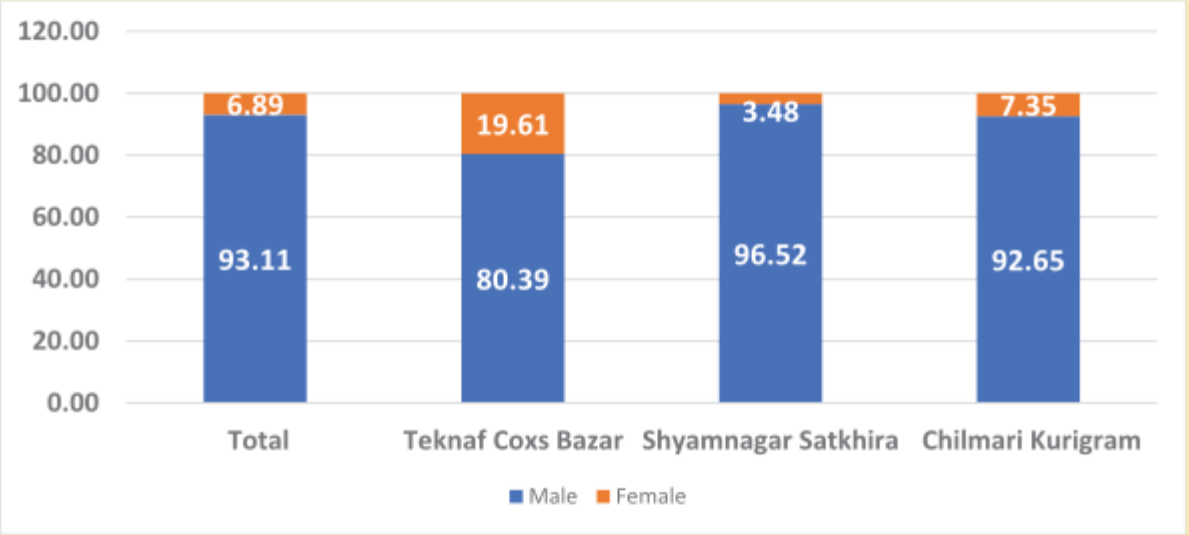


Figure 3.9: Distribution of ownership agricultural land by sex

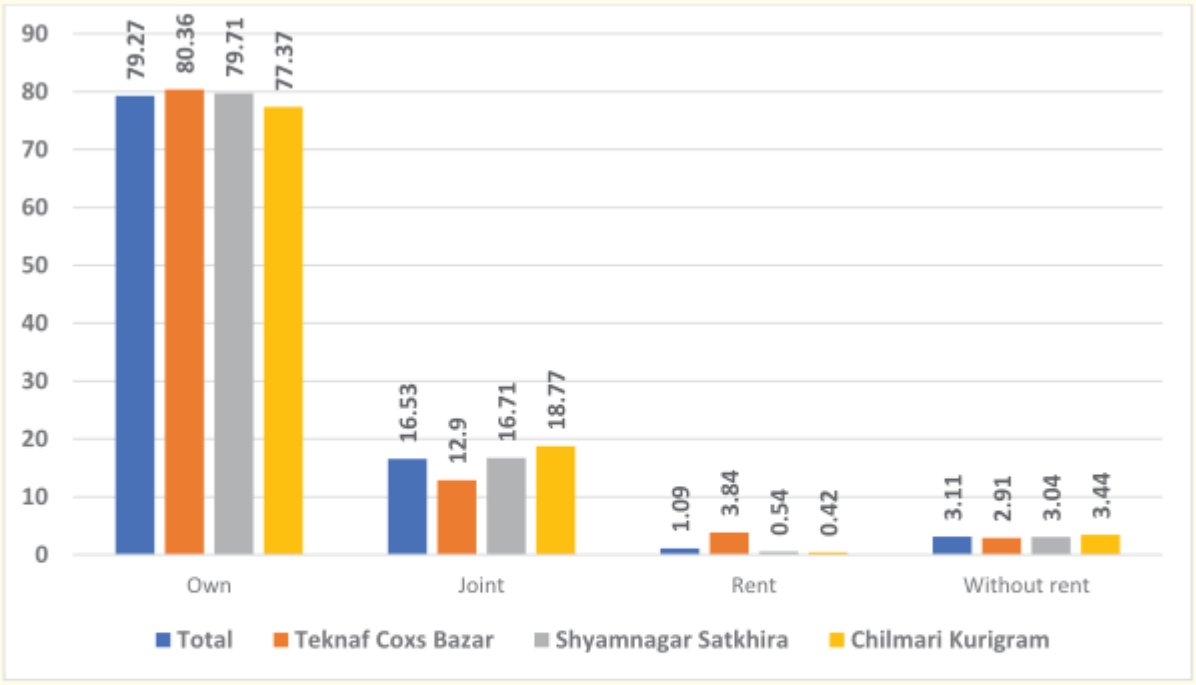
3.12 Ownership of dwelling house

As can be seen from the following table, 72823 (79.27 %) of the total of 91871 dwelling houses were individually owned or possessed under single ownership. The total number of joint-ownership dwelling houses was 15189 (16.53 %). On the other hand, 1001 dwelling houses (1.09 %) were rented from owners, whereas 2859 dwelling houses (3.11%) were chartered in some manner for free.

Table 3.17: Number and Percentage Distribution of households by type of ownership of dwelling

Upazila	Total	Individual ownership	Joint ownership	Rented	Without rent
Total	91871	72823	15189	1001	2859
Teknaf	16131	12962	2080	619	469
Shyamnagar	53826	42904	8996	290	1636
Chilmari	21915	16956	4113	91	754
	Percent distribution				
Total	100	79.27	16.53	1.09	3.11
Teknaf	100	80.36	12.90	3.84	2.91
Shyamnagar	100	79.71	16.71	0.54	3.04
Chilmari	100	77.37	18.77	0.42	3.44

Figure 3.10: Percentage distribution of ownership of dwelling household by Upazila



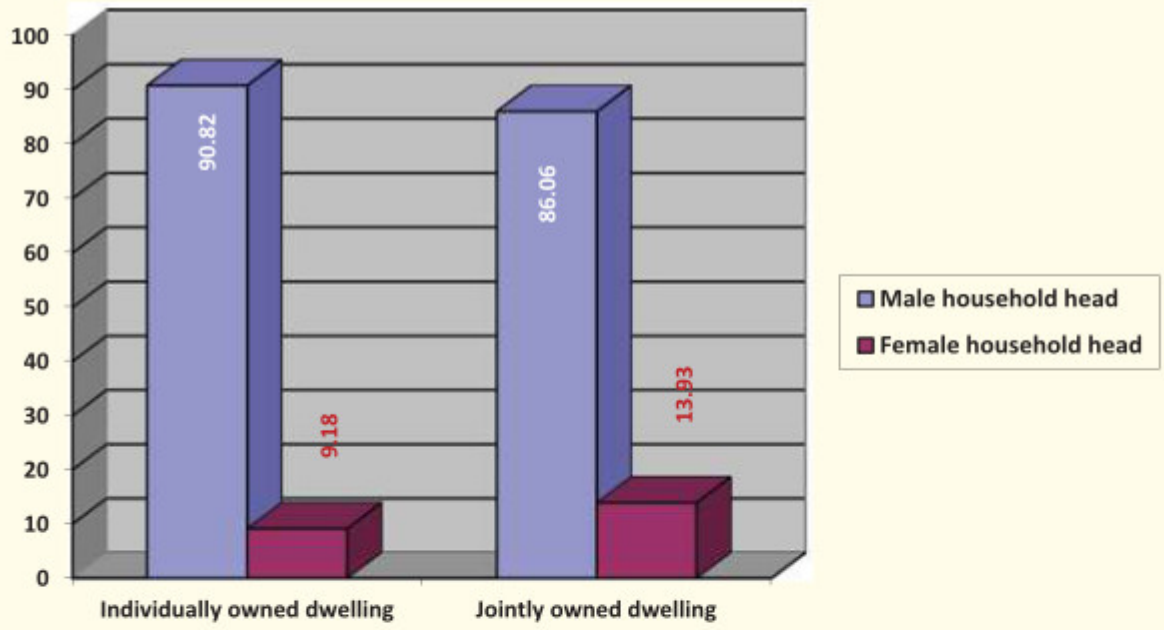
3.13 Ownership of dwellings by sex

As can be seen from the following table, out of a total of 72823 individually owned dwellings, men owned 66135 dwellings, or 90.82%, and women owned 6688 dwellings, or only 9.18%. On the other hand, for jointly owned dwellings, men accounted for 13073 households or 86.6% and women accounted for 2116 dwellings or only 13.93%. It is clear that housing ownership rights are highly unequally distributed and women's socioeconomic empowerment is being hampered by unequal housing ownership rights.

Table 3.18: Distribution of dwelling by sex

Sex	Ownership status		Percent distribution	
	Individually owned dwelling	Jointly owned dwelling	Individually owned dwelling	Jointly owned dwelling
Total	72823	15189	100.00	100.00
Male household head	66135	13073	90.82	86.06
Female household head	6688	2116	9.18	13.93

Figure 3.11 : Distribution of dwelling by sex of household heads



3.14 Distribution of labor of household members engaged in production of goods and services for household consumption by sex

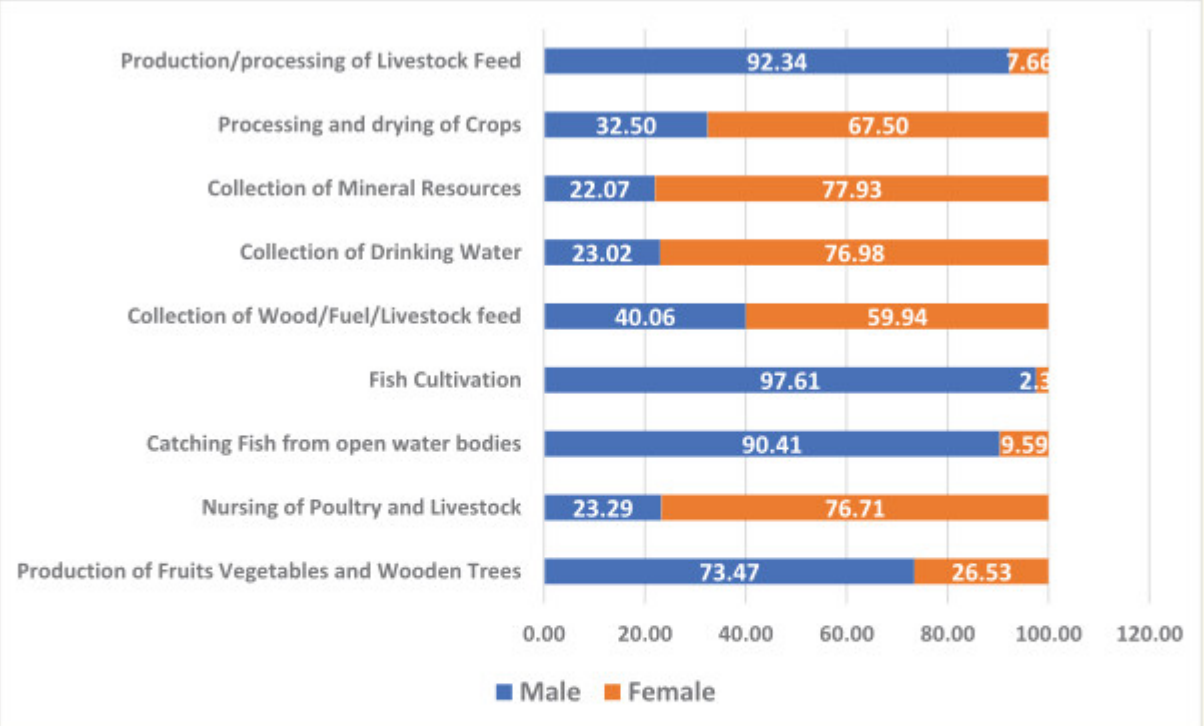
The sex distribution of labor of household members engaged in the production of goods and services for household consumption is shown in the table below. The data in the table below shows that male members of households were more likely than female members to be involved (i) in the production of fruits, vegetables, and wooden trees; (ii) catching fish

from open water bodies; (iii) fish cultivation; and (IV) the production/processing of livestock feed. On the other hand, female members of households were more likely than male members to be involved in (i) collection of firewood/livestock feed, (ii) collection of drinking water, (iii) collection of mineral resources, and (iv) processing and drying of crops.

Table 3.19: Distribution of labour of household members engaged in production of goods and services for household consumption by sex

Type of production of good and service	Both Sex			Percentage of Both Sex		
	Total	Male	Female	Total	Male	Female
Production of Fruits Vegetables and Wooden Trees	15556	11429	4127	100.00	73.47	26.53
Nursing of Poultry and Livestock	92098	21450	70649	100.00	23.29	76.71
Catching Fish from open water bodies	5744	5194	551	100.00	90.41	9.59
Fish Cultivation	15236	14872	364	100.00	97.61	2.39
Collection of Wood/Fuel/Livestock feed	26485	10611	15874	100.00	40.06	59.94
Collection of Drinking Water	73246	16863	56382	100.00	23.02	76.98
Collection of Mineral Resources	68	15	53	100.00	22.07	77.93
Processing and drying of Crops	9246	3005	6241	100.00	32.50	67.50
Production/processing of Livestock Feed	934	863	72	100.00	92.34	7.66

Figure 3.12: Distribution of labour of household members engaged in production of goods and services for household consumption by sex



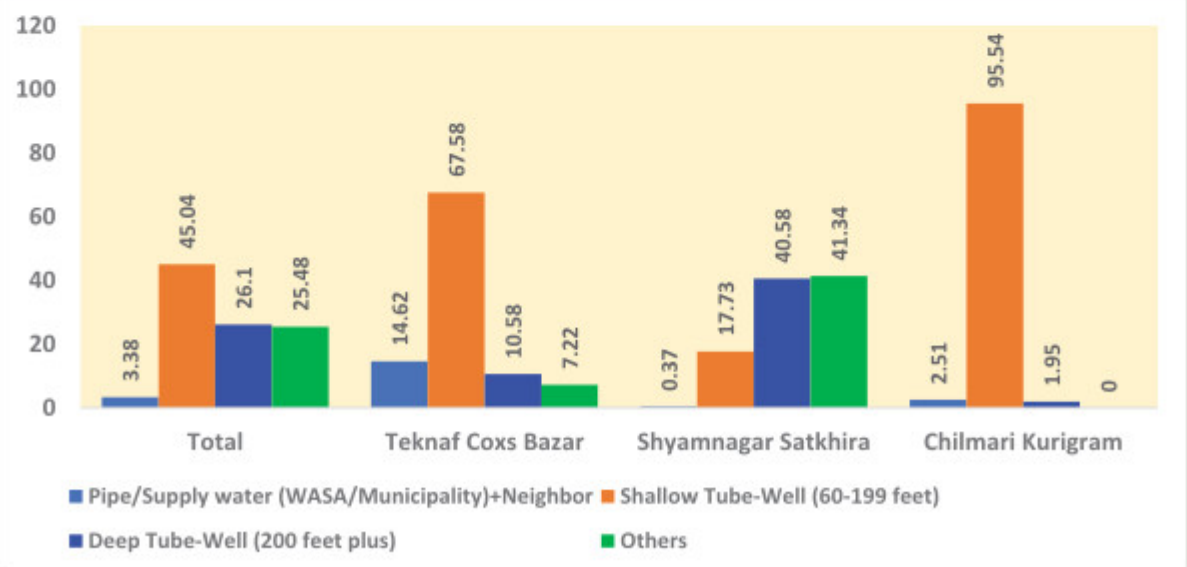
3.15: Main sources of drinking water

Table 3.20 shows the household distribution by main source of drinking water. It is evident from the table below that shallow tube wells were the main source of drinking water for 45.04 percent of households and deep tube wells were the main source for 26.10 percent. According to the findings, groundwater is still the main source (71.14%) of drinking water in three selected upazilas. Furthermore, only 3.38 % of households had access to drinking water supplied by WASA/municipalities. In addition, it is revealed that 11.92% of households were mainly dependent on surface water, such as ponds, rivers, and canals that may be contaminated by disease-causing bacteria and viruses.

Table 3.20: Distribution of households by major source of drinking water

Upazila	Main Source of Drinking Water							
	Total	Pipe/ Supply water + Neighbor	Shallow Tube-Well (60-199 feet)	Deep Tube-Well (200 feet plus)	Pond/ Dighi/ River/ Cannel/ Water Fall Well/ Indira/ Stream/ Dam Lake	Water Fall Rain Water	Bottled Water	Others
Total	91871	3106	41380	23976	10951	3928	7794	736
Teknaf	16131	2358	10901	1707	216	924	25	0
Shyamnagar	53826	197	9543	21841	10736	3004	7770	736
Chilmari	21915	551	20936	428	0	0	0	0
	Percentage distribution							
Total	100.00	3.38	45.04	26.10	11.92	4.28	8.48	0.80
Teknaf	100.00	14.62	67.58	10.58	1.34	5.73	0.15	0.00
Shyamnagar	100.00	0.37	17.73	40.58	19.95	5.58	14.44	1.37
Chilmari	100.00	2.51	95.54	1.95	0.00	0.00	0.00	0.00

Figure 3.13: Distribution of households by main source of drinking water



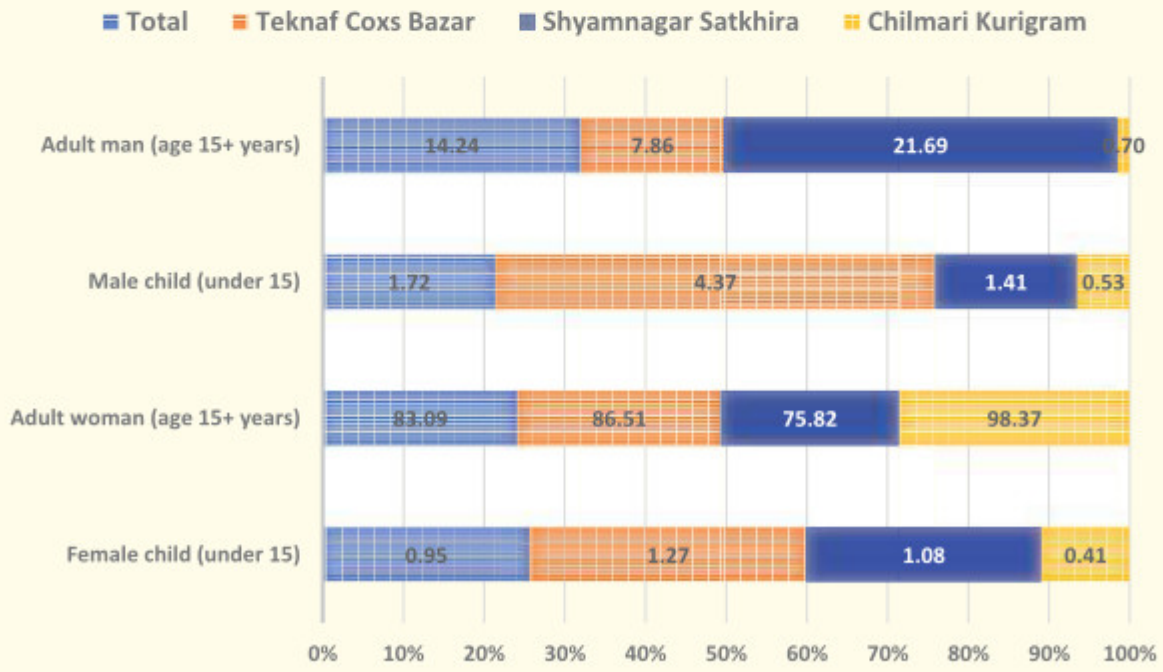
3.16 Distribution of households based on drinking water collectors by sex

The table 3.21 shows that, out of a total of 91485 households, women aged 15 years and up used to collect drinking water for 76017 household (83.09 %), while men of the same age group used to collect drinking water for 13028 households (14. 24 %). This information indicates that women (age 15 and up) were mainly responsible for collecting drinking water to meet their needs. It is also exposed that a small number of male and female children were also engaged in collecting drinking water. The rest of the households 389 (there are 91485 total households) were not required to collect drinking water.

Table 3.21: Distribution of households based on drinking water collectors by sex

Upazila	Collection of Drinking Water				
	Total household	Female child (Age under 15 Years)	Adult woman (age 15+ years)	Male child (Age under 15 Years)	Adult man (age 15+ years)
Total	**91485**	**869**	**76017**	**1571**	**13028**
Teknaf	16082	204	13912	702	1264
Shyamnagar	53533	576	40591	754	11612
Chilmari	21869	89	21513	115	152
	Percent distribution				
Total	100.00	0.95	83.09	1.72	14.24
Teknaf	100.00	1.27	86.51	4.37	7.86
Shyamnagar	100.00	1.08	75.82	1.41	21.69
Chilmari	100.00	0.41	98.37	0.53	0.70

Figure 3.14: Distribution of households based on drinking water collectors by sex



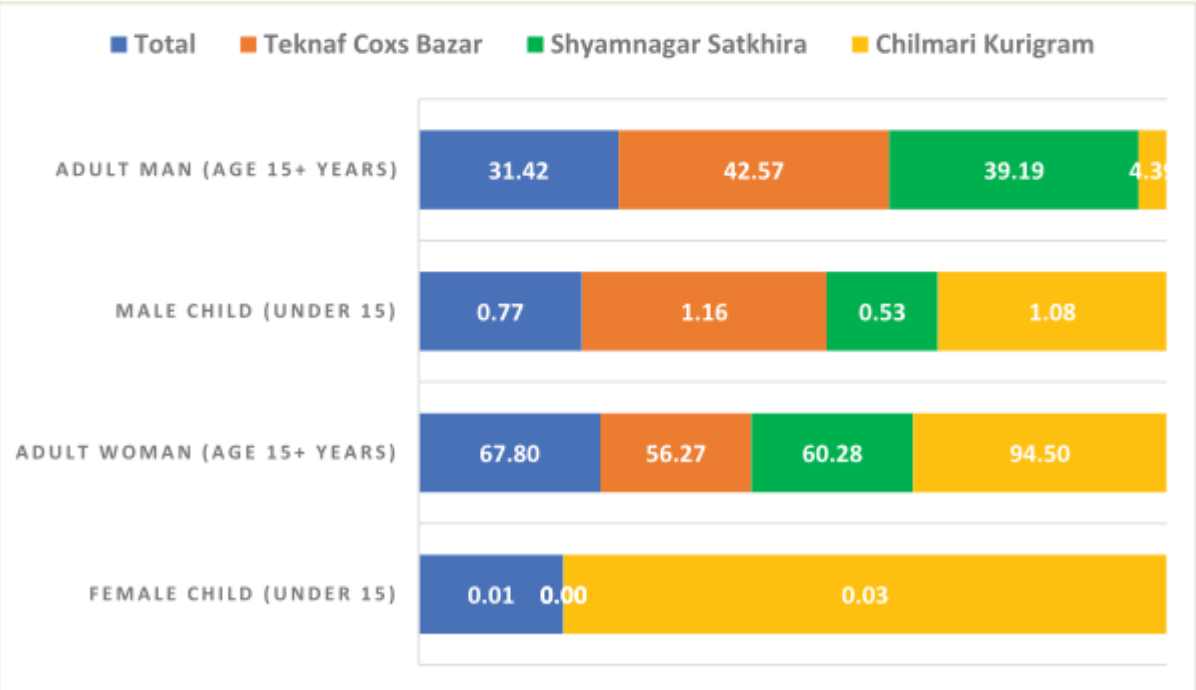
3.17 Distribution of households based on firewood collectors by sex

The table 3.22 shows that, out of a total of 90775 households, women aged 15 years and up used to collect firewood for 61541 household (67.80%), while men of the same age group used to collect firewood for 28525 households (31.42%). This information indicates that women (age 15 and up) were mainly responsible for collecting firewood to meet their needs. It is also exposed that a small number of male and female children were also engaged in collecting firewood. On the other hand, a total of 1097 households were not required to collect firewood.

Table 3.22: Distribution of households based on firewood collectors by sex

Upazila	Collection of fuel for Cooking by Sex and Age				
	Total	Female child (Age under 15)	Adult woman (age 15+ years)	Male child (Age under 15)	Adult (age 15+ years)
Total	90775	7	61541	702	28525
Teknaf	16073	0	9044	186	6843
Shyamnagar	52882	0	31878	279	20725
Chilmari	21820	7	20619	236	958
	Percent distribution				
Total	100.00	0.01	67.80	0.77	31.42
Teknaf	100.00	0.00	56.27	1.16	42.57
Shyamnagar	100.00	0.00	60.28	0.53	39.19
Chilmari	100.00	0.03	94.50	1.08	4.39

Table 3.15: Distribution of households based on firewood collectors by sex



3.18 Affected households that received early warning by type of disaster

An early warning system (EWS) is a method of providing people with relevant and timely information in a systematic manner prior to a disaster, assisting them to make informed decisions and take appropriate action. Cyclone warnings were received by the greatest number of households (71.06 %), followed by flooding (27.31%), and finally river and coastal erosion (14.14 %). It should be highlighted that there was no early warning for landslides or salinity.

Table 3.23: Number and Percentage Distribution of Household that received early warning by type of disaster

Upazila	Total household (non-overlapped actual number of household)	Number of households				
		Flood	Cyclone	Strom/ Tidal Surge	River/ Coastal Erosion	Others
Total	91871	25090	65208	7187	12997	12301
Teknaf	16131	215	10897	1226	0	250
Shyamnagar	53826	2971	52999	5961	12359	2333
Chilmari	21915	21904	1312	0	638	9719
	Percent distribution					
Total		27.31	71.06	7.82	14.14	13.39
Teknaf		13.34	86.57	67.55	0.00	1.54
Shyamnagar		5.52	98.46	11.07	22.96	4.33
Chilmari		99.94	5.99	0.00	2.91	44.35

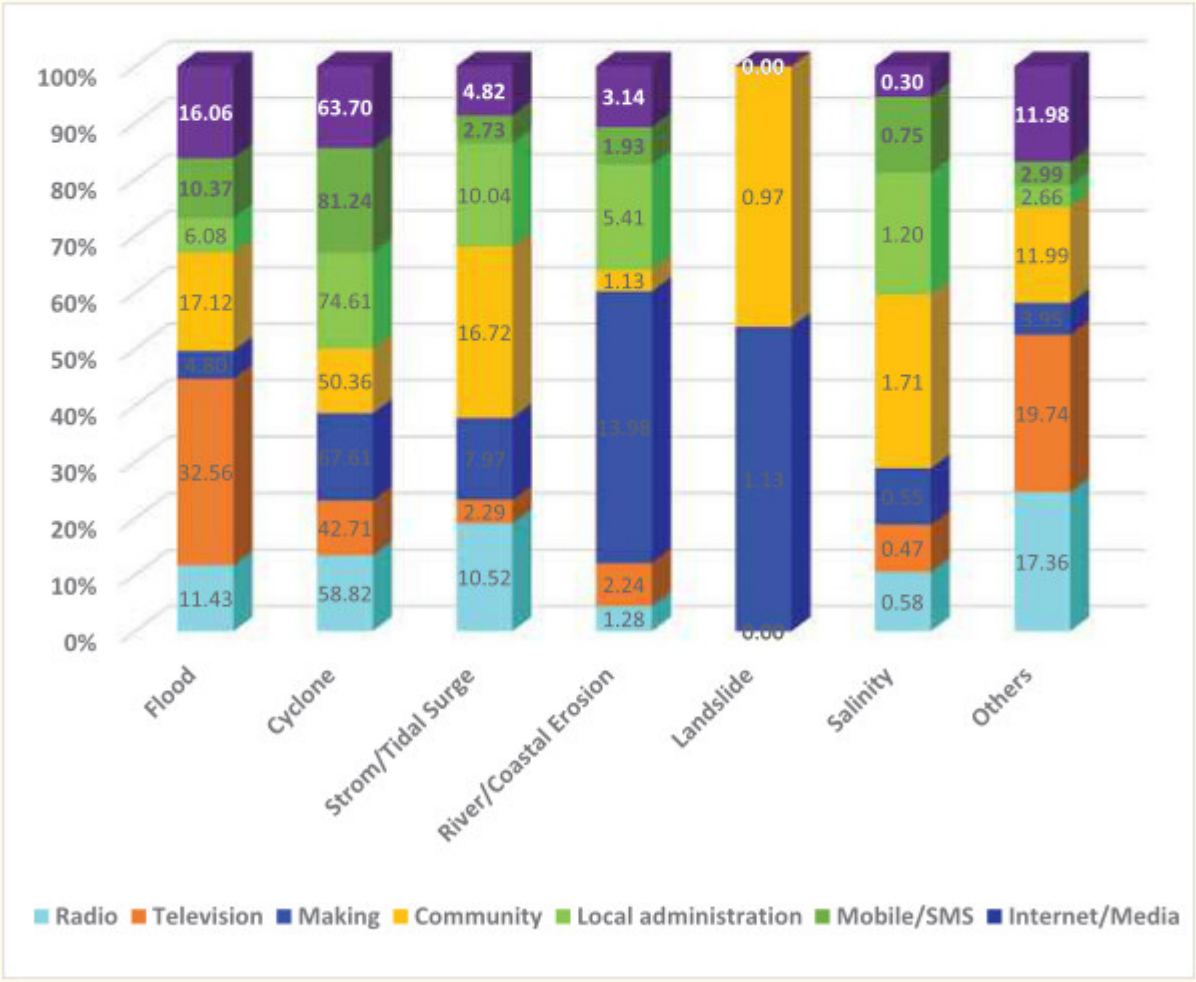
3.19 Households that received early warning by types of media

The following table 3.24 shows the percentage distribution of households that received early warning by media type as well as disaster type. The early warning received on radio by households, maximum households (58.82%), received cyclone warnings, followed by flood warnings (11.43%). The early warning received on television by households, maximum households (42.71%), received cyclone warnings, followed by flood warnings (32.56 %). Cell phone SMS early warnings accounted for 81.24 % of cyclone warnings. Prior to the disaster, public announcements through miking or loudspeakers were also clearly important for conveying timely and accurate information to communities.

Table 3.24: Distribution of households that received early warning by type of media

Early Warning System	Percentage of Type of Disaster							
	Total	Flood	Cyclone	Strom/ Tidal Surge	River/ Coastal Erosion	Landslide	Salinity	Others
Radio	100.00	11.43	58.82	10.52	1.28	0.00	0.58	17.36
Television	100.00	32.56	42.71	2.29	2.24	0.00	0.47	19.74
Miking	100.00	4.80	67.61	7.97	13.98	1.13	0.55	3.95
Community	100.00	17.12	50.36	16.72	1.13	0.97	1.71	11.99
Local administration	100.00	6.08	74.61	10.04	5.41	0.00	1.20	2.66
Mobile/SMS	100.00	10.37	81.24	2.73	1.93	0.00	0.75	2.99
Internet/Media	100.00	16.06	63.70	4.82	3.14	0.00	0.30	11.98

Figure 3.16: Distribution of households that received early warning by type of media



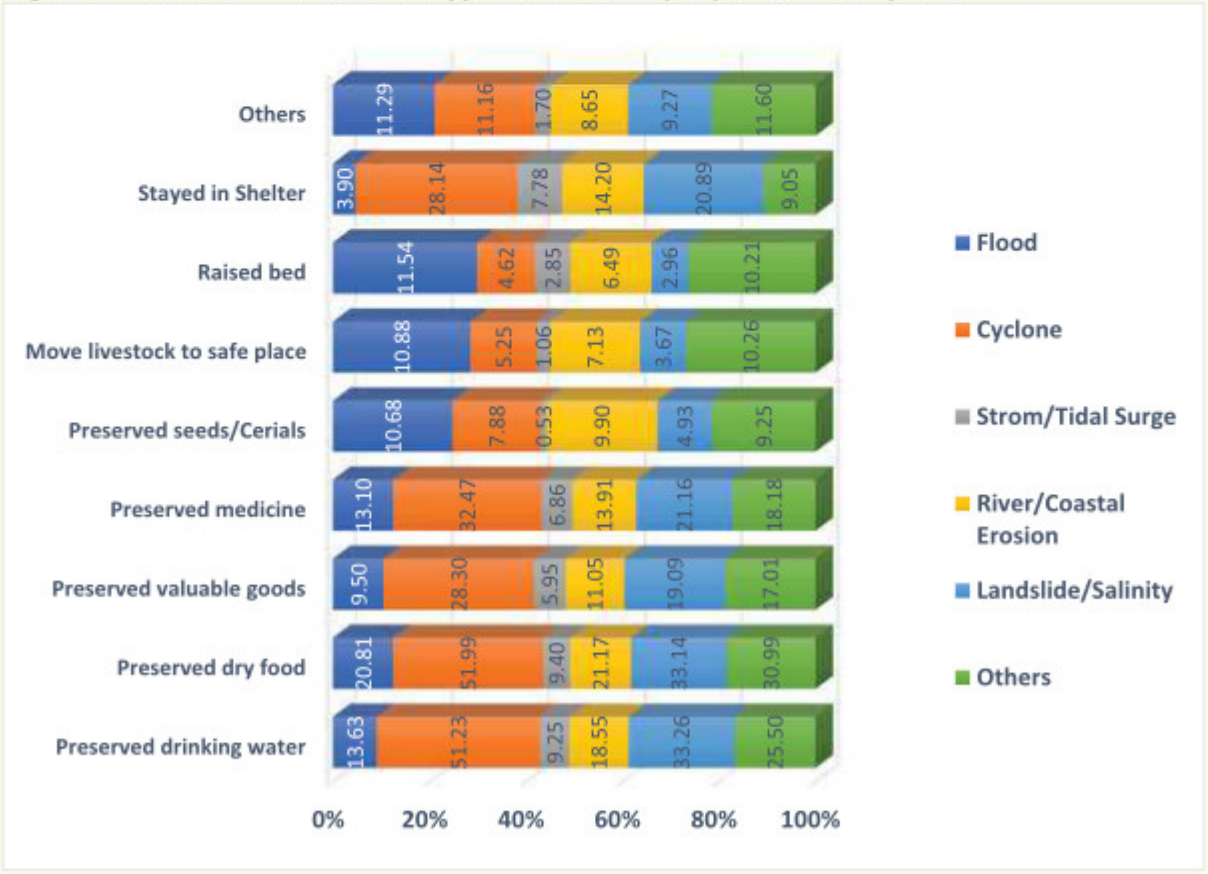
3.20: Type of emergency disaster preparedness by Household

Table 3.25 shows the percentage distribution of households by type of emergency preparedness as well as type of disaster. It is also clear that the preservation of drinking water, dry food, medicine and valuables took priority over all other sorts of preparedness.

