

“Scaling Women-Led Adaptation Planning for Green Roads”

Green Roads Webinar Series

4 June 2026

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Webinar Agenda

1. **Presentation of the “Scaling Women-Led Adaptation Planning for Green Roads” project, including the methodology and key results – presented by Anastasia Deligianni (15 minutes)**
2. **Presentation of a Women-Led Adaptation Plan developed for one of the project roads – presented by Tahmina Akter (5 minutes)**
3. **Reflections from key stakeholders – remarks from LGED and the World Bank (10 minutes)**
4. **Q&A and discussion**

Strong Linkage to the ADB Green Roads Toolkit

- Women rely on **roads** daily for **work, services, and care responsibilities**, yet their needs rarely shape road **planning, design, or maintenance**.
- This project developed and piloted a **women-led planning methodology** for road rehabilitation by combining the **Green Roads for Water (GR4W)** and **Locally Led Adaptation (LLA)** approaches.
- The main aim was to place **women at the center** of road rehabilitation planning, enabling them to **define challenges, identify solutions**, determine their **role in implementation**, and share in the **benefits**, while the project team acted as **facilitators**.
- The project addresses multiple dimensions of **green roads**, including **climate resilience, water and land management, and inclusive growth**. It aligns with the **ADB Green Roads Toolkit** by promoting road projects that are not only **greener** but also more **inclusive and participatory**.



Project Details

- Project Title: Scaling Women-Led Adaptation Planning for Green Roads
- Implemented by: GCA, GOPA MetaMeta, SocioConsult, and WAVE Foundation
- Funded by: *Global Affairs Canada*
- Project Duration: May 2025 – February 2026
- Project Location: Rajshahi, Bangladesh

Project Objective:

Develop and pilot a locally led model for rural road planning and design that improves mobility and access to services, while enhancing flood resilience and water management through better use of road runoff for agriculture and groundwater recharge.

Project Outcomes/ Outputs:

- ✓ Women-led **green road plans** developed for the two project roads
- ✓ A **practical manual for scaling up women-led planning for green roads**, based on lessons learned from the pilot project
- ✓ **Capacity Strengthening of stakeholders through involvement/** working directly with UPZ engineer and teams – and from local women involved as enumerator/facilitators.



Key Concepts: Green Roads for Water and Locally-Led Adaptation

Green Roads for Water (GR4W)

Water-related road damage and closure



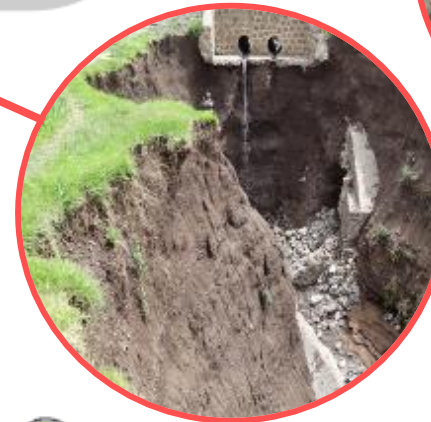
Flooding



Water logging



Erosion (gullies and landslides)



Key Concepts: Green Roads for Water and Locally-Led Adaptation

Green Roads for Water (GR4W)

The GR4W approach aims to **turn these challenges into opportunities**, achieving:

- ✓ **Reduced road maintenance costs**
- ✓ **Reduced landscape degradation** around roads
- ✓ **Enhanced water availability** by using roads as instruments for water harvesting
- ✓ **Fostered inclusive growth**
- ✓ through livelihood opportunities for roadside communities



Key Concepts: Green Roads for Water and Locally-Led Adaptation

Green Roads for Water (GR4W)

Global Guideline on Green Roads for Water (2021)

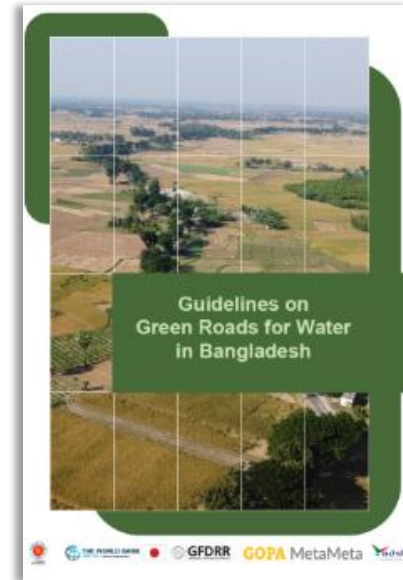
Developed by the World Bank with support from GOPA MetaMeta.

