

# Women's Adaptation Plan for Monhapur road: Co-created by Women's Groups Through Participatory Adaptation Labs Under the Services for Organizing Women's Adaptation Labs under the WBG CSmaRT Project in Bangladesh

This plan reflects women's knowledge, priorities, and solutions for improving climate resilience and ensuring safer, more accessible roads for their communities.

## Background on project and the specific road

The CSmaRT project engages women's groups along key roads in Rajshahi District to collaboratively develop **Women's Adaptation Plans** for climate-resilient road development. Grounded in a **Locally Led Adaptation** approach, the project empowers women to identify climate vulnerabilities, set priorities, and propose practical solutions for safer and more accessible roads, following the **Green Roads for Water** approach. These plans will guide future investments in road planning, design, and maintenance, ensuring that women's voices meaningfully shape infrastructure that responds to community needs.

This poster presents the **Women's Adaptation Plan for Mohanpur Road, a 6.71 km Union Road serving 2,386 families across eight mouzas in two unions.** The road connects densely populated areas, two major local markets, and several educational institutions, but faces significant climate and infrastructure challenges. Its narrow width, sharp bends, and proximity to betel leaf fields contribute to frequent waterlogging and make vehicle movement difficult. Adjacent ponds without protective parapet walls cause soil erosion, while the increasing use of the road by heavily loaded trucks leads to rapid deterioration and safety concerns.

Addressing these issues is essential to improve mobility, access to markets and schools, and the overall resilience of the community - especially for women, who play a vital role in daily transport, care, and economic activities.

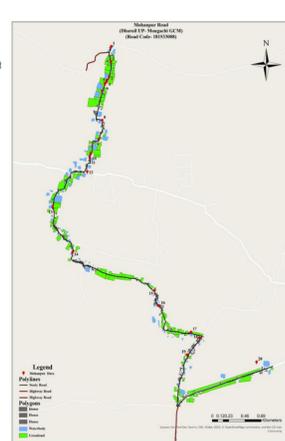
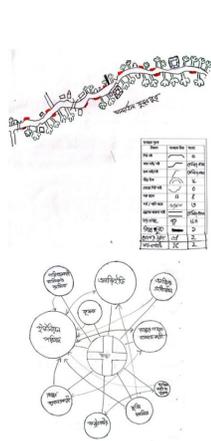


Road Map of Upazila Mohanpur



Examples of road-water issues in Mohanpur road

## Proposed Green Roads for Water Interventions along Mohanpur road



## Participatory Process

Below are the eight key steps followed to develop People's Adaptation Plans for Green Roads for Water in Rajshahi:



## Climate Vulnerability and Risk profile

Mohanpur upazila is vulnerable to seasonal climate extremes. Floods, erosion, erratic rainfall, and droughts all disrupt daily life, agricultural production, and women's access to markets and services. Women's groups have assessed these risks as high or medium severity, with most expected to worsen in the future, impacting their economic opportunities and family health.

Climate Threat	Season of Occurrence	Severity (Women's Scoring)	Future Trend	Main Impact on Women and Community
Flooding	Monsoon (July-Sept)	High	Increasing	Restricted mobility, betel leaf/vegetable crop loss, income decrease
Erosion	May-Sept	Medium	Increasing	Road damage, unsafe conditions
Erratic rainfall	Monsoon (July-Sept)	Medium	Increasing	Water logging near roads, agricultural disruption
Drought	Summer (Apr-June)	Medium	Increasing	Extreme heat, water scarcity, low crop yield
Cold wave	Winter (Dec-Jan)	Low	Decreasing	Health hazards for women, children, elderly

After documenting these risks, the women's group presented their findings to the advisory committee and at the final upazila-level wrap-up meeting, ensuring local stakeholder engagement in the adaptation planning process.



Requirements for successful implementation of all measures: (1) Confirm the official road layout and boundaries; (2) Secure additional land where needed for the proposed measures

