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**THEMATIC PAPER**

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# **Women-Friendly Villages: Addressing Gender Concerns in Building Climate Resilience in Agriculture and Water Resources in Bundelkhand**





# Abstract

Bundelkhand, a semi-arid and drought-prone region spanning Uttar Pradesh and Madhya Pradesh, continues to experience intensified climate stress in the form of erratic monsoons, prolonged dry spells, rising temperatures, and groundwater depletion. Recent climate trends have compounded pre-existing socio-economic and gender inequalities. Women remain central to agriculture, water management, livestock rearing, household nutrition, and community coping strategies, yet they continue to face structural barriers in access to land, irrigation, finance, technology, and decision-making platforms.

This paper reframes climate resilience in Bundelkhand through a contemporary gender lens, aligning with current policy frameworks such as the Jal Jeevan Mission, National Mission on Natural Farming, MGNREGS 2.0 (now known as VB-G RAM G), and renewed focus on climate-resilient agriculture under National and State Action Plans on Climate Change (NAPCC & SAPCC). It maps prevailing gendered vulnerabilities, highlights emerging evidence from the field, and proposes scalable, women-centred interventions to build resilient and women-friendly villages. The paper concludes with an updated implementation roadmap, monitoring indicators, and policy recommendations for Panchayati Raj Institutions (PRIs), Line Departments, Civil Society Organizations (CSOs), and Development Partners.

# Introduction

Climate change impacts in Bundelkhand have become more frequent and severe in recent years, directly affecting rainfed agriculture, drinking water security, livestock productivity, and rural livelihoods. These impacts translate into increased unpaid care work, food insecurity, seasonal distress migration, and health burdens—disproportionately borne by women.

Evidence from recent programme evaluations and state-level climate assessments suggests that climate interventions which are gender-neutral in design often fail to reach women farmers and water managers effectively. Conversely, initiatives that intentionally enhance women's access to assets, knowledge, finance, and governance roles show stronger and more sustained resilience outcomes.

A women-friendly village approach recognizes women not only as beneficiaries but as decision-makers and leaders in climate adaptation. It integrates gender equity, climate-smart agriculture (CSA), and decentralized water governance into a unified framework for local resilience building.

## **Key premises guiding this paper include:**

- Women are primary managers of climate-sensitive resources such as seeds, water, fodder, and household nutrition.
- Empowering women and improving their access to resources multiplies benefits for household welfare and community resilience.
- Bundelkhand needs locally grounded, low-cost, and socially inclusive adaptation strategies tailored to its specific context.



# The Bundelkhand Context (Current Scenario)

Bundelkhand comprises drought-prone districts across southern Uttar Pradesh and northern Madhya Pradesh. Agriculture remains predominantly rainfed, with small and marginal farmers constituting the majority. Groundwater over-extraction, declining water tables, and high inter-annual rainfall variability have intensified livelihood vulnerability.

Despite constitutional reservations enabling women's representation in PRIs, effective participation of women—particularly in water resource planning, agriculture extension, and budgetary decisions—remains limited. Women's land ownership continues to be low, restricting access to institutional credit, crop insurance, and government subsidies linked to land titles.

Recent government initiatives, including household tap water connections, women's Self-Help Group (SHG) federations, and digitization of service delivery, present new opportunities to embed gender-responsive climate action at the village level.

## Gendered Vulnerabilities in Agriculture and Water

Women in Bundelkhand face multiple, intersecting vulnerabilities in agriculture, water management, livelihoods, and governance. Climate variability, resource scarcity, and entrenched gender norms exacerbate these challenges, limiting women's capacity to adapt, lead, and benefit equitably from development interventions.



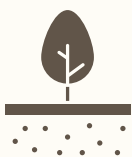
### Water Insecurity and Time Poverty

Climate variability and recurrent droughts have **exacerbated water scarcity**, increasing both the **distance and time required for household water collection**, especially during peak summer months. Although infrastructure coverage—such as handpumps, piped connections, and storage tanks—has expanded, challenges of **functionality, maintenance, and sustainability** remain widespread.

