

Women's Adaptation Plan for Godagari 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 a selected Union Road in Godagari upazila, with a total length of 9.45 km**. The road previously functioned as an earthen road, mainly used by local residents travelling on foot or by cattle-drawn carts. It crosses **five mouzas within one Union Parishad, serving 833 families** living in the hinterland, and runs largely through **agricultural land**.

Originally an earthen road, later upgraded to HBB and blacktopping, the road has deteriorated over time due to heavy traffic, misuse, and limited maintenance, resulting in subsidence, rutting, and potholes.

Poor drainage, caused by undersized culverts and blocked water flow, along with slope erosion from adjacent ponds, tree root damage, and sharp curves, further affects road safety and performance. The road is currently being widened and resurfaced under an LGED project, including erosion protection works.



Road Map of Upazila Godagari



Examples of road-water issues in Godagari 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

Godagari upazila is highly exposed to climate threats due to its low-lying landscape and the influence of the Padma River. Seasonal flooding, erosion, erratic rainfall, and drought pose significant risks to mobility, livelihoods, and the well-being of women and their families. Women's groups have identified and scored these risks, highlighting increasing trends for most hazards, with direct consequences for health, income, and access to essential services.

After documenting these risks, the women's group shared their findings with the advisory committee and local authorities for validation and feedback, paving the way for further joint action and planning.

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, rice crop damage, income loss
Erosion	May-Sept	Medium	Increasing	Threat to homes/land, unsafe roads
Erratic rainfall	Monsoon (July-Sept)	Medium	Increasing	Water logging, roads/settlements submerged
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



Proposed Green Roads for Water Interventions along Godagari road



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 Godagari 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"> Light: 2,50,000-4,00,000/km Medium: Tk 5,00,000-8,00,000/km Heavy: Tk 9,00,000-14,00,000/km Full standard rehabilitation: Tk 17,052,386 per km
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"> Earthen: Tk 90,000-1,60,000/km (both sides) Improved: Tk 1,60,000-2,60,000/km Paved: Tk 4,40,000-7,00,000/km
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"> Regrading+grass: Tk 70,000-1,20,000/km Bio-engineering: Tk 1,20,000-2,00,000/km Jute/coir: Tk 2,00,000-3,00,000/km Slope protection (turf+vetiver): Tk 1,54,500/km
4	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"> Earthen: Tk 90,000-2,40,000/km Brick: Tk 4,40,000-10,00,000/km RCC: Tk 11,00,000-24,00,000/km
5	Narrow / blocked / high-invert culverts	Structural	Replace / widen culverts	LGED	Reduced flooding & crop loss	Debris monitoring, cleaning	<ul style="list-style-type: none"> RCC Pipe: Tk 90,000-4,80,000/culvert RCC Box: Tk 4,00,000-14,00,000/culvert Upgrading: Tk 30,000-5,00,000/culvert Replacement: Tk 1,50,000-12,00,000/culvert O&M: Tk 25,000-50,000/culvert/year
6	Sharp / narrow / dangerous curves	Hard	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"> Granular: Tk 1,20,000-2,20,000/km Paved: Tk 2,80,000-5,00,000/km Signage: Tk 12,375/sign Lighting: Tk 25,000-40,000/point
7	Poor side-road connections	Structural	Paved junctions	LGED	Easier movement of people & livestock	Identify priority junctions	<ul style="list-style-type: none"> Low-cost junction: Tk 25,000-45,000 Standard cost junction: Tk 55,000-95,000 High-cost junction: Tk 1,10,000-1,90,000 <p>Formula: Cost per km = Number of junctions per km x Cost per junction</p>
8	Roadside ponds / ditches / beels	Structural	Palisading + backfilling	LGED, Contractor	Prevent accidents, protect road & water bodies	Identify risk spots, monitor damage	<ul style="list-style-type: none"> Tk 50,000/km (50 trees/km @ Tk 1,000/tree)
9	Large roadside trees	Structural	Pruning + replanting	Forest Dept., LGED, UP	Reduced accident risk, maintained shade	Support plantation & caretaking	<ul style="list-style-type: none"> Tk 50,000/km (50 trees/km @ Tk 1,000/tree)
10	Heavy vehicle misuse	Structural	Height bars & signage	LGED, Police	Reduced road damage & accidents	Awareness & reporting	<ul style="list-style-type: none"> Height bar: Tk 73,600 Sign: Tk 12,375 Entry point (bar + 4 signs): Tk 1,30,000
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"> Awareness, signage, meetings: Tk 20,000-40,000/year
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"> Maintaining shoulders: Tk 35,000-70,000/km/year Maintaining drains: Tk 70,000-1,40,000/km/year Maintaining slopes: Tk 45,000-90,000/km/year
13	Weak local oversight	Non-Structural	Monitoring committee	UP (lead), LGED	Accountability & transparency	Formal committee membership	<ul style="list-style-type: none"> Meetings, reporting, allowances: Tk 10,000-20,000/year
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"> Training: Tk 20,000-50,000/year