Table 3.25: Distribution of household by type of emergency disaster preparedness

Type of Disaster Preparedness	Type of Disaster (%)					
	Flood	Cyclone	Strom/ Tidal Surge	River/ Coastal Erosion	Landslide /Salinity	Others
Preserved drinking water	13.63	51.23	9.25	18.55	33.26	25.50
Preserved dry food	20.81	51.99	9.40	21.17	33.14	30.99
Preserved valuable goods	9.50	28.30	5.95	11.05	19.09	17.01
Preserved medicine	13.10	32.47	6.86	13.91	21.16	18.18
Preserved seeds/Cereals	10.68	7.88	0.53	9.90	4.93	9.25
Move livestock to safe place	10.88	5.25	1.06	7.13	3.67	10.26
Raised bed	11.54	4.62	2.85	6.49	2.96	10.21
Stayed in Shelter	3.90	28.14	7.78	14.20	20.89	9.05
Others	11.29	11.16	1.70	8.65	9.27	11.60

Figure 3.17: Household took type of disaster preparedness by Disaster



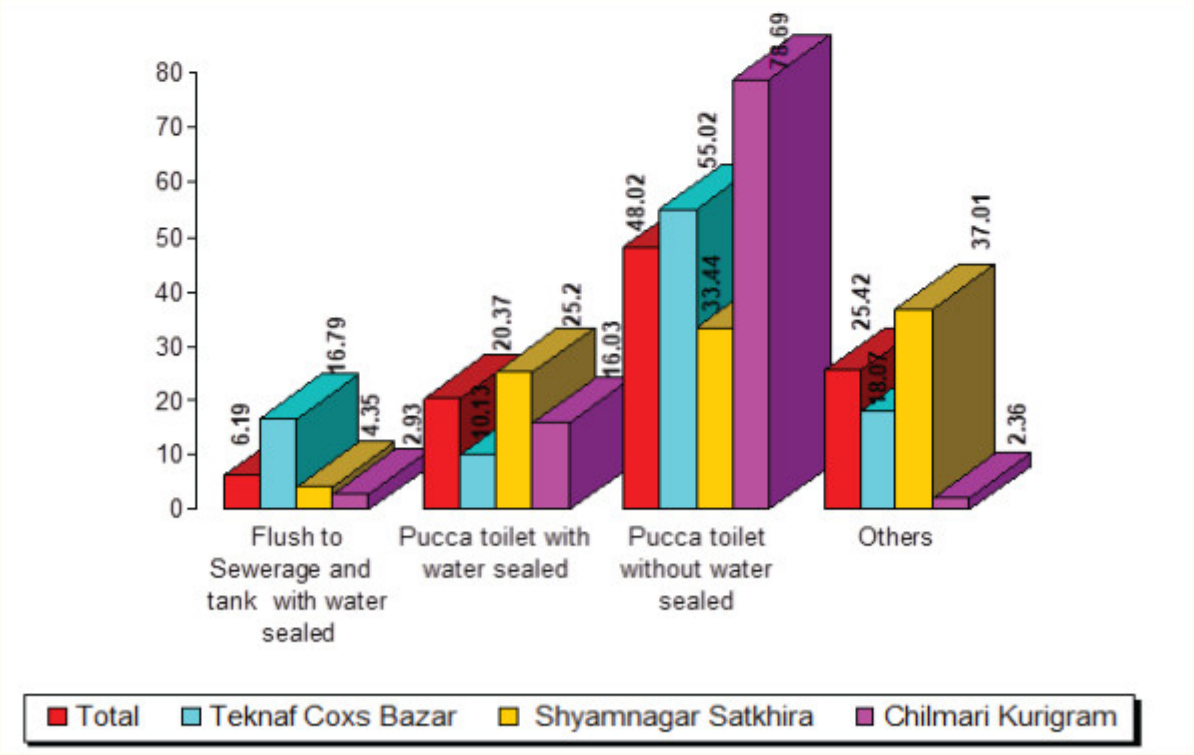
3.21 Household's toilet facility

Out of a total of 91871 disaster-affected households, 5687 (6.19%) had flush toilets, 18 714 (20.37%) had pucca toilets with water sealed, and 44116 (48.02) had pucca toilets without water sealed. The remaining 23354 households (25.42 %) used other types of latrines, such as open defecation. It should be noted that, according to the Sustainable Development Goals (SDGs), by 2030, everyone should have access to adequate and equitable sanitation and hygiene. At the same time, open defecation should be eliminated, with a special focus on the needs of women and girls, as well as those in vulnerable situations.

Table 3.26: Distribution of household by type of toilet facility

Upazila	Total household	Flush toilet	Pucca toilet with water sealed	Pucca toilet without water sealed	Others
Total	91871	5687	18714	44116	23354
Teknaf	16131	2708	1634	8875	2913
Shyamnagar	53826	2341	13564	17999	19921
Chilmari	21915	642	3513	17245	515
	Percent distribution				
Total	100.00	6.19	20.37	48.02	25.42
Teknaf	100.00	16.79	10.13	55.02	18.07
Shyamnagar	100.00	4.35	25.20	33.44	37.01
Chilmari	100.00	2.93	16.03	78.69	2.36

Figure 3.18: Distribution of household by type of toilet facility



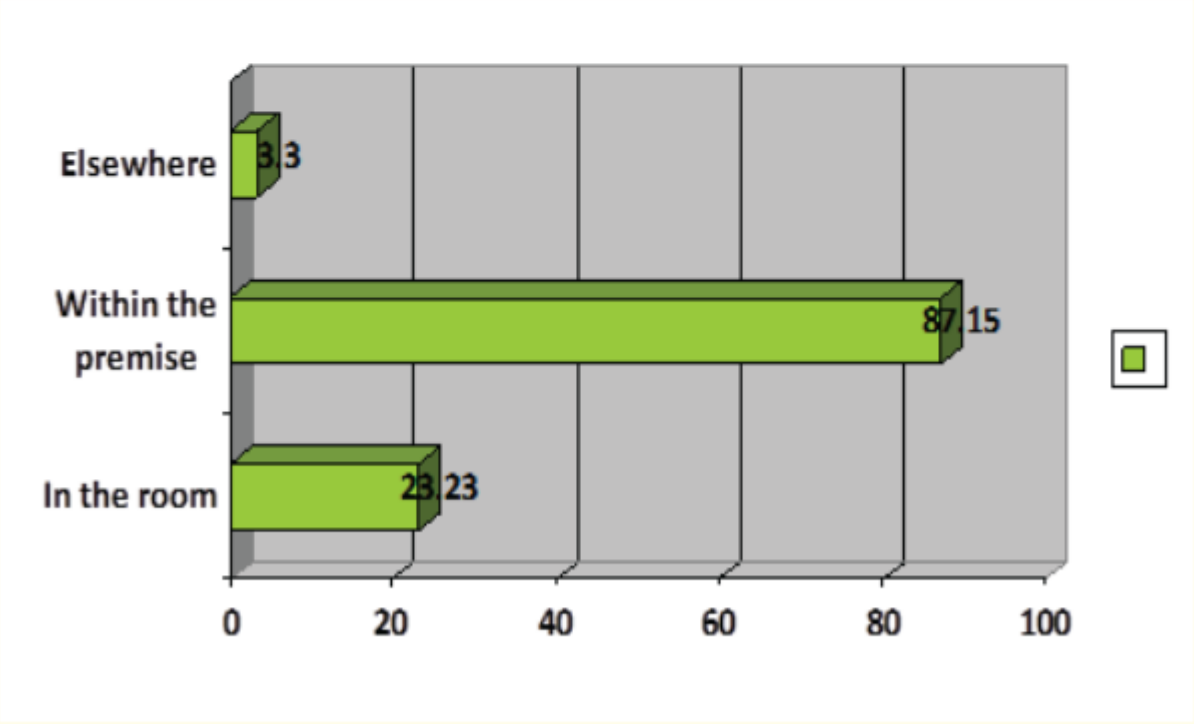
3.22 Household based on the location of their toilet

Among total 91871 households, a total of 8777 (23.33%) households, 80063 (87.15%) households and 3031 (3.30%) households, respectively, had toilets in the room, in the premises or in elsewhere. According to upazila-level data, 23.23 percent of the total households in the Teknaf upazila had toilet in the room. In Shayamnagar and Chilmari, however, 8.78% and 1.39% of households, respectively, had a toilet in the room.

Table 3.27: Percentage distribution of households based on the location of their toilet

Upazila	Number of households			
	Total	In the room	Within the premises	Elsewhere
Total	91871	8777	80063	3031
Teknaf	16131	3747	11814	569
Shyamnagar	53826	4726	47369	1731
Chilmark	21915	304	20880	730
	Percent distribution			
Total	100.00	23.23	87.15	3.30
Teknaf	100.00	8.78	73.24	3.53
Shyamnagar	100.00	1.39	88.00	3.22
Chilmari	100.00	9.55	95.28	3.33

Figure 3.19: Percentage distribution of households based on the location of their toilet



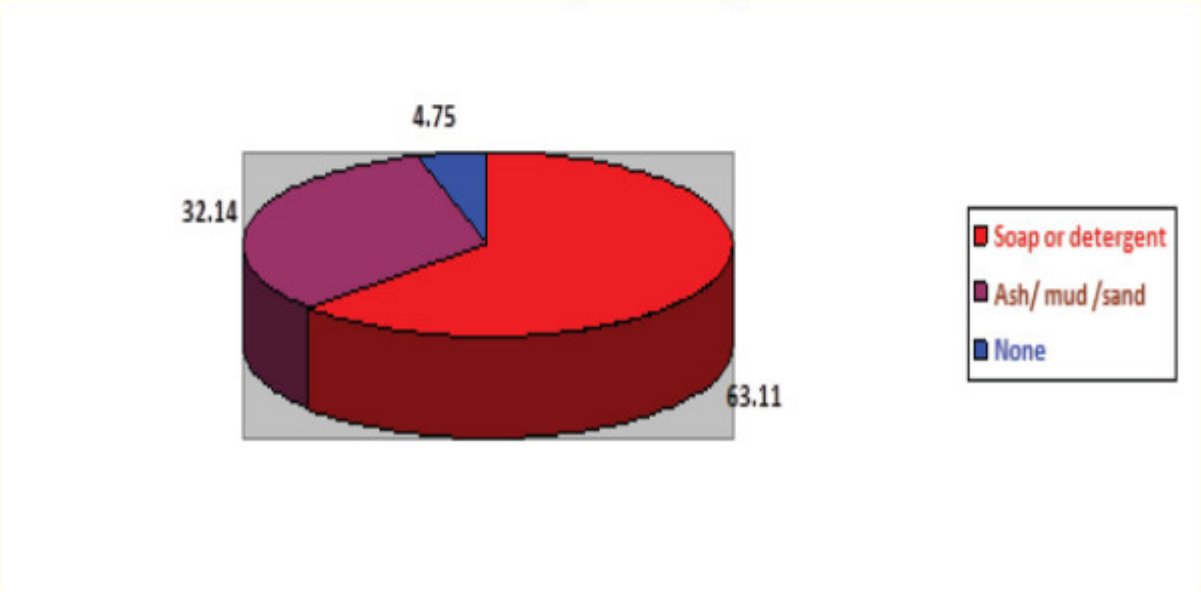
3.23 Household broken down by toiletries available for their hand washing after trips to the toilet

The following table shows the number and percentage distribution of households based on the toiletries that are generally used for hand washing after using the toilet. It is seen that, of total households, as many as 57981 (63.11%) households had soap or other type of detergent for washing their hands after a trip to the toilet. On the other hand, as many as 29523 (32.14%) households use ash or mud or sand for their hand washing after using the toilet. The rest 4366 (4.75%) households did not use anything to wash their hand after trip to toilet. All of these figures indicate that 36.89 percent of the total households lacked adequate and effective toiletries for washing their hands after using the restroom.

Table 3.28: Household distribution based on the toiletries available for their hand washing after using the toilet

Upazila/District	Used of Toiletries			
	Total	Soap or detergent	Ash/ mud /sand	None
Total	91871	57981	29523	4366
Teknaf	16131	6281	9175	675
Shyamnagar	53826	41836	8493	3496
Chilmari	21915	9864	11856	195
	Percent distribution			
Total	100.00	63.11	32.14	4.75
Teknaf	100.00	38.94	56.88	4.19
Shyamnagar	100.00	77.73	15.78	6.50
Chilmari	100.00	45.01	54.10	0.89

Figure 3.20: Household distribution based on the toiletries available for them hand washing after using toilet



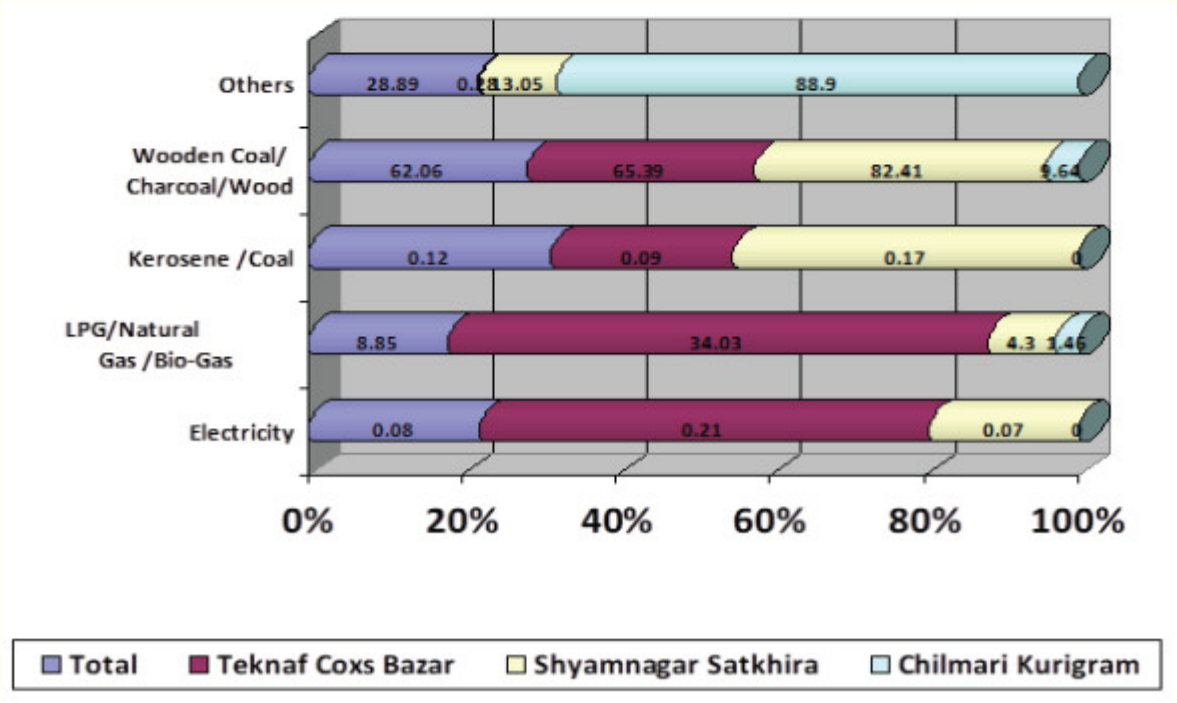
3.24 Cooking fuel used by households

The distribution of households in disaster-affected areas by type of cooking fuel used is shown in table 3.29. According to the data in the table, as many as 57015 households (62.06%) made use of wood, wooden coal, and charcoal as cooking fuel, out of a total of 91871 households. In all, only 8131 households (8.85%) consumed gas, LPG, or biogas as their cooking fuel. Around 110 households (0.12%) used kerosene as their cooking fuel. As few as 73 (0.08%) households used electricity as their cooking fuel. It is clear from the survey results that the vast majority of households (90.95%) in disaster areas used solid fuels as their primary cooking fuel. The remaining households (7.05%) used up modern fuels such as gas, LPG, kerosene, and electricity as their cooking fuel.

Table3.29: Distribution of households by type of cooking fuel used

	Total	Electricity	LPG/Natural Gas/Bio-Gas	Kerosene /Coal	Wooden Coal/ Charcoal/Wood	Others
Total	91871	73	8131	110	57015	26542
Teknaf	16131	34	5489	15	10548	45
Shyamnagar	53826	38	2315	92	44358	7024
Chilmari	21915	0	320	0	2113	19482
	Percent distribution					
Total	100.00	0.08	8.85	0.12	62.06	28.89
Teknaf	100.00	0.21	34.03	0.09	65.39	0.28
Shyamnagar	100.0	0.07	4.3	0.17	82.41	13.05
Chilmari	100.00	0	1.46	0	9.64	88.9

Figure 3.21: Type of using fuel for cooking by Upazila/District



3. 25 Household by types of cooks, classified based on their sex and age

Table 3.30 shows that, out of a total of 91871 households, women aged 15 years and up used to prepare food for 90312 household (98.30%), while men of the same age group used to prepare food for 768 households (0.84%) . This information indicates that women (age 15 and up) were mainly responsible for preparing food to meet their needs. It is also exposed that a small number of male and female children were also engaged in preparing food. Boys (634) were likewise significantly more involved in preparing food than their girls (50). This could be due to the fact that girls outnumber boys in primary and secondary school.

Table 3.30: Household Distribution by types of cooks, classified based on their sex and age

	Total	Girls (under 15 years)	Adult woman (age 15+ years)	Boys (under 15)	Adult man (age 15+ years)
Total	91871	50	90312	634	768
Teknaf	16131	0	15911	7	213
Shyamnagar	53826	0	52799	434	485
Chilmari	21915	50	21602	192	70
	Percent distribution				
Total	100.00	0.05	98.30	0.69	0.84
Teknaf	100.00	0.00	98.64	0.04	1.32
Shyamnagar	100.00	0.00	98.09	0.81	0.90
Chilmari	100.00	0.23	98.57	0.88	0.32

3.26 Dwelling's ownership document divided into male-headed and female headed household

Around 64868 (80.69 percent) of the 80392 male household heads had ownership documentation, compared to 6297 (66.81%) of the female household heads. This data shows that, despite their efforts to establish their rights in the family, society, and the state, Bangladeshi women face significant discrimination and deprivation.

Table 3.31: Status of a dwelling's ownership document divided into male-headed and female headed household

Investigation parameter	Male headed household	Female headed household
Total	80392	9425
Households had ownership documents.	64868	6297
Households did not have ownership documents.	15524	3128
	Percent distribution	

Investigation parameter	Male headed household	Female headed household
Total	100.00	100.00
Households had ownership documents.	80.69	66.81
Households did not have ownership documents.	19.31	33.19

3.27 Recommendations

There is no doubt that the country's planning and implementation authorities are working hard to align the synergies between numerous global and regional commitments, national policies, and implementation guidelines. The need and demand for credible real-time **'Sex, Age and Disability Disaggregated Data (SADDD)'** has been increased manifold and felt seriously during the Covid-19 pandemic. The pandemic fallout has exponentially increased the demand for reliable and timely data from healthcare professionals, policymakers, and the public at large. In the case of a disaster, geo-localization and geospatial parameters are essential for planning, programming, and managing DRR, DRM, CCA, during and after-disaster management. It is hoped that this pilot survey will, to a great extent, improve knowledge and understanding of the issues and challenges in collecting SADDD for disaster risk reduction (DRR) and climate change adaptation (CCA) and enhanced resilience. With this background, some specific recommendations are made which may facilitate the improvement of the future survey related to SADDD.

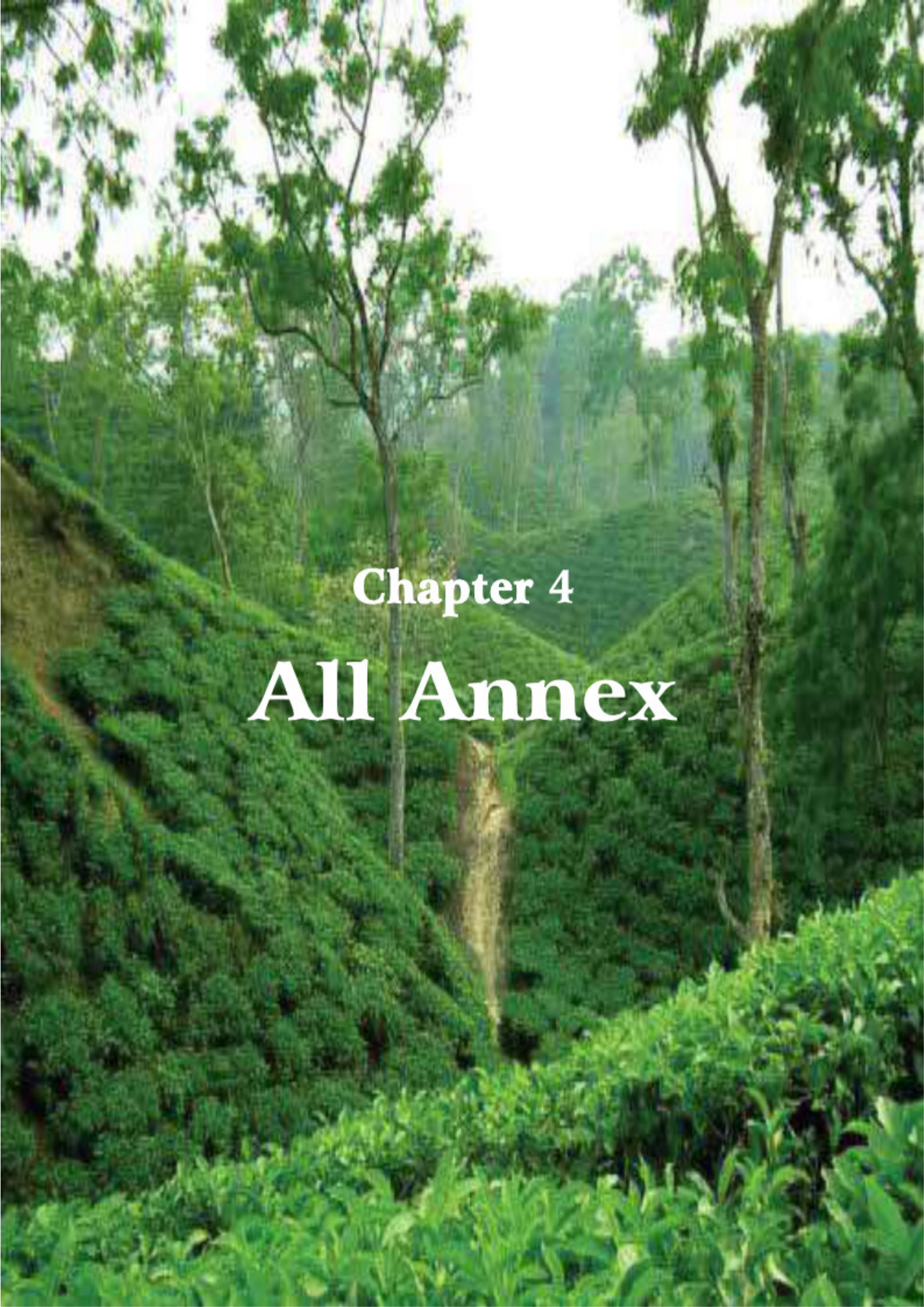
1. *Random interviews with the country's population should be considered. Purposive sample distribution in disaster-prone districts, upazilas, unions, and mauzas may be appropriate for the piloting phase. Future national surveys must include randomization to ensure that different segment of the population, such as girls and boys, women and men, and older and younger people, are included.*
2. *The length and scope of the SADDD questionnaire should be improved in future in compare to the country wise large sample survey. Some modules might be alligned to other surveys (for example, on water, sanitation, health, and safety issues), while others, such as major disasters, climate change, and environmental livelihoods, could be standalone. It can be further improved if more attention is given to collecting data related to disasters only, disaggregated by Sex, Age and Disability. So that SADDD can be generated more efficiently.*
3. *Would be great if UN Women could offer BBS professionals assistance in customizing the Global Model Questionnaire, as it was done the ECDS Cell, BBS. So that in future national SADDD surveys can address the limitations of this pilot survey, particularly in the areas of sex, age and disability disaggregated data collection.*

4. *SADDD questionnaires require special consideration when designed, taking into account the time required by the interviewer and the interviewee.*
5. *Sample strategies should be developed in line with the Custodian Agencies of United Nations recommendations, which recommend interviewing at least two adults of different sexes from each household.*
6. *A digital interactive platform needs to be developed for field level data collection before and after disaster events, including disaster risks and related social, biophysical and geospatial parameters.*
7. *The questionnaire should be designed in such a way so that specific impacts of disasters on vulnerable groups such as women and people with disabilities can be captured and be visible in the survey report.*
8. *For SADDD collection, particularly for person focused data, proxy respondents should be avoided as far as possible. A proxy respondent may be used only when there is a particular reason that the target person cannot report. Interviewing at least two adults of different sexes in each household may help to avoid proxy respondents.*
9. *A standard operating procedure (SOP) for data inputs by vulnerable communities, as well as an operational, data cleaning, and quality management policy and methodology, must be designed so that communities (vulnerable women, men, hijra, children, boys, and girls) can contribute to the platform.*
10. *In Bangladesh, there is a huge data gap in terms of dropouts and learning losses caused by specific disasters. Students in secondary and post-secondary education are unlikely to drop out of school in the aftermath of a disaster. Sex disaggregated data in dropouts would be fascinating to investigate.*
11. *Students from low-income as well as disaster-prone households are unable to access digital services or attend online classes due to a lack of digital devices and internet connectivity. As a result, disadvantaged and vulnerable households must have access to disaster risk information as well as digital technologies and services.*
12. *For future rounds, disaggregated sex, age and disability data collection should be given more attention. One way may be that prior to finalizing the questionnaire, sex and age disaggregated dummy tables may be developed for anticipated visualization of survey findings.*
13. *Many people lose their jobs and wages as a result of disasters, and they are sometimes retrenched at a lower wage. Shifting to a lower-skilled job lowers the productivity and wages. It is necessary to collect data on such changes.*
14. *Disaster affected marginal people had limited access to drinking water and nutritious food. Besides, to compensate for the loss of income, they reduced the*

menu of their meals, their protein intake, and finally, the number of meals per day. This pre and post disaster risk data must be collected as part of a routine data collection program.

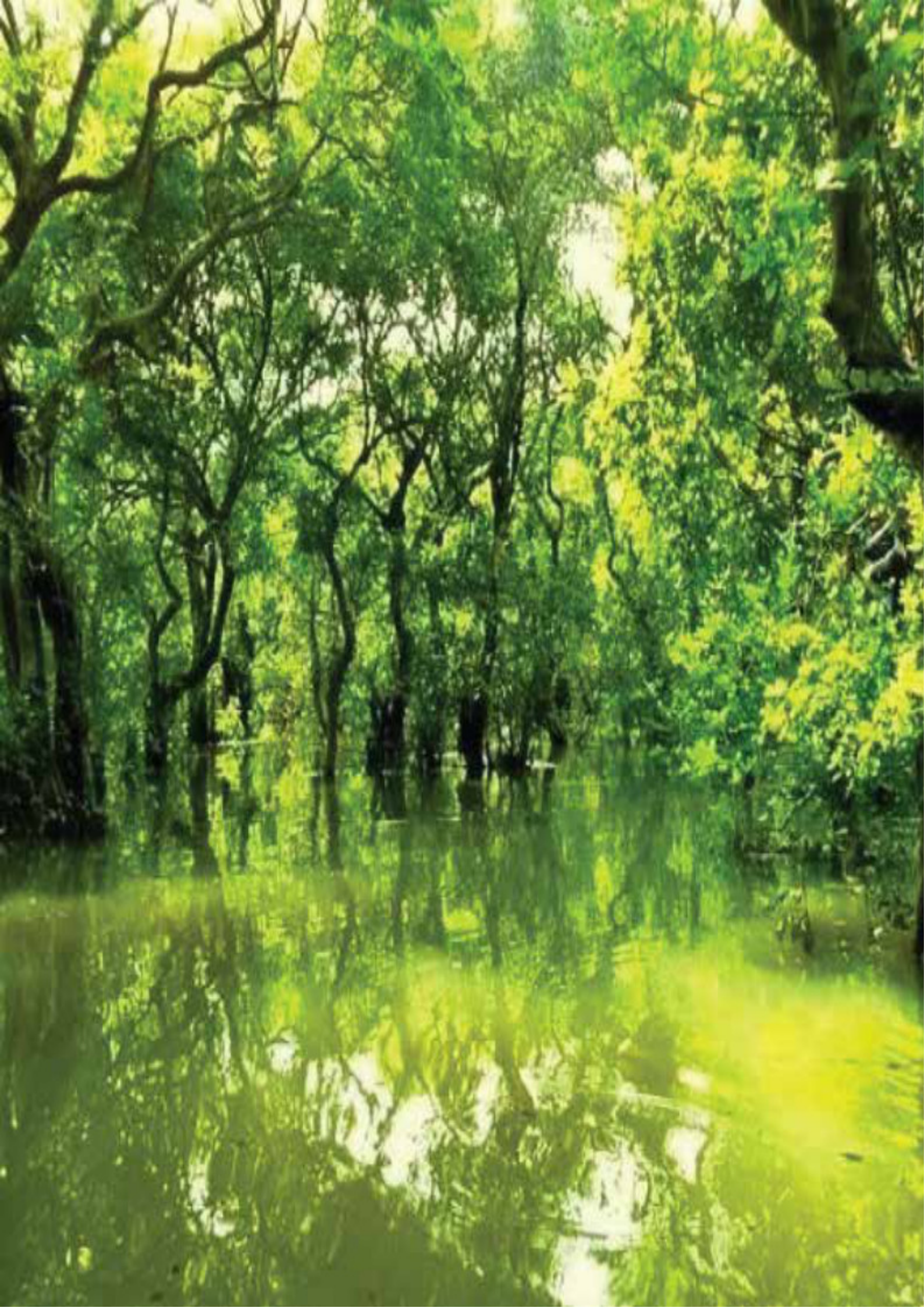
15. *One of the most important requirements of the Early Warning (EW) is to communicate all required risks and risk management or recovery information with adequate "lead time". As a result, the source of EW and "lead time" must be included in any future SADDD or other disaster-related survey.*

16. *Finally, BBS may create an effective database connected to SADDD so that the government and other stakeholders can construct more successful evidence-based on DRR, DRM, CCA, and resilience programs.*



Chapter 4

All Annex



Annex: 4.1 Detailed Statistical Tables

Table 001: Distribution of household and population by sex and Upazila

Upazila	Household	Population			
		Total	Male	Female	Hijra
Total	91871	398693	200074	198446	173
Teknaf	16131	72657	35744	36851	62
Shyamnagar	53826	230332	117437	112785	111
Chilmari	21915	95703	46893	48810	0

Table 002: Distribution of household by number of persons in the households

Upazila	Number of persons in the households										
	Total	1	2	3	4	5	6	7	8	9	10 +
Total	91871	1405	7740	18296	27699	18472	10021	4434	2318	800	685
Teknaf	16131	46	1522	2691	5164	3082	1809	801	492	212	313
Shyamnagar	53826	726	4545	10749	17108	10787	5808	2488	1063	379	172
Chilmari	21915	633	1674	4856	5427	4603	2404	1145	763	209	201

Table 003: Distribution of household size and sex-ratio by Upazila

Upazila	Household	Population			Household size	Sex ratio
		Total	Male	Female		
Total	91871	398693	200074	198618	4.34	100.73
Teknaf	16131	72657	35744	36913	4.50	96.83
Shyamnagar	53826	230332	117437	112896	4.28	104.02
Chilmari	21915	95703	46893	48810	4.37	96.07

Table 004: Distribution of population by educational attainment and sex

Education	Population			
	Total	Male	Female	Hijra
Total	358803	180248	178407	148
No education	76185	33215	42917	53
Primary (i to v grade)	137329	70040	67212	77
Junior secondary (vi to viii) grade with class ix	84547	39418	45129	0
Secondary/higher secondary/diploma	44904	26588	18298	18
Graduation/masters	14681	10187	4494	0
Others	1158	801	357	0

Table 005: Distribution of household members broken down by relationship with household head Upazila

Upazila	Household population	Relationship						
		Household head	Spouse	Child	Parents	Others household member (not relative)	Other household members (relative)	Other non-relative
Total	398693	91871	82282	155698	18915	48958	893	76
Teknaf	72657	16131	13588	36197	1212	5513	17	0
Shyamnagar	230332	53826	49666	81700	14151	30104	841	46
Chilmari	95703	21915	19029	37801	3553	13341	36	30

Table 006: Distribution of population by sex and age group

Age group	Population			
	Total	Male	Female	Hijra
Total	**398693**	**200074**	**198446**	**173**
00 – 04	39889	19826	20039	25
05 – 09	37614	17691	19909	14

Table 006: Distribution of population by sex and age group

Age group	Population			
	Total	Male	Female	Hijra
Total	**398693**	**200074**	**198446**	**173**
10 – 19	74579	38640	35923	15
20 – 29	70224	33613	36556	55
30 – 39	58966	28693	30255	18
40 – 49	45359	22357	22972	31
50 – 59	34711	18239	16472	0
60 – 69	23900	13597	10287	15
70 – 79	9527	5846	3681	0
80 – 89	2981	1161	1821	0
90 – 99	942	411	531	0

Table 007: Distribution of population (age 10 years and above) by marital status and age group

Age group	Marital status (age 10 years and above)					
	Total	Unmarred	Married	Widow/widower	Divorce	Separated
Total	321189	85691	218403	14498	1477	1119
10 – 19	74579	65577	8705	18	122	157
20 – 29	70224	17100	52053	431	373	267
30 – 39	58966	1981	55278	935	394	378
40 – 49	45359	289	43082	1293	474	222
50 – 59	34711	285	31551	2794	66	16
60 – 69	23900	191	19398	4182	49	80
70 – 79	9527	175	6376	2976	0	0
80 – 89	2981	88	1558	1336	0	0
90 – 99	942	6	402	534	0	0

Table 007: Distribution of population (age 10 years and above) by marital status and age group						
Age group	Marital status (age 10 years and above)					
	Total	Unmarred	Married	Widow/widower	Divorce	Separated