These gaps disproportionately affect **women and girls**, who typically bear primary responsibility for water collection, resulting in:

- ➔ **Time poverty:** Hours spent fetching water reduce availability for livelihoods, education, and rest
- ➔ **Physical burden:** Carrying heavy loads over long distances, often in unsafe conditions
- ➔ **Opportunity costs:** Limited participation in income-generating activities, self-care, and community engagement

Addressing water insecurity in a **gender-responsive manner**—through decentralized water systems, proximity-based supply, micro-irrigation, and women-managed governance mechanisms—is essential to **reduce drudgery, enhance resilience, and enable equitable development outcomes**.



## Limited Control over Productive Assets

**Women's low ownership and control over productive assets**—including land, irrigation systems, livestock, and tools—significantly limits their capacity to engage in climate-resilient and nutrition-sensitive agriculture. This constraint has several implications:

- ➔ **Restricted adoption of climate-smart practices:** Without secure land or irrigation access, women cannot implement improved cropping patterns, water-saving techniques, or soil and fodder conservation measures.
- ➔ **Limited access to formal credit and subsidies:** Many government schemes and financial products require land titles or asset ownership, effectively excluding women from benefits.
- ➔ **Reduced income and bargaining power:** Asset ownership is closely linked to women's decision-making within households and communities; lack of assets undermines their economic agency and leadership in local institutions.

Strengthening **women's access to and control over productive resources**, including through joint land titles, women-managed water and irrigation systems, and targeted subsidy and credit mechanisms, is therefore **essential for equitable and sustainable rural development**.



## Unequal Access to Extension and Climate Information

**Women farmers** remain **systematically underrepresented in formal agricultural extension services and climate advisory mechanisms**, limiting their capacity to adopt climate-resilient and nutrition-sensitive practices. Key challenges include:

- ➔ **Exclusion from traditional extension channels:** Training sessions, demonstration plots, and advisory visits are often designed for male farmers, while social norms, mobility restrictions, and household responsibilities prevent women from participating fully.
- ➔ **Digital and mobile access barriers:** Even as SMS alerts, mobile apps, and digital advisories expand, women frequently **lack access to smartphones or internet connectivity**, and digital literacy gaps prevent effective use.
- ➔ **Relevance and contextualization gaps:** Available advisories are often not **localized or gender-sensitive**, failing to address women's specific roles in agriculture, water management, livestock care, or nutrition-sensitive farming.
- ➔ **Knowledge asymmetry:** **Without timely and actionable information, women cannot make** informed decisions regarding cropping patterns, irrigation, post-harvest management, or climate adaptation strategies.



## Livelihood Fragility and Nutrition Risks

Women's livelihoods and household nutrition are **highly vulnerable to climate variability and shocks**. Climate-induced crop failures, erratic rainfall, and droughts have **direct consequences on women's roles in food provisioning and nutrition security**. Key challenges include:

- ➔ **Income instability:** Women's earnings from livestock, minor forest produce, non-timber forest products, and informal value chains (e.g., handicrafts, small-scale trading) are **highly climate-sensitive** and subject to seasonal fluctuations.
- ➔ **Nutrition risks:** Crop losses and reduced household income often **translate into limited access to diverse, nutritious foods**, disproportionately affecting women and children.
- ➔ **Limited risk protection:** Women have **minimal access to crop or livestock insurance**, emergency credit, or social protection schemes that could buffer against climate shocks.
- ➔ **Interlinked vulnerabilities:** Reduced income and food access exacerbate **care burdens**, health challenges, and limited participation in community governance.



