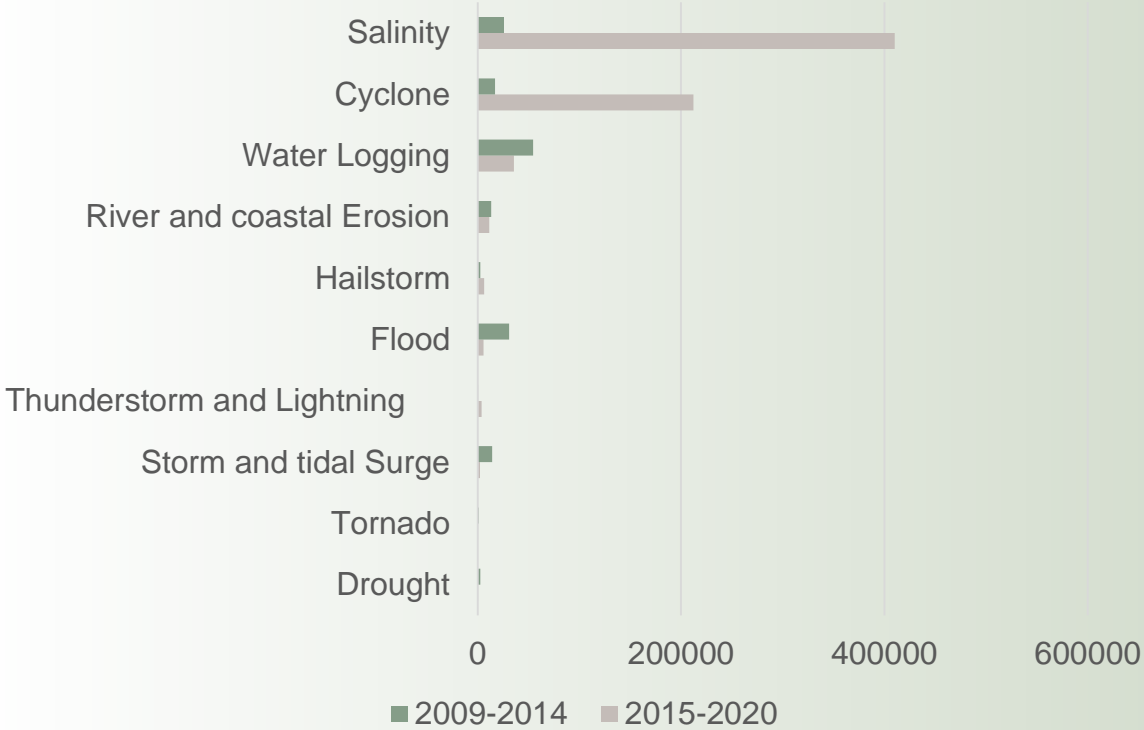


Introduction

Anthropogenic climate change-induced extremities have turned southwest Bangladesh into one of the most climate-vulnerable areas in the world. The unique geography of the districts leaves it prone to increasingly frequent storm surges, cyclones, river erosion, flooding, and inundation, and changing weather patterns. These districts are also alarmingly exposed to climate change-driven salinity intrusion. Out of the 38.52 million people living along the 710 km long Bangladeshi coastline, approximately 20 million are affected by salinity in water, giving rise to new and emerging complexities related to people's health and livelihoods. It is estimated that by 2050, the water of 10 rivers will be affected by excessive salinity affecting 148 sub-districts of 19 districts of the country. The rivers of Shyamnagar of Satkhira district are notably among them as the area is already experiencing salinity levels of 10 ppt, which may increase to 15-25 ppt by 2050.

Disaster-affected households in the study area (2015-2020)



Source: BRDS, 2015; 2021

Over the years, ActionAid Bangladesh (AAB) has been observing these shifting dynamics in its coastal program areas, especially increased salinity and extreme weather events, and its direct correlation to health issues, particularly among women. Salinity increase in freshwater sources translates into increased salinity in water used by families for drinking, cooking, hygiene, and irrigation. AAB designed a structured research to gather evidence to substantiate these trends, gain deeper understanding of the causalities, and explore the significance of the problem.