Table 008: Distribution of population (age 10 years and above) by sex and marital status

Marital status	Population (age 10 years and above)			
	Total	Male	Female	Hijra
Total	321189	162558	158497	134
Unmarred	85691	53714	31962	15
Married	218403	106977	111323	104
Widow/widower	14498	1512	12971	15
Divorce	1477	209	1268	0
Separated	1119	147	972	0

Table 009: Distribution of population by educational attainment and age group (5 years+)							
Age group	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary/higher secondary/diploma	Graduation /masters	Others
Total	358803	76185	137329	84547	44904	14681	1158
05 – 09	37614	9823	27453	18	0	0	320
10 – 19	74579	1604	26477	33433	12249	349	467
20 – 29	70224	3587	20556	19540	19116	7285	142
30 – 39	58966	9188	24353	15189	6158	3998	81
40 – 49	45359	15348	17910	7277	3102	1692	31
50 – 59	34711	16113	10689	4760	2262	888	0
60 – 69	23900	12285	6936	3126	1254	187	111
70 – 79	9527	5620	2145	999	533	229	0
80 – 89	2981	1938	757	115	163	2	7

Table 009: Distribution of population by educational attainment and age group (5 years+)

Age group	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary/higher secondary/diploma	Graduation /masters	Others
90 – 99	942	679	53	90	67	52	0

Table 010: Distribution of population by religion affiliation

Upazila	Religion affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
Total	398693	322157	76535	0	0	0
Teknaf	72657	72281	376	0	0	0
Shyamnagar	230332	156892	73440	0	0	0
Chilmari	95703	92984	2719	0	0	0

Table 011: Distribution of population by religion affiliation and age group

Age group	Religion affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
Total	398693	322157	76535	0	0	0
00 – 04	39889	34166	5723	0	0	0
05 – 09	37614	33068	4546	0	0	0
10 – 19	74579	63759	10820	0	0	0
20 – 29	70224	56271	13953	0	0	0
30 – 39	58966	47217	11749	0	0	0
40 – 49	45359	34724	10636	0	0	0
50 – 59	34711	25943	8768	0	0	0
60 – 69	23900	17389	6511	0	0	0
70 – 79	9527	7093	2433	0	0	0
80 – 89	2981	1971	1011	0	0	0

Table 011: Distribution of population by religion affiliation and age group

Age group	Religion affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
90 – 99	942	556	386	0	0	0

Table 012: Distribution of population (10 years+) by marital status and religion affiliation

Religion affiliation	Marital status					
	Total	Unmarred	Married	Widow	Divorce	Separated
Total	321189	85691	218403	14498	1477	1119
Islam	254923	69303	173519	9683	1428	990
Hindu	66266	16389	44884	4815	49	129
Buddhist	0	0	0	0	0	0
Christian	0	0	0	0	0	0
Others	0	0	0	0	0	0

Table 013: Distribution of population by religion affiliation and educational attainment

Educational attainment	Region affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
Total	358803	287991	70812	0	0	0
No education	76185	66404	9781	0	0	0
Primary	137329	118619	18710	0	0	0
Junior secondary with class ix	84547	62820	21727	0	0	0
Secondary/higher secondary/diploma	44904	30923	13981	0	0	0
Graduation/masters	14681	8101	6580	0	0	0
Others	1158	1125	33	0	0	0

Table 014: Distribution of population (10 years+) by marital status and educational attainment						
Educational attainment	Marital status					
	Total	Unmarred	Married	Widow/widower	Divorce	Separated
Total	321189	85691	218403	14498	1477	1119
No education	66361	2828	53240	9595	433	266
Primary	109876	28972	75922	3729	665	587
Junior secondary with class ix	84529	31986	51171	1043	186	143
Secondary	24129	8604	15400	0	124	0
Higher secondary	20774	8238	12308	116	69	44
Graduation	8859	3243	5536	0	0	79
Masters	5822	1319	4488	15	0	0
Others	839	500	339	0	0	0

Table 015: Distribution of population (5 years+) based on type of disability and relationship with household head								
Disability status	Relationship							
	Total population	Household head	Spouse	Child	Parents	Others family member	Other relative	Other non-relative
Visual impairment								
Total population	358803	91871	82269	126747	18915	38137	789	76
No visual impairment	324735	78967	73049	123838	11073	37144	589	76
Some visual impairment	27105	10947	7991	2116	5139	723	188	0
A great deal of visual impairment	6174	1631	1213	778	2292	246	13	0
Unable to work due to visual impairment	746	283	15	14	411	23	0	0
Don't know	43	43	0	0	0	0	0	0

Table 015: Distribution of population (5 years+) based on type of disability and relationship with household head

Disability status	Relationship							
	Total population	Household head	Spouse	Child	Parents	Others family member	Other relative	Other non-relative
Hearing impairment								
Total population	358803	91871	82269	126747	18915	38137	789	76
No hearing impairment	341610	86806	78708	123431	14826	37083	680	76
Some hearing impairment	13159	3976	2935	2486	2843	824	96	0
A great deal of hearing impairment	3516	1031	595	753	906	218	13	0
Completely deaf	473	59	30	31	341	12	0	0
Don't know	45	0	0	45	0	0	0	0
Inability to walk								
Total population	358803	91871	82269	126747	18915	38137	789	76
Absolutely able to walk	339441	85488	79045	123788	13175	37281	588	76
Walking is somewhat difficult.	13250	4951	2200	2125	3335	560	79	0
A lot of difficulty in walking	5031	1312	930	607	1832	240	110	0
Completely unable to walk	1021	119	94	166	574	56	13	0
Don't know	60	0	0	60	0	0	0	0
Mental illness								
Total population	358803	91871	82269	126747	18915	38137	789	76
Mentally in good health	343946	88100	79392	123554	15020	37137	666	76
Somewhat mentally ill	11469	3177	2627	2130	2766	658	110	0

Table 015: Distribution of population (5 years+) based on type of disability and relationship with household head

Disability status	Relationship							
	Total population	Household head	Spouse	Child	Parents	Others family member	Other relative	Other non-relative
Sufficiently mentally ill	2910	544	242	899	924	300	0	0
Completely unable to work due to mental illness	400	7	7	126	206	41	13	0
Don't know	80	43	0	37	0	0	0	0
Physical disability								
Total population	358803	91871	82269	126747	18915	38137	789	76
No physical disabilities at all.	348712	90171	80767	124616	14962	37380	740	76
Physical disability, to some extent	6512	1389	1194	1299	2155	474	0	0
A lot of physical difficulty	2799	238	271	685	1313	255	37	0
Completely unable to work due to physical disability	751	73	37	116	485	27	13	0
Don't know	30	0	0	30	0	0	0	0
Speech impediment								
Total population	358803	91871	82269	126747	18915	38137	789	76
No speech impediment at all	349989	90094	81015	122989	17665	37392	758	76
Some speech impediment	6121	1392	894	2517	802	496	18	0
A lot of speech impediment	2583	378	359	1197	417	232	0	0
Completely speech impaired.	81	7	0	13	32	16	13	0
Don't know	30	0	0	30	0	0	0	0

Table 016: Distribution of population (5 years+) by sex and disability				
Disability status	Population			
	Total	Male	Female	Hijra
Visual impairment				
Total population	358803	180248	178407	148
No visual impairment	324735	165098	159489	148
Some visual impairment	27105	12408	14697	0
A great deal of visual impairment	6174	2410	3764	0
Unable to work due to visual impairment	746	290	457	0
Don't know	43	43	0	0
Hearing impairment				
Total population	358803	180248	178407	148
No hearing impairment	341610	172388	169089	133
Some hearing impairment	13159	6204	6940	15
A great deal of hearing impairment	3516	1560	1956	0
Completely deaf	473	97	376	0
Don't know	45	0	45	0
Inability to walk				
Total	358803	180248	178407	148
Absolutely able to walk	339441	171085	168207	148
Walking is somewhat difficult.	13250	6581	6669	0
A lot of difficulty in walking	5031	2137	2894	0
Completely unable to walk	1021	430	591	0
Don't know	60	15	45	0
Mental illness				
Total population	358803	180248	178407	148

Table 016: Distribution of population (5 years+) by sex and disability				
Disability status	Population			
	Total	Male	Female	Hijra
Mentally in good health	343946	174203	169594	148
Somewhat mentally ill	11469	4711	6758	0
Sufficiently mentally ill	2910	1108	1802	0
Completely unable to work due to mental illness	400	178	222	0
Don't know	80	49	30	0
Physical disability				
Total population	358803	180248	178407	148
No physical disabilities at all.	348712	176077	172487	148
Physical disability, to some extent	6512	2873	3639	0
A lot of physical difficulty	2799	1072	1727	0
Completely unable to work due to physical disability	751	227	523	0
Don't know	30	0	30	0
Speech impediment				
Total population	358803	180248	178407	148
No speech impediment at all	349989	175929	173912	148
Some speech impediment	6121	3107	3014	0
A lot of speech impediment	2583	1173	1409	0
Completely speech impaired.	81	40	41	0
Don't know	30	0	30	0

Table 017: Distribution of population (5 years+) by age group and disability									
Disability status	Age group								
	Total	05 - 09	10 – 19	20 - 29	30 – 39	40 - 49	50 - 59	60 - 69	70 +
Visual impairment									
Total	358803	37614	74579	70224	58966	45359	34711	23900	13450
No visual impairment	324735	36955	73032	68804	55582	40016	28362	16296	5688
Some visual impairment	27105	655	1178	1089	2641	4853	5789	5910	4991
A great deal of visual impairment	6174	4	354	332	744	435	545	1491	2268
Unable to work due to visual impairment	746	0	14	0	0	55	15	202	460
Don't know	43	0	0	0	0	0	0	0	43
Hearing impairment									
Total	358803	37614	74579	70224	58966	45359	34711	23900	13450
No hearing impairment	341610	36756	72556	69058	57225	43922	32305	20931	8856
Some hearing impairment	13159	717	1642	1032	1343	1030	2027	2253	3116
A great deal of hearing impairment	3516	111	353	134	380	362	293	637	1246
Completely deaf	473	0	13	0	18	45	86	79	231
Don't know	45	30	15	0	0	0	0	0	0
Inability to walk									
Total	358803	37614	74579	70224	58966	45359	34711	23900	13450
Absolutely able to walk	339441	36822	73448	69039	57151	43151	32419	19798	7613
Walking is somewhat difficult.	13250	731	723	758	1299	1783	1687	2858	3411
A lot of difficulty in walking	5031	12	264	287	454	355	575	1087	1998

Table 017: Distribution of population (5 years+) by age group and disability

Disability status	Age group								
	Total	05 - 09	10 – 19	20 - 29	30 – 39	40 - 49	50 - 59	60 - 69	70 +
Completely unable to walk	1021	4	128	140	62	71	31	157	428
Don't know	60	45	15	0	0	0	0	0	0
Mental illness									
Total population	358803	37614	74579	70224	58966	45359	34711	23900	13450
Mentally in good health	343946	36694	73303	69049	57874	43709	32943	21128	9245
Somewhat mentally ill	11469	666	898	1048	642	1318	1558	2510	2829
Sufficiently mentally ill	2910	213	377	94	366	299	210	250	1100
Completely unable to work due to mental illness	400	4	0	34	84	33	0	12	232
Don't know	80	37	0	0	0	0	0	0	43
Physical disability									
Total	358803	37614	74579	70224	58966	45359	34711	23900	13450
No physical disabilities at all.	348712	36959	73833	69550	58257	44581	34133	21925	9474
Physical disability, to some extent	6512	541	356	420	460	662	379	1371	2323
A lot of physical difficulty	2799	79	347	204	198	82	118	598	1171
Completely unable to work due to physical disability	751	4	42	50	50	35	81	5	482
Don't know	30	30	0	0	0	0	0	0	0
Speech impediment									
Total population	358803	37614	74579	70224	58966	45359	34711	23900	13450
No speech impediment at all	349989	36248	73012	69182	57683	44777	34070	22829	12188

Table 017: Distribution of population (5 years+) by age group and disability

Disability status	Age group								
	Total	05 - 09	10 – 19	20 - 29	30 – 39	40 - 49	50 - 59	60 - 69	70 +
Some speech impediment	6121	677	1311	722	901	480	409	583	1038
A lot of speech impediment	2583	658	243	320	382	103	232	488	156
Completely speech impaired.	81	0	13	0	0	0	0	0	68
Don't know	30	30	0	0	0	0	0	0	0

Table 018: Number and percentage distribution of population by sex, age group and disability status (5 years +)

Disability status	Age group											
	Total			05 -17			18 - 49			50 +		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Vision												
Total	358655	180248	178407	93661	47560	46101	192948	93434	99515	72046	39255	32791
No difficulty	324587	165098	159489	91765	46689	45076	182490	89668	92822	50332	28741	21591
Some difficulty	27105	12408	14697	1610	625	985	8805	3338	5467	16690	8444	8245
A lot of difficulty	6174	2410	3764	274	246	28	1595	373	1222	4304	1791	2513
Cannot do at all	746	290	457	11	0	11	58	55	3	677	235	442
Don't know	43	43	0	0	0	0	0	0	0	43	43	0
Hearing add												
Total	358655	180248	178407	93661	47560	46101	192948	93434	99515	72046	39255	32791
No difficulty	341477	172388	169089	91167	46334	44834	188232	91668	96565	62077	34386	27691
Some difficulty	13144	6204	6940	1972	881	1091	3776	1437	2340	7396	3886	3510
A lot of difficulty	3516	1560	1956	464	333	131	876	266	610	2176	962	1215
Cannot do at all	473	97	376	13	13	0	63	63	0	397	21	376

Table 018: Number and percentage distribution of population by sex, age group and disability status (5 years +)												
Disability status	Age group											
	Total			05 -17			18 - 49			50 +		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Don't know	45	0	45	45	0	45	0	0	0	0	0	0
Walking/moving												
Total	358655	180248	178407	93661	47560	46101	192948	93434	99515	72046	39255	32791
No difficulty	339292	171085	168207	91849	46649	45200	187629	90575	97054	59815	33861	25953
Some difficulty	13250	6581	6669	1344	664	680	3951	2298	1653	7955	3619	4336
A lot of difficulty	5031	2137	2894	276	146	130	1095	384	711	3660	1606	2054
Cannot do at all	1021	430	591	132	86	46	273	177	96	616	167	448
Don't know	60	15	45	60	15	45	0	0	0	0	0	0
Mental												
Total	358655	180248	178407	93661	47560	46101	192948	93434	99515	72046	39255	32791
No difficulty	343797	174203	169594	91712	46746	44965	188785	91914	96871	63301	35543	27758
Some difficulty	11469	4711	6758	1470	753	717	3101	997	2104	6898	2960	3937
A lot of difficulty	2910	1108	1802	438	54	384	911	371	540	1560	682	878
Cannot do at all	400	178	222	4	0	4	151	151	0	244	27	218
Don't know	80	49	30	37	7	30	0	0	0	43	43	0
Physical												
Total	358655	180248	178407	93661	47560	46101	192948	93434	99515	72046	39255	32791
No difficulty	348564	176077	172487	92456	47119	45337	190591	92358	98232	65517	36599	28918
Some difficulty	6512	2873	3639	786	228	558	1653	752	901	4073	1893	2180
A lot of difficulty	2799	1072	1727	343	213	130	569	273	296	1887	586	1301
Cannot do at all	751	227	523	46	0	46	136	50	85	569	177	392

Table 018: Number and percentage distribution of population by sex, age group and disability status (5 years +)												
Disability status	Age group											
	Total			05 -17			18 - 49			50 +		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Don't know	30	0	30	30	0	30	0	0	0	0	0	0
Talking												
Total	358655	180248	178407	93661	47560	46101	192948	93434	99515	72046	39255	32791
No difficulty	349841	175929	173912	90867	46173	44694	189901	91803	98098	69072	37952	31120
Some difficulty	6121	3107	3014	1899	1070	829	2192	1241	951	2030	796	1234
A lot of difficulty	2583	1173	1409	852	304	547	856	390	466	875	479	396
Cannot do at all	81	40	41	13	13	0	0	0	0	68	27	41
Don't know	30	0	30	30	0	30	0	0	0	0	0	0

Table 019: Distribution of population (5 years+) by religion affiliation and disability status						
Disability status	Religion affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
Visual impairment						
Total population	358803	287991	70812	0	0	0
No visual impairment	324735	260999	63736	0	0	0
Some visual impairment	27105	21392	5713	0	0	0
A great deal of visual impairment	6174	5021	1153	0	0	0
Unable to work due to visual impairment	746	536	210	0	0	0
Don't know	43	43	0	0	0	0
Hearing impairment						

Table 019: Distribution of population (5 years+) by religion affiliation and disability status						
Disability status	Religion affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
Total population	358803	287991	70812	0	0	0
No hearing impairment	341610	274196	67414	0	0	0
Some hearing impairment	13159	10312	2848	0	0	0
A great deal of hearing impairment	3516	3056	460	0	0	0
Completely deaf	473	382	91	0	0	0
Don't know	45	45	0	0	0	0
Inability to walk						
Total	358803	287991	70812	0	0	0
Absolutely able to walk	339441	272642	66799	0	0	0
Walking is somewhat difficult.	13250	10078	3172	0	0	0
A lot of difficulty in walking	5031	4307	724	0	0	0
Completely unable to walk	1021	904	117	0	0	0
Don't know	60	60	0	0	0	0
Mental illness						
Total population	358803	287991	70812	0	0	0
Mentally in good health	343946	275340	68606	0	0	0
Somewhat mentally ill	11469	9716	1753	0	0	0
Sufficiently mentally ill	2910	2603	307	0	0	0

Table 019: Distribution of population (5 years+) by religion affiliation and disability status						
Disability status	Religion affiliation					
	Total	Islam	Hindu	Buddhist	Christian	Others
Completely unable to work due to mental illness	400	253	147	0	0	0
Don't know	80	80	0	0	0	0
Physical disability						
Total population	358803	287991	70812	0	0	0
No physical disabilities at all.	348712	280260	68452	0	0	0
Physical disability, to some extent	6512	4797	1714	0	0	0
A lot of physical difficulty	2799	2325	473	0	0	0
Completely unable to work due to physical disability	751	578	173	0	0	0
Don't know	30	30	0	0	0	0
Speech impediment						
Total	358803	287991	70812	0	0	0
No speech impediment at all	349989	280945	69043	0	0	0
Some speech impediment	6121	4794	1327	0	0	0
A lot of speech impediment	2583	2153	429	0	0	0
Completely speech impaired.	81	68	13	0	0	0
Don't know	30	30	0	0	0	0

Table 020: Distribution of population by marital status (10 years+) and disability status						
Disability status	Marital status					
	Total	Unmarred	Married	Widow/widower	Divorce	Separated
Visual impairment						
Total population	321189	85691	218403	14498	1477	1119
No visual impairment	287781	83551	193147	8657	1358	1068
Some visual impairment	26450	1692	20688	3951	82	36
A great deal of visual impairment	6170	434	4216	1467	37	15
Unable to work due to visual impairment	746	14	310	422	0	0
Don't know	43	0	43	0	0	0
Hearing impairment						
Total	321189	85691	218403	14498	1477	1119
No hearing impairment	304854	83303	207588	11442	1423	1098
Some hearing impairment	12443	1962	8369	2112	0	0
A great deal of hearing impairment	3405	399	2358	592	36	21
Completely deaf	473	13	89	353	18	0
Don't know	15	15	0	0	0	0
Inability to walk						
Total population	321189	85691	218403	14498	1477	1119
Absolutely able to walk	302619	83751	206040	10458	1352	1018
Walking is somewhat difficult.	12519	1300	8741	2328	84	66
A lot of difficulty in walking	5019	387	3271	1354	7	0

Table 020: Distribution of population by marital status (10 years+) and disability status						
Disability status	Marital status					
	Total	Unmarred	Married	Widow/widower	Divorce	Separated
Completely unable to walk	1017	238	351	358	35	35
Don't know	15	15	0	0	0	0
Mental illness						
Total population	321189	85691	218403	14498	1477	1119
Mentally in good health	307252	83699	209844	11302	1303	1103
Somewhat mentally ill	10803	1352	6901	2486	49	16
Sufficiently mentally ill	2696	523	1588	494	92	0
Completely unable to work due to mental illness	395	118	27	218	33	0
Don't know	43	0	43	0	0	0
Physical disability						
Total population	321189	85691	218403	14498	1477	1119
No physical disabilities at all.	311753	84495	213191	11634	1380	1053
Physical disability, to some extent	5971	696	3640	1541	63	31
A lot of physical difficulty	2720	428	1335	957	0	0
Completely unable to work due to physical disability	746	72	237	367	35	35
Don't know	0	0	0	0	0	0
Speech impediment						
Total	321189	85691	218403	14498	1477	1119

Table 020: Distribution of population by marital status (10 years+) and disability status						
Disability status	Marital status					
	Total	Unmarred	Married	Widow/widower	Divorce	Separated
No speech impediment at all	313741	83630	213898	13733	1360	1119
Some speech impediment	5443	1565	3309	452	117	0
A lot of speech impediment	1924	468	1176	280	0	0
Completely speech impaired.	81	28	20	33	0	0
Don't know	0	0	0	0	0	0

Table 021: Distribution of population (5 years+) by educational attainment and disability status							
Disability status	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Visual impairment							
Total population	358803	76185	137329	84547	44904	14681	1158
No visual impairment	324735	61575	126053	79619	42493	13888	1107
Some visual impairment	27105	11067	8606	4302	2329	793	7
A great deal of visual impairment	6174	2944	2486	619	81	0	45
Unable to work due to visual impairment	746	556	184	7	0	0	0
Don't know	43	43	0	0	0	0	0
Hearing impairment							
Total population	358803	76185	137329	84547	44904	14681	1158
No hearing impairment	341610	67794	132193	82216	43981	14298	1128

Table 021: Distribution of population (5 years+) by educational attainment and disability status							
Disability status	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Some hearing impairment	13159	5663	4169	2277	688	331	31
A great deal of hearing impairment	3516	2231	951	47	235	52	0
No hearing impairment	473	466	0	7	0	0	0
Don't know	45	30	15	0	0	0	0
Inability to walk							
Total population	358803	76185	137329	84547	44904	14681	1158
Absolutely able to walk	339441	66378	131072	82664	43988	14448	891
Walking is somewhat difficult.	13250	6067	4356	1652	766	209	199
A lot of difficulty in walking	5031	3043	1577	203	115	24	69
Completely unable to walk	1021	651	308	27	35	0	0
Don't know	60	45	15	0	0	0	0
Mental illness							
Total population	358803	76185	137329	84547	44904	14681	1158
Mentally in good health	343946	68287	132728	83078	44264	14480	1108
Somewhat mentally ill	11469	5405	4064	1216	582	201	0
Sufficiently mentally ill	2910	2069	521	246	24	0	50
Completely unable to work due to mental illness	400	344	16	7	33	0	0

Table 021: Distribution of population (5 years+) by educational attainment and disability status							
Disability status	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Don't know	80	80	0	0	0	0	0
Physical disability							
Total population	358803	76185	137329	84547	44904	14681	1158
No physical disabilities at all.	348712	70887	134001	83489	44686	14577	1072
Physical disability, to some extent	6512	2947	2433	807	183	80	62
A lot of physical difficulty	2799	1925	616	210	0	24	25
Completely unable to work due to physical disability	751	395	279	42	35	0	0
Don't know	30	30	0	0	0	0	0
Speech impediment							
Total	358803	76185	137329	84547	44904	14681	1158
No speech impediment at all	349989	72486	133976	83419	44422	14608	1077
Some speech impediment	6121	1939	2580	990	458	73	81
A lot of speech impediment	2583	1655	773	131	24	0	0
Completely speech impaired.	81	74	0	7	0	0	0
Don't know	30	30	0	0	0	0	0

Table 022: Distribution of population by sex, age group and educational status (5 years+)							
Sex and age group	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary/higher secondary/diploma	Graduation/ masters	Others
Both sex							
Total	358803	76185	137329	84547	44904	14681	1158
05 – 09	37614	9823	27453	18	0	0	320
10 – 19	74579	1604	26477	33433	12249	349	467
20 – 29	70224	3587	20556	19540	19116	7285	142
30 – 39	58966	9188	24353	15189	6158	3998	81
40 – 49	45359	15348	17910	7277	3102	1692	31
50 – 59	34711	16113	10689	4760	2262	888	0
60 +	37349	20522	9891	4331	2018	470	118
Male							
Total	180248	33215	70040	39418	26588	10187	801
05 – 09	17691	4358	13088	18	0	0	227
10 – 19	38640	1151	15128	15498	6409	79	375
20 – 29	33613	2289	9821	6746	10114	4531	111
30 – 39	28693	3650	11209	7042	3708	3034	50
40 – 49	22357	6425	8546	3750	2392	1213	31
50 – 59	18239	6891	5718	2824	1948	859	0
60 +	21015	8451	6531	3541	2016	470	7
Female							
Total	178407	42917	67212	45129	18298	4494	357
05 – 09	19909	5459	14358	0	0	0	92
10 – 19	35923	453	11334	17935	5839	270	92

Table 022: Distribution of population by sex, age group and educational status (5 years+)							
Sex and age group	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary/higher secondary/diploma	Graduation/ masters	Others
20 – 29	36556	1297	10698	12794	8983	2753	31
30 – 39	30255	5538	13126	8146	2450	964	31
40 – 49	22972	8892	9364	3528	709	478	0
50 – 59	16472	9222	4971	1936	314	28	0
60 +	16319	12056	3361	790	2	0	111
Hijra							
Total	148	53	77	0	18	0	0
05 – 09	14	7	7	0	0	0	0
10 – 19	15	0	15	0	0	0	0
20 – 29	55	0	37	0	18	0	0
30 – 39	18	0	18	0	0	0	0
40 – 49	31	31	0	0	0	0	0
50 – 59	0	0	0	0	0	0	0
60 +	15	15	0	0	0	0	0

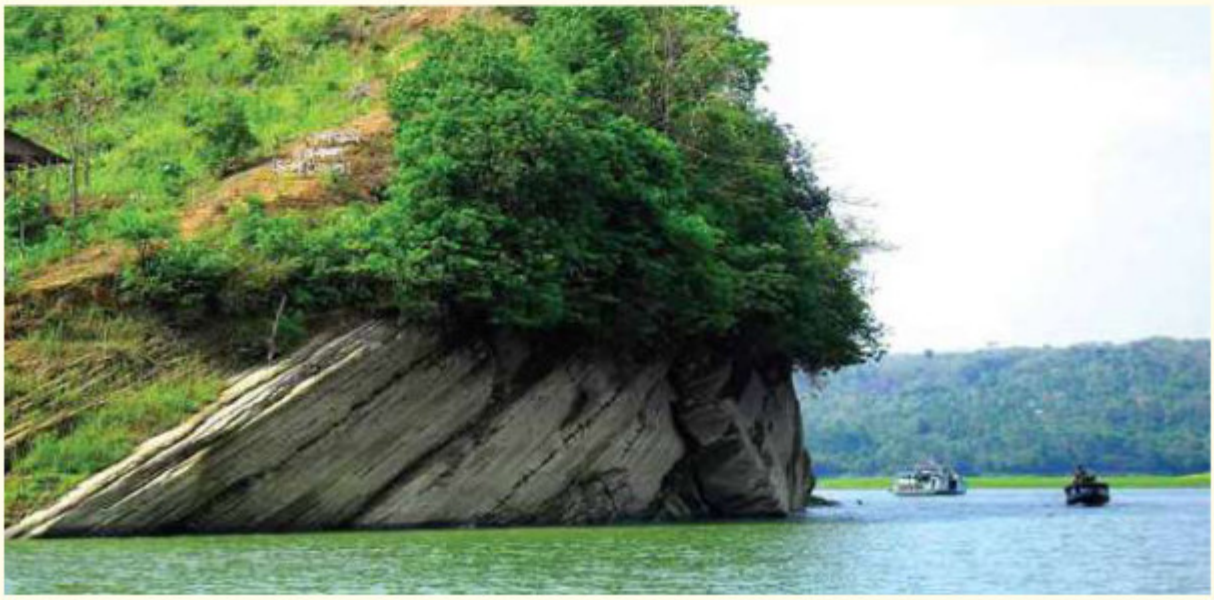


Table 023: Distribution of population (age 10 years+) worked at least one hour in exchange for money in the previous seven days by sex

Upazila	Working at least 1 hour in the last 7 days											
	Total				Yes				No			
	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	321189	162558	158497	134	109326	96459	12867	0	211863	66099	145630	134
Teknaf	52243	26099	26114	30	19093	16211	2882	0	33150	9888	23232	30
Shyamnagar	192927	99425	93398	104	66653	60207	6446	0	126274	39218	86952	104
Chilmari	76019	37034	38985	0	23580	20041	3539	0	52439	16993	35446	0

Table 024: Distribution of population (age 10 years+) worked at least one hour in exchange for money in the previous seven by age group and sex.

Age group	Working at least 1 hour in the last 7 days											
	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	321189	162558	158497	134	109326	96459	12867	0	211863	66099	145630	134
10 – 19	74579	38640	35923	15	6165	5663	502	0	68414	32977	35421	15
20 – 29	70224	33613	36556	55	26408	23642	2766	0	43816	9971	33790	55
30 – 39	58966	28693	30255	18	29133	25103	4030	0	29834	3590	26225	18
40 – 49	45359	22357	22972	31	21649	18580	3069	0	23711	3777	19903	31
50 – 59	34711	18239	16472	0	15792	14138	1653	0	18920	4101	14819	0

Table 024: Distribution of population (age 10 years+) worked at least one hour in exchange for money in the previous seven by age group and sex.												
Age group	Working at least 1 hour in the last 7 days											
	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra
60 – 69	23900	13597	10287	15	8417	7800	617	0	15482	5797	9670	15
70 +	13450	7418	6032	0	1763	1532	230	0	11687	5885	5802	0

Table 025: Distribution of population (age 10 years+) worked for at least one hour the previous seven days by level of education and sex												
Education	Working at least 1 hour in the last 7 days											
	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	321189	162558	158497	134	109326	96459	12867	0	211863	66099	145630	134
No education	66361	28857	37458	46	23910	19390	4520	0	42451	9467	32939	46
Primary	109876	56952	52854	70	42729	37941	4787	0	67147	19011	48066	70
Junior secondary with class ix	84529	39400	45129	0	21151	19497	1654	0	63378	19903	43475	0
Secondary/higher secondary/diploma	44904	26588	18298	18	14967	13993	974	0	29937	12595	17323	18
Graduation/masters	14681	10187	4494	0	6389	5457	933	0	8292	4731	3561	0
Others	839	574	265	0	180	180	0	0	658	393	265	0

Table 026: Distribution of population (10 years+) based on the number of working hours worked in the previous seven days against remuneration							
Sex / upazila	working hours						
	Total	0 - 7	8 – 14	15 - 28	29 – 49	50 - 70	71+
Both sex							
Total	109326	3071	8133	16181	48923	30093	2925
Teknaf	19093	878	270	2037	8903	6878	128
Shyamnagar	66653	1423	4595	8168	32327	17881	2257
Chilmari	23580	769	3268	5976	7693	5334	540
Male							
Total	96459	1581	6487	13030	43689	28864	2807
Teknaf	16211	216	85	1485	7949	6357	120
Shyamnagar	60207	876	3856	6689	29241	17398	2147
Chilmari	20041	489	2546	4856	6500	5110	540
Female							
Total	12867	1490	1646	3151	5234	1229	117
Teknaf	2882	663	185	552	954	521	7
Shyamnagar	6446	547	739	1480	3087	484	110
Chilmari	3539	280	722	1120	1193	224	0
Hijra							
Total	0	0	0	0	0	0	0
Teknaf	0	0	0	0	0	0	0
Shyamnagar	0	0	0	0	0	0	0
Chilmari	0	0	0	0	0	0	0

Table 027: Distribution of population (10 years+) based on the number of working hours worked in the previous seven days by age group and sex							
Age group	Working hours						
	Total	0 – 7	8 – 14	15 - 28	29 – 49	50 - 70	71+
Both sex							
Total	109326	3071	8133	16181	48923	30093	2925
10 – 19	6165	278	310	712	2462	2193	210
20 – 29	26408	715	1663	2890	10942	9119	1079
30 – 39	29133	599	1450	3736	14181	8518	649
40 – 49	21649	594	1662	3646	10192	5095	460
50 – 59	15792	506	1484	3352	6789	3163	497
60 – 69	8417	232	1210	1507	3575	1864	29
70 +	1763	147	355	338	782	142	0
Male							
Total	96459	1581	6487	13030	43689	28864	2807
10 – 19	5663	134	293	688	2292	2046	210
20 – 29	23642	298	1397	2267	9681	8920	1079
30 – 39	25103	124	1186	2891	12259	8095	547
40 – 49	18580	278	970	2746	9239	4902	445
50 – 59	14138	380	1231	2866	6112	3052	497
60 – 69	7800	219	1161	1305	3348	1738	29
70 +	1532	147	250	267	758	111	0
Female							
Total	12867	1490	1646	3151	5234	1229	117
10 – 19	502	144	17	25	170	147	0
20 – 29	2766	417	266	623	1262	199	0
30 – 39	4030	474	264	845	1922	422	102

Table 027: Distribution of population (10 years+) based on the number of working hours worked in the previous seven days by age group and sex

Age group	Working hours						
	Total	0 – 7	8 – 14	15 - 28	29 – 49	50 - 70	71+
40 – 49	3069	316	692	900	953	193	15
50 – 59	1653	126	253	486	678	111	0
60 – 69	617	13	49	202	227	126	0
70 +	230	0	105	71	24	31	0
Hijra							
Total	0	0	0	0	0	0	0
10 – 19	0	0	0	0	0	0	0
20 – 29	0	0	0	0	0	0	0
30 – 39	0	0	0	0	0	0	0
40 – 49	0	0	0	0	0	0	0
50 – 59	0	0	0	0	0	0	0
60 – 69	0	0	0	0	0	0	0
70 +	0	0	0	0	0	0	0

Table 028: Distribution of population (10 years+) based on the number of working hours worked in the previous seven days by level of education and sex

