



Women in Green Politics and Environmental Conservation in Bakalia, Karbi Anglong District, Assam

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Abstract

Green politics is a political philosophy that highlights the interdependence between human life and the natural environment.¹ It advocates for policies that ensure ecological balance, social justice, grassroots democracy, and nonviolence. The core idea of green politics is to promote sustainable development without exploiting nature or marginalizing vulnerable communities. The importance of green politics lies in its ability to address pressing global challenges—such as deforestation, waste management, and climate change—through democratic participation and policy reform. By prioritizing ecological concerns, green politics aims to create a society that lives in harmony with nature. Environmental conservation is one of the most urgent needs of the 21st century. The continuous destruction of forests, depletion of water resources, and increase in industrial pollution have endangered the earth's ecological systems. Bakalia, a region in the Karbi Anglong district of Assam, is rich in natural beauty and cultural diversity. The people of this region depend heavily on agriculture, forest produce, and rivers for their livelihood. However, Bakalia faces several environmental challenges such as deforestation from shifting cultivation (jhum), soil erosion, water scarcity, and loss of biodiversity. These issues threaten the ecological balance and the traditional livelihoods of local communities. In recent years, women in Bakalia have taken an active role in promoting environmental conservation through awareness programs, tree plantation drives, and sustainable farming practices.

Keywords: Green politics, sustainable development, environmental conservation, environmental challenges in Bakalia and role of women.

Introduction

Green politics is a political philosophy that highlights the interdependence between human life and the natural environment.ⁱ It advocates for policies that ensure ecological balance, social justice, grassroots democracy, and nonviolence. The core idea of green politics is to promote sustainable development without exploiting nature or marginalizing vulnerable communities. In a time of growing global concern over climate change, pollution, and biodiversity loss, green politics has gained significance as it encourages both citizens and governments to adopt eco-friendly approaches to progress.ⁱⁱ

○ **Meaning and Importance of Green Politics**

The term *green politics* refers to a movement that integrates environmental values with political action. It stresses the importance of conserving natural resources, protecting biodiversity, and ensuring environmental justice for all. Green political thought argues that economic development should not come at the expense of nature. Instead, it should be based on principles of sustainability and intergenerational equity. The importance of green politics lies in its ability to address pressing global challenges—such as deforestation, waste management, and climate change—through democratic participation and policy reform. By prioritizing ecological concerns, green politics aims to create a society that lives in harmony with nature.

○ **Relevance of Environmental Conservation in Present Times**

Environmental conservation is one of the most urgent needs of the 21st century. The continuous destruction of forests, depletion of water resources, and increase in industrial pollution have endangered the earth's ecological systems. Conservation today means not only preserving forests and wildlife but also promoting sustainable livelihoods and clean living conditions. Women, in particular, play a central role in this process. Their close relationship with the environment in daily life—through agriculture, water collection, and household management—gives them deep ecological understanding and practical experience. Their participation in conservation activities contributes significantly to environmental protection and community welfare.

○ **Focus on Bakalia Region in Karbi Anglong**

Bakalia, a region in the Karbi Anglong district of Assam, is rich in natural beauty and cultural diversity. The people of this region depend heavily on agriculture, forest produce, and rivers for their livelihood. However, Bakalia faces several environmental challenges such as deforestation from shifting cultivation (jhum), soil erosion, water scarcity, and loss of biodiversity. These issues threaten the ecological balance and the traditional livelihoods of local communities. In recent years, women in Bakalia have taken an active role in promoting environmental conservation through awareness programs, tree plantation drives, and sustainable farming practices. Their leadership at the grassroots level has helped build environmental awareness and community cooperation. This study focuses on highlighting the role of these women in advancing green politics and environmental protection in **Bakalia, Karbi Anglong**.

Objectives of the Study

The purpose of this study is to examine the **role and participation of women in green politics and environmental conservation in Bakalia**, a region in the Karbi Anglong district of Assam. It aims to understand how women contribute to environmental sustainability through grassroots actions, leadership, and traditional ecological knowledge. Furthermore, it seeks to assess the tangible impacts of these contributions on the local environment and community development.

- 1) **To Understand the Participation of Women in Environmental Politics**
- 2) **To Identify Women-Led Environmental Initiatives in Bakalia**
- 3) **To Assess the Impact of Women's Contribution on the Local Environment**

Methodology

The methodology section outlines the systematic approach adopted to study the participation of women in green politics and environmental conservation in Bakalia, Karbi Anglong. The study employs both **qualitative** and **quantitative** research methods to collect and analyze data.^v The methodology is designed to ensure the reliability and validity of findings while capturing the nuanced role of women in environmental initiatives.

▪ Research Design

This study adopts a **descriptive and exploratory research design**^{vi}. Descriptive research helps in portraying an accurate profile of women's involvement in environmental politics, while exploratory research facilitates the identification of emerging trends, challenges, and opportunities in women-led initiatives. By combining these approaches, the study provides both a detailed snapshot and a broader understanding of the topic.