Objectives

- Explore the multifaceted impact of climate change on human health, particularly women's health, as a rapidly growing challenge for marginalized coastal communities in Bangladesh.
- Establish the causality between increased salinity and health issues, especially related to female health.
- Evaluate the impact on communities for a deeper understanding of the severity and complexity of the issue to inform possible future solutions.

Methodology

A household (HH) survey targeting 200 HHs in 6 different unions of Shyamnagar sub-district in Satkhira was completed in May 2024. The survey is the first half of the planned 400+ HH surveys targeting the 2 coastal sub-districts of Shyamnagar and Kolapara, as part of the ongoing research on climate change's impacts on health in these coastal communities. A field visit by research team and a focus group discussion (FGD) with women from the community was also conducted. The survey was designed to collect detailed data primarily on climate change and disasters, quality of drinking and HH use water, menstrual hygiene management, and health issues.



Key Findings

Climate Change and Disaster Vulnerability

- Elevation of most of Shyamnagar is below 2 meter of sea level.
- Salinity intrusion was ranked 1 by respondents among the disasters impacting the sub-district in the past 10 years.
- 100% of the surveyed HHs selected drinking water and clean water crisis as a disaster impact.
- Loss of livelihoods and health issues were reported to be significant impacts of climate change and disasters.
- Females were found to be most vulnerable to disasters.

Water Quality and Availability

- 34.5% of surveyed HHs purchase drinking water to meet daily need as seasonal scarcity and salinity impact source and availability.
- The majority of HHs reported experiencing seasonal water scarcity during March to May period every year.
- Although 92% respondents categorized drinking water (primarily bottled or deep tube well) under 'no taste' (pure), during field visit research team found both primary source drinking water to be unclear and salty to taste. This could be attributed to the development of higher tolerance for salinity among the population.

Health Status

- Gastrointestinal diseases featured predominantly: gastric/acidity (69.5%), stomachache (57%), diarrhea (54%), dysentery (49.5%); Community attributed these to water quality.
- Gender appears to be a significant predictor, with females showing a higher prevalence of salinity-related health issues compared to males.
- Positive correlation between female health issues and menstrual hygiene management was established regardless of whether women used cloth (91%) or disposable sanitary napkins (29%). This can be attributed to the use of saline/dirty water used for washing and cleaning purposes during menstruation.
- Use of cloth shows the strongest association with salinity-related health problems, followed by disposable sanitary pads.
- A significant number of women reported suffering from irregular or delayed menstruation (86%); urinary tract infections (28%); and uterine inflammation (24%); with many suffering from multiple of these issues.
- Maternal health issues such as miscarriages (19%) were reported in both survey and FGD.

Conclusion

The results of the HH survey, FGD and field visit in Shyamnagar indicate a clear relationship between climate, disaster, water scarcity. The quality and availability of freshwater is impacting the health of the population, with a clear and significant correlation with women's health. As the research continues, additional qualitative assessments (FGDs, KIIs) as well as the remaining 200 surveys in Kolapara will be conducted. This will provide additional data and information for analysis to allow for a greater understanding of the complex nexus of climate change and health impacting the coastal districts.