Education	Working hours						
	Total	1- 7	8 – 14	15 - 28	29 - 49	50 - 70	71+
Both sex							
Total	109326	3071	8133	16181	48923	30093	2925
No education	23910	652	2172	4767	9198	6818	302
Primary	42729	1083	2820	6191	18899	12695	1041
Junior secondary with class ix	21151	834	1602	2491	9249	6418	556

Table 028: Distribution of population (10 years+) based on the number of working hours worked in the previous seven days by level of education and sex

Education	Working hours						
	Total	1- 7	8 – 14	15 - 28	29 - 49	50 - 70	71+
Secondary/higher secondary/diploma	14967	502	1172	2012	7015	3355	911
Graduation/masters	6389	0	323	720	4490	742	115
Others	180	0	45	0	72	64	0
Male							
Total	96459	1581	6487	13030	43689	28864	2807
No education	19390	374	1446	3355	7481	6455	279
Primary	37941	340	2140	5029	17294	12164	975
Junior secondary with class ix	19497	381	1465	2195	8656	6272	528
Secondary/higher secondary/diploma	13993	486	1104	1731	6463	3298	911
Graduation/masters	5457	0	288	720	3723	611	115
Others	180	0	45	0	72	64	0
Female							
Total	12867	1490	1646	3151	5234	1229	117
No education	4520	278	727	1412	1717	363	23
Primary	4787	743	680	1162	1605	531	66
Junior secondary	1654	453	137	296	593	146	29
Secondary/higher secondary/diploma	974	16	67	282	552	58	0
Graduation/masters	933	0	35	0	767	130	0
Others	0	0	0	0	0	0	0
Hijra							
Total	0	0	0	0	0	0	0

Table 028: Distribution of population (10 years+) based on the number of working hours worked in the previous seven days by level of education and sex							
Education	Working hours						
	Total	1- 7	8 – 14	15 - 28	29 - 49	50 - 70	71+
No education	0	0	0	0	0	0	0
Primary	0	0	0	0	0	0	0
Junior secretary	0	0	0	0	0	0	0
Secondary/higher secondary/diploma	0	0	0	0	0	0	0
Graduation/masters	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0

Table 029: Distribution of population (age 10 years+) based on reasons not to work the previous seven-days by sex				
Upazila/Main reason	Population			
	Total	Male	Female	Hijra
Total	**211863**	**66099**	**145630**	**134**
Student	61218	35504	25714	0
Homeworker	104951	7305	97527	119
Older or retired	15140	6397	8728	15
Physical or mental problems	3777	2239	1538	0
Sickness/accident	4924	3251	1673	0
No work found	4557	3701	855	0
Disaster or extreme weather	45	0	45	0
Work was temporarily cancelled	559	559	0	0
Disaster/ emergency situation	17	0	17	0

Table 029: Distribution of population (age 10 years+) based on reasons not to work the previous seven-days by sex				
Upazila/Main reason	Population			
	Total	Male	Female	Hijra
Leave for disaster/emergency	701	480	221	0
Do not look for work	539	502	37	0
Others	1310	931	379	0
Not applicable	14124	5229	8894	0
Teknaf				
Total	33150	9888	23232	30
Student	10107	5594	4513	0
Homeworker	17633	1220	16398	15
Older and retired	1766	790	961	15
Physical or mental problem	1307	763	545	0
Sickness / accident	526	294	233	0
No work found	404	404	0	0
Disaster or extreme weather	0	0	0	0
Work was temporarily cancelled	0	0	0	0
Disaster/ emergency situation	17	0	17	0
Leave for disaster/emergency	0	0	0	0
Do not look for job	0	0	0	0
Others	261	254	7	0
Not applicable	1128	569	559	0
Shyamnagar				

Table 029: Distribution of population (age 10 years+) based on reasons not to work the previous seven-days by sex				
Upazila/Main reason	Population			
	Total	Male	Female	Hijra
Total	126274	39218	86952	104
Student	34696	20995	13701	0
Homeworker	59694	3061	56528	104
Older / retired	11021	4513	6508	0
Physical or mental problem	1575	883	691	0
Sick / accident	3510	2453	1057	0
No work found	2840	2120	720	0
Disaster//extreme weather	0	0	0	0
Work was temporarily cancelled	274	274	0	0
Disaster/ emergency situation	0	0	0	0
Leave for disaster/emergency	701	480	221	0
Do not look for job	322	285	37	0
Others	737	473	265	0
Not applicable	10904	3680	7224	0
Chilmari				
Total	52439	16993	35446	0
Student	16415	8914	7501	0
Homeworker	27625	3024	24601	0
Older or retired	2352	1094	1258	0
Physical or mental problem	895	593	302	0
Sickness / accident	888	504	384	0

Table 029: Distribution of population (age 10 years+) based on reasons not to work the previous seven-days by sex				
Upazila/Main reason	Population			
	Total	Male	Female	Hijra
No work found	1312	1177	135	0
Disaster/ extreme weather	45	0	45	0
Work was temporarily cancelled	285	285	0	0
Disaster/ emergency situation	0	0	0	0
Leave for disaster/emergency	0	0	0	0
Not look for job	217	217	0	0
Others	312	204	107	0
Not applicable	2091	980	1111	0

Table 030: Distribution of population (age 10 years+) based on reasons not to work the previous seven-days by age group								
Main reason	Age group							
	Total	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 +
Total	211863	68414	43816	29834	23711	18920	15482	11687
Student	61218	52249	8048	793	39	25	32	33
Homeworker	104951	10472	30441	24688	18919	13674	5469	1289
Older or retired	15140	0	0	0	81	1858	5620	7580
Physical or mental problem	3777	621	505	573	576	389	706	407
Sickness / accident	4924	119	388	394	766	890	1404	963
No work found	4557	471	785	1268	1096	550	387	0
Disaster/ extreme weather	45	0	0	0	45	0	0	0
Work was temporarily cancelled	559	115	44	72	52	79	161	36

Table 030: Distribution of population (age 10 years+) based on reasons not to work the previous seven-days by age group

Main reason	Age group							
	Total	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 +
Disaster/ emergency situation	17	0	17	0	0	0	0	0
Leave for disaster/emergency	701	0	0	142	396	163	0	0
Not look for job	539	16	190	48	163	15	70	37
Others	1310	559	288	200	64	64	115	20
Not applicable	14124	3792	3110	1655	1515	1211	1519	1322

Table 031 distribution of population (age 10 years+) based on reasons not to work the previous seven-days by level of education

Main reason	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Total	211863	42451	67147	63378	29937	8292	658
Student	61218	328	17770	26139	13254	3509	218
Homeworker	104951	23960	36417	29557	12722	2203	92
Older / retired	15140	9343	3731	1165	609	286	7
Physical or mental problem	3777	1729	1335	458	205	0	50
Sickness or accident	4924	2175	1330	972	275	61	111
No work found	4557	1834	1041	989	206	487	0
Disaster/extreme weather	45	0	45	0	0	0	0
Work was temporarily cancelled	559	160	204	69	0	126	0
Disaster/ emergency situation	17	17	0	0	0	0	0

Table 031 distribution of population (age 10 years+) based on reasons not to work the previous seven-days by level of education							
Main reason	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Leave for disaster/emergency	701	0	0	0	79	622	0
Do not look for job	539	147	268	109	15	0	0
Others	1310	226	297	221	253	144	168
Not applicable	14124	2532	4708	3700	2319	853	12

Table 032: Distribution of population (10 years+) by main occupation, sex and Upazila

Main occupation	Upazila															
	Total				Teknaf				Shyamnagar				Chilmari			
	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	321189	162558	158497	134	52243	26099	26114	30	192927	99425	93398	104	76019	37034	38985	0
Agriculture	36797	35598	1199	0	5159	4805	355	0	20394	19721	673	0	11243	11073	171	0
Business	16264	15661	603	0	5365	4995	370	0	8491	8350	141	0	2408	2316	93	0
Job	14446	12055	2391	0	2373	1994	379	0	9973	8381	1592	0	2100	1680	420	0
Day labour	49269	44224	5044	0	5758	4687	1070	0	32692	30005	2687	0	10819	9532	1287	0
House wife/house hubby	104829	1533	103213	82	15889	774	15100	15	62228	520	61641	67	26711	239	26472	0
Student	64454	37108	27347	0	10578	5950	4628	0	36776	21996	14779	0	17101	9162	7939	0
Maid servant	3614	90	3524	0	1784	79	1705	0	1331	0	1331	0	499	12	487	0
Unemployed	3503	3035	468	0	964	848	116	0	1916	1584	332	0	624	604	20	0
Unable to work	19442	8764	10663	15	2069	908	1146	15	14240	6209	8031	0	3133	1647	1486	0
Not applicable	8573	4490	4047	37	2306	1059	1246	0	4886	2660	2189	37	1381	771	611	0

Table 033: Distribution of population (age 10 years+) by main occupation and age group								
Main occupation	Age group							
	Total	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 +
Total	321189	74579	70224	58966	45359	34711	23900	13450
Agriculture	36797	1587	5987	7434	7529	7201	5398	1661
Business	16264	157	3087	4371	4302	3060	957	330
Job	14446	918	4603	4440	2666	1284	357	179
Day labour	49269	3473	12623	12993	8759	6885	3972	563
House wife /house hubby	104829	8731	31017	27291	19563	12665	4724	837
Student	64454	54226	9279	504	265	108	15	56
Maid servant	3614	375	811	240	796	803	347	243
Unemployed	3503	1168	1180	682	83	79	212	98
Unable to work	19442	611	617	446	1050	2142	6378	8199
Not applicable	8573	3332	1020	567	347	485	1540	1282

Table 034: distribution of population (age 10 years+) by main occupation and level of education							
Main occupation	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary y/diploma	Graduation /masters	Others
Total	321189	66361	109876	84529	44904	14681	839
Agriculture	36797	8509	14258	8391	4616	942	81
Business	16264	1621	7639	3323	2640	996	45
Job	14446	207	1535	2017	5168	5464	55
Day labour	49269	15758	20194	9600	3550	167	0
House wife/ house hubby	104829	23667	37189	29470	12101	2310	92
Student	64454	535	18378	26889	14569	3861	223
Maid servant	3614	1427	1437	747	2	0	0
Unemployed	3503	518	1349	504	599	534	0
Unable to work	19442	11911	4840	1812	595	141	142
Not applicable	8573	2210	3057	1776	1064	266	201

able 035: Distribution of population (ten years and up) by type of occupation and Upazila

Type of occupation	Upazila															
	Total				Teknaf				Shyamnagar				Chilmari			
	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra	Total	Male	Female	Hijra
Total	321189	162558	158497	134	52243	26099	26114	30	192927	99425	93398	104	76019	37034	38985	0
Production	37631	35802	1829	0	2217	1987	230	0	25467	24113	1354	0	9946	9701	244	0
Service	53327	31041	22271	15	20347	9255	11077	15	25448	19097	6351	0	7532	2689	4843	0
Consumption /use	68676	38998	29641	37	5929	3271	2658	0	27005	23431	3537	37	35741	12295	23446	0
Conservation	1151	738	413	0	181	46	135	0	494	416	79	0	476	277	199	0
Not applicable	160405	55980	104343	82	23568	11540	12014	15	114512	32368	82077	67	22324	12072	10252	0

Table 036: Distribution of population (10 years+) by type of occupation by age group.								
Type of occupation	Age group							
	Total	10 - 19	20 - 29	30 – 39	40 - 49	50 – 59	60 - 69	70 +
Total	321189	74579	70224	58966	45359	34711	23900	13450
Production	37631	1652	6763	8044	7709	7229	4585	1648
Service	53327	4338	14767	15710	9588	5991	2706	227
Consumption /use	68676	4750	17554	17023	12290	10366	5393	1300
Conservation	1151	373	256	137	45	250	63	28
Not applicable	160405	63466	30884	18052	15726	10876	11153	10247

Table 037: Distribution of population (10 years+) by type of occupation and level of education							
Type of occupation	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Total	321189	66361	109876	84529	44904	14681	839
Production	37631	9629	14508	8355	4318	819	0
Service	53327	9227	21383	9574	7657	5394	92
Consumption/use	68676	20254	24307	14734	7231	1979	169
Conservation	1151	181	347	415	51	158	0
Not applicable	160405	27070	49331	51451	25646	6330	577

Table 038: Distribution of population (10 years+) by type of occupation and sex				
Type of occupation	Total	Male	Female	Hijra
Total	321189	162558	158497	134
Employer	2763	2470	293	0
Self-employed (agriculture)	37347	36061	1286	0
Self-employed (non-agriculture)	13563	12139	1424	0

Table 038: Distribution of population (10 years+) by type of occupation and sex				
Type of occupation	**Total**	**Male**	**Female**	**Hijra**
Family helper	42935	4113	38807	15
Employed with pay/ employee	13993	11803	2190	0
Day labour	42569	38725	3843	0
Trainees with pay	600	355	245	0
Maid servant	66070	1161	64842	67
Family business without pay/ unpaid family worker	4228	3981	232	15
Others	97122	51750	45335	37

Table 039: Distribution of population (10 years+) by type of occupation and age group								
Working status of occupation	**Age group**							
	Total	**10 – 19**	**20 - 29**	**30 - 39**	**40 – 49**	**50 - 59**	**60 - 69**	**70 +**
Total	321189	74579	70224	58966	45359	34711	23900	13450
Employer	2763	0	114	1080	851	443	124	151
Self-employed (agriculture)	37347	1625	5968	7294	7795	7441	5482	1741
Self-employed (non-agriculture)	13563	661	3685	3926	1899	2093	1056	243
Family helper	42935	7753	11832	10380	5985	4688	1960	337
Employed with pay/ employee	13993	632	4574	4470	2767	1035	336	179
Day labour	42569	3086	10272	11175	8142	6192	3277	425
Trainees with pay	600	289	201	100	0	9	0	0
Maid servant	66070	6231	19028	15087	13046	8109	3554	1016
Family business without pay/ unpaid family worker	4228	349	986	881	929	502	514	66
Others	97122	53953	13564	4574	3947	4199	7595	9290

Table 040: Distribution of population (10 years+) by type of occupation and level of education

working status of occupation	Education						
	Total	No education	Primary	Junior secondary with class ix	Secondary /higher secondary /diploma	Graduation /masters	Others
Total	321189	66361	109876	84529	44904	14681	839
Employer	2763	385	1594	440	131	213	0
Self-employed (agriculture)	37347	8713	14491	8338	4647	1078	81
Self-employed (non-agriculture)	13563	2964	6113	2296	1757	388	45
Family helper	42935	10093	19104	10002	3006	691	38
Employed with pay/ employee	13993	220	1394	1987	5067	5270	55
Day labour	42569	13624	15964	9310	3503	167	0
Trainees with pay	600	0	46	245	185	103	21
Maid servant	66070	14148	19717	20961	9561	1622	62
Family business without pay/ unpaid family worker	4228	731	1437	961	863	235	0
Others	97122	15483	30016	29989	16184	4913	538

Table 041: Distribution of population (age ten and above) worked for at least one hour in the seven days before the purpose of generating products and services for household consumption by sex.

Categorization of work	Total	Male	Female
Production of fruits vegetables and wooden trees	15556	11429	4127
Rearing of poultry and livestock	92098	21450	70649
Catching fish from open water bodies	5744	5194	551
Fish cultivation	15236	14872	364
Collection of firewood / feed	26485	10611	15874
Collection of drinking water	73246	16863	56382

Table 041: Distribution of population (age ten and above) worked for at least one hour in the seven days before the purpose of generating products and services for household consumption by sex.			
Collection of mineral resources	68	15	53
Processing and drying of crops	9246	3005	6241
Production/processing of livestock feed	934	863	72
Picking/recycling/management of waste	0	0	0
Production of crop	0	0	0
Others	9390	7758	1632
Not applicable	145776	87825	57951

Table 042: Distribution of the population (age ten and above) worked in the seven days to generate goods and services for household consumption, broken down by number of working hours and sex.						
Items	Both sex			Spend hour by sex		
	Total	Male	Female	Total	Male	Female
Production of fruits vegetables and wooden trees	15599	11472	4127	7.84	8.77	5.26
Rearing of poultry and livestock	92107	21435	70673	6.42	7.61	6.06
Catching fish from open water bodies	1128	1128	0	3.00	3.00	0.00
Fish cultivation	695	592	103	4.00	4.00	4.00
Collection of firewood /livestock feed	1379	468	911	5.00	5.00	5.00
Collection of drinking water	1736	351	1385	6.00	6.00	6.00
Collection of mineral resources	15	15	0	7.00	7.00	0.00
Processing and drying of crops	428	17	410	8.00	8.00	8.00
Production/processing of livestock feed	0	0	0	0.00	0.00	0.00
Picking/recycling/management of waste	0	0	0	0.00	0.00	0.00
Production of crop	50	50	0	1.00	1.00	0.00
Others	159	80	79	12.00	12.00	12.00

Table 043: Distribution of the population (age ten and above) worked in the seven days to generate goods and services mainly for sale by sex.			
Items	Both sex		
	Total	Male	Female
Production of fruits vegetables and wooden trees	13247	10749	2498
Nursing of poultry and livestock	69627	18050	51577
Catching fish from open water bodies	4135	3636	498
Fish cultivation	17060	16527	533
Collection of wood/fuel/livestock feed	5378	2590	2788
Collection of drinking water	16004	6068	9937
Collection of mineral resources	48	0	48
Processing and drying of crops	7604	2953	4651
Production/processing of livestock feed	426	171	255
Picking/recycling/management of waste	0	0	0
Production of crop	0	0	0
Others	4546	3384	1162
Not applicable	205622	106317	99306

Table 044: Distribution of population changed occupation in the last twelve months by education level and sex			
Education	Both sex		
	Total	Male	Female
Total	321189	162558	158631
No education	66361	28857	37504
Primary	109876	56952	52923
Junior secondary with class ix	84529	39400	45129
Secondary/higher secondary/diploma	44904	26588	18316
Graduation/masters	14681	10187	4494

Table 044: Distribution of population changed occupation in the last twelve months by education level and sex			
Education	Both sex		
	Total	Male	Female
Others	839	574	265
Yes			
Total	6752	5299	1453
No education	936	741	196
Primary	3485	2309	1176
Under secondary	1188	1177	12
Secondary/higher secondary/diploma	791	721	70
Graduation/masters	352	352	0
Others	0	0	0
No			
Total	314437	157259	157178
No education	65425	28117	37309
Primary	106391	54643	51747
Under secondary	83341	38223	45118
Secondary/higher secondary/diploma	44113	25867	18246
Graduation/masters	14329	9836	4494
Others	839	574	265

Table 045: Distribution of population worked at least one hour per week in the last twelve months by education level and sex			
Education	Both sex		
	Total	Male	Female
Total	6752	5299	1453
No education	936	741	196

Table 045: Distribution of population worked at least one hour per week in the last twelve months by education level and sex			
Education	Both sex		
	Total	Male	Female
Primary	3485	2309	1176
Junior secondary with class ix	1188	1177	12
Secondary/higher secondary/diploma	791	721	70
Graduation/masters	352	352	0
Others	0	0	0
Yes			
Total	3314	3053	261
No education	729	634	95
Primary	1587	1421	166
Under secondary	324	324	0
Secondary/higher secondary/diploma	322	322	0
Graduation/masters	352	352	0
Others	0	0	0
No			
Total	3438	2246	1192
No educat4on	207	107	101
Primary	1898	888	1010
Under secondary	864	853	12
Secondary/higher secondary/diploma	469	399	70
Graduation/masters	0	0	0
Others	0	0	0

Table 046: Distribution of population of main occupation in the last 12 months by sex			
Occupation	Both sex		
	Total	Male	Female
Total	3314	3053	261
Agriculture	301	301	0
Business	463	463	0
Employment	441	441	0
Day labour	1867	1803	64
House wife	166	0	166
Student	45	45	0
Maid servant	31	0	31
Unemployment	0	0	0
Inapplicable to work	0	0	0
Not applicable	0	0	0

Table 047: Distribution of population by type of work in occupation and sex			
Type of work	Both sex		
	Total	Male	Female
Total	3314	3053	261
Production	914	883	31
Service	1356	1190	166
Enjoy/use	778	747	31
Stock	0	0	0
Not applicable	266	232	33

Table 048: Distribution of population of working one hour in the last 12 months for own consumption/use by sex (multiple answer)			
Working	Both sex		
	Total	Male	Female
Production of fruits vegetables and wooden trees	303	285	18
Nursing of poultry and livestock	547	317	230
Catching fish from open water bodies	305	305	0
Fish cultivation	210	210	0
Collection of wood/fuel/livestock feed	594	514	80
Collection of drinking water	375	177	197
Collection of mineral resources	0	0	0
Processing and drying of crops	127	37	90
Production/processing of livestock feed	0	0	0
Picking/recycling/management of waste	0	0	0
Production of crop	0	0	0
Others	0	0	0
Not applicable	0	0	0

Table 049: Distribution of population of working time changing in the following items last week compared to last 12 months by sex			
Working time changing in the following items	Both sex		
	Total	Male	Female
Production of fruits, vegetables and wooden trees			
Total	321189	162558	158631
Roughly doubled or more	46	46	0
Increased but didn't double	98	98	0
Remained unchanged	127	109	18

Table 049: Distribution of population of working time changing in the following items last week compared to last 12 months by sex			
Working time changing in the following items	Both sex		
	Total	Male	Female
Decreased but didn't half	31	31	0
Half or more than half	0	0	0
Don't answer	320886	162273	158613
Nursing of poultry and livestock			
Total	321189	162558	158631
Roughly doubled or more	88	57	31
Increased but didn't double	98	98	0
Remained unchanged	327	159	168
Decreased but didn't half	3	3	0
Half or more than half	31	0	31
Don't answer	320643	162241	158401
Catching fish from open water bodies			
Total	321189	162558	158631
Roughly doubled or more	0	0	0
Increased but didn't double	47	47	0
Remained unchanged	137	137	0
Decreased but didn't half	91	91	0
Half or more than half	31	31	0
Don't answer	320884	162253	158631
Fish cultivation			
Total	321189	162558	158631
Roughly doubled or more	0	0	0
Increased but didn't double	0	0	0

Table 049: Distribution of population of working time changing in the following items last week compared to last 12 months by sex			
Working time changing in the following items	Both sex		
	Total	Male	Female
Remained unchanged	130	130	0
Decreased but didn't half	80	80	0
Half or more than half	0	0	0
Don't answer	320979	162348	158631
Collection of wood/fuel/livestock feed			
Total	321189	162558	158631
Roughly doubled or more	216	154	62
Increased but didn't double	122	122	0
Remained unchanged	196	178	18
Decreased but didn't half	31	31	0
Half or more than half	29	29	0
Don't answer	320595	162044	158551
Collection of drinking water			
Total	321189	162558	158631
Roughly doubled or more	31	0	31
Increased but didn't double	0	0	0
Remained unchanged	234	98	136
Decreased but didn't half	110	79	31
Half or more than half	0	0	0
Don't answer	320815	162381	158434
Collection of mineral resources			
Total	321189	162558	158631
Roughly doubled or more	0	0	0

Table 049: Distribution of population of working time changing in the following items last week compared to last 12 months by sex			
Working time changing in the following items	Both sex		
	Total	Male	Female
Increased but didn't double	0	0	0
Remained unchanged	0	0	0
Decreased but didn't half	0	0	0
Half or more than half	0	0	0
Don't answer	321189	162558	158631
Processing and drying of crops			
Total	321189	162558	158631
Roughly doubled or more	0	0	0
Increased but didn't double	0	0	0
Remained unchanged	111	21	90
Decreased but didn't half	16	16	0
Half or more than half	0	0	0
Don't answer	321062	162521	158541
Production/ processing of livestock feed			
Total	321189	162558	158631
Roughly doubled or more	0	0	0
Increased but didn't double	0	0	0
Remained unchanged	0	0	0
Decreased but didn't half	0	0	0
Half or more than half	0	0	0
Don't answer	321189	162558	158631
Picking/recycling/management of waste			
Total	321189	162558	158631

Table 049: Distribution of population of working time changing in the following items last week compared to last 12 months by sex			
Working time changing in the following items	Both sex		
	Total	Male	Female
Roughly doubled or more	0	0	0
Increased but didn't double	0	0	0
Remained unchanged	58	40	18
Decreased but didn't half	0	0	0
Half or more than half	0	0	0
Don't answer	321131	162518	158613
Production of crop			
Total	321189	162558	158631
Roughly doubled or more	68	68	0
Increased but didn't double	52	52	0
Remained unchanged	103	103	0
Decreased but didn't half	31	31	0
Half or more than half	0	0	0
Don't answer	320935	162304	158631
Others			
Total	321189	162558	158631
Roughly doubled or more	0	0	0
Increased but didn't double	21	21	0
Remained unchanged	18	18	0
Decreased but didn't half	79	79	0
Half or more than half	0	0	0
Don't answer	321071	162440	158631

Table 050: Distribution of population collecting water or fire wood feel anxious/insecure about surroundings/environment by sex			
anxious/insecure	Both sex		
	Total	Male	Female
Total	321189	162558	158631
Yes, I have felt unsafe at least once	440	440	0
Yes, I have often felt unsafe	834	773	62
No, I have never felt unsafe	1293	1109	184
Don't know	747	732	15
Don't answer	317875	159505	158371

Table 051: Distribution of household by main source of drinking water of household and Upazila								
Upazila	Main source of drinking water							
	Total	Pipe/supply water +neighbour	Shallow tube-well (60-199 feet)	Deep tube-well (200 feet plus)	Pond/Dighi river/ cannel water fall well/ Indira stream dam lake	Water falls rain water	Bottled water	Others
Total	91871	3106	41380	23976	10951	3928	7794	736
Teknaf	16131	2358	10901	1707	216	924	25	0
Shyamnagar	53826	197	9543	21841	10736	3004	7770	736
Chilmari	21915	551	20936	428	0	0	0	0

Table 052: Distribution of household by drinking water access points and Upazila					
Upazila	Location of drinking water source				
	Total	In the room	Within the premises	Elsewhere	Don't answer
Total	91871	957	41106	44741	5067
Teknaf	16131	822	8671	6638	0
Shyamnagar	53826	21	11270	37467	5067
Chilmari	21915	114	21165	636	0

Table 053: Distribution of household based on collection time (in minutes) for drinking water by Upazila

Upazila	Duration time for collecting drinking water source					Average duration time for collecting drinking water source				
	Total	0 - 9 minutes	10 - 29 minutes	30 - 59 minutes	60 - 99 minutes	Total	0 - 9 minutes	10 - 29 minutes	30 - 59 minutes	60 - 99 minutes
Total	77998	30682	26531	19221	1564	17	4	15	35	65
Teknaf	10960	4534	3523	2902	0	15	3	17	33	0
Shyamnagar	47023	7490	21667	16303	1564	22	6	15	35	65
Chilmari	20015	18658	1342	16	0	4	3	12	30	0

Table 054: Distribution of household on the basis of water collectors according to sex and age limit by Upazila

Upazila	Collection of drinking water					
	Total	Female child (under 15)	Adult woman (age 15+ years)	Male child (under 15)	Adult man (age 15+ years)	Don't know
Total	91871	869	76017	1571	13028	387
Teknaf	16131	204	13912	702	1264	49
Shyamnagar	53826	576	40591	754	11612	293
Chilmari	21915	89	21513	115	152	45

Table 055: Distribution of household by type of mode of transportation used for collecting drinking water by Upazila

Upazila	Mode of transportation					
	Total	Walk	Bicycle	Motorcycle	Car/bus/van /shared vehicle/public transport	Not applicable
Total	91871	78658	5943	241	4662	2368
Teknaf	16131	15832	0	0	64	234
Shyamnagar	53826	41029	5914	241	4598	2044
Chilmari	21915	21797	29	0	0	89

Table 056: Distribution of household by type of purification of drinking water by Upazila

Upazila	Purification system						
	Total	Using a water filter/boiling	Add bleach or chlorine. Strain through a cloth.	Solar disinfection /stand and settle	Don't treat before drinking.	Don't know /others	Not applicable
Total	91871	14337	8234	5320	52128	3278	8574
Teknaf	16131	596	1469	340	7395	3095	3236
Shyamnagar	53826	12462	6764	4848	24519	74	5158
Chilmari	21915	1279	0	132	20214	110	180

Table 057: Distribution of households by type preservation of purified drinking water and Upazila

Upazila	Type of containers						
	Total	Containers made of plastic, ceramic, or metal with small openings	Containers with large openings made of plastic, ceramic, or metal	Plastic, ceramic or metal container has no cover.	Different type of container	Don't preserve any drinking water	Don't know
Total	91871	39374	12061	8535	9876	20974	1051
Teknaf	16131	4033	1063	5625	229	4160	1020
Shyamnagar	53826	30301	10085	2258	7145	4021	16
Chilmari	21915	5040	913	652	2502	12793	15

Table 058: Distribution of household became sick due to drinking of water contaminated from common sources by Upazila.

Upazila	Number of households				
	Total	Yes, have been sick more than three times.	Yes, have been sick once.	No sick	Don't know
Total	91871	6841	9029	69002	6999
Teknaf	16131	92	186	11943	3910

Shyamnagar	53826	5923	6067	40939	897
Chilmari	21915	825	2776	16121	2192

Table 059: Distribution household of risk for drinking water source due to pollution, chemical, animal faces and urine, etc. by Upazila

Upazila	Risk of drinking water source				
	Total	Yes, the water was collected from other source	Yes, the water was collected from same source	no risk for collecting water	Don't know
Total	91871	12952	8946	60133	9840
Teknaf	16131	800	968	9869	4493
Shyamnagar	53826	8590	5838	35461	3936
Chilmari	21915	3561	2140	14803	1411

Table 060: Distribution of household by type of toilet facilities and Upazila

Upazila	Type of toilet facilities						
	Total	Flush to sewera system and sep tank with wate sealed	Pucca toilet with water sealed	Pucca toilet without water sealed	Kutcha hanging toilet/open space /flush to open drainage /flush to any where	Flush to pit latrine	Others
Total	91871	5688	18712	44121	7861	11801	3688
Teknaf	16131	2708	1634	8875	1503	341	1070
Shyamnagar	53826	2339	13565	18001	5857	11460	2603
Chilmari	21915	641	3513	17245	501	0	15

Table 061: Distribution of household based on toilet with members of another household by Upazila

Upazila	Number of households			
	Total	No sharing with the members of other households	Yes, share with members of other households	Yes, open for all
Total	91871	78788	12535	548
Teknaf	16131	12783	3019	329

Shyamnagar	53826	47090	6564	172
Chilmari	21915	18915	2952	47

Table 062: Distribution of number of households use one toilet by Upazila

Upazila	Number household use toilet						
	Total	1	2	3	4	5+	Don't answer
Total	91871	1074	7083	4070	1345	222	78077
Teknaf	16131	675	1976	838	284	0	12358
Shyamnagar	53826	263	3512	2170	965	41	46875
Chilmari	21915	137	1595	1062	96	181	18844

Table 063: Distribution of households by location of toilet facilities and Upazila

Upazila	Location of toilet facilities			
	Total	In the room	Within the premises	Elsewhere
Total	91871	8777	80063	3031
Teknaf	16131	3747	11814	569
Shyamnagar	53826	4726	47369	1731
Chilmari	21915	304	20880	730

Table 064: Distribution of household have adequate lighting and other amenities of toilet by Upazila

	Total	Yes, it is well illuminated and has a lock.	Yes, it is well illuminated but doesn't have a lock	Has a lock but not well illuminated	No, it is neither illuminated nor has a lock
Total	91871	29266	27434	8857	26313
Teknaf	16131	3839	4774	4242	3275
Shyamnagar	53826	20253	19174	1578	12820
Chilmari	21915	5175	3486	3036	10218

Table 065: Distribution of household based on the types of toilets used by Upazila							
	Total	A treatment plant	Buried in a covered pit	Uncovered pit	Bush/ open ground/	Others	Don't know
Total	91871	532	77458	10552	1532	1241	556
Teknaf	16131	293	12948	1457	25	1046	362
Shyamnagar	53826	100	48528	3851	1094	100	153
Chilmari	21915	139	15982	5244	414	95	41

Table 066: Distribution of household based on the toiletries used for hand washing by Upazila				
Upazila	**Used of toiletries**			
	Total	**Soap or detergent**	**Ash/ mud /sand**	**None**
Total	91871	57981	29523	4366
Teknaf	16131	6281	9175	675
Shyamnagar	53826	41836	8493	3496
Chilmari	21915	9864	11856	195

Table 067: distribution of household based on the number of available rooms by Upazila							
	Total	**1 room**	**2 rooms**	**3 rooms**	**4 rooms**	**5 rooms**	**6+ rooms**
Total	91871	10985	29489	31214	13686	4092	2405
Teknaf	16131	490	5032	6749	2832	420	608
Shyamnagar	53826	7066	17378	17686	7909	2541	1247
Chilmari	21915	3429	7080	6779	2945	1132	550

Table 068: district of household based on the number of available bed rooms by Upazila							
	Total	**1 room**	**2 rooms**	**3 rooms**	**4 rooms**	**5 rooms**	**6+ rooms**
Total	91856	32941	40666	14628	2436	863	323
Teknaf	16116	2791	7210	4897	813	404	0
Shyamnagar	53826	22445	23473	6660	883	232	133
Chilmari	21915	7704	9983	3071	739	228	189

Table 069: Average of number of rooms with window access to lighting in the household by Upazila							
Upazila	Number of rooms with window						
	Total	1 room	2 rooms	3 rooms	4 rooms	5 rooms	6+ rooms
Total	88169	25254	34020	17800	7503	2548	1043
Teknaf	13423	5139	5981	1378	673	83	169
Shyamnagar	53826	10954	19649	13852	6405	2304	661
Chilmari	20920	9161	8390	2570	425	161	213

Table 070: Distribution of bed room with window and access to lighting in household by Upazila							
Upazila	Number of bed room with window (table 67 and 69 not consistent)						
	Total	1 room	2 rooms	3 rooms	4 rooms	5 rooms	6+ rooms
Total	85702	37848	36038	9460	1506	536	313
Teknaf	12169	5616	4854	960	504	235	0
Shyamnagar	53787	22867	23512	6330	740	204	133
Chilmari	19747	9365	7672	2170	262	97	180

Table 071: Distribution of household based on material of floor of the living room of household head by Upazila							
Upazila	Floor made of						
	Total	Earth	Sand/dung	Wood planks/palm / bamboo/ polished wood	Ceramic tiles	Cement/ concrete /carpet	Vinyl or asphalt strips others
Total	91871	60269	7055	129	2655	20558	1205
Teknaf	16131	3673	5217	129	506	6421	185
Shyamnagar	53826	37092	1793	0	2099	11871	970
Chilmari	21915	19504	45	0	50	2266	50

Table 072: Distribution of household wall type by upazila

Upazila	Type of wall							
	Total	Cane / palm / trunks	Mud/ bamboo with mud/stone with mud	Plywood /pitch board/ wood planks	Tin	Cement/ stone with lime / cement /brick /cement blocks	No wall	Others
Total	2666	55	653	261	861	761	42	33
Teknaf	320	26	80	4	68	113	2	27
Shyamnagar	1506	11	563	256	69	606	0	1
Chilmari	840	18	10	1	724	42	40	5

Table 073: Distribution of household based on the material of the living room roof used by the household head and upazila

Upazila	Roof made of						
	Total	Date/ palm leaf /straw /mud/ bamboo /wood planks /pitch board /wood	Tin	Calamine / cement fibre	Ceramic tiles/ cement/ concrete /brick /tiles	No roof ??	Others
Total	91871	8810	40892	27791	10508	2299	1571
Teknaf	16131	5102	8912	17	1153	94	853
Shyamnagar	53826	3338	11953	27774	9210	833	718
Chilmari	21915	370	20027	0	145	1372	0

Table 074: Distribution of household based on the primary type of cooking fuel used by upazila

Upazila	Total	Electricity	Liquefied petroleum gas (lpg) /natural gas/ bio-gas	Kerosene /coal	Wooden coal/ charcoal /wood	Straw / shrubs / grass/ animal dung/ agricultural crop residue	Others
Total	91871	70	8127	107	57016	26537	14
Teknaf	16131	33	5490	15	10547	46	0
Shyamnagar	53826	37	2317	92	44357	7022	0
Chilmari	21915	0	321	0	2112	19469	14

Table 075: Distribution of household of source of electricity by Upazila						
Upazila	Source of electricity					
	Total	Grid	Off-grid solar	Off-grid wind	Off-grid hydro	Off-grid fuel
Total	70	70	0	0	0	0
Teknaf	33	33	0	0	0	0
Shyamnagar	37	37	0	0	0	0
Chilmari	0	0	0	0	0	0

Table 076: Distribution of households with windows in the kitchen for ventilation and access to natural light by upazila					
Upazila	Total	Yes, the cooking location has at least one window for ventilation and natural light.	Yes, cooking location has at least one window for ventilation but no natural light	Yes, cooking location has at least one window for natural light but no ventilation	No windows
Total	91871	64773	5793	5923	15382
Teknaf	16131	8631	1961	3971	1568
Shyamnagar	53826	50207	2212	569	837
Chilmari	21915	5935	1620	1382	12977

Table 077: Distribution of household based on the type of fuel they use to heat or cool their homes by upazila							
Upazila	Total	Electricity	Liquefied petroleum gas (lpg) /natural gas/bio-gas	Kerosene /coal	Wooden coal/ charcoal /wood	Straw / shrubs / grass/animal dung/ agricultural crop residue	Others
Total	91871	47369	3632	438	19496	18537	2399
Teknaf	16131	3332	808	184	10716	30	1061
Shyamnagar	53826	43135	2335	254	6347	416	1338
Chilmari	21915	902	489	0	2433	18091	0

Table 078: Distribution of household by time spent (in minutes) on fuel collecting

Upazila	Number of minutes							Average number of minutes						
	Total	1 - 59 minutes	60 - 119 minutes	120 - 179 minutes	180 - 239 minutes	240 - 299 minutes	300 + minutes	Total	1 - 59 minutes	60 - 119 minutes	120 - 179 minutes	180 - 239 minutes	240 - 299 minutes	300 + minutes
Total	71483	53963	8600	5500	176	49	3194	49	19	64	127	181	244	369
Teknaf	8283	7870	167	154	62	31	0	26	22	60	120	180	240	0
Shyamnagar	45163	30233	6714	4890	115	18	3194	64	22	64	127	182	250	369
Chilmari	18037	15861	1720	456	0	0	0	20	13	66	121	0	0	0

Table 079: Number of days for collecting fuel in a week by Upazila

Upazila	Number of days for collecting fuel							
	Total	1	2	3	4	5	6	7
Total	47206	8420	10675	11931	4126	4266	2174	5613
Teknaf	9621	1210	1257	3677	1061	728	0	1688
Shyamnagar	20153	5594	5261	2269	1845	1233	1622	2329
Chilmari	17432	1616	4157	5985	1220	2305	552	1596

Table 080: Distribution of household by types of cooks, classified based on their sex and age.