▪ Data Sources

To ensure comprehensive coverage of the topic, the study uses both **primary** and **secondary data sources**:^{vii}

a.Primary Data:

Primary data were collected directly from the local population to capture first-hand information regarding women's participation in environmental initiatives. The primary data sources include:

- **Interviews:** Structured and semi-structured interviews were conducted with local women actively involved in green politics, as well as with community leaders and activists. These interviews focused on understanding their motivations, challenges, strategies, and outcomes of their initiatives.
- **Observation:** Field visits were undertaken to observe local environmental activities such as tree plantations, waste management programs, and awareness campaigns. Direct observation allowed the

researcher to validate information gathered through interviews and to record the social dynamics of community participation.

- **Documentation of Initiatives:** Photographs, event records, and reports of environmental programs led by women were documented systematically. This helped in assessing the scale, organization, and impact of these initiatives on the local community.

b.Secondary Data:

Secondary sources were used to provide context and to complement the primary data. These include:

- Government reports and publications on environmental policies and women's participation in governance.
- Scholarly articles, books, and case studies on green politics and women's leadership in environmental conservation.
- Local newspapers, newsletters, and digital media reporting on environmental campaigns in Bakalia.

c. Sampling Technique

Given the localized nature of the study, a **purposive sampling technique** was employed. Women participants were selected based on their involvement in environmental initiatives, leadership roles in community organizations, or participation in local governance related to environmental conservation. Similarly, community leaders and key informants were chosen for their knowledge, influence, and contribution to green political activities.

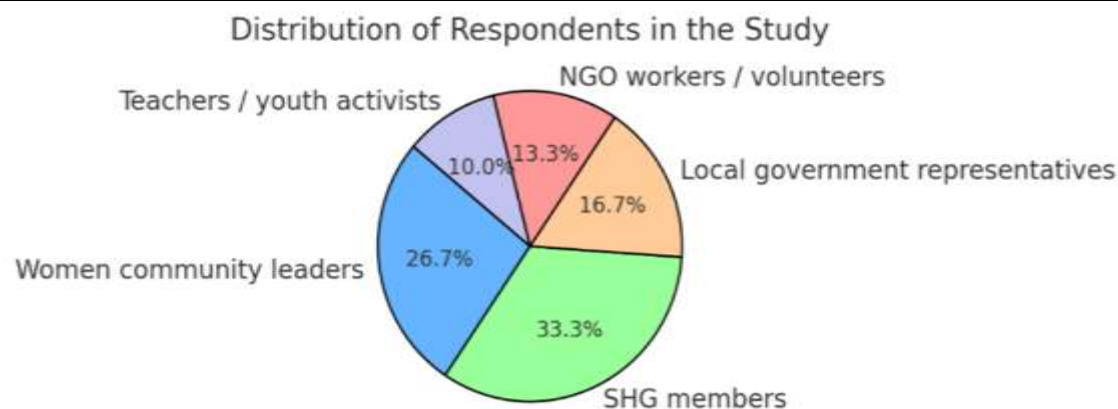
- **Data Collection Methods**
- **Interviews**

Interviews were designed to be semi-structured, allowing flexibility for participants to share their experiences in detail. Open-ended questions encouraged respondents to reflect on their motivations, challenges, and perceptions of women's role in environmental politics. Interviews were recorded with prior consent, transcribed, and analyzed for recurring themes.

- **Observation**

Participant and non-participant observation methods were used during environmental activities. The researcher noted the following aspects:

- Participation level of women in activities
- Leadership roles undertaken by women
- Interaction with local authorities and community members
- Effectiveness and sustainability of initiatives



- Women community leaders: **26.7%**
- SHG members: **33.3%**
- **Local** government representatives: **16.7%**
- NGO workers / volunteers: **13.3%**
- **Teachers** / youth activists: **10%**

• Documentation

Documentation of initiatives involved collecting program reports, photographs, social media posts, and other artifacts related to environmental campaigns. This provided objective evidence of women's contributions and helped cross-verify interview findings.

• Data Analysis

Data analysis involved **qualitative thematic analysis** and **quantitative description** where appropriate.

- **Thematic Analysis:** Transcripts from interviews were coded to identify recurring patterns, common challenges, and strategies employed by women. Themes such as “community mobilization,” “environmental awareness,” and “policy advocacy” were highlighted.

- **Descriptive Statistics:** Where numerical data were available (e.g., number of participants, trees planted, events organized), basic statistical techniques like frequency counts and percentages were used to summarize findings.

• Ethical Considerations

The study strictly adhered to ethical guidelines in social research:

- Informed consent was obtained from all participants before interviews and observation.
- Participants' identities were kept confidential, and sensitive information was anonymized.
- Care was taken to ensure that the research did not disrupt ongoing community activities or harm participants in any way.