## Participation, Voice, and Safety

While women's **numerical representation in Panchayati Raj Institutions (PRIs) has increased**, their **meaningful influence in decision-making—particularly over natural resources, climate adaptation, and livelihood investments—remains uneven**. Several factors contribute to this gap:

- ➔ **Limited voice in governance:** Women often participate in meetings but **decision-making power is constrained by social norms, gendered hierarchies, and lack of technical knowledge**.
- ➔ **Safety and mobility risks:** Climate stress, water scarcity, and long distances to work or resources increase **women's exposure to physical risks and gender-based violence**, particularly during water collection, fuel wood & non-timber forest products collection, or agricultural activities.
- ➔ **Unequal access to information:** Women frequently **lack access to timely, relevant, and actionable information** on schemes, entitlements, or climate advisories, limiting their ability to influence outcomes.

**Overburden and care responsibilities:** Increased participation in governance, livelihoods, and climate adaptation can **compound women's workloads**, reducing their ability to engage effectively.

## Principles for Women-Friendly Climate Resilience

- ➔ **Gender-transformative:** Address structural barriers and shift norms that limit women's agency. A gender-transformative approach goes beyond improving women's access to services or increasing their participation. It **actively challenges and transforms the structural barriers, unequal power relations, and discriminatory social norms** that limit women's agency, leadership, and control over resources.
- ➔ **Intersectional:** Account for caste, age, disability, marital status, and landholding differences. An intersectional approach recognizes that women and men do not experience exclusion or empowerment in the same way. Gender inequalities are **shaped and intensified by overlapping social identities** such as caste, age, disability, marital status, and landholding status, which together influence access to resources, services, rights, and decision-making.
- ➔ **Low-barrier and scalable:** Emphasize affordable, collective, and subsidy-linked solutions. A low-barrier and scalable approach prioritizes solutions that are **affordable, easy to adopt, and capable of being expanded across geographies and populations** without excluding resource-poor households. It focuses on reducing financial, administrative, technological, and social barriers that often prevent marginalized groups from accessing development interventions.
- ➔ **Participatory and accountable:** Institutionalize women's participation in planning, budgeting, and monitoring. A participatory and accountable approach ensures that women's participation is **systematic, meaningful, and institutionalized** across planning, budgeting, implementation, and monitoring processes, rather than being ad hoc or symbolic. It emphasizes shared decision-making, transparency, and accountability of institutions to women's priorities and rights.
- ➔ **Integrated:** Link water, agriculture, livelihoods, nutrition, health, and governance interventions. An integrated approach recognizes that sectoral challenges such as water security, agriculture, livelihoods, nutrition, health, and governance are **interconnected and mutually reinforcing**, and therefore require coordinated and convergent interventions rather than isolated, siloed actions.

## Priority Interventions for Women – Friendly Villages

### A. Climate-Resilient and Nutrition-Sensitive Agriculture

This component promotes Agricultural systems that are **adaptive to climate variability, enhance household nutrition, and strengthen women's livelihoods**. It integrates crop diversification, sustainable water use, livestock resilience, and women-led agri-enterprises in alignment with National and State Missions on climate resilience and nutrition.

#### Key Interventions:

#### 1. Diversification towards Climate-Resilient and Nutritious Crops

- ➔ Promote **millets, pulses, oilseeds, and short-duration crops** suited to local agro-climatic conditions to reduce climate risk and improve soil health.

- ➔ Encourage intercropping and mixed farming systems to enhance resilience and nutrition diversity.

## 2. Women-Led Seed Banks and Community Nurseries

- ➔ Establish and strengthen **women-managed Seed Banks** to conserve and disseminate climate-resilient, indigenous, and improved varieties.
- ➔ Promote **Community Nurseries** for vegetables, fruits, and fodder crops, ensuring timely access to quality planting material.
- ➔ Build women's capacities in seed selection, storage, certification norms, and enterprise management.