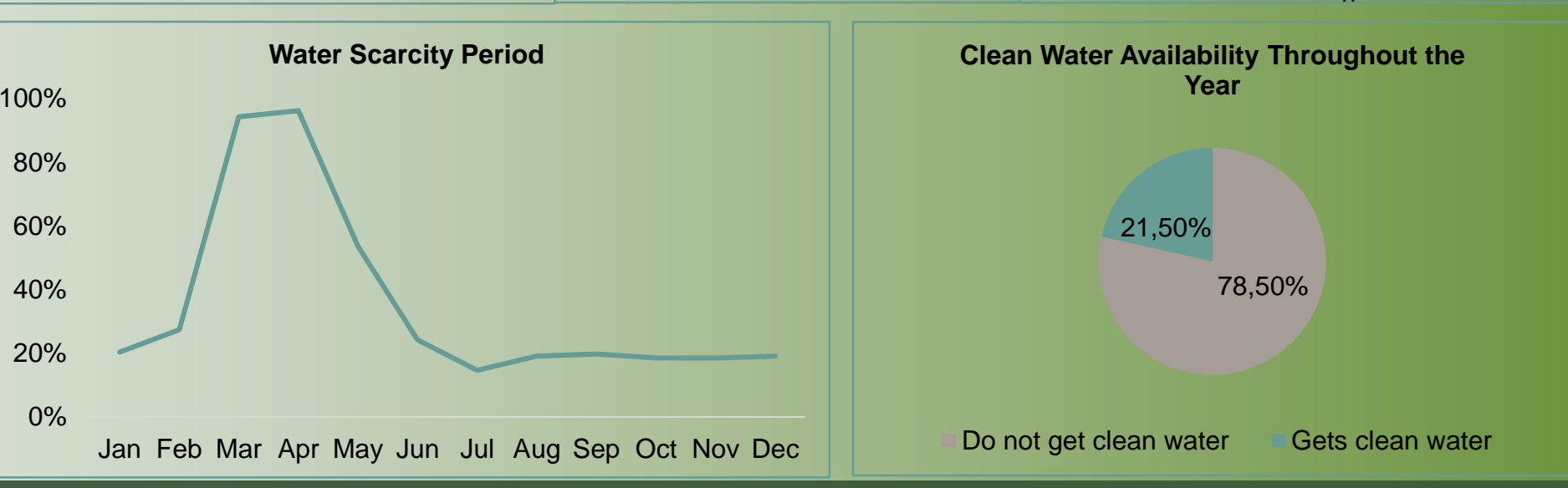
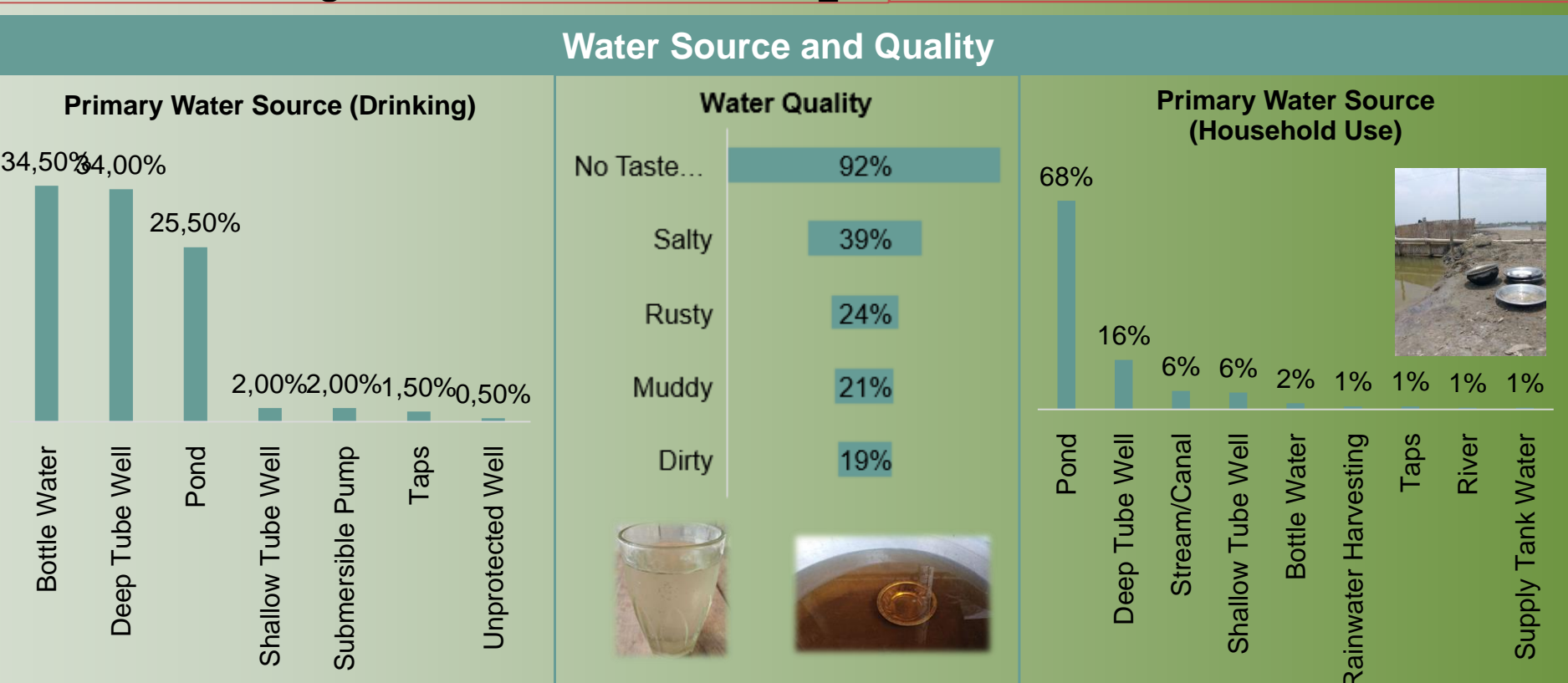
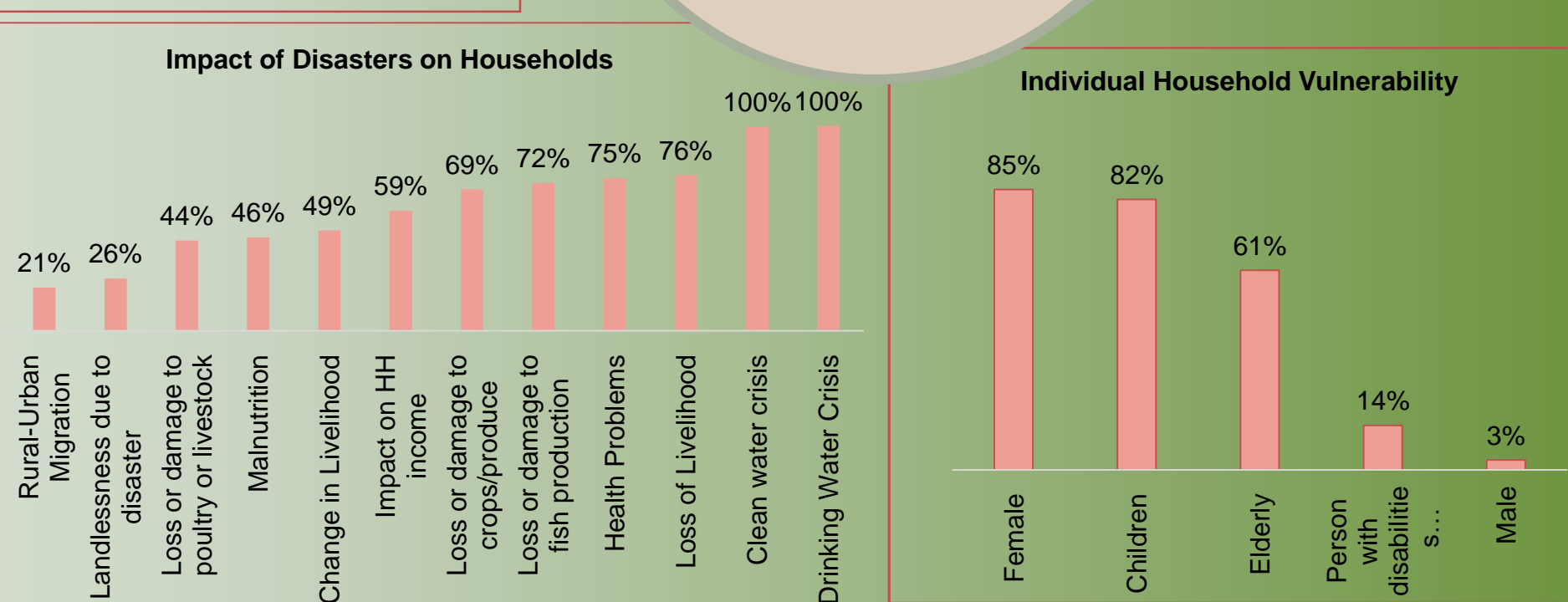
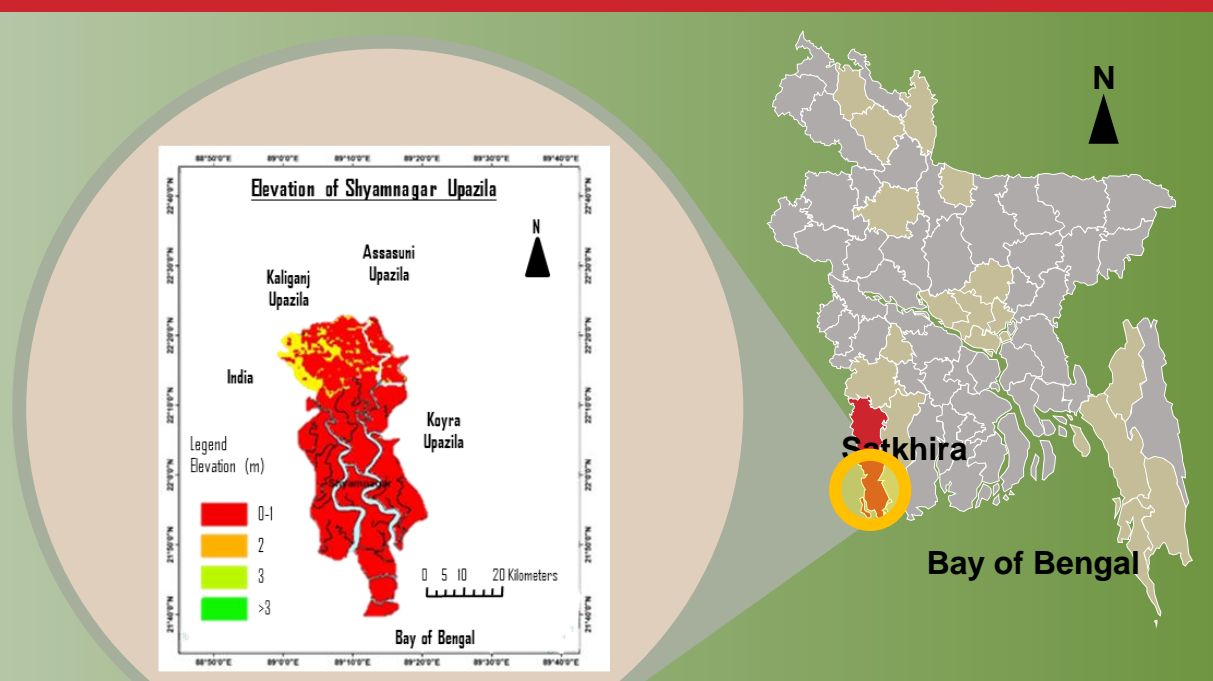
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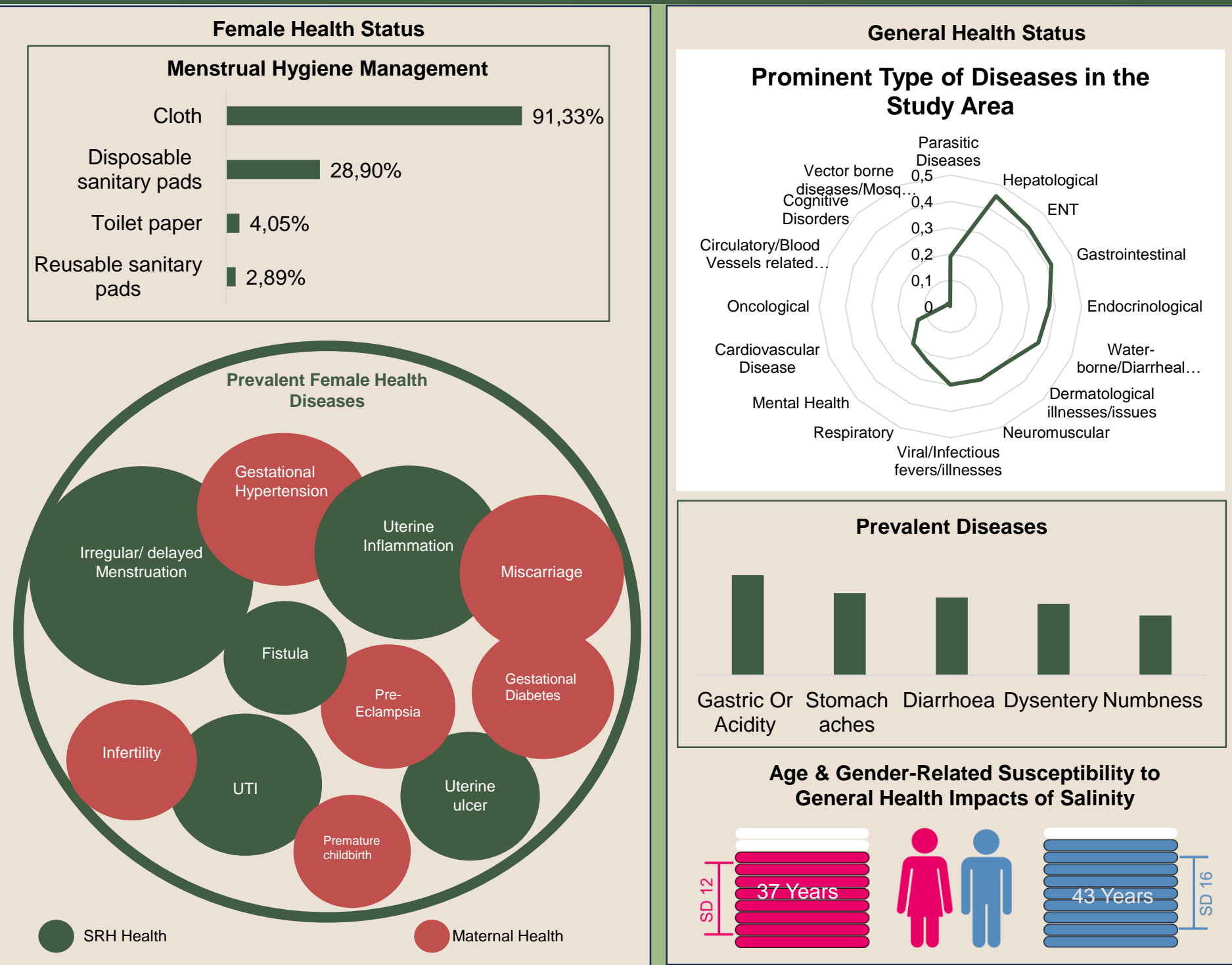
Disaster and Climate Vulnerability

Disaster Impact Ranking based on Community Perception (2013-2023)

Ranking	Disasters
1	Salinity Intrusion
2	Cyclone
3	Heat Wave
4	Storm Surge
5	Riverbank Erosion
6	Flood
7	Drought
8	Water Logging
9	Irregular rainfall
10	Thunderstorm



Health Status



Health Impact Analysis

Features	n (%)	Salinity-Related Health Problem		
		R ²	B [#] (95% CI)	p-value
Gender				
- Male	27 (13.5%)		Reference	
- Female	173 (86.5%)	0.069	0.98 (0.047; 0.148)***	0.000
Hygiene Materials during menstrual period				
- Reusable sanitary pads	5 (3%)		Reference	
- Toilet paper	7 (4%)		0.091 (0.036; 0.147)**	0.001
- Disposable sanitary pads	50 (29%)	0.281	0.102 (0.075; 0.129)***	0.000
- Cloth	158 (91%)		0.113 (0.069; 0.156)***	0.000

