



# Rural Livelihood Dynamics in the Haor Region of Bangladesh

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# Introduction

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- Haors are categorized as large bowl-shaped wetland ecosystems which receive surface runoff water, forming large regions of extensive water.
- The haor region, located in the northeast, forms vast stretches of water bodies during monsoon, and often dry up in the post-monsoon season.
- Haors account for about 43 percent of the area in the region.
- Population density is 966/sqkm. But without haor it almost doubles.
- Of the 373 haors, as many as 47 are major haors. But only **Tanguar Haor** is a **Ramsar Site** under the wetland category.
- Even if the other major **haors** and **beels** in the region are not recognized as Ramsar sites or ecologically critical areas it is generally accepted that the whole haor region is vulnerable to natural and man-made disasters.

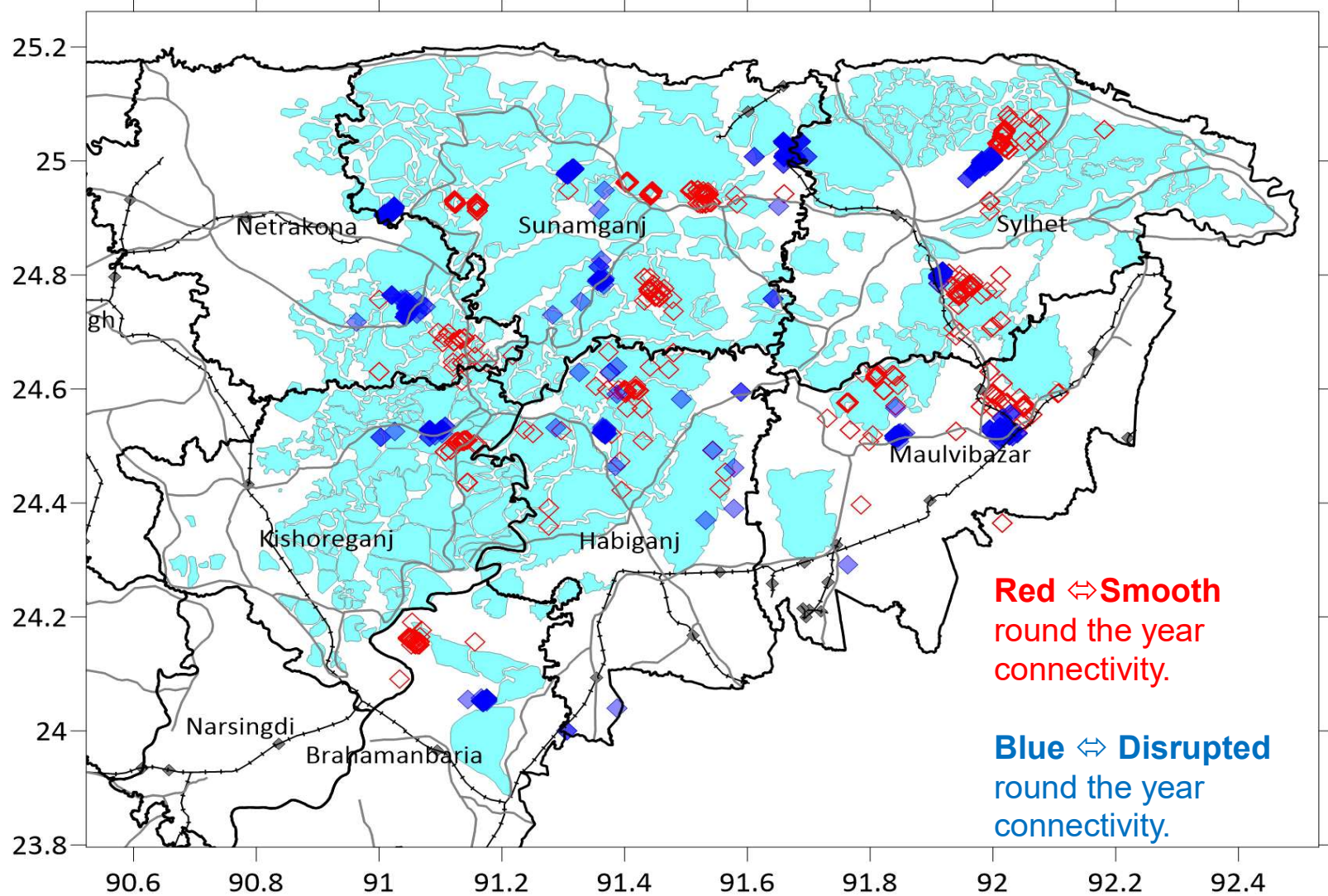


## Introduction Contd.

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- The livelihood in the haor region dynamics in the haor region are separately assessed on several domains:
  - Physical and human capital endowments
  - Employment and Income
  - Poverty and Inequality
  - Food Security
  - Credit Market Participation
  - Migration and
  - Climate Change and Livelihood Vulnerability
- Because the **Haor Region is NOT HOMOGENOUS!**
- Livelihood dynamics is compared and contrasted between groups of households with and without round the year road connectivity with the rest of the country.