## 3. Kitchen and Nutrition Gardens

- ➔ Expand **household and community Nutrition Gardens** to improve access to diverse and micronutrient-rich foods.
- ➔ Promote **micro-irrigation systems** (drip, pitcher irrigation) and **greywater reuse** to address water scarcity.
- ➔ Link nutrition gardens with **behaviour change communication (BCC)** on dietary diversity, maternal and child nutrition, and food preparation.

## 4. Post-Harvest Management and Women-Led Value Addition

- ➔ Introduce **post-harvest technologies** such as improved storage, grading units, and **solar dryers** to reduce losses and increase shelf life.
- ➔ Support **women's collectives and SHGs** to undertake value addition (cleaning, grading, processing, packaging) of crops and horticultural produce.
- ➔ Facilitate market linkages through **FPOs, local Haats, Mid-day Meals, and Anganwadi supply chains**.

## 5. Climate-Resilient Livestock Systems

- ➔ Promote **improved fodder development**, fodder banks, and integration of crop-livestock systems to ensure year-round feed availability.
- ➔ Strengthen access to **mobile veterinary services**, vaccination drives, and preventive animal healthcare.
- ➔ Support women-led small livestock enterprises (Poultry, Goatery, Dairy) with climate-resilient practices.

# B. Gender-Responsive Water Resource Management

This component promotes **equitable, sustainable, and climate-resilient Water Management Systems** by recognizing women as key users, managers, and decision-makers in water governance. It integrates decentralized infrastructure, institutional strengthening, and workload reduction to address both water security and gender inequality.

### Key Interventions:

#### 1. Decentralized Rainwater Harvesting and Recharge Structures

- ➔ Ensure **meaningful participation of women** in site selection, design, and prioritization through Gram Sabhas and planning committees.

- ➔ Converge with **MGNREGA (now known as VB-G RAM G), Jal Jeevan Mission, and Watershed programmes** for sustainable financing and scale.

## 2. Women-Managed Water User Groups

- ➔ Establish and strengthen **women-led Water User Groups (WUGs)** linked with SHGs, Village Water and Sanitation Committees (VWSCs), and Panchayat Standing Committees.
- ➔ Build capacities in **Operation and Maintenance (O&M), water budgeting, record-keeping, and conflict resolution.**

## 3. Proximity-Based Drinking Water Solutions

- ➔ Prioritize solutions that improve **women's safety, dignity, and health**, particularly for adolescent girls, elderly women, and persons with disabilities.
- ➔ Integrate water quality testing and safe storage practices.

## 4. Micro-Irrigation with Priority Support to Women Farmers

- ➔ Promote **household- and group-based micro-irrigation systems** (drip, sprinkler, low-pressure systems) to improve water-use efficiency.
- ➔ Provide **priority access to women farmers**, including landless women through group leasing or collective cultivation models.
- ➔ Link with Agriculture Extension Services, subsidies, and credit mechanisms to ensure affordability and adoption.

# C. Institutions, Finance, and Markets

This component strengthens **women-centred institutions, inclusive financial systems, and market access** to enable sustainable livelihoods and climate-resilient local economies. It focuses on reducing financial and institutional barriers while enhancing women's leadership, decision-making power, and economic agency.

### Key Interventions:

#### 1. SHG-Linked Village Climate Resilience Funds

- ➔ Establish **village-level Climate Resilience Funds** anchored in SHGs to finance small-scale adaptation investments such as water harvesting, climate-resilient inputs, nutrition gardens, and livestock support.
- ➔ Promote transparent governance through community guidelines, participatory selection of investments, and social audits.

#### 2. Simplified and Inclusive Financial Services

- ➔ Facilitate access to **low-cost credit, savings, insurance, and risk-transfer products** tailored to women's needs and livelihood cycles.
- ➔ Link women to **crop, livestock, health, and accident insurance schemes** to enhance resilience to climate and economic shocks.

#### 3. Leadership and Governance Capacity for EWRs

- ➔ Provide structured **leadership, governance, and financial management training** for Elected Women Representatives (EWRs).