	Total	Female child (under 15)	Adult woman (age 15+ years)	Male child (under 15)	Adult man (age 15+ years)	Don't know
Total	91871	50	90312	634	768	107
Teknaf	16131	0	15911	7	213	0
Shyamnagar	53826	0	52799	434	485	107
Chilmari	21915	50	21602	192	70	0

Table 081: Distribution of household by location of kitchen and upazila

Upazila	Cooking location					
	Total	In a separate room in the residence	Yard/ premises	Separate building/room	Outside	Others
Total	91871	20417	60815	9963	578	98
Teknaf	16131	12011	3606	256	258	0
Shyamnagar	53826	6891	37934	8636	267	98
Chilmari	21915	1515	19275	1071	53	0

Table 082: distribution of households by types of collectors of cooking fuel based on sex and age

Upazila	Collector of cooking fuel						
	Total	Female child (under 15)	Adult woman (age 15+ years)	Male child (under 15)	Adult man (age 15+ years)	Nobody fetches fuel	Don't know/not applicable
Total	91871	7	61541	702	28525	29	1068
Teknaf	16131	0	9044	186	6843	29	29
Shyamnagar	53826	0	31878	279	20725	0	944
Chilmari	21915	7	20619	236	958	0	95

Table 083: Distribution of household affected by type of natural disaster during last 12 months

Upazila	Total household	Number of households						
		Flood	Cyclone	Strom/tidal surge	River/coastal erosion	Landslide	Salinity	Others
Total	91871	43930	70511	10100	23261	1784	39481	15436
Teknaf	16130	10287	14837	3888	0	1784	1905	87
Shyamnagar	53826	11740	53607	6213	15926	0	37577	7186
Chilmari	21915	21904	2067	0	7335	0	0	8163

Table 084: Distribution of household got early warning by type of disaster (multiple answer)

Upazila	Total household (Actual number household, not overlapped)	Number of household (the total of the subgroups is overlapping across disaster type.)						
		Flood	Cyclone	Strom/ tidal surge	River/ coastal erosion	Landslide	Salinity	Others
Total	91871	25090	65208	7187	12997	0	0	12301
Teknaf	16130	215	10897	1226	0	0	0	250
Shyamnagar	53826	2971	52999	5961	12359	0	0	2333
Chilmari	21915	21904	1312	0	638	0	0	9719

Table 085: Distribution of household took disaster preparedness by type of disaster (multiple answer)								
Upazila	Total household	Number of households						
		Flood	Cyclone	Strom/ tidal surge	River/ coastal erosion	Landslide	Salinity	Others
Total	91871	16906	54967	6936	12712	0	0	11194
Teknaf	16130	215	4482	1004	0	0	0	250
Shyamnagar	53826	2638	49173	5932	12139	0	0	2123
Chilmari	21915	14053	1312	0	573	0	0	8821

Table 086: Distribution of household got early warning by disaster media type (multiple answer)								
	Total	Flood	Cyclone	Strom/tidal surge	River/coastal erosion	Landslide	Salinity	Others
Radio	6368	728	3746	670	82	0	37	1106
Television	50273	16367	21474	1151	1124	0	234	9923
Making	89401	4294	60447	7128	12500	1008	495	3530
Community	11396	1951	5739	1905	129	111	195	1366
Local administration	39097	2377	29170	3927	2115	0	469	1040
Mobile/SMS	8862	919	7200	242	171	0	67	265
Internet/media	7996	1284	5094	385	251	0	24	958

Table 087: Distribution of household got early warning by disaster type (multiple answer)							
Upazila	Radio	Television	Making	Community	Local administration	Mobile /SMS	Internet /media
Total	6368	50273	89401	11396	39097	8862	7996
Teknaf	0	1633	13580	876	2451	1327	1182
Shyamnagar	5127	22645	72545	6318	33924	7385	4623
Chilmari	1241	25995	3276	4202	2722	151	2192

Table 088: Distribution of household by type of disaster preparedness (multiple answer)							
Type of disaster preparedness	Type of disaster						
	Flood	Cyclone	Strom/tidal surge	River/coastal erosion	Landslide	Salinity	Others
Preserved drinking water	14002	52622	9506	19056	1350	32811	26193
Preserved dry food	21372	53398	9652	21748	1446	32599	31830
Preserved valuable goods	9755	29073	6114	11355	168	19444	17468
Preserved medicine	13454	33348	7044	14286	1446	20286	18672
Preserved seeds	4048	1241	64	2902	0	894	3187
Took livestock to safe place	11171	5394	1092	7321	15	3753	10539
Raised bed	11854	4750	2930	6671	84	2961	10490
Preserved cereals	6917	6854	482	7265	15	4155	6314
Stayed in cyclone shelter or other safe shelter	4001	28905	7994	14581	1280	20175	9294
Shelter on embankment/high land	2503	1017	57	1250	15	1014	2329
Took shelter in another area, temporarily.	1165	1442	0	506	0	782	1211
Children or pregnant women were sent to a safe place.	1173	3068	772	2803	0	2817	1290
Livestock was sent to a safe place.	6348	5752	752	4121	169	4538	6662
Disinfect household/property	407	185	168	206	0	185	425
No preparation was taken	0	0	0	0	0	0	0

Table 089: population distribution by type of disaster affliction (multiple answer)							
Affected category	Disaster category						
	Flood	Cyclone	Strom/ tidal surge	River/ coastal erosion	Landslide	Salinity	Others
Injury	47	2832	1778	336	1109	894	64
Illness	4331	10585	3959	7919	183	7895	4044
Death	115	368	123	348	0	348	115
Sickness	1143	6203	3308	4720	168	5345	1433
Missing	155	392	218	394	0	361	190
Loss and damage of residence	21075	52023	6207	20402	210	32151	32878
Dwelling destroyed	6802	19308	4786	13017	355	14639	10283
Personal income decreased	19756	24842	5797	15568	210	16886	24035
Loss and damage of crops	12206	12105	1792	8010	187	8700	14147
Lose/illness of livestock	2774	2498	1171	2820	0	1831	2643
Lose/illness of fisheries	1011	13019	2001	9075	0	11875	3668
Personal property (land, industrial assets, machinery, productive services, and so on, damaged or destroyed	96	494	281	281	0	314	96
Not attending school of children	11339	16297	2296	8846	15	9770	13508
Migration to another area of the country	949	385	0	177	184	0	771
Migration to a different country	205	104	44	114	15	29	174
Obtained refugee status in different country	20	91	0	0	0	0	51
Forcibly transferred	20	45	0	0	0	0	20

Table 089: population distribution by type of disaster affliction (multiple answer)							
Affected category	Disaster category						
	Flood	Cyclone	Strom/ tidal surge	River/ coastal erosion	Landslide	Salinity	Others
Damaged of water source	3318	10569	3232	6286	183	8857	4645
Time spent on child care increased (including physical care, teaching and playing).	267	2056	1360	1664	0	1703	299
Time spent caring for adult family members increased (including administrative support, physical care, and psychological support).	528	3657	1484	2562	306	3171	881
Time spent on any domestic work activities increased (household services such as cleaning, cooking, and shopping for household repairs, décor, and pet care).	2175	15601	5904	3856	1193	8548	5897
had to switch to unclean cooking/heating/lighting fuel for more than two weeks	987	3945	2608	2997	84	3189	1107
Job loss due to natural disaster	20	235	114	84	0	84	20
Had to switch to unimproved form of sanitation	8379	9003	4786	5585	198	5250	7868
Had to start sharing sanitation facilities with other households	5199	6428	3597	3617	168	3629	5144
found difficulties in accessing hygiene products	8094	15341	4533	8673	192	10405	8919
Experienced longer wait times to visit	2792	6672	3286	6206	168	5798	2393

Table 089: population distribution by type of disaster affliction (multiple answer)

Affected category	Disaster category						
	Flood	Cyclone	Strom/ tidal surge	River/ coastal erosion	Landslide	Salinity	Others
doctors or seek medical care.							
Unable to seek necessary medical care for himself/herself.	1862	5078	3409	4101	198	4158	1628
Was unable to seek necessary medical care for his/her family	1543	5684	3273	4397	168	4686	1626
Affected mental health	7854	36534	5404	11051	192	26639	17376
Crime increased	328	2415	2381	2625	84	2415	18
Victims of violence increased	15	133	0	102	0	102	0
Water source was compromised	0	3404	3360	3192	168	3389	7
Damage of vehicles	49	284	170	185	0	238	84
Could not use public transportation	45	856	588	505	84	650	86
Took no preparation	0	0	0	0	0	0	0

Table 090: Distribution of household head by type of ownership of dwelling house by sex

	Total	Male owned	Female owned
Total	91871	82102	9769
Individual ownership	72823	66135	6688
Joint ownership	15189	13073	2116
Rented	1001	779	221
Did not own a dwelling, but did not pay rent either	2859	2114	744

Table 091: Distribution of household head by types of legal documents of dwelling house by sex

	Total	Male owned	Female owned
Total	91871	82102	9769
Households had ownership documents.	71166	64868	6297
Households did not have ownership documents.	18652	15524	3128

Table 092: Transfer rights of land by sex

	Total	Male	Female
Total	73219	66577	6641
Inherited registered deeds yes	50202	46629	3573
No	13170	10933	2237
Don't know	9846	9015	831

Table 093: Type of ownership of agricultural land by sex

	Total	Male owned	Female
Total	73219	66577	6641
Yes, had ownership of agricultural land	49817	45143	4674
No, did not have ownership of agricultural land	21816	19848	1968
Don't know	1586	1586	0

Table 094: Ownership of agriculture land by sex

	Total	Male	Female
Total	64240	58736	5504
01 – 04	8254	7175	1079
05 – 49	34783	30992	3791
50 – 149	14218	13846	372
150 – 499	5884	5622	261
500 – 749	564	564	0
750 +	539	539	0

Table 095: Distribution of household head of ownership of agriculture land jointly by sex			
Land size	Total	Male	Female
Total	20528	18026	2502
01 – 04	2894	2617	277
05 – 49	11593	9570	2023
50 – 149	3673	3579	95
150 – 499	1980	1874	106
500 – 749	345	345	0
750 +	43	43	0

Table 096: Deed/document of ownership by sex			
	Total	Male	Female
Title deed			
Total	73219	66577	6641
Yes	36467	32218	4249
No	27459	25423	2035
Don't know	9293	8936	357
Traditional deed			
Total	73219	66577	6641
Yes	18856	17457	1399
No	37823	33729	4094
Don't know	16539	15391	1148
Occupancy copyright			
Total	73219	66577	6641
Yes	20135	17584	2551
No	38592	35510	3082
Don't know	14492	13483	1009
Inherited registered deeds			

Table 096: Distribution of household head of deed/document of ownership by sex			
	Total	Male	Female
Total	73219	66577	6641
Yes	50202	46629	3573
No	13170	10933	2237
Don't know	9846	9015	831
Survey record			
Total	73219	66577	6641
Yes	54392	49596	4796
No	5733	4832	901
Don't know	13094	12150	944
Registered rental contact			
Total	73219	66577	6641
Yes	1743	1556	186
No	44671	39783	4888
Don't know	26805	25238	1567
Registered lease contact			
Total	73219	66577	6641
Yes	3211	2894	317
No	42631	37820	4811
Don't know	27376	25863	1513
Others			
Total	73219	66577	6641
Yes	540	540	0
No	39946	36094	3852
Don't know	32732	29943	2789

Table 097: Distribution of household head of right to sell owned agricultural land by sex			
	Total	Male	Female
Total	73219	66577	6641
Yes	34961	33097	1864
No	30723	26924	3799
Don't know	993	911	82
Objections to answer	1624	1595	29
Not applicable	4917	4051	867

Table 098: Distribution of right to transfer owned agricultural land by sex			
	Total	Male	Female
Total	73219	66577	6641
Yes	34503	32756	1746
No	29807	25990	3817
Don't know	1221	1040	182
Objections to answer	1628	1599	29
Not applicable	6060	5193	867

Table 099. Distribution of household head of irrigation by sex			
	Total	Male	Female
Total	91871	82102	9769
Yes	29365	27677	1688
Don't need irrigation	50587	44908	5679
Can't afford irrigation	6014	4283	1732
Not available water	5904	5234	670
% Total	100.00	89.37	10.63

Table 100. Distribution of household head of water availability decrease of well/others source by sex			
	Total	Male	Female
Total	91871	82102	9769
No water is always available in sufficient quantity	14764	13845	919
Yes water level is progressively going down	20077	16944	3133
Yes water in river lake or canal is getting scarce and can't have reliable supply	36605	33650	2955
Don't know	20425	17663	2762

Table 101. Distribution of household head of aware of the environmental and health risks of using pesticides by sex			
	Total	Male	Female
Total	91871	82102	9769
Yes	52886	49178	3708
No	38985	32923	6061
Don't answer	0	0	0

Table 102. Distribution of household head of using land for agriculture last 12 months by sex			
	Total	Male	Female
Total	91871	82102	9769
Yes	41306	39087	2219
No	50565	43015	7550

Table 103: Distribution of household assets by Upazila				
Name of assets	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Radio				
Total	91871	16131	53826	21915

Table 103: Distribution of household assets by Upazila				
Name of assets	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Own	4840	29	4638	173
Joint	0	0	0	0
None	87031	16102	49188	21742
Television				
Total	91871	16131	53826	21915
Own	25868	209	21119	4540
Joint	2290	938	249	1102
None	63713	14984	32457	16273
Telephone				
Total	91871	16131	53826	21915
Own	1235	249	787	198
Joint	69	31	18	20
None	90567	15851	53020	21696
Mobile phone/smart phone				
Total	91871	16131	53826	21915
Own	81103	10721	50857	19525
Joint	6398	3643	1457	1298
None	4371	1767	1511	1092
Bus/truck				
Total	91871	16131	53826	21915
Own	629	368	193	67
Joint	111	111	0	0
None	91131	15651	53632	21847

Table 103: Distribution of household assets by Upazila				
Name of assets	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Microbus/car				
Total	91871	16131	53826	21915
Own	261	0	261	0
Joint	12	0	12	0
None	91599	16131	53553	21915
Launch/steamer/ship				
Total	91871	16131	53826	21915
Own	0	0	0	0
Joint	0	0	0	0
None	91871	16131	53826	21915
Computer/laptop				
Total	91871	16131	53826	21915
Own	2006	7	1835	164
Joint	0	0	0	0
None	89865	16123	51990	21751
Refrigerator (freeze)				
Total	91871	16131	53826	21915
Own	10717	25	10194	499
Joint	1994	1729	42	223
None	79160	14377	43590	21193
Mechanical boat/toller				
Total	91871	16131	53826	21915
Own	722	0	275	448

Table 103: Distribution of household assets by Upazila				
Name of assets	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Joint	271	199	29	43
None	90878	15931	53522	21424
Freeze/deep freeze				
Total	91871	16131	53826	21915
Own	2666	137	1797	732
Joint	633	484	109	40
None	88572	15510	51920	21143
Motor cycle				
Total	91871	16131	53826	21915
Own	11637	389	10007	1241
Joint	509	227	190	92
None	79725	15514	43629	20581
CNG/auto rickshaw				
Total	91871	16131	53826	21915
Own	2002	134	1548	321
Joint	49	0	29	20
None	89821	15997	52249	21574
Rickshaw/van				
Total	91871	16131	53826	21915
Own	4556	0	4335	221
Joint	314	163	151	0
None	87001	15968	49339	21694
By-cycle				

Table 103: Distribution of household assets by Upazila				
Name of assets	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
Own	36076	117	28036	7922
Joint	1458	267	741	450
None	54338	15747	25048	13543
Khat/Polanco				
Total	91871	16131	53826	21915
Own	55606	740	40303	14563
Joint	10533	7735	956	1842
None	25732	7656	12567	5510
Sewing machine				
Total	91871	16131	53826	21915
Own	16173	239	13344	2590
Joint	814	459	182	173
None	74884	15432	40300	19151
Chowki				
Total	91871	16131	53826	21915
Own	53404	342	37575	15487
Joint	7031	5685	597	749
None	31436	10103	15653	5679
Almirah/ware drop				
Total	91871	16131	53826	21915
Own	44530	112	39708	4710
Joint	8299	7509	443	347

Table 103: Distribution of household assets by Upazila				
Name of assets	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
None	39042	8510	13675	16858
Own solar				
Total	91871	16131	53826	21915
Own	45543	1350	35036	9157
Joint	6690	5560	923	207
None	39638	9220	17867	12551
Boat (without engine)				
Total	91871	16131	53826	21915
Own	1630	169	412	1050
Joint	911	844	67	0
None	89330	15118	53347	20865

Table 104: Distribution of household by type of ownership of dwelling house					
Upazila	Total	individual ownerships	Joint ownership	Rented	Without rent
Total	91871	72823	15189	1001	2859
Teknaf	16131	12962	2080	619	469
Shyamnagar	53826	42904	8996	290	1636
Chilmari	21915	16956	4113	91	754

Table 105: Distribution of household by types of legal ownership documents of dwelling house				
Upazila	Total	Yes, had ownership documents	No, did not have ownership documents	Don't know
Total	91871	71166	18652	2053
Teknaf	16131	12669	2955	506

Shyamnagar	53826	44632	7892	1302
Chilmari	21915	13865	7805	245

Table 106: Distribution of households by land transfer right

Upazila / district	Total	Yes, had transfer right	No, did not have transfer right	Don't know
Total	73219	61949	9900	1370
Teknaf	13175	12341	722	112
Shyamnagar	45933	38077	6758	1098
Chilmari	14110	11530	2420	160

Table 107: household distribution of ownership of agriculture land by Upazila

Upazila/zila	Ownership of agriculture land			
	Total	Yes	No	Don't know
Total	73219	49817	21816	1586
Teknaf	13175	11468	992	716
Shyamnagar	45933	25908	19301	724
Chilmari	14110	12440	1523	146

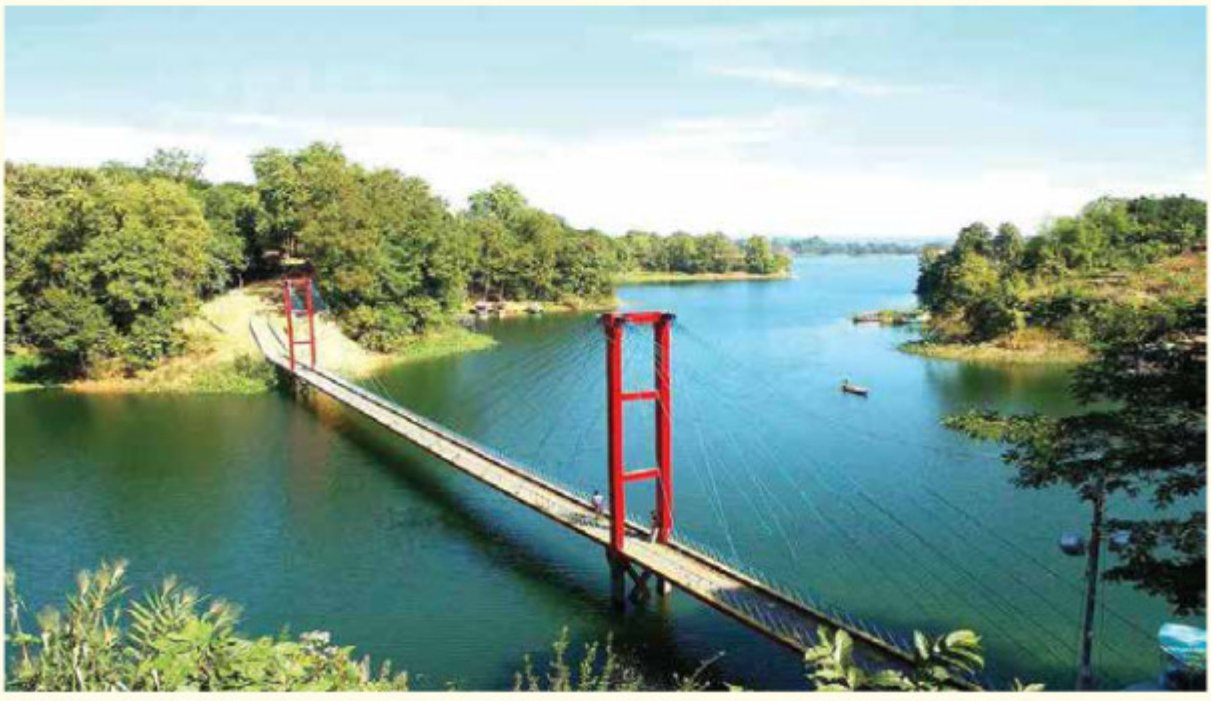


Table 108: household distribution of independently ownership of the land by Upazila

Upazila/zila	Independently ownership of the land							Average size of independently ownership of the land (decimal)						
	Total	01 -04	05 - 49	50 - 149	150 - 499	500 - 749	750 +	Total	01 -04	05 - 49	50 - 149	150 - 499	500 - 749	750 +
Total	64240	8254	34783	14218	5884	564	539	66	3	19	84	235	604	1146
Teknaf	12965	853	10028	2084	0	0	0	30	3	23	72	0	0	0
Shyamnagar	39607	6270	20124	7853	4333	534	493	75	3	16	89	240	609	1152
Chilmari	11668	1131	4631	4280	1550	30	46	74	3	22	81	219	522	1080

Table 109: Distribution of household of jointly ownership of land by Upazila

Upazila/zila	Jointly ownership of land							Average size of jointly ownership of land (decimal)						
	Total	01 -04	05 - 49	50 - 149	150 - 499	500 - 749	750 +	Total	01 -04	05 - 49	50 - 149	150 - 499	500 - 749	750 +
Total	20528	2894	11593	3673	1980	345	43	62	3	19	83	237	632	1131
Teknaf	5974	308	4937	729	0	0	0	27	3	23	61	0	0	0
Shyamnagar	9729	2112	3910	1744	1624	304	36	87	3	15	89	238	649	1155
Chilmari	4826	474	2747	1200	357	41	7	56	3	19	86	237	501	1000

Table 110: Distribution of household based on type of land ownership				
Type of deed/document	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Title deed				
Total	73219	13175	45933	14110
Have title deed	36467	11848	14710	9909
Don't have title deed	27459	1015	22780	3664
Don't know	9293	313	8444	536
Traditional deed / informal deed				
Total	73219	13175	45933	14110
Have traditional deed	18856	3690	9446	5720
Don't have traditional deed	37823	5342	26827	5655
Don't know	16539	4144	9661	2735
Occupancy copyright				
Total	73219	13175	45933	14110
Have occupancy copyright	20135	9858	7302	2974
Don't have occupancy copyright	38592	862	29057	8673
Don't know	14492	2455	9575	2462
Inherited registered deeds				
Total	73219	13175	45933	14110
Have inherited registered deed	50202	6548	37325	6329
Don't have inherited registered deed	13170	1596	5295	6279
Don't know	9846	5031	3314	1502
Survey record				
Total	73219	13175	45933	14110
Have survey record	54392	4408	39082	10902
Don't have survey record	5733	2413	1614	1706

Table 110: Distribution of household based on type of land ownership				
Type of deed/document	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Don't know	13094	6354	5238	1502
Registered rental deed				
Total	73219	13175	45933	14110
Have registered rental deed	1743	23	419	1301
Don't have registered rental deed	44671	5536	29583	9551
Don't know	26805	7617	15931	3257
Registered lease deed				
Total	73219	13175	45933	14110
Have registered lease deed	3211	0	2056	1155
Don't have registered lease deed	42631	4709	28204	9718
Don't know	27376	8467	15673	3237
Other types of deeds				
Total	73219	13175	45933	14110
Have other types of deed	540	7	260	273
Don't have other types of deed	39946	1900	27952	10095
Don't know	32732	11268	17722	3742

Table 111: Distribution of right to sell owned agricultural land by Upazila						
Upazila/zila	Right to sell owned agricultural land					
	Total	Yes	No	Don't know	Objections to answer	Not applicable
Total	73219	34961	30723	993	1624	4917
Teknaf	13175	2141	7251	606	490	2688
Shyamnagar	45933	23657	18985	155	1111	2025
Chilmari	14110	9163	4487	232	23	205

Table 112: Distribution of right to transfer owned agricultural land by Upazila						
Upazila/zila	Right to transfer owned agricultural land					
	Total	Yes	No	Don't know	Objections to answer	Not applicable
Total	73219	34503	29807	1221	1628	6060
Teknaf	13175	1599	6605	885	507	3580
Shyamnagar	45933	24016	18344	187	1111	2275
Chilmari	14110	8887	4858	150	10	205

Table 113: Distribution of ownership cultivated agricultural land by Upazila					
Upazila/zila	Ownership cultivated agricultural land				
	Total	Male	Female	Hijra	Not applicable
Total	73219	45064	3333	0	24821
Teknaf	13175	6076	1482	0	5617
Shyamnagar	45933	28685	1034	0	16215
Chilmari	14110	10303	817	0	2990

Table 114: Distribution of households by loss and damage to agricultural land				
	Total	Teknaf	Shyamnagar	Chilmari
Number of households experienced land loss due to river or coastal erosion.				
Total	73219	13175	45933	14110
Yes, experienced land loss	14502	8077	409	6016
No, did not experience	58716	5099	45524	8093
Number of households experienced land productivity loss due to natural disasters.				
Total	73219	13175	45933	14110
Yes, experienced land productivity loss	22151	7735	6289	8127
No, did not experience	51067	5440	39645	5982

Table 114: Distribution of households by loss and damage to agricultural land				
	Total	Teknaf	Shyamnagar	Chilmari
Waterlogging (table is not consistent)				
Total	73219	13175	45933	14110
Yes	17687	??? 8060	2280	7347
No	55531	5115	43654	6763
Salinity the irrigated land				
Total	73219	13175	45933	14110
Yes	23075	374	22592	108
No	50144	12801	23341	14001
None				
Total	73219	13175	45933	14110
Yes	17706	0	17661	45
No	55512	13175	28272	14065

Table 115: Distribution of households by loss and damage to agricultural land by size of land				
Land size	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Number of household experienced loss of land due to river and coastal erosion				
Total	14502	8077	409	6016
01 – 04	2501	1566	155	780
05 – 09	9717	6313	179	3225
10 – 19	2285	198	76	2011
20 – 49	0	0	0	0
50 +	0	0	0	0
Number of households experienced land productivity loss due to natural disasters				
Total	22151	7735	6289	8127

Table 115: Distribution of households by loss and damage to agricultural land by size of land				
Land size	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
01 – 04	3919	1557	1344	1019
05 – 09	13221	5980	2695	4546
10 – 19	5011	198	2250	2563
20 – 49	0	0	0	0
50 +	0	0	0	0
Waterlogging				
Total	17687	8060	2280	7347
01 – 04	3803	1549	1383	871
05 – 09	6916	4190	451	2274
10 – 19	6968	2321	445	4202
20 – 49	0	0	0	0
50 +	0	0	0	0
Salinity the irrigated land				
Total	23075	374	22592	108
01 – 04	6628	0	6628	0
05 – 09	4530	37	4448	45
10 – 19	11917	338	11517	63
20 – 49	0	0	0	0
50 +	0	0	0	0
None				
Total	17706	0	17661	45
01 – 04	1326	0	1326	0
05 – 09	1445	0	1400	45

Table 115: Distribution of households by loss and damage to agricultural land by size of land				
Land size	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
10 – 19	2118	0	2118	0
20 – 49	3398	0	3398	0
50 +	9419	0	9419	0

Table 116: Distribution of households based on whether or not they had an irrigation system.					
Upazila / district	Total	Yes, had irrigation system	Did not need irrigation	Could not afford irrigation	Unavailability of water for irrigation.
Total	91871	29365	50587	6014	5904
Teknaf	16131	576	7705	4468	3382
Shyamnagar	53826	14571	35975	949	2330
Chilmari	21915	14218	6907	597	193

Table 117: Distribution of agricultural land under irrigation (alone) by Upazila

Upazila	Agricultural land under irrigation (alone)							Average size agricultural land under irrigation (alone) decimal						
	Total	0	01 - 04	05 - 49	50 - 149	150 - 499	500 +	Total	0	01 - 04	05 - 49	50 - 149	150 - 499	500 +
Total	29365	2101	4250	14337	6810	1816	51	42	0	2	20	80	206	647
Teknaf	576	0	0	576	0	0	0	10	0	0	10	0	0	0
Shyamnagar	14571	1136	4200	6624	2115	484	12	29	0	2	17	82	241	800
Chilmari	14218	965	50	7137	4695	1331	40	57	0	4	23	79	193	603

Table 118: Distribution of agricultural land under irrigation (jointly) by Upazila

Upazila	Agricultural land under irrigation (jointly)							Average size agricultural land under irrigation (jointly) decimal						
	Total	0	01 – 04	05 - 49	50 - 149	150 - 499	500 +	Total	0	01 - 04	05 - 49	50 - 149	150 - 499	500 +
Total	29365	24527	236	2795	1200	588	20	10	0	2	21	78	204	698
Teknaf	576	338	0	238	0	0	0	6	0	0	13	0	0	0
Shyamnagar	14571	13132	236	697	289	218	0	6	0	2	18	90	189	0
Chilmari	14218	11058	0	1859	911	370	20	14	0	0	23	75	213	698

Table 119: Distribution of water used for irrigation of agricultural land by Upazila				
Upazila	Water used for irrigation of agricultural land			
	Total	Teknaf	Shyamnagar	Chilmari
No water is always available in sufficient quantity				
Total	91871	16131	53826	21915
Freshwater from a stream river lake or well	3733	238	2997	498
Don't answer	88138	15892	50829	21416
Yes, water level is progressively going down				
Total	91871	16131	53826	21915
Piped clean water	26391	338	11925	14128
Don't answer	65480	15793	41901	7786
Yes, water in river lake or canal is getting scarce and can't have reliable supply				
Total	91871	16131	53826	21915
Wastewater (domestic or industrial runoff)	0	0	0	0
Don't answer	91871	16131	53826	21915
Don't know				
Total	91871	16131	53826	21915
Greywater (from bathroom sinks showers washing machines)	21	0	21	0
Don't answer	91850	16131	53805	21915