## Spatial Location of Sample Households



# Demographic and Household Characteristics

Characteristics	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
Household size	5.82	5.48	0.34***	5.89	5.52	0.37***
Sex Ratio (%)	110.82	106.09		108.10	104.96	
Child-woman ratio (%)	22.43	22.65		21.99	20.99	
Dependency Ratio (%)	67.27	65.13		61.39	58.59	
Economic Dependency ratio (%)	139.10	147.29		138.39	136.09	
No education	28.01	25.32	2.69***	26.80	23.02	3.77***
Religious Education (%)	9.57	7.90	1.67**	9.70	7.32	2.38***

- A case of 'missing women', high illiteracy, and demographic dependency in exaggerated forms in the haor areas.

Characteristics	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
HH electricity (%)	93.63	97.24	-3.61***	97.45	99.63	-2.18***
Agriculture	53.19	34.77	18.42***	49.51	34.50	15.01***
Business, Trade & Commerce	15.39	18.85	-3.46**	17.83	20.33	-2.49*
Construction	11.06	16.33	-5.26***	10.63	14.49	-3.86***
Highly Durable House	10.22	16.23	-6.01***	17.96	25.89	-7.93***
Moderately Durable House	71.88	68.03	3.85*	71.72	64.00	7.73***

- Lower household electricity connections, mostly engaged in agriculture, have less durable houses.

## Demographic and Household Characteristics (Contd.)

One way distance from Household (km)	2021		
	Haor Areas	Adjacent Areas	Diff.
Union Parishad	3.50	2.04	1.43***
Upazila Sadar	10.62	4.59	6.03***
Nearest Health Complex	2.64	1.53	1.11***
Nearest Primary School	1.54	1.02	0.51***
Nearest Secondary School	4.94	2.81	2.13***
College	6.75	2.98	3.79***

- Facilities available at a higher distance, which is likely to affect adversely livelihood outcomes.

## Labor Supply, Underemployment, and Labor Productivity

Indicators	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
	<b>Labor Supply (days and hours worked/year)</b>					
Days Worked per year	204.0	232.5	-28.5***	193.3	221.7	-28.4***
Hours Worked per year	1,624.8	1,860.5	-235.6***	1,534.6	1,854.0	-319.4***
	<b>Underemployment and Deviation from full employment (in hours)</b>					
Underemployment (hours/year)	455.2	219.5	235.6***	545.4	226.0	319.4***
Proportion of potential hours utilized	0.78	0.89	-0.11***	0.74	0.89	-0.15***
	<b>Productivity of labor: earnings</b>					
Earnings/hour	51.6	52.6	-1.1	57.1	54.5	2.5*
Yearly earnings/ employed member	78,608	93,379	-14,770***	82,731	96,275	-13,544***

- On average, the duration of labor supply in haor areas is only 87% of that in adjacent areas, which dropped to a level of 83% in 2021 when measured by hours/year.
- Hours-per-day worked by the employed population in the haor area shrank in 2021.
- Significant underemployment in the region, and the extent of underemployment is notably larger in haor areas compared to non-haor areas.



## Income by Sources and Inequality

Income Sources	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
Crop Income	16939	13042	3896**	24375	15982	8393***
Non-Crop Income	15028	12015	3013**	10282	10140	142
Agricultural Income	31967	25058	6909***	34657	26122	8535***
Labor Income	127911	136287	-8376*	112929	129826	-16897***
Enterprise Income	16259	21610	-5350**	18448	27172	-8724***
Remittance Income	52171	35669	16503***	51551	31727	19824***
Transfer Income	1749	1834	-84	3101	2454	647*
Miscellaneous (Rents from Assets, etc.)	6100	9557	-3457**	5123	7167	-2044*
Per Capita Household Income	42426	44453	-2027	39534	41876	-2342

- Levels of income from crop agriculture, remittances, and transfers are significantly higher in haor areas while income from labor, enterprises, and miscellaneous sources are higher in the adjacent areas.
- Remittances seem to be the driving force to reduce the gap in total per capita income between households in the haor and adjacent areas.