- ➔ Strengthen capacities in **GPDP planning, gender-responsive budgeting, convergence, and oversight of service delivery.**
- ➔ Create peer-learning platforms and mentoring systems for women leaders at Panchayat and Block levels.

#### 4. Market Linkages and Aggregation Platforms

- ➔ Strengthen **aggregation, storage, and collective marketing platforms** for women producers through SHGs, FPOs, and producer collectives.
- ➔ Facilitate **market linkages** with local Haats, institutional buyers (ICDS, MDM), private value chains, and e-marketplaces.
- ➔ Support branding, quality standards, packaging, and pricing to improve women's bargaining power and incomes.

## D. Capacity Building and Knowledge Systems

This component strengthens **gender-responsive knowledge systems and last-mile extension services** by positioning women as **Knowledge Holders, Trainers, and Change Agents**. It ensures that climate, agriculture, water, and livelihood information is accessible, localized, and actionable for women farmers and producers.

### Key Interventions:

#### 1. Gender-Responsive Extension through Women Para-Extension Workers

- ➔ Identify and train **Women Para-Extension Workers** from SHGs, FPOs, and farmer groups to provide localized advisory support.
- ➔ Build capacities in **climate-resilient agriculture, water management, livestock care, nutrition-sensitive practices, and scheme convergence.**

#### 2. Peer Learning and Women-Led Demonstration Platforms

- ➔ Establish **women-led demonstration plots**, nutrition gardens, and livestock units to showcase climate-resilient and nutrition-sensitive practices.
- ➔ Promote **Farmer Field Schools (FFS) and exposure visits** facilitated by experienced women farmers and para-extension workers.
- ➔ Encourage peer-to-peer learning, collective problem-solving, and adaptation innovations.

## E. Social Protection and Care Economy Support

This component strengthens **Social Protection Systems and Care-Support mechanisms** to reduce women's time poverty, enhance participation in climate-resilient livelihoods, and ensure that public employment and welfare programmes respond to women's priorities and constraints.

### Key Interventions:

#### 1. Gender-Responsive Alignment of MGNREGA (now known as VB-G RAM G)

- ➔ Ensure women's participation in **work selection, site planning, and monitoring** through Gram Sabhas, SHGs, and Panchayat Committees.
- ➔ Promote timely wage payments, worksite facilities, and equal wages to enhance women's access and retention.

## 2. Care Economy Support and Work Facilitation

- ➔ Provide **childcare support at worksites and community level**, including Crèches and shared care arrangements, to enable women's participation in wage work and training.
- ➔ Promote **flexible work timings and proximity-based works** to accommodate women's care responsibilities and mobility constraints.

# Designing Women – Friendly Village Resilience Plans

Women-Friendly Village Resilience Plans provide a **systematic, participatory, and gender-responsive framework** to strengthen village-level resilience to climate and socio-economic risks. The process embeds women's leadership, local knowledge, and priorities across assessment, planning, financing, implementation, and monitoring.

## Step-by-Step Process:

### A. Gender-Sensitive Vulnerability and Resource Assessment

- ➔ Conduct participatory assessments to map **climate risks, livelihood vulnerabilities, water stress, nutrition gaps, and care burdens**, with specific attention to women, youth, elderly, and marginalized groups.
- ➔ Use **Sex- and Caste-disaggregated data**, Seasonal Calendars, Workload analysis, and Resource mapping to capture differentiated impacts and capacities.

### B. Inclusive Participatory Planning

- ➔ Facilitate **inclusive planning forums** involving women, SHGs, Elected Women Representatives (EWRs), youth groups, and marginalized households.
- ➔ Ensure **safe spaces and facilitation support** for women to articulate priorities and solutions.
- ➔ Integrate women's voices through Gram Sabha resolutions and Standing Committee deliberations.