Table 120: Distribution of households based on their perception regarding irrigation water scarcity.					
Upazila	Total	No water is always available in a sufficient quantity.	Yes, the water level is progressively going down.	Yes, water in a river, lake, or canal is getting scarce and can't have a reliable supply.	Don't know
Total	91871	14764	20077	36605	20425
Teknaf	16131	1493	8052	227	6358
Shyamnagar	53826	12683	6075	22584	12483
Chilmari	21915	587	5949	13795	1584

Table121: Distribution of household by type of awareness of the environmental risks of using excess fertilizer			
Upazila	Total	Yes, had awareness	No, did not have awareness
Total	77087	39093	37994
Teknaf	14637	3309	11329
Shyamnagar	41142	20192	20950
Chilmari	21308	15592	5715

Table 122: Distribution of taken measures to avoid environmental risks (multiple answer) by Upazila				
Type of environmental risk	Taken measures to avoid environmental risks (multiple answer)			
	Total	Teknaf	Shyamnagar	Chilmari
Adherence to label directions for pesticide application (convert the as in key findings by upazila)				
Total	91871	16131	53826	21915
Adherence to label directions for pesticide application	26115	5182	9804	11129
Don't answer	65756	10949	44021	10785
Adjustment of planting time				
Total	91871	16131	53826	21915
Adjustment of planting time	5720	76	1794	3850
Don't answer	86151	16055	52031	18064
Application of crop spacing				
Total	91871	16131	53826	21915
Application of crop spacing	5144	32	1427	3685
Don't answer	86727	16099	52398	18230
Application of crop rotation				
Total	91871	16131	53826	21915
Application of crop rotation	7775	463	1677	5634

Table 122: Distribution of taken measures to avoid environmental risks (multiple answer) by Upazila				
Type of environmental risk	Taken measures to avoid environmental risks (multiple answer)			
	Total	Teknaf	Shyamnagar	Chilmari
Don't answer	84096	15668	52148	16280
Application of mixed cropping				
Total	91871	16131	53826	21915
Application of mixed cropping	3079	30	1088	1962
Don't answer	88791	16101	52738	19953
Application of inter-cropping				
Total	91871	16131	53826	21915
Application of inter-cropping	7594	156	1480	5958
Don't answer	84277	15975	52345	15957
Perform biological pest control				
Total	91871	16131	53826	21915
Perform biological pest control	11124	115	5671	5338
Don't answer	80747	16016	48154	16577
Use of biopesticides				
Total	91871	16131	53826	21915
Use of biopesticides	12387	71	7610	4706
Don't answer	79484	16060	46216	17208
Adopting pasture rotation to suppress livestock pest population				
Total	91871	16131	53826	21915
Adopting pasture rotation to suppress livestock pest population	4039	30	1865	2144
Don't answer	87832	16101	51960	19771
Automatic removal of plant parts attacked by pests				
Total	91871	16131	53826	21915

Table 122: Distribution of taken measures to avoid environmental risks (multiple answer) by Upazila				
Type of environmental risk	Taken measures to avoid environmental risks (multiple answer)			
	Total	Teknaf	Shyamnagar	Chilmari
Automatic removal of plant parts attacked by pests	10803	184	5709	4911
Don't answer	81068	15947	48117	17004
Maintenance and cleansing of spray equipment after use				
Total	91871	16131	53826	21915
Maintenance and cleansing of spray equipment after use	13639	629	9179	3831
Don't answer	78232	15502	44646	18084
Use one pesticide no more than two times (or in mixture) in a season to avoid pesticide resistance				
Total	91871	16131	53826	21915
Use one pesticide no more than two times (or in mixture) in a season to avoid pesticide resistance	3761	30	3209	522
Don't answer	88110	16101	50616	21393
Take no action				
Total	91871	16131	53826	21915
Take no action	38540	8954	24723	4863
Don't answer	53330	7177	29102	17051

Table 123: Distribution of households based on the types of pesticides used on their land for crop production and animal husbandry in the previous year				
	Total	Teknaf	Shyamnagar	Chilmari
Inorganic pesticides				
Total	91871	16131	53826	21915
Inorganic pesticides	39149	5705	17689	15755
Don't answer	52722	10426	36136	6160

Table 123: Distribution of households based on the types of pesticides used on their land for crop production and animal husbandry in the previous year				
	Total	Teknaf	Shyamnagar	Chilmari
Organic pesticides				
Total	91871	16131	53826	21915
Organic pesticides	11728	1871	7522	2335
Don't answer	80143	14259	46304	19580
Pest killer				
Total	91871	16131	53826	21915
Pest killer	68201	8500	43535	16165
Don't answer	23670	7631	10290	5749
Hormones				
Total	91871	16131	53826	21915
Hormones	19288	1209	16027	2052
Don't answer	72583	14922	37799	19863

Table 124: Distribution of household by type of awareness of the environmental risks of using excess pesticides				
	Total	Yes, had awareness	No, did not have awareness	Don't answer
Total	91871	52886	38985	0
Teknaf	16131	4461	11670	0
Shyamnagar	53826	31336	22490	0
Chilmari	21915	17090	4825	0

Table 125: Distribution of households based on the number of livestock and poultry they had by upazila				
Number of animal / poultries	Total	Teknaf	Shyamnagar	Chilmari
Cattle, dairy cows, bulls, etc.				

Table 125: Distribution of households based on the number of livestock and poultry they had by upazila				
Number of animal / poultries	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
0	67873	15222	44879	7772
1	7449	327	2730	4392
2	7858	309	3076	4473
'3 – 4	6373	273	2433	3667
'5 – 9	2194	0	697	1497
'10 – 19	50	0	0	50
20 – 49	11	0	10	1
50 – 99	63	0	0	63
100 +	0	0	0	0
Horses, donkeys, mules etc.				
Total	91871	16131	53826	21915
0	91462	15947	53789	21726
1	133	0	5	128
2	36	0	16	20
'3 – 4	17	0	0	17
'5 – 9	223	184	15	24
'10 – 19	0	0	0	0
20 – 49	0	0	0	0
50 – 99	0	0	0	0
100 +	0	0	0	0
Goat				
Total	91871	16131	53826	21915

Table 125: Distribution of households based on the number of livestock and poultry they had by upazila				
Number of animal / poultries	Total	Teknaf	Shyamnagar	Chilmari
0	65427	14934	38173	12321
1	6302	207	2646	3449
2	7824	523	4427	2874
'3 – 4	7350	388	4683	2279
'5 – 9	4405	79	3355	971
'10 – 19	467	0	460	7
20 – 49	81	0	81	0
50 – 99	15	0	0	15
100 +	0	0	0	0
Sheep				
Total	91871	16131	53826	21915
0	88857	15991	52879	19988
1	1447	111	133	1203
2	674	0	205	469
'3 – 4	555	0	368	187
'5 – 9	338	29	241	68
'10 – 19	0	0	0	0
20 – 49	0	0	0	0
50 – 99	0	0	0	0
100 +	0	0	0	0
Poultry				
Total	91871	16131	53826	21915
0	29401	9598	15210	4594

Table 125: Distribution of households based on the number of livestock and poultry they had by upazila				
Number of animal / poultries	Total	Teknaf	Shyamnagar	Chilmari
1	2398	132	1182	1084
2	8847	386	5865	2596
'3 – 4	12239	411	9239	2588
'5 – 9	23847	1564	16316	5967
'10 – 19	10763	2156	4823	3785
20 – 49	3869	1884	762	1223
50 – 99	167	0	113	54
100 +	340	0	316	24
Pigs				
Total	91871	16131	53826	21915
0	91763	16076	53778	21909
1	5	0	5	0
2	0	0	0	0
'3 – 4	0	0	0	0
'5 – 9	90	55	30	6
'10 – 19	0	0	0	0
20 – 49	13	0	13	0
50 – 99	0	0	0	0
100 +	0	0	0	0
Fish, shrimp, aquatic animals (kg)				
Total	91871	16131	53826	21915
0	69427	15962	32089	21376
1	107	0	107	0

Table 125: Distribution of households based on the number of livestock and poultry they had by upazila				
Number of animal / poultries	Total	Teknaf	Shyamnagar	Chilmari
2	213	0	213	0
'3 – 4	575	0	568	7
'5 – 9	3138	0	3031	106
'10 – 19	2475	169	2181	125
20 – 49	5429	0	5429	0
50 – 99	5267	0	5183	83
100 +	5241	0	5024	217

Table 126: Distribution of households based on the agricultural land used by them by upazila			
Upazila/ district	Total	Yes, used agricultural land	No, did not use agricultural land
Total	91871	41306	50565
Teknaf	16131	1049	15082
Shyamnagar	53826	25852	27974
Chilmari	21915	14405	7510

Table 127: Distribution of households based on the size of agricultural land used by them by upazila				
Agricultural land (decimal)	Total	Teknaf	Shyamnagar	Chilmari
Temporary crops				
Total	41306	1049	25852	14405
0	2498	169	2030	299
01 – 04	1613	0	1563	50
05 – 49	17366	880	9083	7404
50 -149	12925	0	7796	5129

Table 127: Distribution of households based on the size of agricultural land used by them by upazila				
Agricultural land (decimal)	Total	Teknaf	Shyamnagar	Chilmari
150 – 249	4502	0	3301	1201
250 – 499	1280	0	991	289
500 +	1122	0	1089	34
Perennial crops				
Total	41306	1049	25852	14405
0	33521	460	22669	10392
01 – 04	3563	169	1937	1456
05 – 49	4084	420	1245	2419
50 -149	138	0	0	138
150 – 249	0	0	0	0
250 – 499	0	0	0	0
500 +	0	0	0	0
Area of pond/dighi				
Total	41306	1049	25852	14405
0	24665	473	11181	13012
01 – 04	6433	169	5571	693
05 – 49	9639	407	8539	693
50 -149	387	0	380	7
150 – 249	158	0	158	0
250 – 499	12	0	12	0
500 +	12	0	12	0
Area of the nursery				
Total	41306	1049	25852	14405
0	40894	1049	25771	14074

Table 127: Distribution of households based on the size of agricultural land used by them by upazila				
Agricultural land (decimal)	Total	Teknaf	Shyamnagar	Chilmari
01 – 04	82	0	42	40
05 – 49	330	0	39	291
50 -149	0	0	0	0
150 – 249	0	0	0	0
250 – 499	0	0	0	0
500 +	0	0	0	0
Current fallow				
Total	41306	1049	25852	14405
0	37092	827	25497	10768
01 – 04	175	0	72	103
05 – 49	3076	222	195	2659
50 -149	787	0	61	727
150 – 249	159	0	28	131
250 – 499	10	0	0	10
500 +	7	0	0	7
Total cultivated land				
Total	41306	1049	25852	14405
0	236	0	131	106
01 – 04	1562	0	1512	50
05 – 49	17831	1020	10106	6706
50 -149	13853	29	8373	5451
150 – 249	5147	0	3580	1566
250 – 499	1537	0	1051	487
500 +	1140	0	1100	40

Table 128: Number and average size of land distribution of area of cultivated land (decimal) by Upazila								
Area of cultivated land (decimal)	Number				Average size in decimal			
	Total	Teknaf	Shyamnagar	Chilmari	Total	Teknaf	Shyamnagar	Chilmari
Temporary crops								
Total	41306	1049	25852	14405	88	12	105	62
0	2498	169	2030	299	0	0	0	0
01 – 04	1613	0	1563	50	3	0	2	4
05 – 49	17366	880	9083	7404	23	14	23	23
50 -149	12925	0	7796	5129	84	0	88	79
150 – 249	4502	0	3301	1201	184	0	188	173
250 – 499	1280	0	991	289	323	0	329	302
500 +	1122	0	1089	34	788	0	790	735
Permanent crops								
Total	41306	1049	25852	14405	2	9	1	3
0	33521	460	22669	10392	0	0	0	0
01 – 04	3563	169	1937	1456	2	3	2	2
05 – 49	4084	420	1245	2419	12	22	11	11
50 -149	138	0	0	138	78	0	0	78
150 – 249	0	0	0	0	0	0	0	0
250 – 499	0	0	0	0	0	0	0	0
500 +	0	0	0	0	0	0	0	0
Area of pond/dighi								
Total	41306	1049	25852	14405	5	3	7	1
0	24665	473	11181	13012	0	0	0	0
01 – 04	6433	169	5571	693	3	3	3	2
05 – 49	9639	407	8539	693	10	6	10	11

Table 128: Number and average size of land distribution of area of cultivated land (decimal) by Upazila								
Area of cultivated land (decimal)	Number				Average size in decimal			
	Total	Teknaf	Shyamnagar	Chilmari	Total	Teknaf	Shyamnagar	Chilmari
50 -149	387	0	380	7	85	0	85	100
150 – 249	158	0	158	0	185	0	185	0
250 – 499	12	0	12	0	300	0	300	0
500 +	12	0	12	0	800	0	800	0
Area of nursery								
Total	41306	1049	25852	14405	*	0	*	*
0	40894	1049	25771	14074	0	0	0	0
01 – 04	82	0	42	40	2	0	2	2
05 – 49	330	0	39	291	8	0	8	8
50 -149	0	0	0	0	0	0	0	0
150 – 249	0	0	0	0	0	0	0	0
250 – 499	0	0	0	0	0	0	0	0
500 +	0	0	0	0	0	0	0	0
Current fellow								
Total	41306	1049	25852	14405	3	2	1	9
0	37092	827	25497	10768	0	0	0	0
01 – 04	175	0	72	103	2	0	3	2
05 – 49	3076	222	195	2659	16	8	17	17
50 -149	787	0	61	727	65	0	93	63
150 – 249	159	0	28	131	187	0	240	176
250 – 499	10	0	0	10	299	0	0	299
500 +	7	0	0	7	1000	0	0	1000
Total cultivated land								

Table 128: Number and average size of land distribution of area of cultivated land (decimal) by Upazila

Area of cultivated land (decimal)	Number				Average size in decimal			
	Total	Teknaf	Shyamnagar	Chilmari	Total	Teknaf	Shyamnagar	Chilmari
Total	41306	1049	25852	14405	97	26	113	74
0	236	0	131	106	0	0	0	0
01 – 04	1562	0	1512	50	3	0	3	4
05 – 49	17831	1020	10106	6706	24	25	23	25
50 -149	13853	29	8373	5451	86	60	90	80
150 – 249	5147	0	3580	1566	187	0	192	175
250 – 499	1537	0	1051	487	332	0	338	318
500 +	1140	0	1100	40	814	0	806	1026

Table 129: Distribution household and their agricultural income by type of crops

Type of crops	Total household			Reported household			Amount		
	Total	Yes	No	Quantity	Production cost	Market price	Quantity (kg/no)	Production cost (tk)	Market price (tk)
Total				125596	125596	97164	34623535	156279227	21064814
Paddy	91871	28823	63048	28823	28823	20767	21259275	7278406	2276651
Jute	91871	5524	86347	5524	5524	5524	2006200	484267	240999
Wheat	91871	3688	88183	3688	3688	3041	969924	78883	67453
Maize	91871	5938	85933	5938	5938	5938	1443619	787933	2347256
Pulse	91871	6162	85709	6162	6162	3287	300033	668766	1113899
Vegetables	91871	10714	81157	10714	10714	10598	502931	218379	216559
Oil seed	91871	5149	86722	5149	5149	2842	83802	399711	1387026
Fruits	91871	5985	85886	5985	5985	3158	190292	765263	1158025
Spices	91871	171	91700	171	171	171	15499	3788	7195
Flowers	91871	169	91702	169	169	0	84394	202545	0

Table 129: Distribution household and their agricultural income by type of crops

Type of crops	Total household			Reported household			Amount		
	Total	Yes	No	Quantity	Production cost	Market price	Quantity (kg/no)	Production cost (tk)	Market price (tk)
Milk	91871	2063	89808	2063	2063	2063	171058	203345	265293
Fisheries	91871	17943	73928	17943	17943	17527	5166458	15653189	6867036
Poultry	91871	16759	75111	16759	16759	14326	482990	11396149	4909148
Cattle	91871	8334	83537	8334	8334	61	1018364	117078342	221
Potato	91871	5411	86460	5411	5411	5300	645329	58695	87719
Others agricultural products	91871	2764	89107	2764	2764	2559	283367	1001567	120334

Table 130: Distribution household and their non-agricultural income by type of source

Type of source	Total household			Reported household			Amount (tk)		
	Total	Yes	No	Daily income	Monthly income	Yearly income	Daily income	Monthly income	Yearly income
Total				29751	27350	7112	12416724	372807422	386511696
Salary	91871	11820	80051	0	11796	0	0	182662203	0
Business	91871	13661	78210	0	13661	0	0	160663361	0
Labour	91871	28273	63598	28273	0	0	11589645	0	0
Remittance	91871	731	91140	0	0	731	0	0	126542824
Savings interest	91871	421	91450	0	0	421	0	0	5393547
Societies interest	91871	602	91269	0	0	602	0	0	3165169
Micro loans	91871	103	91768	0	0	103	0	0	491793
Loans interest	91871	0	91871	0	0	0	0	0	0
Life insurance	91871	202	91669	0	0	202	0	0	1008339

Table 130: Distribution household and their non-agricultural income by type of source

Type of source	Total household			Reported household			Amount (tk)		
	Total	Yes	No	Daily income	Monthly income	Yearly income	Daily income	Monthly income	Yearly income
Share/bond	91871	39	91832	0	0	39	0	0	883575
Social security allowance	91871	3097	88774	0	0	3097	0	0	21700763
Others	91871	1917	89954	1478	1893	1917	827078	29481858	227325686

Table 131: Distribution household and their other source income by type of source

Type of source	Total household			Reported household			Amount (tk)		
	Total	Yes	No	Quantity	Unit price	Total price	Quantity (no/kg)	Unit price (tk)	Total price (tk)
Total				542	542	542	463429	1677053	1953193024
sale of timber trees	2666	149	2517	149	149	149	17776	404618	4813176
Sale of fruit trees	2666	50	2616	50	50	50	5521	50944	282900
Sale of tree stalks	2666	31	2635	31	31	31	6558	6525	536770
Sale of straw/ bichali/ bhasi/ kura/ husk	2666	91	2575	91	91	91	202337	3777	15003180
Sale of organic manure / dung	2666	19	2647	19	19	19	8130	2403	1530300
Land / garden mortgage / lease	2666	59	2607	59	59	59	13544	94725	8476205
Sale of land	2666	5	2661	5	5	5	375	127000	15609000
Sale of household property	2666	31	2635	31	31	31	50261	515102	1300805404
Mortgage of household property	2666	1	2665	1	1	1	1000	1000	1000000
Rent of agricultural equipment	2666	4	2662	4	4	4	12	245000	484000
Shop/house rent	2666	17	2649	17	17	17	60039	106811	300136111

Table 131: Distribution household and their other source income by type of source

Type of source	Total household			Reported household			Amount (tk)		
	Total	Yes	No	Quantity	Unit price	Total price	Quantity (no/kg)	Unit price (tk)	Total price (tk)
Others	2666	85	2581	85	85	85	97876	119148	304515978

Table 132: Distribution of households based on whether they were engaged in fishing or not by upazila

Upazila	Household number			Percent distribution		
	Total household	Yes, were engaged in fishing	No, were not engaged in fishing	Total household	Yes, were engaged in fishing	No, were not engaged in fishing
Total	91871	7717	84154	100.00	8.40	91.60
Teknaf	16131	3571	12560	100.00	22.14	77.86
Shyamnagar	53826	3221	50604	100.00	5.98	94.01
Chilmari	21915	925	20990	100.00	4.22	95.78

Table 133: Distribution of usually methods of fishing by Upazila

Usually, methods of fishing	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Mechanical boat				
Total	91871	16131	53826	21915
Mechanical boat	786	585	114	87
Don't answer	91085	15546	53711	21828
Non-mechanical boat				
Total	91871	16131	53826	21915
Non-mechanical boat	555	0	429	126
Don't answer	91316	16131	53397	21789
Equipment made by bamboo				
Total	91871	16131	53826	21915

Table 133: Distribution of usually methods of fishing by Upazila				
Usually, methods of fishing	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Equipment made by bamboo	1368	0	937	431
Don't answer	90503	16131	52889	21484
Fishing traps				
Total	91871	16131	53826	21915
Fishing traps	763	0	285	477
Don't answer	91108	16131	53540	21437
Fishing with tata / conch				
Total	91871	16131	53826	21915
Fishing with tata / conch	0	0	0	0
Don't answer	91871	16131	53826	21915
Pulled fishing rod				
Total	91871	16131	53826	21915
Pulled fishing rod	271	0	0	271
Don't answer	91600	16131	53826	21644
Fishing with net				
Total	91871	16131	53826	21915
Fishing with net	4637	939	2948	751
Don't answer	87234	15192	50878	21164
Purse seine				
Total	91871	16131	53826	21915
Purse seine	35	0	35	0
Don't answer	91836	16131	53791	21915
Gillnet				

Table 133: Distribution of usually methods of fishing by Upazila				
Usually, methods of fishing	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
Gillnet	356	0	356	0
Don't answer	91515	16131	53470	21915
Sitting on poles and fishing				
Total	91871	16131	53826	21915
Sitting on poles and fishing	0	0	0	0
Don't answer	91871	16131	53826	21915
Others				
Total	91871	16131	53826	21915
Others	496	0	496	0
Don't answer	91375	16131	53330	21915

Table 134: Distribution of household reporting location of fishing by Upazila				
Household reporting location of fishing	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Land				
Total	91871	16131	53826	21915
Land (inland fishing) by type	1042	338	642	63
Don't answer	90829	15793	53183	21852
Sea (marine fishing)				
Total	91871	16131	53826	21915
Sea	585	585	0	0
Don't answer	91286	15546	53826	21915

Table 134: Distribution of household reporting location of fishing by Upazila				
Household reporting location of fishing	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
River				
Total	91871	16131	53826	21915
River	3371	17	2531	823
Don't answer	88500	16114	51295	21091
Cannel/bill				
Total	91871	16131	53826	21915
Cannel/bill	1006	0	444	561
Don't answer	90865	16131	53381	21353
Hour/bour				
Total	91871	16131	53826	21915
Hour/bour	33	0	33	0
Don't answer	91838	16131	53792	21915
Pen / cage				
Total	91871	16131	53826	21915
Pen / cage				
Don't answer	91871	16131	53826	21915

Table 135: Distribution of ratio of fishing is decreased/increased by Upazila						
Upazila	Ratio of fishing is decreased/increased					
	Total	Increased fishing	Decreased fishing	Don't change fishing	Don't know	Don't answer
Total	91871	636	3634	120	507	86973
Teknaf	16131	29	724	0	185	15192
Shyamnagar	53826	206	2538	58	277	50747

Chilmari	21915	401	372	63	45	21034

Table 136: Distribution of households based on their perception of forest area change and its factors by upazila

Item	Total	Teknaf	Shyamnagar	Chilmari
A. Household perception on forest area change				
Total	91871	16131	53826	21915
Yes, forests and pastures / forest lands decreased	62408	9972	45634	6802
Yes, forests and pastures / forest areas increased	950	435	436	78
B. Factors responsible for forest area change				
Yes, can't find the same kind of animals and plants	517	188	136	193
Yes, the area is completely dry.	11942	1388	2475	8079
Yes, the area is polluted and not useable.	3896	3618	277	0
Forest land has been turned into industrial or other uses.	496	496	0	0
The area is completely in danger due to floods, drought, or other reasons.	11664	33	4868	6763

Table 137: Distribution of using pesticides in ponds/waterlogging by Upazila

Using pesticides in ponds/waterlogging	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
Yes, use both pesticides and antibiotics	12780	1364	10808	608
Yes, only use pesticides not antibiotics	8022	1541	5788	692
Yes, only use antibiotics not pesticides	4812	3496	1099	217

Don't use anything	66257	9730	36130	20397

Table 138: Distribution of sharing information into household member by Upazila

Sharing information into household member	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Weather and climate information				
Total	91871	16131	53826	21915
Weather and climate information	41493	6907	25143	9442
Don't answer	50378	9224	28682	12472
Information on the impact of climate on agricultural activities				
Total	91871	16131	53826	21915
Information on the impact of climate on agricultural activities	22261	675	15036	6549
Don't answer	69610	15455	38789	15366
Varieties of stable crops				
Total	91871	16131	53826	21915
Varieties of stable crops	23836	921	16827	6087
Don't answer	68035	15210	36998	15827
Sustainable agricultural solutions				
Total	91871	16131	53826	21915
Sustainable agricultural solutions	27837	745	21006	6086
Don't answer	64034	15386	32820	15829
Renewable energy solutions				
Total	91871	16131	53826	21915
Renewable energy solutions	22194	1142	16924	4128
Don't answer	69677	14989	36902	17787
Others				

Total	91871	16131	53826	21915
Others	39979	8310	20400	11268
Don't answer	51892	7821	33425	10647

Table 139: Distribution of get help from forest/grazing land by Upazila

Get help from forest/grazing land	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Wood collection				
Total	91871	16131	53826	21915
Wood collection	18704	6208	9981	2515
Don't answer	73167	9923	43844	19399
Collection of plants/ cattle feed				
Total	91871	16131	53826	21915
Collection of plants/ cattle feed	10450	366	3236	6848
Don't answer	81421	15765	50589	15067
Fuel wood collection for own use				
Total	91871	16131	53826	21915
Fuel wood collection for own use	53911	3769	41151	8991
Don't answer	37960	12362	12675	12924
Collection of flowers mushrooms other crops				
Total	91871	16131	53826	21915
Collection of flowers mushrooms other crops	47	0	47	0
Don't answer	91824	16131	53779	21915
Cattle grazing				
Total	91871	16131	53826	21915
Cattle grazing	13567	29	3381	10157

Table 139: Distribution of get help from forest/grazing land by Upazila				
Get help from forest/grazing land	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Don't answer	78304	16102	50445	11757
Collection of honey				
Total	91871	16131	53826	21915
Collection of honey	1380	0	749	632
Don't answer	90490	16131	53077	21283
Others				
Total	91871	16131	53826	21915
Others	18562	7812	8462	2288
Don't answer	73309	8319	45364	19627

Table 140: Distribution of cause of decreased of household income/properties due to natural disaster by Upazila				
Cause of decreased of household income/properties	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Insect attack				
Total	91871	16131	53826	21915
Insect attack	34203	3773	16622	13808
Don't answer	57668	12358	37203	8107
Flood cyclone/ flash flood				
Total	91871	16131	53826	21915
Flood cyclone/ flash flood	68432	765	49392	18275
Don't answer	23439	15365	4434	3640
Increased temperature				
Total	91871	16131	53826	21915

Table 140: Distribution of cause of decreased of household income/properties due to natural disaster by Upazila				
Cause of decreased of household income/properties	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Increased temperature	54840	4918	38671	11252
Don't answer	37031	11213	15155	10663
Decreased temperature				
Total	91871	16131	53826	21915
Decreased temperature	10717	1471	1780	7465
Don't answer	81154	14659	52045	14450
Very heat				
Total	91871	16131	53826	21915
Very heat	47024	4116	25819	17089
Don't answer	44847	12015	28006	4826
Very cold				
Total	91871	16131	53826	21915
Very cold	21244	1377	4211	15656
Don't answer	70627	14754	49615	6258
Increased raining				
Total	91871	16131	53826	21915
Increased raining	28107	3429	10483	14194
Don't answer	63764	12701	43342	7721
Decreased raining				
Total	91871	16131	53826	21915
Decreased raining	19567	1006	11724	6838
Don't answer	72304	15125	42102	15077
Increase in the number of insect-borne diseases				

Table 140: Distribution of cause of decreased of household income/properties due to natural disaster by Upazila				
Cause of decreased of household income/properties	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
Increase in the number of insect-borne diseases	5634	665	3796	1174
Don't answer	86237	15466	50030	20741
Decreased pure water				
Total	91871	16131	53826	21915
Decreased pure water	34033	4317	24457	5258
Don't answer	57838	11814	29368	16656
Biodiversity / endangered species (animals trees insects mushrooms and seeds)				
Total	91871	16131	53826	21915
Biodiversity / endangered species (animals trees insects mushrooms and seeds)	5562	366	4780	416
Don't answer	86309	15765	49045	21499
Biodiversity extinction / extinction (fish seafood seaweed)				
Total	91871	16131	53826	21915
Biodiversity extinction / extinction (fish seafood seaweed)	4441	744	3650	47
Don't answer	87430	15387	50176	21868
Increased air pollution				
Total	91871	16131	53826	21915
Increased air pollution	15914	508	15165	241
Don't answer	75957	15623	38661	21674
Increased sea level				

Table 140: Distribution of cause of decreased of household income/properties due to natural disaster by Upazila				
Cause of decreased of household income/properties	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
Increased sea level	13084	415	12656	13
Don't answer	78786	15716	41169	21901
Increasing disease germs				
Total	89223	15830	51673	21720
Increasing disease germs	17251	609	13731	2912
Don't answer	71972	15220	37943	18808
Increased spread of parasites				
Total	91871	16131	53826	21915
Increased spread of parasites	0	0	0	0
Don't answer	91871	16131	53826	21915
Water pollution				
Total	91871	16131	53826	21915
Water pollution	27279	982	25786	511
Don't answer	64592	15149	28040	21403
Salinity				
Total	91871	16131	53826	21915
Salinity	41754	886	40867	0
Don't answer	50117	15244	12958	21915
Others				
Total	91871	16131	53826	21915
Others	33	0	33	0

Table 140: Distribution of cause of decreased of household income/properties due to natural disaster by Upazila				
Cause of decreased of household income/properties	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Don't answer	91838	16131	53792	21915
No problems encountered				
Total	91871	16131	53826	21915
No problems encountered	0	0	0	0
Don't answer	91871	16131	53826	21915

Table 141: Distribution of get earlier information of changing disaster impact by Upazila				
Get earlier information of changing disaster impact	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Radio				
Total	91871	16131	53826	21915
Radio	5024	76	4472	477
Don't answer	86846	16055	49354	21438
Television				
Total	91871	16131	53826	21915
Television	32921	4216	21804	6901
Don't answer	58950	11915	32021	15014
Local NGO				
Total	91871	16131	53826	21915
Local NGO	18858	2507	16272	79
Don't answer	73013	13624	37553	21836
Local volunteer				
Total	91871	16131	53826	21915

Table 141: Distribution of get earlier information of changing disaster impact by Upazila				
Get earlier information of changing disaster impact	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Local volunteer	44895	7698	36422	775
Don't answer	46976	8433	17403	21140
Local administration				
Total	91871	16131	53826	21915
Local administration	41867	6050	33442	2374
Don't answer	50004	10081	20383	19541
Community leader / union parishad / rural disaster management committee				
Total	91871	16131	53826	21915
Community leader / union parishad / rural disaster management committee	31447	5748	23989	1710
Don't answer	60424	10382	29837	20204
Fpp/cpp/volunteer				
Total	91871	16131	53826	21915
Fpp/cpp/volunteer	55029	5212	49818	0
Don't answer	36842	10919	4008	21915
Member of women's organization				
Total	91871	16131	53826	21915
Member of women's organization	3510	3401	109	0
Don't answer	88361	12730	53717	21915
Others				
Total	91871	16131	53826	21915
Others	297	0	297	0
Don't answer	91574	16131	53529	21915

Table 141: Distribution of get earlier information of changing disaster impact by Upazila				
Get earlier information of changing disaster impact	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
None				
Total	91871	16131	53826	21915
None	0	0	0	0
Don't answer	91871	16131	53826	21915

Table 142: Distribution of facing problems from changing the impact of disaster by Upazila				
Facing problems from changing the impact of disaster	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Long-time water preservation				
Total	91871	16131	53826	21915
Long-time water preservation	49263	5423	31756	12084
Don't answer	42608	10707	22070	9831
Problem for receiving / storing food				
Total	91871	16131	53826	21915
Problem for receiving / storing food	31311	773	21630	8908
Don't answer	60560	15358	32196	13006
Collecting less food due to lack of food / income				
Total	91871	16131	53826	21915
Collecting less food due to lack of food / income	25065	477	16244	8345
Don't answer	66805	15654	37581	13570
Seed preservation				
Total	91871	16131	53826	21915
Seed preservation	9755	325	3169	6261

Table 142: Distribution of facing problems from changing the impact of disaster by Upazila				
Facing problems from changing the impact of disaster	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Don't answer	82116	15806	50657	15653
Apply more pesticides				
Total	91871	16131	53826	21915
Apply more pesticides	13983	491	10801	2691
Don't answer	77887	15639	43025	19224
Apply more antibiotics				
Total	91871	16131	53826	21915
Apply more antibiotics	10218	258	7850	2110
Don't answer	81653	15872	45976	19804
Transfer of animal resources elsewhere				
Total	91871	16131	53826	21915
Transfer of animal resources elsewhere	7638	278	1384	5976
Don't answer	84232	15853	52441	15939
Decreased agricultural yields				
Total	91871	16131	53826	21915
Decreased agricultural yields	20403	739	11162	8502
Don't answer	71468	15391	42664	13413
Finding new land for agriculture				
Total	91871	16131	53826	21915
Finding new land for agriculture	2185	225	364	1596
Don't answer	89686	15905	53462	20318
Start producing different crops				
Total	91871	16131	53826	21915

Table 142: Distribution of facing problems from changing the impact of disaster by Upazila				
Facing problems from changing the impact of disaster	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Start producing different crops	2388	105	780	1503
Don't answer	89483	16026	53045	20412
Fish / tree collection elsewhere				
Total	91871	16131	53826	21915
Fish / tree collection elsewhere	2439	413	1907	120
Don't answer	89432	15718	51919	21795
Job change				
Total	91871	16131	53826	21915
Job change	7761	1005	2496	4260
Don't answer	84110	15126	51330	17655
Loss / dismissal job				
Total	91871	16131	53826	21915
Loss / dismissal job	9922	1122	5795	3004
Don't answer	81949	15008	48030	18911
Damage of mental health				
Total	91871	16131	53826	21915
Damage of mental health	53323	1300	43261	8761
Don't answer	38548	14830	10564	13154
Damage of physical health				
Total	91871	16131	53826	21915
Damage of physical health	33195	1756	25578	5862
Don't answer	58676	14375	28248	16053
Impact on family health				