- Introduces the Green Roads for Water approach
- provides strategies to use roads for beneficial water management tailored to diverse landscapes and climates, including watershed areas, semiarid climates, coastal lowlands, mountainous areas, and floodplains
- Accessible [here](#)

National Guideline on Green Roads for Water for Bangladesh (2026)

Developed by the World Bank and GOPA MetaMeta.

- National adaptation of the Green Roads for Water approach
- Tailored guidance for implementation in the Bangladesh context
- Accessible [here](#)

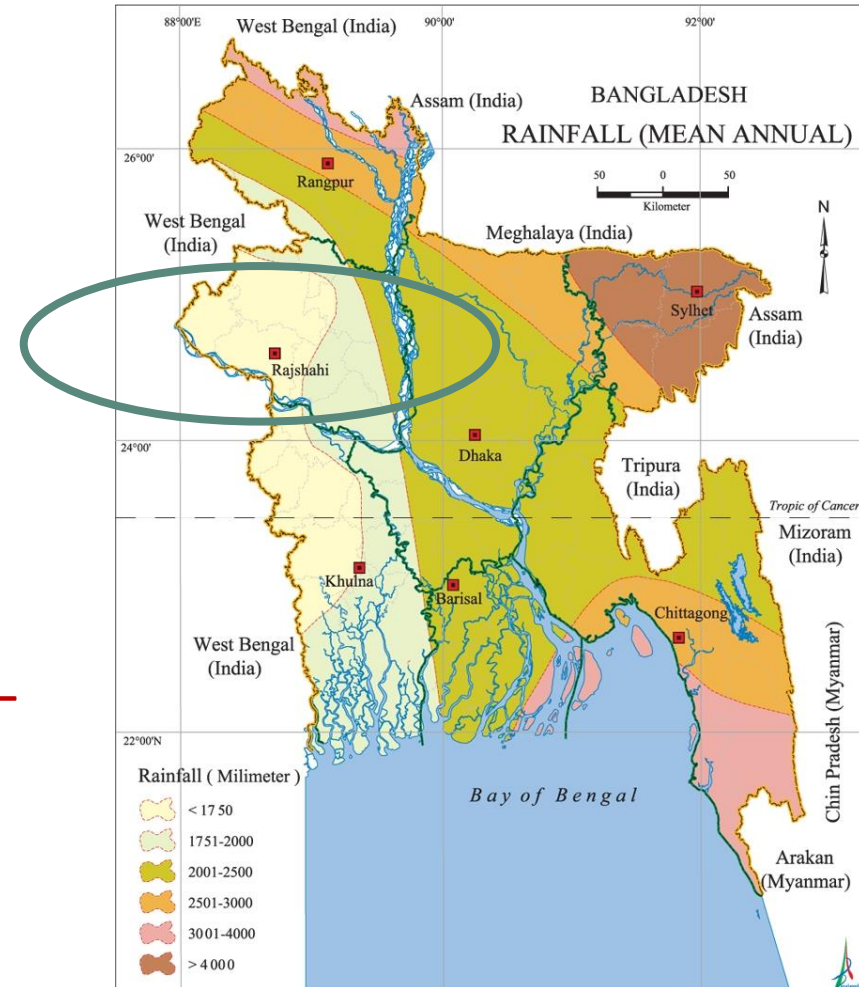


Key Concepts: Green Roads for Water and Locally-Led Adaptation

Green Roads for Water (GR4W)

Rajshahi – Water & Climate Challenges

- **Region:** Barind, drought-prone area of Bangladesh
- **Key Issues:**
 - Frequent droughts & limited rainfall
 - Limited infiltration
 - Falling groundwater levels
 - Water-related damage to roads causing connectivity and road safety issues
- **Current Situation:** Roads and water work against each other – water damages roads, and roads block natural water flow.
- **Potential:** Turn roads and water into friends. Roads can help manage water better, support farming, and improve livelihoods for people living nearby while securing transport.