### C. Preparation of an Integrated Village Resilience Plan

- ➔ Prepare a **comprehensive Village Resilience Plan** integrating interventions across **agriculture, water, livelihoods, nutrition, health, social protection, and governance**.
- ➔ Align the plan with **GPDP themes, climate action priorities, and nutrition goals**, ensuring clear objectives, timelines, and responsibilities.

### D. Convergence Mapping and Resource Mobilization

- ➔ Map and align **Panchayat, State, and Central Government Schemes** (e.g., MGNREGS, NRLM, Jal Jeevan Mission, POSHAN, NHM) with resilience priorities.
- ➔ Prepare a phased investment plan to enable scalability.

### E. Implementation through Women's Institutions

- ➔ Implement priority actions through **women's Institutions** such as SHGs, SHG federations, WUGs, and producer collectives, with defined roles and accountability.

## F. Sustainability and Operations & Maintenance (O&M) Planning

- ➔ Establish **O&M funds** and strengthen **local service providers and community technicians**, with preference to women, to ensure long-term functionality and ownership.

## G. Monitoring, Social Audits, and Adaptive Learning

- ➔ Institutionalize **community-led monitoring**, gender-responsive indicators, and periodic social audits to track progress and equity.

# Policy Recommendations for Gender-Responsive Village Resilience

To ensure women's leadership, equity, and agency in climate-resilient development, the following policy measures are recommended:

### 1. Mandatory Gender-Tagging of Expenditures

- ➔ Require **gender-tagging of budgets and expenditures** in climate, water, agriculture, and livelihood programmes at Panchayat, Block, and District levels.
- ➔ Enable tracking of funds allocated to **women-managed assets, climate-resilient practices, and women-led enterprises**.

### 2. Priority Access to Climate-Resilient Inputs

- ➔ Ensure **women farmers have preferential access** to improved seeds, saplings, micro-irrigation systems, and other climate-resilient technologies.
- ➔ Align input provision with State and Central Subsidy Schemes for crops, livestock, and water conservation initiatives.

### 3. Strengthening Female Extension and Community Resource Persons

- ➔ Expand the cadre of **women para-extension workers, community facilitators, and technical resource persons**.
- ➔ Provide **training, incentives, and recognition** to women serving as change agents in agriculture, water, nutrition, and climate adaptation.

### 4. Administrative Support for Women's Resource Rights

- ➔ Facilitate **joint land titles, tenancy rights, and women's access to communal resources**.
- ➔ Strengthen Panchayat-level mechanisms to **protect women's property, water, and forest rights**, promoting equity in resource governance.

### 5. Integration of Gender Criteria into MGNREGS and Watershed Guidelines

- ➔ Embed **gender-responsive planning, work allocation, and wage provision** into MGNREGS, watershed management, and climate adaptation guidelines.
- ➔ Include women's priorities for **asset creation, proximity-based works, and care-support facilities**.

## 6. Robust Sex-Disaggregated Data Systems

- ➔ Develop and maintain **Sex- and Caste-disaggregated databases** for all planning, budgeting, and monitoring processes.
- ➔ Use data for **evidence-based decision-making, performance assessment, and social accountability**.

## Conclusion

Climate resilience in Bundelkhand—and similar drought-prone regions—can only be realized by **placing women at the centre of adaptation and development initiatives**. Women-friendly villages, where women have **reliable access to water, control over productive resources, meaningful voice in governance, and viable livelihood opportunities**, offer a **pragmatic, equitable, and sustainable pathway** to climate adaptation.

By embedding **gender-transformative approaches** within Panchayat-led planning and aligning interventions with **current policy priorities, schemes, and local institutions**, communities can:

- ➔ Strengthen **socially just and inclusive governance systems**
- ➔ Build **environmentally sustainable and climate-resilient rural infrastructure**
- ➔ Ensure **scalable and replicable solutions** across drought-prone and resource-stressed regions

Ultimately, centring women as **Agents of Change** is not only a matter of equity but a **strategic necessity** for achieving holistic, resilient, and sustainable development outcomes in Bundelkhand and beyond.