Table 142: Distribution of facing problems from changing the impact of disaster by Upazila				
Facing problems from changing the impact of disaster	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Total	91871	16131	53826	21915
Impact on family health	20131	1300	14446	4384
Don't answer	71740	14830	39379	17530
Reform / change the house				
Total	91871	16131	53826	21915
Reform / change the house	37365	875	30835	5655
Don't answer	54506	15256	22990	16260
Transfer to another home in the same area				
Total	91871	16131	53826	21915
Transfer to another home in the same area	2595	173	521	1901
Don't answer	89276	15958	53305	20014
Transfer to another area same country				
Total	91871	16131	53826	21915
Transfer to another area same country	657	196	87	374
Don't answer	91213	15934	53738	21541
Another country				
Total	91871	16131	53826	21915
Transfer to another area another country	92	76	0	17
Don't answer	91778	16055	53826	21898
Lot of time was spent on home work				
Total	91871	16131	53826	21915
Lot of time was spent on home work	18178	4481	9943	3754

Table 142: Distribution of facing problems from changing the impact of disaster by Upazila				
Facing problems from changing the impact of disaster	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Don't answer	73693	11650	43883	18161
Lot of time was spent caring for family members				
Total	91871	16131	53826	21915
Lot of time was spent caring for family members	8422	2068	4867	1487
Don't answer	83449	14063	48958	20428
Lot of time was spent on waste management				
Total	91871	16131	53826	21915
Lot of time was spent on waste management	7276	107	4585	2584
Don't answer	84595	16024	49241	19330
Lot of time was spent on wood / fuel collection				
Total	91871	16131	53826	21915
Lot of time was spent on wood / fuel collection	15271	831	9657	4783
Don't answer	76600	15300	44168	17132
Facing violence				
Total	91871	16131	53826	21915
Facing violence	329	0	84	245
Don't answer	91542	16131	53742	21670
No problems encountered				
Total	91871	16131	53826	21915
No problems encountered	0	0	0	0
Don't answer	91871	16131	53826	21915

Table 143: Distribution of mental/physical harassment during/after disaster by Upazila					
Upazila	Mental/physical harassment during/after disaster				
	Total	Yes	No	Don't known	Don't speak
Total	91871	62	87830	3133	846
Teknaf	16131	0	12437	3083	612
Shyamnagar	53826	32	53522	37	234
Chilmari	21915	30	21871	14	0

Table 144: Distribution of type of mental/physical harassment by Upazila				
Type of mental/physical harassment	**Upazila**			
	Total	**Teknaf**	**Shyamnagar**	**Chilmari**
Unpleasant touch				
Total	91871	16131	53826	21915
Unpleasant touch	28	0	28	0
Not applicable	91843	16131	53798	21915
Rape				
Total	91871	16131	53826	21915
Rape	0	0	0	0
Not applicable	91871	16131	53826	21915
Evil eye				
Total	91871	16131	53826	21915
Evil eye	6	0	0	6
Not applicable	91865	16131	53826	21908
Teasing				
Total	91871	16131	53826	21915
Teasing	28	0	5	24
Not applicable	91843	16131	53821	21891

Table 144: Distribution of type of mental/physical harassment by Upazila				
Type of mental/physical harassment	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Unpleasant gestures				
Total	91871	16131	53826	21915
Unpleasant gestures	0	0	0	0
Not applicable	91871	16131	53826	21915

Table 145: Distribution of members of the household stayed in the shelter during natural disaster by Upazila			
Upazila	Members of the household stayed in the shelter during natural disaster		
	Total	Yes	No
Total	91871	34469	57402
Teknaf	16131	5023	11108
Shyamnagar	53826	26352	27473
Chilmari	21915	3095	18820

Table 146: Distribution of members of experience of woman/disable person of the household by Upazila				
Experience of woman/disable person of the household	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
Due to the large number of people in the shelter it was not possible to keep a certain distance in each room				
Total	91871	16131	53826	21915
Due to the large number of people in the shelter it was not possible to keep a certain distance in each room	33063	4712	25593	2758
Not applicable	58807	11419	28232	19157
The shelter was not friendly for disable				
Total	91871	16131	53826	21915

Table 146: Distribution of members of experience of woman/disable person of the household by Upazila				
Experience of woman/disable person of the household	Upazila			
	Total	Teknaf	Shyamnagar	Chilmari
The shelter was not friendly for disable	19890	4825	13996	1069
Not applicable	71981	11306	39830	20845
Lack of women friendly management				
Total	91871	16131	53826	21915
Lack of women friendly management	25512	3658	19627	2228
Not applicable	66359	12473	34199	19687
No special arrangements for lactating / pregnant women				
Total	91871	16131	53826	21915
No special arrangements for lactating / pregnant women	18410	1151	16063	1196
Not applicable	73461	14979	37763	20719
Risk of any kind of harassment due to lack of necessary light				
Total	91871	16131	53826	21915
Risk of any kind of harassment due to lack of necessary light	10103	0	9329	774
Not applicable	81768	16131	44496	21140

Table 147: Household distribution based on who decides the most critical decisions in the households				
Decision makers	Total	Teknaf	Shyamnagar	Chilmari
Money Spent				
Total	91871	16131	53826	21915
Household head	43351	8905	24776	9670
Husband / wife themselves	11076	5127	4326	1624

Table 147: Household distribution based on who decides the most critical decisions in the households				
Decision makers	Total	Teknaf	Shyamnagar	Chilmari
Husband/wife jointly	36628	1898	24286	10444
Don't make any decisions	816	201	438	177
Food purchases				
Total	91871	16131	53826	21915
Household head	36900	6685	21108	9107
Husband / wife themselves	10143	4797	4005	1341
Husband/wife jointly	44150	4591	28303	11256
Don't make any decisions	679	58	410	211
Domestic animal purchase				
Total	91871	16131	53826	21915
Household head	24992	3741	15084	6168
Husband / wife themselves	8988	3911	4020	1056
Husband/wife jointly	50104	7360	30539	12205
Don't make any decisions	7787	1119	4182	2486
Purchasing of agricultural equipment				
Total	91871	16131	53826	21915
Household head	33666	5668	18827	9172
Husband / wife themselves	8401	2115	4752	1534
Husband/wife jointly	31898	6196	18138	7564
Don't make any decisions	17905	2151	12109	3646
Sold the household's farm products				
Total	91871	16131	53826	21915
Household head	26413	4313	15139	6961
Husband / wife themselves	7267	2256	3824	1188
Husband/wife jointly	34581	6921	18890	8770

Table 147: Household distribution based on who decides the most critical decisions in the households				
Decision makers	Total	Teknaf	Shyamnagar	Chilmari
Don't make any decisions	23610	2642	15972	4997
Purchase of fuel				
Total	91871	16131	53826	21915
Household head	36370	6014	22377	7980
Husband / wife themselves	8759	3677	3859	1223
Husband/wife jointly	36057	6046	22422	7588
Don't make any decisions	10685	394	5168	5123
Purchase of health and hygiene services or medicine				
Total	91871	16131	53826	21915
Household head	30368	3067	21444	5857
Husband / wife themselves	9103	3580	3878	1645
Husband/wife jointly	50002	9128	26660	14214
Don't make any decisions	2398	357	1843	198
Waste management				
Total	91871	16131	53826	21915
Household head	30224	3415	20350	6459
Husband / wife themselves	10945	2649	6181	2115
Husband/wife jointly	41932	9153	22129	10650
Don't make any decisions	8770	913	5165	2691
Use of household transportation/ vehicles				
Total	91871	16131	53826	21915
Household head	38139	4785	24229	9124
Husband / wife themselves	9253	3444	4615	1194
Husband/wife jointly	32752	7111	17501	8139
Don't make any decisions	11728	790	7480	3457

Table 147: Household distribution based on who decides the most critical decisions in the households				
Decision makers	Total	Teknaf	Shyamnagar	Chilmari
Income in higher/lower compared				
Total	91871	16131	53826	21915
Think less	12322	2221	6621	3480
Think more	40482	2810	22699	14973
Don't know	7160	343	6652	165
Not willing to answer	8917	7437	419	1061
Not applicable	22990	3320	17434	2236

Annex 4.2

Constitutional Provision for Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM) in Different Policies and Commitments of the Bangladesh Government

1. Disaster management stages

Prevention/Mitigation	***Preparedness***	***Response***	***Recovery***
Article 16: Rural development and agricultural revolution	Article 11: Democracy and human rights	Article 28: Discrimination on the grounds of religion, etc.	Article 28: Discrimination on the grounds of religion, etc.
Article 17: Free and compulsory education	Article 14: Emancipation of peasants and workers	Article 37: Freedom of assembly	Article 37: Freedom of assembly
Article 18A: Protection and improvement of environment and biodiversity	Article 17: Free and compulsory education	Article 19: Equality of opportunity	Article 39: Freedom of thought and conscience and speech
Article 27: Equality before the law	Article 23A: The culture of tribes, minor races, ethnic sects and communities	Article 36: Freedom of movement	
Disaster management stages			
Prevention/Mitigation	*Preparedness*	*Response*	*Recovery*
Article 15: Provision of necessities	Article 10: Socialism and freedom from exploitation	Article 21: Duties of citizens and public servants	Article 21: Duties of citizens and public servants

2. Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM) in Sustainable Development Goals (SDGs)

Goal 1: End Poverty in all its Forms Everywhere	
Target 1.4:	By 2030, aims to ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other

	forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
Indicator 1.4.2:	Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure.
Related indicators	This indicator is Goal 1, and is also particularly related to Goal 5, 5.a.1 (access to agricultural land) and 5.a.2 (legal framework for land governance).
Target 1.5	By 2030 build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
Indicator: 1.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
Indicator: 1.5.2	Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)
Indicator: 1.5.4	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies
SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
Target 2.3	Tenure security also matters for (2.3.1 and 2.3.2 addressing smallholder farmers;
Target 2.4	(2.4.1 on agricultural area), to Goal 11, to target 11.1 (access to affordable housing/upgrading slums) and
	target 11.3 (sustainable urbanization/settlement planning). Land tenure also influences land use and is thus key to achieving Goal 14 (b) to provide access to small-scale fishers and marine resources, and to Goal 15 on the sustainable use of land and natural resources. Similarly, land is a significant source of conflict, and thus also matters for Goal 16 for promoting peace and inclusive societies and institutions.
Goal 3: Ensure healthy lives and promote well-being for all at all ages	
Target 3.9:	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination Indicator 3.9.2: Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services

Goal 5: Achieve sex equality and empower all women and girls	
Target 5.a:	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
Indicator: 5.a.1: (a)	Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and **(b)** share of women among owners or rights-bearers of agricultural land, by type of tenure
Indicator 5.a.2:	Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control
Goal 6:	**Ensure availability and sustainable management of water and sanitation for all**
Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all	
Indicator 6.1.1:	Proportion of population using safely managed drinking water services 6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
Indicator 6.2.1:	Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all	
Target 7.1:	By 2030, ensure universal access to affordable, reliable and modern energy services
Indicator 7.1.2:	Proportion of population with primary reliance on clean fuels and technology
SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
Target 9.1:	develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
Indicator: 9.1.1	Proportion of the rural population who live within 2 km of an all-season road
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable	
Target 11.2:	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in

	vulnerable situations, women, children, persons with disabilities and older persons
Indicator 11.2.1:	Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities
	Indicators NPT 30: Ensure women, children, elderly and persons with disabilities have convenient access to public transport (minimum 20% seats) (SDG Indicator 11.2.1)
SDG 13: Take urgent action to combat climate change and its impacts	
Target 13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Indicator: 13.1.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
Indicator: 13.1.2	Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030
Indicator: 13.1.3	Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies

3. DRR and DRM in Policy and Institutional Framework of Bangladesh

implementation	Plan/policy	Scope	Purpose
Ministries, Divisions and Agencies at all levels	Standing Orders on Disaster (1999/2010)	All levels of government, relevant stakeholders	Outline duties and responsibilities at all levels of government, covering all the phases of the disaster management cycle.
National Disaster Management council	Disaster Management Act (2012)	National Level	To improve coordination of DM activities and to formulate rules for effective implementation
Ministry of Disaster Management and Relief	National Plan for Disaster Management (2016-2020)	All levels of government	Integrated DRR under the umbrella of SFDRR, SDGs and Climate Change Agreement, aligned with the Vision 2021 to save lives, protect investment and guarantee effective recovery and rebuilding
Ministry of Environment, forests and Climate Change	Bangladesh Climate Change Strategy and Action Plan (2009-	National level, local government units, NGOs, CBOs, CSOs	To improve the capacity and resilience in six core dimensions; Food security, social protection & Health, DM, Infrastructure,

	2018) [under review and finalization and approval stage]	and the private sector	Research Mitigation & Low Carbon Development and Capacity building
Bangladesh planning commission	Seventh Five-year plan (2016-2021)	All levels of government, the private sector	Building on previous successes, the 7th FYP aims to accelerate growth and empower citizens with a special focus on lowering income inequality, sustainable development and poverty reduction
Bangladesh planning commission	Eighth Five-year plan (2021-20215	All levels of government, the private sector	The 8FYP will play a major role in implementing the government's strategic shift towards better management and reduction of risks from natural disaster, enhance resilience, especially from floods, sea-level rise, salinity and water logging.

Annex 4.3: Principal definitions and concepts

Climate change[61]	**Climate change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.** **Adverse effects of climate change means change in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare.** **Climate system means the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions.**
Disability	**Persons with disabilities** include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.[62] Disaggregation by Disability refers to "pre-event disability" and not people who develop disabilities during the course or as consequence of the event. The disability status of the population is typically estimated through censuses and household surveys using international standard definitions and collection mechanisms.[63] The definition of disability is based around recommendations on disability statistics from the Washington Group – the United Nations body leading standard setting in this area.[64] A short set of questions determine if people have 'no difficulty', 'some difficulty', 'a lot of difficulty' or 'cannot do at all' in six areas of functioning: seeing, hearing, walking or climbing stairs, remembering or concentrating, self-care (washing or dressing), communicating (understanding or being understood by others).

[61] United Nations Framework Convention on Climate Change. https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf

[62] United Nations Convention on the Rights of Persons with Disabilities. https://www.un.org/disabilities/documents/convention/convention_accessible_pdf.pdf

[63] UNDRR. 2017. Technical guidance for monitoring and reporting on progress in achieving the global targets of the Sendai Framework for Disaster Risk Reduction. https://www.preventionweb.net/files/54970_collectionoftechnicalguidancenoteso.pdf

[64] Washington Group on Disability Statistics: Short set of disability questions. www.washingtongroup-disability.com/washington-group-question-sets/short-set-of-disability-questions/

	Based on the Washington Group recommended definitions, people who have a lot of difficulty or cannot do at all one or more of the six domains are considered to have a disability.
Disaster[65]	According to UNDRR, a '**disaster**' is a "serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts." Annotations: The effect of the disaster can be immediate and localized, but is often widespread and could last for a long period of time. The effect may test or exceed the capacity of a community or society to cope using its own resources, and therefore may require assistance from external sources, which could include neighbouring jurisdictions, or those at the national or international levels. **Emergency** is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society. **Disaster damage** occurs during and immediately after the disaster. This is usually measured in physical units (e.g., square meters of housing, kilometers of roads, etc.), and describes the total or partial destruction of physical assets, the disruption of basic services and damages to sources of livelihood in the affected area. **Disaster impact** is the total effect, including negative effects (e.g., economic losses) and positive effects (e.g., economic gains), of a hazardous event or a disaster. The term includes economic, human and environmental impacts, and may include death, injuries, disease and other negative effects on human physical, mental and social well-being. For the purpose of the scope of the Sendai Framework for Disaster Risk Reduction 2015-2030 (para. 15), the following terms are also considered:

[65] Source: UNDRR Terminology. https://www.unisdr.org/we/inform/terminology

	Small-scale disaster: a type of disaster only affecting local communities which require assistance beyond the affected community. **Large-scale disaster**: a type of disaster affecting a society which requires national or international assistance. **Frequent and infrequent disasters**: depend on the probability of occurrence and the return period of a given hazard and its impacts. The impact of frequent disasters could be cumulative, or become chronic for a community or a society. A **slow-onset disaster** is defined as one that emerges gradually over time. Slow-onset disasters could be associated with, e.g., drought, desertification, sea-level rise, epidemic disease. A **sudden-onset disaster** is one triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters could be associated with, e.g., earthquake, volcanic eruption, flash flood, chemical explosion, critical infrastructure failure, transport accident.
Gender[66]	Gender refers to the roles, behaviour, activities, and attributes that a given society at a given time considers appropriate for men and women. In addition to the social attributes and opportunities associated with being male and female and the relationships between women and men and girls and boys, gender also refers to the relations between women and those between men. These attributes, opportunities and relationships are socially constructed and are learned through socialization processes. They are context/ time-specific and changeable. Gender determines what is expected, allowed and valued in a woman or a man in a given context. In most societies there are differences and inequalities between women and men in responsibilities assigned, activities undertaken, access to and control over resources, as well as decision-making opportunities. Gender is part of the broader socio-cultural context, as are other important criteria for socio-cultural analysis including class, race, poverty level, ethnic group, sexual orientation, age, etc.

[66] UN Women. OSAGI Gender Mainstreaming - Concepts and definitions

Hazard[67]	A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Annotations: Hazards may be natural, anthropogenic or socio-natural in origin. Natural hazards are predominantly associated with natural processes and phenomena. Anthropogenic hazards, or human-induced hazards, are induced entirely or predominantly by human activities and choices. This term does not include the occurrence or risk of armed conflicts and other situations of social instability or tension which are subject to international humanitarian law and national legislation. Several hazards are socio-natural, in that they are associated with a combination of natural and anthropogenic factors, including environmental degradation and climate change. Hazards may be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity or magnitude, frequency and probability. Biological hazards are also defined by their infectiousness or toxicity, or other characteristics of the pathogen such as dose-response, incubation period, case fatality rate and estimation of the pathogen for transmission. Multi-hazard means (1) the selection of multiple major hazards that the country faces, and (2) the specific contexts where hazardous events may occur simultaneously, cascading or cumulatively over time, and taking into account the potential interrelated effects. Hazards include (as mentioned in the Sendai Framework for Disaster Risk Reduction 2015-2030, and listed in alphabetical order) biological, environmental, geological, hydro meteorological and technological processes and phenomena. Biological hazards are of organic origin or conveyed by biological vectors, including pathogenic microorganisms, toxins and bioactive substances. Examples are bacteria, viruses or parasites, as well as venomous wildlife and insects, poisonous plants and mosquitoes carrying disease-causing agents. Environmental hazards may include chemical, natural and biological hazards. They can be created by environmental degradation or physical or chemical pollution in the air, water and soil. However, many of the processes and phenomena that fall into this category may be termed drivers of hazard and risk rather than hazards in

[67] UNDRR. 2017. Prevention Web. Terminology: Hazard. https://www.preventionweb.net/terminology/view/488

	themselves, such as soil degradation, deforestation, loss of biodiversity, salinization and sea-level rise. Geological or geophysical hazards originate from internal earth processes. Examples are earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses and debris or mud flows. Hydro meteorological factors are important contributors to some of these processes. Tsunamis are difficult to categorize: although they are triggered by undersea earthquakes and other geological events, they essentially become an oceanic process that is manifested as a coastal water-related hazard. Hydro meteorological hazards are of atmospheric, hydrological or oceanographic origin. Examples are tropical cyclones (also known as typhoons and hurricanes); floods, including flash floods; drought; heatwaves and cold spells; and coastal storm surges. Hydro meteorological conditions may also be a factor in other hazards such as landslides, wildland fires, locust plagues, epidemics and in the transport and dispersal of toxic substances and volcanic eruption material. Technological hazards originate from technological or industrial conditions, dangerous procedures, infrastructure failures or specific human activities. Examples include industrial pollution, nuclear radiation, toxic wastes, dam failures, transport accidents, factory explosions, fires and chemical spills. Technological hazards also may arise directly as a result of the impacts of a natural hazard event.

Annex 4.4: All Committee

1. Inter-Ministerial/ Inter-Agency Technical Working Committee

Sl. No.	Name, Designation and Office (Not according to seniority)	Designation in the Committee
1.	**Mr. Mohammad Tajul Islam,** Director General (Additional Secretary), Bangladesh Bureau of Statistics (BBS)	**Chairperson**
2.	**Mr. Md. Shahabuddin Khan,** Additional Secretary (Admin), Statistics and Informatics Division, Ministry of Planning	Member
3.	**Mr. Rezaul Azam Faruqui,** Additional Secretary (Dev.), Statistics and Informatics Division, Ministry of Planning	Member
4.	**Mr. Kazi Nurul Islam,** Deputy Director General (Joint Secretary), Bangladesh Bureau of Statistics	Member
5.	**Dr. A. Atiq Rahman,** Executive Director, The Bangladesh Centre for Advanced Studies (BCAS)	Member
6.	**Dr. A. S. M. Maksud Kamal,** Professor, Department of Disaster Science and Management, University of Dhaka	Member
7.	**Dr. Mahbuba Nasreen,** Professor & Director, Institute of Disaster Management and Vulnerability Studies, University of Dhaka	Member
8.	**Dr. Syed Shahadat Hossain,** Professor, Institute of Statistical Research and Training (ISRT), University of Dhaka	Member
9.	**Dr. Mohammad Rezaur Rahman,** Professor, Institute of Water and Flood Management (IWFM), BUET, Dhaka	Member
10.	**Dr. Md. Maksudur Rahman, Professor,** Department of Geography and Environment, University of Dhaka, Dhaka	Member
11.	**Ms. Munira Begum,** Joint Chief, General Economics Division (GED), Planning Commission	Member
12.	**Dr. Md. Aminul Haque,** Professor, Department of Population Sciences, University of Dhaka, Dhaka	Member
13.	**Dr. Nurun Nahar,** Joint Chief, Programming Division, Planning Commission, Sher-E-Bangla Nagar, Dhaka	Member
14.	**Mr. Md. Hanif,** Joint Chief (Joint Secretary), Socio Economic Infrastructure Division, Planning Commission	Member
15.	**Mr. Md. Hasan Hasibur Rahman,** Director, Department of Environment, Paribesh Bhaban, Agargaon, Dhaka	Member
16.	**Mr. Netai Chandra Dey Sarker**, Director (MIM), Department of Disaster Management, Mohakhali, Dhaka	Member
17.	**Dr. Md. Abdus Salam,** Principal Scientific Officer, Bangladesh Space Research and Remote Sensing Organization, Agargaon, Dhaka	Member
18.	**Dr. Shamal Chandra Das,** Superintendent Engineer, Bangladesh Water Development Board (DWDB), Motijheel, Dhaka	Member
19.	**Mr. Monfique Ahmed Chowdhury,** Principal Scientific Officer, Soil Resource Development Institute (SRDI), Dhaka	Member
20.	**Mr. Md. Zaheer Iqbal,** Deputy Conservator of Forests, RIMS Unit, Department of Forest	Member
21.	**Dr. Farida Pervin,** Deputy Director, Department of Agriculture Extension, Farmgate, Dhaka	Member
22.	**Mr. Md. Bazlur Rashid,** Climatologist, Storm Forecast Centre, Department of Meteorology, Agargaon, Dhaka.	Member

Sl. No.	Name, Designation and Office (Not according to seniority)	Designation in the Committee
23.	**Mr. Mohammad Abdul Kadir Mia,** Director, Census Wing, Bangladesh Bureau of Statistics	Member
24.	**Mr. Ziauddin Ahmed,** Director, National Accounting Wing, Bangladesh Bureau of Statistics	Member
25.	**Mr. Mashud Alam,** Director, Demography and Health Wing, Bangladesh Bureau of Statistics	Member
26.	**Mr. Md. Rafiqul Islam,** Joint Director and Focal Point Officer, ECDS Cell, BBS	**Member-Secretary**

2. Report Review Committee Statistics and Informatics Division (SID)

Sl. No.	Name, Designation and Office (Not according to seniority)	Designation in the Committee
1.	**Mr. Shaikh Md. Kabedul Islam,** Additional Secretary (Informatics), Statistics and Informatics Division (SID), Ministry of Planning	Chairperson
2.	**Mr. Md. Shahabuddin Khan,** Additional Secretary (Admin), Statistics and Informatics Division (SID), Ministry of Planning	Member
3.	**Mr. Rezaul Azam Faruqui,** Additional Secretary (Dev.), Statistics and Informatics Division (SID), Ministry of Planning	Member
4.	**Mst. Shireen Ruby,** Joint Secretary (Admin), Statistics and Informatics Division (SID), Ministry of Planning	Member
5.	**Mst. Nurjahan Khatun,** Joint Secretary (Informatics), Statistics and Informatics Division (SID), Ministry of Planning	Member
6.	**Ms. Nurjahan**, Deputy Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
7.	**Mst. Kamrunnahar,** Deputy Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
8.	**Ms. Jasmin Akter,** Deputy Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
9.	**Mr. Khaled Ur Rahman,** Deputy Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
10.	**Mr. Md. Farid Hossain,** Senior Assistant Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
11.	**Mr. A.F.M Firoj Mahmud,** Senior Assistant Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
12.	**Mr. Engr. Md. Wahid Murad,** Programmer, Statistics and Informatics Division (SID), Ministry of Planning	Member
13.	**Mr. Md. Azgor Ali,** Deputy Director, FA & MIS Wing, Bangladesh Bureau of Statistics (BBS)	Member
14.	**Mr. Md. Rafiqul Islam,** Joint Director and Focal Point Officer (FPO), ECDS Cell, BBS	**Member-Secretary**

3. Monitoring Committee of Statistics and Informatics Division (SID)

Sl. No.	Name, Designation and Office	Designation in the Committee
1.	**Mr. Md. Shahabuddin Khan,** Additional Secretary (Admin), Statistics and Informatics Division (SID), Ministry of Planning	**Chairperson**
2.	**Mst. Shireen Ruby,** Joint Secretary (Admin), Statistics and Informatics Division (SID), Ministry of Planning	Member

Sl. No.	Name, Designation and Office	Designation in the Committee
3.	**Mr. Khaled Ur Rahman,** Deputy Secretary, Statistics and Informatics Division (SID), Ministry of Planning	Member
4.	**Mr. Juwel Ahmed,** Ps to Secretary, Statistics and Informatics Division, Ministry of Planning	Member
5.	**Mr. Jahid Hasan,** Deputy Director, Industry and Labour Wing, Bangladesh Bureau of Statistics	Member
6.	**Mr. Md. Jahurul Islam,** (Admin-2), Statistics and Informatics Division, Ministry of Planning	Member
7.	**Mr. Md. Rafiqul Islam,** Joint Director and Focal Point Officer (FPO), ECDS Cell, BBS	**Member-Secretary**

4. Editor's Forum of Bangladesh Bureau of Statistics (BBS)

Sl. No.	Name, Designation and Office (Not according to seniority)	Designation in the Committee
1.	**Mr. Kazi Nurul Islam,** Deputy Director General (Joint Secretary), Bangladesh Bureau of Statistics (BBS)	**Convenor**
2.	**Mr. Alauddin Al Azad**, Director, Agriculture Wing, Bangladesh Bureau of Statistics	Member
3.	**Mr. Mohammad Abdul Kadir Miah**, Director, Census Wing, Bangladesh Bureau of Statistics	Member
4.	**Mr. Md. Mashud Alam,** Director, Demography and Health Wing and Project Director, Bangladesh Bureau of Statistics	Member
5.	**Mr. Kabir Uddin Ahmed,** Director, SSTI, Bangladesh Bureau of Statistics	Member
6.	**Mr. Md. Emdadul Haque**, Director, FA & MIS Wing, Bangladesh Bureau of Statistics	Member
7.	**Mr. Ziauddin Ahmed,** Director, National Accounting Wing, BBS	Member
8.	**Dr. Dipankar Roy,** Project Director (DS), Household Income and Expenditure Survey Project, BBS	Member
9.	**Mr. Md. Dilder Hossain,** Project Director (DS), NSDS Implementation Support Project, BBS	Member
10.	**Mr. Md. Alamgir Hossen,** Project Director, MSVSB Project, BBS	Member
11.	**Mr. Jahid Hasan,** Deputy Director, ECDS Cell, BBS	Member
12.	**Mr. Md. Sohel Rana,** Statistical Officer, ECDS Cell, BBS	Member
13.	**Mr. Md. Rafiqul Islam,** Joint Director and Focal Point Officer, ECDS Cell, BBS and Project Director, ECDS Project, BBS	Member
14.	**Mr. Abul Kalam Azad,** Director, Industry and Labour Wing, Bangladesh Bureau of Statistics	**Member-Secretary**

5. Structuring, Reviewing and Editing of the Report

Mr. Md. Rafiqul Islam, Joint Director and Focal Point Officer, Environment, Climate Change and Disaster Statistics (ECDS) Cell, BBS

Annex 4.5: Glossary

Glossary[68]:

This glossary aims to provide an easily accessible alphabetic list of selected terms used in the BESF. These terms originate in the UN-FDES with particular or distinct attributes. They occur at different levels of complexity and provide context and supplementary information in diverse ways. The terms are presented here along with the paragraph numbers in which they appear in the text of the UN-FDES. Each term is accompanied by an explanation which may represent an actual definition or a simple description or may provide other relevant contextual information considered useful in furthering understanding.

In some cases, terms which have been separated from their original context have a re-contextualized explanation or supplemental content found in other paragraphs in order to enrich the explanation provided. The wording in this list may thus vary slightly from that used in the text of the BESF under the guidance of the UN-FDES.

A.

Adaptation: It means the adjustment in natural or human systems in response to actual or expected climactic stimuli or their effects, which moderates harm and exploits beneficial opportunities[69].

Afforestation is the establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest. It implies a transformation from non-forest to forest. From a resource accounting perspective, afforestation is defined by SEEA-CF as the increase in the stock of forest and other wooded land either due to the establishment of new forest on land that was previously not classified as forest land, or as a result of silvicultural measures such as planting and seeding.

Agri-environmental indicators (AEI) are indicators able to describe and assess state and trends in the environmental performance of agriculture to furnish useful indications to scientists and policymakers about the state of the environment, about the effects of different policies, as well as about the efficiency in the use of budgets in terms of environmental outcomes.

Airborne diseases and conditions associated with the environment are caused or worsened by exposure to unhealthy levels of pollutants (such as PM, SO2 or O3), usually found in urban settlements and, in particular, in cities with weaker air quality regulations and/or enforcement capabilities.

Aquaculture is the farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc.

Aquatic resources comprise fish, crustaceans, molluscs, shellfish, aquatic mammals and other aquatic organisms that are considered to live within the boundaries of the Exclusive Economic Zone (EEZ) of a country throughout their lifecycles, including both coastal and inland fisheries. Migrating and straddling fish stocks are considered to belong to a given country during the period when those stocks inhabit its EEZ.

Awareness: The process of informing the community as to the nature of the disaster and actions needed to save lives and property prior to and in the event of disaster. This is especially important for the responsible government officers and the public mandated for the protection of resources from any kind of disaster. Programs directed towards public awareness play an important role in safeguarding the lives and property from the risks and hazards. It is also related to information, transmission and broadcasting of information through electronic media, and community networking[70].

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[68] United Nations Framework for Development of Environment Statistics (UN-FDES) 2013

[69] National Plan for Disaster Management 2010-2015: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.

[70] National Plan for Disaster Management 2010-2015: Ministry of Disaster Management and Relief.

B

Biodiversity is the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part, including diversity within species, between species and of ecosystems. It is also a measure of ecosystem health.

Biological resources are renewable resources that are capable of regeneration through natural (non-managed or managed) processes. Biological resources include timber and aquatic resources and a range of other animal and plant resources (such as livestock, orchards, crops and wild animals), fungi and bacteria.

Biome: A biome is a distinct community of plants, animals or fungi that occupy a distinct region. It is often referred to as an ecosystem.

Biota is defined as all animal and plant life of a particular region or time. Biotic (living) factors function with the abiotic (non-living) factors to form a complex unit such as an ecosystem

C

Climate: Weather features/data of a particular area/region involving temperature, humidity, atmospheric pressure, wind, precipitation, and other meteorological elements measured as average for longer periods, usually minimum of 30 years. It is simply the average weather condition for longer period of time. Geographic location and natural environment of a country may also dictate the climate of that particular area/region/country[71].

Climate of Bangladesh: Bangladesh is a small country in terms of its territory with an area of about 147,570 sq. km. It is located in the tropics between 20º34′ to 26º 38′ north and 88º01′ to 92º41′ east in South Asia and is bounded by India on the west, the north and the northeast and Myanmar on the south-east. The Bay of Bengal demarcates the southern border with a long coastline. The Himalayas is close to the northern border of Bangladesh. The country consists of low and flat land except the hilly regions in the northeast, the southeast, and some areas of highlands in the north and northwestern part. About 80% of the country is floodplain, 12% is hills, and about 8% is terrace or uplifted blocks. Bangladesh currently has 19,467 sq. km of marine area. Three major rivers – the Ganges, the Brahmaputra and the Meghna (GBM), which bring inflow from India - meet inside Bangladesh before discharging into the Bay of Bengal through a single outfall. The mean annual temperature is about 25^{O}C within the country. The mean monthly temperature ranges between 18^{O}C in January and 30^{O}C from April to May. The highest temperatures throughout the year range between 40^{O}C and 43^{O}C in the west. The average annual rainfall in the country is about 2,200 mm. About 80% of the total rainfall occurs during May to September.[72].

Climate change is a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. Climate change occurs through a chain of events and can be observable at all levels, from local to global. Climate process drivers are GHG emissions associated with current production and consumption patterns, which depend heavily on fossil fuels for energy and transportation.

Climate change adaptation is an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Climate change evidence refers to the different processes that substantiate the occurrence of changing climate patterns at the global, regional and local levels. The evidence of global warming and climate change is unequivocal, including global temperature rise, extreme events, sea level rise, shrinking ice sheets and glacial retreat.

Climate change mitigation refers to efforts to reduce or prevent greenhouse gas emissions and may involve using new technologies, incorporating and increasing renewable energies, making older equipment more energy efficient and changing management practices or consumer behaviour. Protecting natural carbon sinks like forests and oceans, or creating new sinks through silviculture or green agriculture, are also elements of mitigation.

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[71] ibid

[72] Durjog Kosh (Disaster Dictionary) 2009: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.