Key Concepts: Green Roads for Water and Locally-Led Adaptation

Locally-Led Adaptation (LLA)

LLA (Locally Led Adaptation)

- A **principle-based approach to climate adaptation**
- Focuses on **who decides, who controls resources, and how priorities are set locally**
- Emphasizes:
 - Local ownership and decision-making
 - Flexibility and context-specific solutions
 - Long-term strengthening of local systems
 - Equity and inclusion in adaptation planning

People's Adaptation Plans (PAPs)

- A **methodology and planning instrument**
- Used to **translate LLA principles into concrete, community-driven adaptation actions**
- Typically Involves:
 - Participatory vulnerability assessment
 - Community prioritisation of risks and solutions
 - Co-design of adaptation measures
 - Sequencing and costing of actions

Stakeholder Mapping



1 Identify key actors and their roles.

Formation of Committees



2 Establish - or work with existing - committees for strategic oversight and local leadership.

Climate Risk Assessment

3 Analyze and validate current and future climate risks - by combining community-led risk profiling and scientific assessments.



Settlement Mapping

5 Map local features and infrastructure, starting with a transect walk and mapping exercise, led by communities and their representatives.



Household Enumeration

7 Conduct a census to collect demographic, socioeconomic, and vulnerability data, to subsequently inform planning exercises.



Training Community Mobilizers and Enumerators

4 Recruit and train local women as community mobilizers and enumerators, building local capacity for data collection, facilitation, and participatory planning, and ensuring trust and effective engagement with the community.



Settlement Profiling

6 Gather information on changes in time and trends of key issues, and stakeholder mapping, led by communities and their representatives.



Developing the adaptation plan

9 Develop a list of validated, costed adaptation actions, presented in an adaptation plan, formalized with local authorities.



Climate Risk Profiling

8 Facilitate community discussions to identify and prioritize risks and solutions - through a series of dialogues with and without external experts and stakeholders.



Step-by-Step Methodology for developing Women-led Plans for Green Roads for Water in Rajshahi, Bangladesh



Step 1

Stakeholder Mapping

- Stakeholder mapping conducted in inception phase
- Mapping to define roles and responsibilities → Incl. who to engage when and how
- Buy-in, synergies and build on what's already there
- Not once off → Continuously develop more complete understanding of stakeholder landscape
- Importance of scale (local, national), continuity, ownership, and thoughtfulness
- Women groups also conducted stakeholder mapping (see next slides)

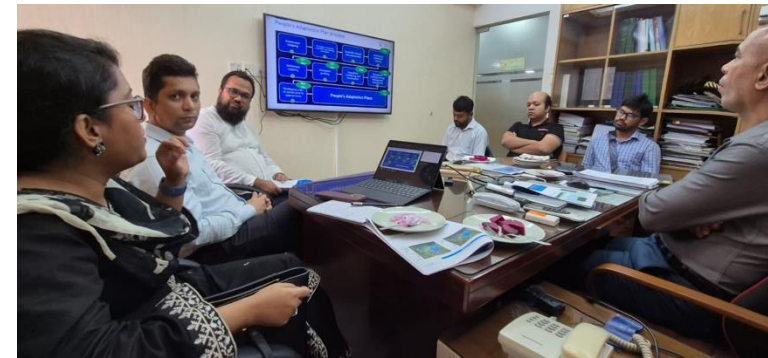


Mohanpur Upazila, Mougachi Union Parishad visit, Team with UP secretary , Rajshahi (29 June, 2025)

Step 2

Formation of Steering Committee Advisory Committee and Women Groups

- **Women groups:** Build on existing women groups (WAVE) and have groups per mouza. Criteria to ensure that groups are balanced, active, diverse, and available.
- **Steering committee:** (GCA, LGED, WB, MetaMeta (on behalf of consortium) → Formed by the consortium after the stakeholder mapping and led by GCA. Engagements before/during project, not always as full committee. A full steering committee meeting conducted towards the end of the project to present project and achievements.
- **Advisory committee:** Three committees, one per union. Initially one-on-one meetings, followed by full advisory committee meetings with local governments, key stakeholders, and women group representatives.