No.	Problems Identified along Mohanpur Road	Type of Proposed Interventions	Proposed Interventions	Responsible Party	Benefit for Women / Community	Potential Role of Women	Costs of proposed interventions
1	Pavement damages, subsidence, cracking and potholes	Structural	Pavement repair & strengthening	LGED (design & works), Contractor	Reliable year round access, safer mobility, reduced travel time, easier access to markets, health & schools	Report damage, monitor quality, support post-monsoon inspections	<ul style="list-style-type: none"> <li>Light: Tk 2,50,000-4,00,000/km</li> <li>Medium: Tk 5,00,000-8,00,000/km</li> <li>Heavy: Tk 9,00,000-14,00,000/km</li> <li>Full standard rehabilitation: Total = Tk 15,752,632.5 per km</li> </ul>
2	Missing/damaged shoulders	Structural	Shoulder reconstruction + turfing	LGED, UP (maintenance)	Safer walking space for women, children, elderly	Maintain turfing, prevent encroachment, routine inspections	<ul style="list-style-type: none"> <li>Earthen: Tk 90,000-1,60,000/km (both sides)</li> <li>Improved: Tk 1,60,000-2,60,000/km</li> <li>Paved: Tk 4,40,000-7,00,000/km</li> </ul>
3	Slope erosion	Structural	Regrading + bio-engineering	LGED, Contractor	Reduced collapse risk near homes & ponds	Grass planting, slope protection monitoring	<ul style="list-style-type: none"> <li>Regrading+grass: Tk 70,000-1,20,000/km</li> <li>Bio-engineering: Tk 1,20,000-2,00,000/km</li> <li>Jute/coir: Tk 2,00,000-3,00,000/km</li> </ul>
4	Sharp / narrow / dangerous curves	Structural	Local widening, signage, lighting	LGED, UP	Reduced accidents, safer night travel (especially also for women)	Identify dangerous curves, monitor lighting	<ul style="list-style-type: none"> <li>Granular: Tk 1,20,000-2,20,000/km</li> <li>Paved: Tk 2,80,000-5,00,000/km</li> <li>Signage: Tk 12,000-18,000/sign</li> <li>Lighting: Tk 25,000-40,000/point</li> </ul>
5	Inadequate drainage & waterlogging	Structural	Side drains (earthen/paved)	LGED (construction), UP (O&M)	Reduced waterlogging in fields, markets, and near homes, and reduced disease risk	Drain maintenance, water flow monitoring	<ul style="list-style-type: none"> <li>Earthen: Tk 90,000-2,40,000/km</li> <li>Brick: Tk 4,40,000-10,00,000/km</li> <li>RCC: Tk 11,00,000-24,00,000/km</li> </ul>
6	Poor side-road connections	Structural	Paved junctions	LGED	Easier movement of people & livestock	Identify priority junctions	<ul style="list-style-type: none"> <li>Low-cost junction: Tk 25,000-45,000</li> <li>Standard cost junction: Tk 55,000-95,000</li> <li>High-cost junction: Tk 1,10,000-1,90,000</li> </ul> <p>Formula: Cost per km = Number of junctions per km x Cost per junction</p>
7	Roadside ponds / ditches	Structural	Palisading + backfilling	LGED, Contractor	Prevent accidents, protect road & water bodies	Identify risk spots, monitor damage	<ul style="list-style-type: none"> <li>Tk 1,128,600 per km (for 44% exposure treated, including palisading work, backfilling and compaction, protection, and monitoring)</li> </ul>
8	Large roadside trees	Structural	Pruning + replanting	Forest Dept., LGED, UP	Reduced accident risk, maintained shade	Support plantation & caretaking	<ul style="list-style-type: none"> <li>Tk 50,000/km (50 trees/km @ Tk 1,000/tree)</li> </ul>
9	Heavy vehicle misuse	Structural	Height bars & signage	LGED, Police	Reduced road damage & accidents	Awareness & reporting	<ul style="list-style-type: none"> <li>Height bar: Tk 73,600</li> <li>Sign: Tk 12,375</li> <li>Entry point (bar + 4 signs): Tk 1,30,000</li> </ul>
10	Market area congestion	Hard	Drains, waste zones, shelters	LGED, Market Committee, UP	Cleaner markets, safer access for women traders	Waste management, hygiene oversight	<ul style="list-style-type: none"> <li>RCC market drains: Tk 3,60,000-5,60,000/km</li> <li>Brick drains: Tk 1,80,000-2,80,000/km</li> <li>Waste zones: Tk 3,00,000-7,00,000/km</li> <li>Total: Tk 3,90,000-6,30,000/km</li> </ul>
11	Road misuse (cattle, materials)	Non-Structural	Awareness + enforcement	UP, Police	Cleaner, safer road environment	Lead awareness, peer enforcement	<ul style="list-style-type: none"> <li>Awareness, signage, meetings: Tk 20,000-40,000/year</li> </ul>
12	Routine Maintenance (O&M)	Non-Structural	Routine O&M system	UP (lead), LGED (support)	Long-term road usability	Paid routine maintenance work	<ul style="list-style-type: none"> <li>Maintaining shoulders: Tk 35,000-70,000/km/year</li> <li>Maintaining drains: Tk 70,000-1,40,000/km/year</li> <li>Maintaining slopes: Tk 45,000-90,000/km/year</li> </ul>
13	Weak local oversight	Non-Structural	Monitoring committee	UP (lead), LGED	Accountability & transparency	Formal committee membership	<ul style="list-style-type: none"> <li>Meetings, reporting, allowances: Tk 10,000-20,000/year</li> </ul>
14	Limited women's technical capacity	Non-Structural	Training & paid O&M roles	UP, NGOs	Income, skills, leadership	Core implementers	<ul style="list-style-type: none"> <li>Training: Tk 20,000-50,000/year</li> </ul>