## Household Consumption and Food Security

- No significant difference is evident in terms of HDDS between haor and adjacent areas. The only exception is that adjacent area households are slightly better in terms of the DDS of mothers of children under 2.

### Household Expenditures in Haor and Adjacent Areas

		Haor Area	Adjacent Area	Diff.
2019	Food expenditure per capita	1503.5	1534.2	-30.6***
	Non-food expenditure per capita	1020.8	1099.7	-78.9***
	Total expenditure per capita	2524.4	2633.9	-109.5***
2021	Food expenditure per capita	1781.2	1851.2	-70.0***
	Non-food expenditure per capita	937.7	989.3	-51.6***
	Total expenditure per capita	2718.9	2840.5	-121.6***

- Households in the haor areas have lower consumption expenditure than those in the adjacent areas.
- Food expenditure has increased but non-food expenditure has decreased in 2021 as compared to 2019 in both the haor and adjacent areas.

- Over 90% of households in both haor and adjacent areas reported better food security (access) situations. The condition in the haor area is marginally better than haor adjacent areas only when the focus is on the moderately food insecure situation.

## Monetary Poverty Rates and Inequality in Income and Consumption

	Head Count	Poverty Gap	Squared Poverty Gap
<b>2019</b>			
<b>Moderate Poverty</b>			
Haor Area	24.2	4.3	1.3
Adjacent Area	23.5	4.4	1.2
<b>Extreme Poverty</b>			
Haor Area	14.6	2.6	0.8
Adjacent Area	14.1	2.2	0.5
<b>2021</b>			
<b>Moderate Poverty</b>			
Haor Area	24.4	3.8	0.9
Adjacent Area	22.1	3.6	0.9
<b>Extreme Poverty</b>			
Haor Area	11.6	1.3	0.3
Adjacent Area	8.7	1.2	0.3

Area	Gini Coefficient of	
	Income	Consumption
<b>2019</b>		
Haor Area	0.361	0.225
Adjacent Area	0.359	0.217
<b>2021</b>		
Haor Area	0.392	0.249
Adjacent Area	0.388	0.246

- The poverty situation has improved ! However, these indices are still worse than national rates.
- Poverty transition analyses does not reveal any sizeable addition of new poor! Similar transition trends for land and non-land assets!
- While consumption inequality appears sticky, income inequality worsened. Despite that these rates are still better than the corresponding national rates.

# Multidimensional Poverty

Multidimensional Poverty	2019		2021	
	Haor Areas	Adjacent Areas	Haor Areas	Adjacent Areas
Multidimensional Poverty Index (MPI)	0.350	0.308	0.309	0.259
Multidimensional Headcount Ratio (H) (%)	65.23	60.81	60.48	53.29
Intensity of Poverty (A) (%)	53.69	50.61	51.03	48.68
Variance of deprivation among the Poor	0.019	0.013	0.013	0.012
Population Share (%)				
Vulnerable to multidimensional poverty	8.35	8.78	7.47	7.56
In Severe multidimensional poverty	47.73	40.93	41.55	34.79
Contribution of deprivation in dimension to overall multidimensional poverty (%)				
Health	52.13	58.36	58.38	63.61
Education	22.27	17.33	17.45	12.63
Standard of Living	25.60	24.31	24.17	23.76

- The head count ratio, the intensity, and consequently the overall MPIs are higher than the corresponding national rates but are declining over time both in magnitudes and variations.
- Around 10% of the HH are vulnerable to MP and around 40% are in severe MP vulnerability.
- More 50% of MPIs originate from the deprivations in health outcomes in the haor areas, which increases to around 60% in the adjacent areas.

## Structure of Credit Market

	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
Informal	28.80	13.60	15.30***	17.50	13.30	4.20**
Formal	22.50	31.60	-9.10***	25.30	29.00	-3.70*
Both	7.20	11.20	-4.00***	9.00	9.10	-0.20
Non-Participant	41.50	43.70	-2.20	48.30	48.60	-0.30

	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
	Moderate Poverty					
Poor	13.57	10.34	3.23**	12.45	11.35	1.10
Non-Poor	44.71	45.27	-0.56	40.10	39.85	0.25
	Extreme Poverty					
Poor	6.48	3.91	2.57**	6.60	7.06	-0.46
Non-Poor	51.81	51.70	0.10	45.95	44.14	1.82

- More than 50% of households in the haor region have been involved in the credit market.
- Households in the haor areas borrowed more from formal sources compared to those in the adjacent areas.
- The incidence of borrowing appears to decline over time.
- Credit market participation of the poor is low!