Climate change-related statistics (according to UNECE) refer to environmental, social and economic data that measure the human causes of climate change, the impacts of climate change on human and natural systems, and the efforts by humans to avoid and adapt to these consequences.

Corporate, non-profit institution and household environmental protection and resource management expenditure includes corporate, non-profit institution and household environmental expenditure whose primary aim is to protect the environment and manage its resources. Statistics on this topic usually require the use of specific surveys of establishments in different sectors and industries.

Crops refer to plants or agricultural produce grown for food or other economic purposes, such as clothes or livestock fodder (ISIC Rev. 4, Section A, Division 01).

Cultivated biological resources cover animal resources yielding repeat products and tree, crop and plant resources yielding repeat products whose natural growth and regeneration are under the direct control, responsibility and management of an institutional unit.

Cyclone: A large-scale closed circulation system in the atmosphere with low barometric pressure and strong winds that rotate counter clockwise in the northern hemisphere and clockwise in the southern hemisphere. The system is referred to as a cyclone in the Indian Ocean and South Pacific, hurricane in the western Atlantic and eastern Pacific and typhoon in the western Pacific. Cyclones are the most devastating of the natural disasters. Generally, the disasters faced by the coastal areas are related to tides, river flows and weather conditions leading to cyclonic winds. A major hazard that occurs in the coastal areas is mostly due to weather conditions associated with depressions of varying severity. The hazards due to cyclones are associated with elements such as depressions, cyclone surges, effect of wind speed, hazard areas, etc. High winds cause rough conditions and high waves during the time of depression over the sea and cause damage and loss throughout the land they pass over. In Bangladesh, the main cause of damage and loss is the severe cyclonic storm with Hurricane intensity. In Bangladesh, most of the cyclones occur during the pre-monsoon (April/ May/ early-June) and post-monsoon (late-September/ October/ November) period. The pre-monsoon period is the sowing or broadcasting season for Aus rice and the post monsoon season is the harvesting season for Aman rice in the coastal areas. Hence, the impact of cyclones is severe in terms of economic loss, as well as loss of lives and property.

D

Damage*:* Damage is defined as the total or partial destruction of physical assets. This includes building and their contents, infrastructure, stocks etc. Typically damages to housing and homestead goods, agricultural lands, pond/wetland, homestead land, homestead forestry etc. Damages typically occur during or immediately after disaster. Damages typically measures in physical terms and a monetary replacement value is assigned to it.

Deforestation is the conversion of forest to another land use or the long-term reduction of the tree canopy cover below the minimum 10 per cent threshold. Deforestation implies the long-term or permanent loss of forest cover and implies transformation into another land use. Such a loss can only be caused and maintained by a continued human-induced or natural perturbation. Deforestation includes areas of forest converted to agriculture, pasture, water reservoirs and urban areas. The term specifically excludes areas where the trees have been removed as a result of harvesting or logging, and where the forest is expected to regenerate naturally or with the aid of silvicultural measures. From a resource accounting perspective, deforestation is defined by SEEA-CF as the decrease in the stock of forest and other wooded land due to the complete loss of tree cover and transfer of forest land to other uses (e.g., use as agricultural land, land under buildings, roads, etc.) or to no identifiable use.

Depletion, in physical terms, is the decrease in the quantity of the stock of a natural resource over an accounting period that is due to the extraction of the natural resource by economic units occurring at a level greater than that of regeneration.

Disaster: Disaster means any such incidents mentioned below created by nature or human or created due to climate change and its massiveness and devastation cause such damage to cattle, birds and fisheries including life, livelihood, normal life, resources, assets of community and the environment of the damaged area or create such level of hassle to that community whose own resources, capability and efficiency is not sufficient to deal this and relief and any kind of assistance is needed to deal that situation, such as: (a) Cyclone, northwester, tornado, sea high tides, abnormal tides, earthquake, tsunami, excessive rains, shortfall of rains, flood, erosion of river, erosion of coastal area, drought, excessive salinity, excessive pollution of arsenic, building slide,

landslide, hill slide, gushing water from hills, hailstorm, heat wave, cold wave, long term water logging etc.; (b) Explosion, fire, capsize of vessel, massive train and road accident, chemical and nuclear radiation, pilferage of oil or gas, or any mass destruction incident; (c) Disease causing pandemic, such as pandemic influenza, bird flue, anthrax, diarrhea, cholera, etc.; (d) Harmful microorganism, poisonous materials and infection of life active object including infection by bio based or biological infectious object; (e) Ineffectiveness or damage of essential service or disaster protection infrastructure; and (f) Any unnatural incident or a misfortune causing massive life loss and damage [73].

Disaster Management: Disaster Management means methodical institutional structure and program for disaster risk reduction and immediate response after disaster, through which following steps and programs may be taken to deal disaster, such as:- (a) determination of danger, scale and duration of disaster; (b) management including adoption of plans, coordination and implementation; 173444 Bangladesh Gazette, additional issue, September 24, 2012 (c) provide early warning, caution, danger or extreme danger signal and arrange for propagation and transfer of life and assets to secure places; (d) conducting search and rescue after disaster, determination of estimation and demand of life and assets damaged, under humanitarian aid program distribution of relief, rehabilitation and reconstruction and adoption programs for essential service, rescue and development; and (e) conducting relevant other programs[74].

Disaster Risk Management: The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards[75].

Disaster Risk Reduction (DRR): Disaster Risk Reduction is development & application of policies and practices that minimizes risks to vulnerabilities and disasters, applies to managing and/or responding to current disaster risks[76].

Dissipative losses are material residues that are an indirect result of production and consumption activity.

Dissipative uses of products cover products that are deliberately released to the environment as part of production processes.

Drought: Bangladesh faces unpredictable drought hazard in the dry monsoon due to inadequate and uneven rainfall. It varies from place to place, however, and the northwestern region/ districts of Bangladesh suffers most from the drought almost regularly in two-year cycle. It is unusual dryness of soil, resulting in crop failure and shortage of water for other uses, caused by significantly lower rainfall than average over a prolonged period. Hot dry winds, shortage of water, high temperatures and consequent evaporation of moisture from the ground can contribute to conditions of drought. This may have initiated the process of desertification in those districts where the affected areas maintain high temperatures, non-availability of surface water due to drying out of water sources, crops die out and there is a crisis of fodder as well. For people who are directly dependent on rainwater, drought is a big problem.

Driving Force-Pressure-State-Impact-Response (DPSIR) framework is an analytical framework that is based on the causal relationship between its D-P-S-I-R components. Driving forces are the socio-economic and socio-cultural forces driving human activities, which increase or mitigate pressures on the environment. Pressures are the stresses that human activities place on the environment. State, or state of the environment, is the condition of the environment. Impacts are the effects of environmental degradation. Responses refer to the responses by society to the environmental situation.

E

Early Warning System: It is a major element of disaster risk reduction. It prevents loss of life and reduces the economic and material impact of disasters. To be effective, early warning systems need to actively involve the

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[73] Disaster Management Act 2012: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.

[74] ibid.

[75] National Plan for Disaster Management 2010-2015: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.

[76] ibid

communities at risk, facilitate public education and awareness of risks, effectively disseminate alerts and warnings and ensure there is constant state of preparedness[77].

Economic territory is the area under the effective control of a single government. It includes the land area of a country, including islands, airspace, territorial waters and territorial enclaves in the rest of the world. Economic territory excludes territorial enclaves of other countries and international organizations located in the reference country.

Ecosystem is a dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.

Ecosystem services are the benefits supplied by the functions of ecosystems and received by humanity.

Emissions are substances released to the environment by establishments and households as a result of production, consumption and accumulation processes.

Emissions to air are gaseous and particulate substances released to the atmosphere by establishments and households as a result of production, consumption and accumulation processes.

Emissions to water are substances released to water resources by establishments and households as a result of production, consumption and accumulation processes.

Energy production refers to the capture, extraction or manufacture of fuels or other energy products in forms which are ready for general consumption. Energy products are produced in a number of ways, depending on the energy source. Total energy production originates from sources that can be classified as non-renewable or renewable. Energy production includes the production of primary and secondary energy. Primary energy refers to energy sources as found in their natural state, as opposed to derived or secondary energy, which is the result of the transformation of primary sources.

Environment statistics are environmental data that have been structured, synthesized and aggregated according to statistical methods, standards and procedures. The scope of environment statistics covers biophysical aspects of the environment and those aspects of the socio-economic system that directly influence and interact with the environment.

Environmental awareness involves the gradual understanding of environmental issues, and the recognition of the connections among human actions, development, sustainability and human responsibility in these processes. Environmental awareness involves the realization that humans and ecosystems co-exist in a shared environment, which is ultimately the biosphere. Awareness fosters pro-environmental attitudes and predispositions for action and changed behaviour.

Environmental data are large amounts of unprocessed observations and measurements about the environment and related processes.

Environmental education refers to the process of sharing and constructing environmental information and knowledge, as well as information on how humans interact with the environment. Environmental education is carried out through a variety of programmes, including formal and informal education and training, directed towards different audiences. It may be curriculum- and classroom-based or experiential, and may be provided on-site or in community settings by government agencies or NGOs. Environmental education is integral to education for sustainable development.

Environmental engagement involves the transformation of perceptions and attitudes into concrete, pro-environmental actions. Individual and social participation and engagement in environmental processes intended to improve and protect the local and global environment are a concrete manifestation of understanding and motivation of, and commitment to protecting and improving the environment, expressed through behaviour.

Environmental Goods and Services Sector (EGSS) consists of a heterogeneous set of producers of technologies, goods and services that: (i) measure, control, restore, prevent, treat, minimise, research and sensitise environmental damages to air, water and soil as well as problems related to waste, noise, biodiversity and landscapes. This includes "cleaner" technologies, goods and services that prevent or minimise pollution; and (ii) measure, control, restore, prevent, minimise, research and sensitise resource depletion. This results mainly in resource-efficient technologies, goods and services that minimise the use of natural resources.

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[77] ibid

Environmental health focuses on how environmental factors and processes impact and change human health. It can be defined as an interdisciplinary field that focuses on analysing the relationship between public health and the environment. From the health perspective, WHO states that "environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments.

Environmental indicators are environment statistics that have been selected for their ability to depict important phenomena or dynamics. Environmental indicators are used to synthesize and present complex environment and other statistics in a simple, direct, clear and relevant way.

Environmental indices are composite or more complex measures that combine and synthesize more than one environmental indicator or statistic and are weighted according to different methods.

Environmental information includes quantitative and qualitative facts describing the state of the environment and its changes as described in the different components of the FDES. Quantitative environmental information is generally produced in the form of data, statistics and indicators, and is generally disseminated through databases, spreadsheets, compendia and yearbooks. Qualitative environmental information consists of descriptions (e.g., textual or pictorial) of the environment or its constituent parts that cannot be adequately represented by accurate quantitative descriptors. Geographically referenced environmental information provides facts on the environment and its components using digital maps, satellite imagery and other sources linked to a location or map feature.

Environmental perception refers to individuals' and groups' notions of, attitudes towards and evaluations of the environment, both as a whole or with respect to specific environmental issues. Individuals and communities make decisions and judgments, and take actions based on subjective perceptions of environmental information and experiences. Values and attitudes thus "filter" information and transform it into perception in a culturally specific manner.

Environmental protection activities are those activities whose primary purpose is the prevention, reduction and elimination of pollution and other forms of degradation of the environment. These activities include the protection of ambient air and climate, wastewater management, waste management, protection and remediation of soil, groundwater and surface water, noise and vibration abatement, protection of biodiversity and landscapes, protection against radiation, research and development for environmental protection and other environmental protection activities.

Environmental regulation and instruments refer to policy responses to regulate and establish acceptable limits for protecting the environment and human health. It entails both direct regulatory and economic instruments. Direct regulatory instruments include environmental and related laws, standards, limits and their enforcement capacities. These can be described using statistics on regulated pollutants, licensing systems, applications for licenses, quotas for biological resource extraction, and budget and the number of staff dedicated to enforcement of environmental regulations. Economic instruments may comprise the existence and number of green/environmental taxes, environmental subsidies, eco-labelling and certification and emission permits.

Environmental resources (assets) are the naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity. Environmental resources include natural resources (such as sub-soil resources (mineral and energy), soil resources, biological resources and water resources) and land. They may be naturally renewable (e.g., fish, timber or water) or non-renewable (e.g., minerals).

Extreme events are events that are rare within their statistical reference distribution at a particular location. An extreme event is normally as rare as or rarer than the 10th or 90th percentile.

F

Fauna: The animal life of a particular region or time. It is generally regarded as that which is naturally occurring and indigenous.

Flora: The plant life of a particular region or time. It is generally regarded as that which is naturally occurring and indigenous.

Flood: Flood is one of the major natural disasters in Bangladesh. In general, the normal inundation of flood-free areas by water caused by excessive rain and spillage from the over flown riverbanks is called flood. Floods bring about immense havoc to the lives of the people. Flooding is a natural phenomenon in Bangladesh and occurs on an annual basis. The rivers are huge by global standards, and can inundate over 30% of the land mass at a time. Bangladesh is prone to serious and chronic flooding. Even in an average year, 18% of the landmass is inundated and previous floods have affected 75% of the country (as in 1988). 75% of the country is below 10m above sea level and 80% is classified as floodplain as Bangladesh is principally the delta region of South Asia's great rivers. Bangladesh floods on a regular basis, recent notable and catastrophic floods have occurred in 1988, 2004, 2007 and 2010. Floods cause erosion of chars (islands) by flooding rivers, cause landlessness amongst Bangladesh's poor; environmental refugees, loss of property, lives, epidemic, other water borne diseases, lack of drinking water, loss of agricultural land and crops, communication disruption are some of the major effects of this natural disaster.

Forest is land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 per cent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

G

Genetic resources are defined as genetic material of plants, animals or microorganisms containing functional units of heredity that are of actual or potential value as a resource for future generations of humanity.

Geographic information system (GIS) is an integrating technology that helps to capture, manage, analyze, visualize and model a wide range of data with a spatial or locational component.

Geospatial information presents the location and characteristics of different attributes of the atmosphere, surface and sub-surface. It is used to describe, display and analyses data with discernible spatial aspects, such as land use, water resources and natural disasters. Geospatial information allows for the visual display of different statistics in a map-based layout, which can make it easier for users to work with and understand the data. The ability to overlay multiple data sets using software, for instance on population, environmental quality, and environmental health, allows for a deeper analysis of the relationship among these phenomena.

Global Warming: The GHGs trap and build-up of heat in the atmosphere (troposphere) near the Earth's surface. Some of the heat flowing back toward space from the Earth's surface absorbed by water vapor, carbon dioxide, ozone, and several other gases in the atmosphere and then reradiated back toward the Earth's surface. If the atmospheric concentrations of these greenhouse gases rise, the average temperature of the lower atmosphere gradually increases. Global warming refers to a gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide, chlorofluorocarbons, and other pollutants[78].

Government environmental protection and resource management expenditure includes government expenditure whose primary aim is to protect the environment and manage its resources.

Groundwater comprises water that collects in porous layers of underground formations known as aquifers.

Greenhouse Gas (GHG): Our atmosphere comprises a mixture of several gases; prominent among them are nitrogen and oxygen. Other than these two, several other gases are also present in trace amounts like carbon dioxide, methane, nitrous oxide, ozone, and water vapours. All these are GHG as they are capable of trapping heat. Apart from the natural gases some gases are produced due to human activities like chlorofluorocarbons, hydro chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride are also GHGs[79].

H

Hailstorm: Hailstorm is a very curious geographical and climatic phenomenon. A hailstorm is named such, because during the storm, hail or balls of ice fall in huge quantities on the Earth. It is nothing but irregular lumps or balls of ice. The specialty of a hailstorm is that both hail, i.e. balls of ice, and rainwater fall during the storm, at the same time. The hailstorms are not exactly storms, but are a side effect of a much bigger storm, the thunderstorm. In fact, this phenomenon originates from thunderclouds that are known as Cumulonimbus clouds. When the existing temperature of a mass of air currents falls down rapidly over decreasing altitude, it

[78] ibid

[79] Durjog Kosh (Disaster Dictionary) 2009: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.

results in a hailstorm. The hailstones are formed due to the process of freezing and grow over time. They are carried by the updrafts or the air currents moving in the upward direction, until they become large for these currents to continue carrying them. Hailstones must have at least ¾ inch of diameter to become severe, and cause a substantial amount of damage and loss to life and property. Being a nature's phenomenon and a type of natural disaster, hailstorms are unavoidable. The impact of hailstones can cause widespread damage and loss to vulnerable plant, agricultural crops, infrastructure and equipment that is stored outside. Hailstones have the potential to destroy animals and human life upon impact if strong enough.

Hazard: Hazard means any unnatural incident which is created by natural law, due to technical faults or by humans and as a result bring down the normal lifestyle of peoples in to danger and risk through occurring devastation and create sorrows and sufferings including devastating and irreparable damages to necessary items to maintain livelihood[80].

Household: A household means a group of persons normally living together and eating in one mess (i.e., with common arrangement of cooking) with their dependents, relatives, servants, and other members. A household may be a one-person household or may have more persons. In case of a household with a group of persons, living together and taking meals from the same kitchen generally maintain a family or family like relation. A household usually described as 'khana'. In some instances, there may be more than one household in a single house or in one dwelling arrangement. Similarly, a household may have more than one house or structure or shed. The household is to be distinguished from family, which comprises members having blood relationship. Members of a family may live in different places but members of household must live in the same place and share the same kitchen.

Human settlements refer to the totality of the human community, whether people live in large cities, towns or villages. They encompass the human population that resides in a settlement, the physical elements (e.g., shelter and infrastructure), services (e.g., water, sanitation, waste removal, energy and transport), and the exposure of humans to potentially deleterious environmental conditions.

I

Improved drinking water source includes the use of: piped water into dwelling, plot or yard; public tap or standpipe; borehole or tube well; protected dug well; protected spring; rainwater collection and bottled water (if a secondary available source is also improved).

Improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved facilities include flush/pour flush toilets or latrines connected to a sewer, -septic tank, or -pit, ventilated improved pit latrines, pit latrines with a slab or platform of any material which covers the pit entirely, except for the drop hole and composting toilets/latrines.

Institutional dimension of environment statistics refers to the institutional factors necessary to develop and strengthen the sustained production, dissemination and use of environment statistics. It comprises the legal framework that establishes the mandates and roles of the main partners, the institutional setting and institutional development level of environment statistics units, and the existence and effectiveness of inter-institutional cooperation and coordination mechanisms at the national level and with specialized international agencies.

Institutional strength: Government and citizen engagement in environmental and sustainable development public policy is reflected in the extent to which institutions that manage and regulate the environment exist and function properly at the national and sub-national levels.

In-stream water use refers to the use of water without moving it from its source or to the use when water is immediately returned with little or no alteration.

K

Known mineral deposits include commercially recoverable deposits, potential commercially recoverable deposits and non-commercial and other known deposits.

L

[80] Disaster Management Act 2012: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.

Land provides space for natural ecosystems, human habitats and human activities. As this space is finite, the expansion of human activities can reduce the space occupied by natural ecosystems, thus reducing ecosystems' capacity to yield ecosystem goods and services for all living beings. From the resource perspective, land is a unique environmental resource that delineates the space in which economic activities and environmental processes take place and within which environmental resources and economic assets are located.

Land cover is the observed (bio) physical cover on the earth's surface.

Land use reflects both the activities undertaken and the institutional arrangements put in place for a given area for the purposes of economic production, or the maintenance and restoration of environmental functions. Land being "used" means the existence of some kind of human activity or management. Consequently, there are areas of land that are "not in use" by human activities.

Landslide: Landslides are a complex-disaster phenomenon that can be caused by earthquakes, volcanic eruptions, heavy rainfall (typhoons, hurricanes), sustained rainfall, heavy snowmelt, unregulated anthropogenic developments, mining, and others. In Bangladesh, landslides are mostly triggered by heavy rainfall. However, underlying causes of landslide include deforestation, hill cutting, unregulated development work, etc. Moreover, poverty and landlessness force poor people to live in the risky hill-slopes. However, recently landslide has emerged as a major hazard, particularly after the Chittagong Landslide 2007. Due to heavy rainfall during 10 -11 June 2007, landslides and collapsed walls caused widespread damages in six areas of Chittagong city and in different Upazilas of the District

Livestock are animal species that are raised by humans for commercial purposes, consumption or labour (ISIC Rev. 4, Section A, Division 01).

Loss is defined as changes in economic flows caused by disaster. Examples, include losses in agricultural (crops, livestock, fishery, poultry etc.). Losses typically occur from the time of disaster until economic recovery and reconstruction of assets are achieved and are measured in monetary terms at current price.

M

Multilateral Environmental Agreements address, via international cooperation, environmental problems, especially those which have a transboundary nature or are global in scope. For the most relevant MEAs, participant or signatory countries are usually expected to report on progress periodically, either on a mandatory or voluntary basis.

N

Natural Disaster: A natural disaster is a major adverse event resulting from natural processes of the Earth; examples include cyclones, drought, floods, erosion, volcanic eruptions, earthquakes, tsunamis, and other geologic processes. A natural disaster can cause loss of life or property loss and damages, and typically leaves some economic loss and damages, the severity of which depends on the affected population's resilience, or ability to recover. Following is the description of some of the natural disasters (with their code number) in Bangladesh[81].

Natural biological resources consist of animals, birds, fish and plants that yield both once-only and repeat products for which natural growth and/or regeneration is not under the direct control, responsibility and management of institutional units.

Nuclear radiation-related diseases and conditions: The related diseases and health conditions may be acute or chronic. They include, but are not limited to, thermal burns from infrared heat radiation, beta and gamma burns from beta and gamma radiation, radiation sickness or "atomic disease", leukaemia, lung cancer, thyroid cancer and cancer of other organs, sterility and congenital anomalies or malformations, premature aging, cataracts, and increased vulnerability to disease and emotional disorders. Exposure to nuclear radiation could occur from a nuclear explosion or an accident involving a nuclear reactor.

O

[81] Standing Orders on Disaster (SOD) 2010: Ministry of Food and Disaster Management Disaster Management & Relief Division, Disaster Management Bureau, Government of the People's Republic of Bangladesh.

Other non-cultivated biological resources: These resources may include wild berries, fungi, bacteria, fruits, sap and other plant resources that are harvested (ISIC Rev. 4, Section A, class 0230), as well as wild animals that are trapped or killed for production, consumption and trade (ISIC Rev. 4, Section A, class 0170).

Other wooded land is land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 per cent, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10 per cent. It does not include land that is predominantly under agricultural or urban land use.

P

Paurashava (Municipality): According to Paurashava Ordinance 1977, Paurashava is an urban area demarcated by a defined area map and location. The Paurashava is a local government body headed by a Mayor. The Paurashava authority administers the area under its jurisdiction, and is responsible for the well-being of the residents. Ensuring the necessary civil amenities for the people is its important functions.

Protected Area Management Categories are based on the strictness of protection and serve as the classification for protected areas. The main categories are strict nature reserve; wilderness area; national park; natural monument or feature; habitat/species management area; protected landscape/seascape; and protected area with sustainable use of natural resources. (para. 3.38)

Preparedness: Measures that are designed to ensure that communities will have the knowledge and understanding of their risk environment to enable them to better cope with potential hazard impact[82].

R

Recovery: Measures that are designed to develop the systems required to support affected communities in the reconstruction of their physical infrastructure and restoration of their emotional, economic and physical well-being[83].

Remote sensing is the science of obtaining information about objects or areas from a distance, typically from aircraft or satellites.

Renewable energy is captured from sources that replenish themselves. It includes solar (photovoltaic and thermal), hydroelectric, geothermal, tidal action, wave action, marine (non-tidal currents, temperature differences and salinity gradients), wind and biomass energy, all of which are naturally replenished, although their flow may be limited.

Renewable water resources of a country are generated by precipitation and inflows of water from neighbouring territories and reduced by evapotranspiration.

Residuals are flows of solid, liquid and gaseous materials, and energy that are discarded, discharged or emitted by establishments and households through processes of production, consumption or accumulation.

Resource management activities are those activities whose primary purpose is preserving and maintaining the stock of natural resources and hence safeguarding against depletion. These activities include, but are not limited to, reducing the withdrawals of natural resources (including through the recovery, reuse, recycling and substitution of natural resources); restoring natural resource stocks (increases or recharges of natural resource stocks); the general management of natural resources (including monitoring, control, surveillance and data collection); and the production of goods and services used to manage or conserve natural resources. They cover the management of mineral and energy resources; timber resources; aquatic resources; other biological resources; water resources; research and development activities for resource management; and other resource management activities.

Reused water is wastewater supplied to a user for further use with or without prior treatment.

River/Coastal Erosion: A combination of natural processes, including weathering, dissolution, abrasion, corrosion, and transportation, by which material is worn away from the earth's surface. The energy in a river causes erosion. The bed and banks can be eroded making it wider, deeper and longer. River erosion and submerging of the coastal lands are the natural phenomenon being one of the main natural disasters. River and

[82] ibid

[83] ibid

coastal erosion cause much more destruction to the socioeconomic mechanism than any other natural disasters. Loss of life may not happen due to erosion but it makes people undone. It causes a massive financial loss and damages. The immense pressure of the downwards tide, current force and twirl, waves and tides, storm, tidal surges, lack of trees on the riverbank causes erosion to the coastal islands every year. The collision between downwards current of fresh water and uprising sea level creates strong twirling that cause erosion to the coast. Moreover, due to combined sudden flood, heavy rain, and downwards freshwaters cause collision to the riverbank and cause erosion to the riverbanks and coastal areas. Deforestation and lack of plantation in the riverbanks and coastal areas also complement to riverbank and coastal erosion.

S

Salinity: Saline water intrusion is mostly seasonal in Bangladesh; in winter months the saline front begins to penetrate inland, and the affected areas rise sharply from 10 percent in the monsoon to over 40 percent in the dry season. Coastal districts such as Satkhira, Khulna, Bagerhat, Barguna, Patuakhali, Barisal are the victims of salinity intrusion. Agricultural production, fisheries, livestock, and mangrove forests are affected by higher salinity in the dry season. It is observed that dry flow trend has declined as a result of which sea flow (saline water) is traveling far inside the country resulting in contamination both in surface and ground water. The population of pure freshwater fish species decline and species that are more tolerant survive and dominate changing the composition of the ecosystem and affecting the livelihoods of the people dependent of the freshwater resources.

Slums are housing lacking one or more of the following conditions: access to improved water; access to improved sanitation; sufficient living area; durability of housing; or security of tenure.

Soil provides the physical base to support the production and cycling of biological resources, provides the foundation for buildings and infrastructure, constitutes the source of nutrients and water for agriculture and forestry systems, provides a habitat for diverse organisms, plays an essential role in carbon sequestration and fulfils a complex buffering role against environmental variability, ranging from dampening diurnal and seasonal change in temperature and water supply to the storage and binding of a range of chemical and biological agents. The main environmental concerns about soil pertain to its degradation through soil erosion or nutrient depletion, among other processes.

Soil resources comprise the top layers (horizons) of soil that form a biological system.

Stocks of non-renewable energy resources are defined as the amount of known deposits of mineral energy resources.

Stocks of mineral resources are defined as the amount of known deposits of non-metallic and metallic mineral resources.

Storm/Tidal Surge: Storms are caused by atmospheric disturbance involving perturbations of the prevailing pressure and wind fields, on scales ranging from tornadoes (1 km across) to extra-tropical cyclones (2000-3000 km across). This causes a rise in sea level that result in the inundation of areas along coastlines. The movement of ocean and sea currents, winds and major storms causes these phenomena.

Sub-soil resources are underground deposits of various minerals that provide raw materials and energy sources for humans. When considered as resources for human use, these sub-soil elements differ fundamentally from ecosystems in that they are non-renewable. Their use thus results in permanent depletion.

Surface water comprises all water that flows over or is stored on the ground's surface, regardless of its salinity levels. Surface water includes water in artificial reservoirs, lakes, rivers and streams, snow, ice and glaciers.

Sustainable Development: The Brundtland Commission defines sustainable development as "the development that meets the need of the present, without compromising the ability of the future generation to meet their own needs". It also implies the concerns of social equity between generations, a concern that must logically be extended to equity within each generation". Sustainable development ensures "a harmonious process of social and economic betterment that satisfies the needs and values of all stakeholders while maintaining future opportunities and conserving natural resources and biological diversity"[84].

[84] Defining Sustainable Development: the World Commission on Environment and Development (Brundtland Commission), Milton Park: earthscan/Routledge, 2014

T

Technological disasters may arise as a result of human intent, negligence or error, or from faulty or failed technological applications. The three types of technological disasters are: industrial accidents which cover accidents associated with chemical spill, collapse, explosion, fire, gas leak, poisoning, radiation and other; transport accidents which cover accidents associated with air, road, rail, and water; and miscellaneous accidents which cover accidents associated with collapse, explosion, fire, and other disasters of varied origin.

Timber resources are defined by the volume of trees, living and dead, which can still be used for timber or fuel.

Thunderstorm: A thunderstorm, also known as an electrical storm, a lightning storm, or a thundershower, is a type of storm characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder. Thunderstorms occur in association with a type of cloud known as a cumulonimbus. They are usually accompanied by strong winds, heavy rain and sometimes hail, or, in contrast, no precipitation at all. Thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As the warm, moist air moves upward, it cools, condenses, and forms cumulonimbus clouds that can reach heights of over 20 km (12.45 miles). As the rising air reaches its dew point, water droplets and ice form and begin to fall through the clouds towards the Earth's surface. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of cold air and moisture that spreads out at the Earth's surface, causing the strong winds commonly associated with thunderstorms, and occasionally fog.

Tornado: The two transitional periods between southwest and northeast monsoons over the Indian sub-continent are characterized by local severe storms. The transitional periods are usually referred to as pre-monsoon (March-May), and post-monsoon (October- November). It is the pre-monsoon period when most of the abnormal rainfall or drought conditions frequently occur in different parts of Bangladesh. Also, there are severe local seasonal storms, popularly known as nor 'westers (kalbaishakhi). Severe nor 'westers are generally associated with tornadoes. Tornadoes are embedded within a mother thundercloud, and moves along the direction of the squall of the mother storm. The frequency of devastating nor 'westers usually reach the maximum in April, while a few occur in May, and the minimum in March. Nor 'westers and tornadoes are more frequent in the afternoon.

Toxic substances include toxic pesticides (e.g., pesticides that have teratogenic, carcinogenic, tumorigenic and/or mutagenic effects), and toxic industrial chemicals (e.g., lead, arsenic, mercury and nickel, among others).

Toxic substance-related diseases and health problems include, but are not limited to, chronic illnesses of the respiratory system (such as pneumonia, upper and lower respiratory diseases, asthma and chronic obstructive pulmonary diseases), cancer, infertility, and congenital anomalies or malformations.

V

Vector borne diseases: Bangladesh Climate Change Strategy and Action Plan (BCCSAP 2009) highlighted the importance of addressing the emerging public health risks associated with three vector borne diseases: malaria, dengue fever, and kala-azar. The focus on the links between climate conditions and the incidence of vector borne diseases in Bangladesh are extremely limited. However, the impact of climate variability on the incidence of many vector-borne and waterborne diseases can be significantly modified by local environmental conditions and human adaptation responses. For example, in a tropical region such as Bangladesh, drought can lead to an increase in dengue fever because more people may store water in open containers in areas where access to piped water is limited, thus increasing the number of breeding sites for mosquitos[85].

Vulnerability: Vulnerability means any such existing socio-economic, geographical and environmental condition of any community, which may make expected capability of the community vulnerable, weak, unskilled and limited to adapt with effect of natural or human created hazard or any adverse reaction[86].

W

[85] Climate Change and Health Impacts 2014: Disaster Risk and Climate Change Unit, Sustainable Development Department, South Asia Region.

[86] National Strategy On The Management Of Disaster And Climate Induced Internal Displacement (Nsmdciid), Ministry of Disaster Management and Relief.

Waste covers discarded materials that are no longer required by the owner or user.

Water borne diseases: Water-borne Diseases are transmitted or spread through contaminated water. Pathogenic microbes (bacteria and viruses) and some parasitic organisms are responsible for various diseases of man and other animals. Such infectious pathogens survive and spread in the environment using various strategies. Three main routes of spread are recognized - air, water and person-to-person contact. The most common category of water-borne diseases is represented by diarrhoea. There are two major types, watery diarrhoea and dysentery. Cholera is the prototype of severe watery diarrhoea caused by the bacteria Vibrio cholerae. Certain other bacteria (bacilli) such as shigellas cause dysentery type of diarrhoea commonly called bacillary dysentery. A group of salmonella bacteria that enter the gut through water may or may not cause diarrhoea at the onset of infection but their actual clinical manifestation is a type of fever called enteric fever, the prototype of which is typhoid fever[87].

Water Logging: Bangladesh's high vulnerability to frequently occurring natural disaster is known worldwide, a lesser-known new phenomenon - water logging - has been disrupting livelihoods of people during the past two decades. The phenomenon involves deterioration of drainage condition in a number of southern coastal rivers leading to temporary to permanent inundation of floodplains along those rivers, causing enormous difficulties towards maintaining livelihoods and disrupting land-based productive system including agricultural crops. The problem has become severe in the southwestern parts of Bangladesh, especially along the Kapataksma river system covering parts of Jessore, Khulna and Satkhira districts. Water logging is also becoming an issue in central southern Noakhali district, where gradual chocking of the Noakhali rivulet (i.e., khal) has given rise to temporary water logging every year.

Wastewater is discarded water that is no longer required by the owner or user.

Water abstraction is the amount of water that is removed from any source, either permanently or temporarily, in a given period of time. Water is abstracted from surface water and groundwater resources by economic activities and households. Water can be abstracted for own use or for distribution to other users.

Water-related diseases and conditions result from micro-organisms and chemicals in the water that humans drink. They include, but are not limited to, diseases caused by biological contamination, such as gastroenteritis infections caused by bacteria, viruses and protozoa, and water-borne parasite infections.

Water resources consist of freshwater and brackish water, regardless of their quality, in inland water bodies, including surface water, groundwater and soil water.

Weather: Weather is the atmospheric condition at any given time or place. It is measured in terms of things such as wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation. In most places, weather can change from hour-to-hour, day-to-day, and season-to-season. It generally refers to the state of day-to-day atmosphere[88].

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