Step 3

Climate risk assessment

Multi-layered by using three main methodologies:

- **Rapid vulnerability assessment** → Based on FGDs and KIIs, resulting in overview of vulnerability per mouza (low, medium, high)
- **Survey** → Emphasis on climate risks and climate (change) impacts in survey (n=1622)
- **Scientific climate risk assessment** → Conducted by Nippon Koei and IWM

Overall → Alignment and validation

Extreme events during last 5 years	Total	
	Count	%
Severe water shortage	438	42.1
Increased temperatures	718	69.0
Cold wave	199	19.1
Heavy rainfall	489	47.0
Cyclone	125	12.0
Hailstorm	42	4.0
Not applicable	61	5.9
TOTAL:	1,041	100

Household faced impact of climate change	Total	
	Count	%
Yes	1,484	91.5
No	138	8.5

Climate Risk Projections:

- Future climate projections indicate a significant increase in surface temperatures in Rajshahi district → **More hot days**
- Monthly average rainfall (from July to October) in Rajshahi district might increase → **More wet in wet season**
- Flood inundation maps covering Rajshahi district, that have been generated with the help of 1D model generated outputs, show increase in inundation area for different climate change scenarios from base condition → **More riverine floods**



Step 4

Recruitment and Training of Community Mobilizers and Enumerators

(1) Training of enumerators

(all women living along the two roads covered in the project)

Step 1: Census of roadside households (n=3219)

Step 2: Survey of roadside households (n=1622)

(2) Training of community mobilizers

(all women living along the two roads covered in the project)

Step 3: GR4W Training

Step 4: Participatory processes to inform the development of the adaptation plans

- Road transect walk
- Social and resources map
- Seasonal diagram
- Timeline
- Chapati diagram

Step 5: Women Adaptation Lab workshops to validate and further improve plans

Enumerator training (26 to 31 August)

- 24 enumerators were trained, subsequently conducted the census and survey
- Mix of classroom, theory, practice
- Interactive, dynamic sessions



Community mobilizers training (4 to 8 October)

- Selection based on performance and interest enumerators
- Mix of classroom, theory, practice
- Interactive, dynamic sessions
- Focus on the 5 participatory processes/exercises that were subsequently conducted in each of the Mouzas



Step 7

Household numbering and enumeration

- Conducted before the settlement mapping and profiling (right after the enumerators training)
- **First a census (100% sampling, 4,425 households)** → to assess wellbeing using indicators like occupation, income, land ownership, housing, electricity, and self-assessment. Use outcomes of census to decide on survey participants.
- **Then, survey (n = 1622 households)** → The survey covered wider range of questions: on households, livelihoods, social structures, agriculture, land use, (perception of) climate (change), environment, transport, mobility, road (network), roads covered in the project, employment opportunities around roads, socio-cultural and governance,



Step 8

Climate risk profiling

- Group discussions following up on the participatory exercises (to discuss/finalize the draft plans developed by the women groups for the two project roads)
- Culmination in Women Adaptation Lab (WAL) workshops
- WAL workshops very useful: confirmation, validation, further improvement and alignment



Step 9

Developing a list of costed priority interventions

Post-WAL workshops, conduct costs analyses of prioritized interventions, by consortium in consultation with UPZ engineer and other stakeholders.

Examples of structural measures

- Bio-engineering on shoulders
- Improved drainage
- Palisading + backfilling
- Pruning + replanting trees
- Improved side-road connection
- Water storage

Examples of non-structural measures

- Routine O&M system
- Training & paid O&M roles
- Monitoring committee
- Awareness + enforcement

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 meezas within one Union Parishad, serving 833 families living in the hinterland, and runs largely through agricultural land.

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.