# Incidence of Migration among Households

Migration Type	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
Households with in-country migrants (%)	27.16	18.75	8.41***	28.76	19.24	9.52***
Households with international migrants (%)	14.78	10.58	4.21***	16.75	11.22	5.53***
Households without migrants (%)	59.62	71.27	-11.65***	56.55	70.65	-14.10***
Households with both international and in-country migrants in households (%)	1.56	0.6	0.96**	2.06	1.1	0.9
Households with regular migrants (%)	28.85	20.43	8.41***	30.58	21.45	9.13***
Households with transient migrants (%)	12.98	9.01	3.97***	15.41	9.49	5.92***

- Both domestic and international migration is higher in haor areas in both years compared to the adjacent areas.
- → Migration can act as a coping mechanism in the face of adversity. Money and goods sent by migrated members may assist in building resilience in order to sustain risks in the long run.

## Distribution of migrants by destination

Destination	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
Within district	8.65	7.37	1.28	10.57	8.03	2.54
Another district	57.65	54.74	2.91	52.03	55.18	-3.15
Abroad	37.40	36.79	0.61	33.70	37.89	-4.19

- Most of the migration in both rounds occurred in other districts.
- While migration seems sticky in the haor areas, it increases in the adjacent areas.
- While more transient migrants in the adjacent areas have shifted from the agricultural sector to the industry sector in the destination from 2019 to 2022, the composition in haor areas is approximately the same.

## Migration Status and Household Poverty

Type of Households	2019			2021		
	Haor Area	Adjacent Area	Diff.	Haor Area	Adjacent Area	Diff.
<b>Moderate Poverty</b>						
International Migrant	25.20	16.09	9.11	22.46	10.98	11.47**
In-country Migrant	24.62	24.08	0.53	29.91	30.14	-0.23
Non-migrant	24.11	22.50	1.62	21.95	23.74	-1.79
<b>Extreme Poverty</b>						
International Migrant	11.38	6.90	4.48	10.14	4.39	5.75
In-country Migrant	8.54	9.49	-0.95	16.82	20.55	-3.72
Non-migrant	12.89	8.79	4.10**	15.08	14.03	1.05

- Poverty situation improved only for overseas migrant households, deteriorated for in-country migrant households and remained largely unchanged for non-migrant households.



## Adverse Effects of Natural Disasters, 2021

Adverse Effects in the last 10 years	Haor Area	Adjacent Area	Difference
Damages to houses	65.90	46.73	19.17***
Disruption of non-agricultural activities	45.87	37.48	8.39***
Disruption of agricultural activities	57.40	38.72	18.69***
Household experience of unemployment	46.48	32.06	14.42***

- In all these broad categories, the incidence of disasters on households in the haor areas appears to be more pronounced than those in the adjacent areas.

# Livelihood Vulnerability

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- Livelihood vulnerability is conditioned by exposure, sensitivity, adaptive capacity
- It is captured by using unweighted average of 13 major sub-components:
  - i) Exposure: Land (L), Natural Disasters (ND), and Climate Variability (CV)
  - ii) Sensitivity: Health (H), Food (F), and Water (WR)
  - iii) Adaptive Capacity: Knowledge and Skills (KS), Livelihood Strategies (LS), Social Networks (SN), Housing and Production Means (HP), Agricultural Assets (AA), Non-agricultural Assets (NAA), and Finance and Income (FI)
- LVI is decomposed to reveal individual indices for exposure, sensitivity, and adaptive capacity.

Major Components	Haor Area	Adjacent Area
Exposure	0.378	0.364
Sensitivity	0.343	0.345
Adaptive Capacity	0.442	0.423
<b>Livelihood Vulnerability Index (LVI)</b>	<b>0.404</b>	<b>0.392</b>
<b>Climate Vulnerability Index</b>	<b>0.428</b>	<b>0.457</b>
<b>LVI-IPCC</b>	<b>-0.022</b>	<b>-0.021</b>

- Haor households, despite being more exposed to natural calamities, are relatively more habituated (less sensitive) to facing crises over time. As a result, more households in haor areas have developed adaptive strategies to mitigate risks and bring some form of normalcy into their lives.
- Overall, households in the haor areas are found to be more vulnerable to natural disasters compared to those in the adjacent areas when the focus is LVI. The conclusion flips when the focus shifts to CVI or LVI-IPCC.

## Research Team

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***Thank you!***