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 Score)	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	• Light: 2,50,000-4,00,000/km • Medium: 5,00,000-8,00,000/km • Heavy: 9,00,000-14,00,000/km • Full standard rehabilitation: Tk 17,00,000-385 per km
2	Missing/damaged shoulders	Structural	Shoulder reconstruction + turfing	LGED, UP (maintenance)	Safe walking space for women, children, elderly	Maintain turfing, prevent encroachment, routine inspections	• Earthen: Tk 90,000-1,65,000/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	• Regrading/soil: Tk 70,000-1,00,000/km • Bio-engineering: Tk 1,20,000-2,00,000/km • Slope protection: Tk 200,000-300,000/km • Slope protection (bar/retainer): Tk 1,54,500/km
4	Inadequate drainage & waterlogging	Structural	Side drains (earth/ paved)	LGED (construction), UP (O&M)	Reduced waterlogging in fields, markets, and near homes, and reduced disease risk	Drain maintenance, water flow monitoring	• Earthen: Tk 90,000-2,40,000/km • Brick: Tk 4,40,000-10,00,000/km • RCC: Tk 1,00,000-24,00,000/km
5	Narrow / blocked / high-level culverts	Structural	Replace / widen culverts	LGED	Reduced flooding & crop loss	Debris monitoring, cleaning	• RCC Pipe: Tk 90,000-4,80,000/culvert • RCC Box: Tk 4,00,000-14,00,000/culvert • Upgrading: Tk 30,000-50,000/culvert • Replacement: Tk 1,50,000-3,00,000/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 right travel (especially also for women)	Identify dangerous curves, monitor lighting	• Widening: Tk 1,20,000-2,00,000/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	• Low-cost junction: Tk 25,000-45,000 • Standard cost junction: Tk 60,000-90,000 • High-cost junction: Tk 1,10,000-1,90,000 Formula: Cost per km = Number of junctions per km * Cost per junction
8	Roadside ponds / ditches / banks	Structural	Palisading + backfilling	LGED, Contractor	Prevent accidents, protect road & water bodies	Identify risk spots, monitor damage	• Tk 1,20,000 per km (for 44% exposure treated, including palisading work, backfilling and compaction, protection, and monitoring)
9	Large roadside trees	Structural	Pruning + replanting	Forest Dept., LGED, UP	Reduced accident risk, maintained shade	Support plantation & caretaking	• Tk 90,000/km (50 trees/km @ Tk 1,800/tree)
10	Heavy vehicle misuse	Structural	Height bars & signage	LGED, Police	Reduced road damage & accidents	Awareness & reporting	• Height bar: Tk 7,500 • Sign: Tk 12,375 • Entry point (bar + 4 signs): Tk 1,30,000
11	Road misuse (cattle, motorbikes)	Non-Structural	Awareness + enforcement	UP, Police	Clearer, safer road environment	Lead awareness, peer enforcement	• Awareness, signage, meetings: Tk 30,000-40,000/year
12	Routine Maintenance (O&M)	Non-Structural	Routine O&M system	UP (lead), LGED (support)	Long term road usability	Paid routine maintenance work	• Maintaining shoulders: Tk 35,000-70,000/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	• 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	• Training: Tk 20,000-50,000/year

Lessons Learned
from this pilot and
instructions for
successful upscale



Women Group's role in implementation and O&M

- The pilot showed that, although traditionally **not involved in road development and maintenance**, women demonstrated **strong interest and capacity** to actively participate in green road activities.
- Women **identified practical roles** such as **reporting road damage, monitoring road conditions, maintaining vegetation on slopes, cleaning culverts and side drains, and identifying hazardous road sections.**
- Their engagement can **strengthen the sustainability and effectiveness of green road interventions**, while also creating potential **income-generating opportunities.**



Next steps / implications for scaling

- Ensure stronger linkage between **participatory planning** and **implementation** through early, visible actions (“quick wins”) to maintain **trust, motivation, and community ownership**.
- Institutionalize **continuous engagement** of women and community groups across the full **project cycle**, from planning through implementation and maintenance.
- Develop **practical, scalable training modules** to strengthen women’s roles in **monitoring, basic maintenance**, and **quality oversight** of green road interventions.
- Integrate women’s participation into formal **monitoring, supervision**, and **post-construction quality assurance systems** for green roads.
- Link participation to **livelihood opportunities** where feasible, to enhance long-term **sustainability** and **socio-economic impact**.
- Mainstream **inclusive planning and monitoring approaches** into road agency procedures, **guidelines**, and **capacity-building programmes** to support **replication and scaling**.

Questions, answers, and discussion

Thank you!

Presenter: Anastasia Deligianni (GOPA MetaMeta)

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