• **Limitations**

While every effort was made to collect accurate data, the study faced some limitations:

- The sample size was limited to Bakalia, and findings may not be generalizable to other regions.
- Some respondents were hesitant to disclose detailed information due to social or cultural constraints.
- Time constraints limited the observation of long-term impacts of initiatives.

• **Justification of Methodology**

The combination of primary and secondary data, along with interviews, observations, and documentation, provides a **holistic understanding** of women's participation in green politics. Qualitative insights reveal personal motivations and challenges, while quantitative descriptions illustrate the scale and reach of initiatives. This mixed-method approach ensures a rigorous and credible analysis of the research problem.

Overview of Green Politics

• **Definition and Evolution of Green Politics**

Green politics, often referred to as ecological politics, is a political ideology and movement that emphasizes environmental sustainability, social justice, and the well-being of both human and non-human life. Unlike traditional politics that primarily focuses on economic growth, military power, or social order, green politics integrates environmental concerns into political decision-making. Its core objective is to address the ecological crises that threaten the planet, such as climate change, pollution, loss of biodiversity, and depletion of natural resources.

The evolution of green politics can be traced back to the environmental movements of the 1960s and 1970s, which emerged as a response to rapid industrialization, urbanization, and the environmental degradation that accompanied economic development.^{viii} Key events, such as the publication of Rachel Carson's *Silent Spring* in 1962, which highlighted the harmful effects of pesticides, and the first Earth Day in 1970, played a pivotal role in raising public awareness about environmental issues globally.^{ix}

In the 1970s and 1980s, green politics evolved into formal political action, with the formation of Green Parties in countries like Germany, New Zealand, and Sweden^x. These parties sought to combine environmental activism with democratic participation, promoting policies that emphasized renewable energy, conservation, and sustainable development. Over time, green politics expanded its focus to include climate justice, ethical governance, and global ecological responsibility, making it a key component of contemporary political discourse.

• **Principles of Sustainability, Justice, and Ecological Balance**

At the heart of green politics lie three fundamental principles: sustainability, justice, and ecological balance.

Sustainability refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. It involves adopting economic, social, and environmental policies that

reduce resource depletion, minimize pollution, and promote renewable sources of energy. For example, sustainable agriculture, green urban planning, and circular economy practices aim to ensure long-term environmental health while supporting human development.

Justice in green politics encompasses both social and environmental justice. Social justice ensures that marginalized communities have equitable access to resources, opportunities, and decision-making processes, while environmental justice addresses the disproportionate burden of environmental degradation on vulnerable populations. Policies that reduce air and water pollution, protect indigenous lands, and ensure fair distribution of natural resources reflect this principle.

Ecological balance emphasizes the interconnectedness of all life forms and the need to maintain harmony within ecosystems. Green politics promotes biodiversity conservation, habitat protection, and the careful management of natural resources to prevent ecological collapse. It recognizes that human activity must coexist with nature rather than dominate it, encouraging policies that protect forests, rivers, oceans, and wildlife.

• **Role of Political Movements in Promoting Environmental Awareness**

Political movements have been instrumental in shaping green politics by mobilizing citizens, influencing policy, and advocating for environmental sustainability. Grassroots movements, environmental NGOs, and Green Parties worldwide have worked to bring ecological issues to the forefront of political agendas.

For instance, campaigns for renewable energy, climate action, and anti-pollution regulations often originate from community-led movements that pressure governments and corporations to adopt sustainable practices. Educational programs, media campaigns, and local environmental initiatives raise awareness among the public, empowering individuals to participate in conservation efforts.

In addition, international cooperation, such as the United Nations' Framework Convention on Climate Change (UNFCCC) and the Sustainable Development Goals (SDGs), reflects the political institutionalization of green principles. These platforms encourage countries to commit to ecological sustainability, climate mitigation, and social equity, demonstrating how political movements translate environmental advocacy into actionable policies.

The role of political movements in promoting environmental awareness is especially significant at the local level. Women-led community initiatives, youth groups, and indigenous organizations often spearhead projects such as tree plantation drives, waste management campaigns, and renewable energy adoption. These efforts not only improve local environmental quality but also inspire a culture of ecological responsibility that aligns with the broader objectives of green politics.

Women in Green Politics: Global and Indian Context

• Global Examples of Women Leaders in Environmental Activism

Women have historically played a pivotal role in environmental activism worldwide. Their leadership spans grassroots mobilization, policy advocacy, scientific research, and global campaigns. By highlighting ecological degradation and proposing sustainable solutions, women have shaped the discourse of environmental politics globally.

One of the most renowned figures is **Wangari Maathai** of Kenya, founder of the **Green Belt Movement**^{xi}. Maathai mobilized thousands of women to plant trees to combat deforestation, soil erosion, and desertification, while simultaneously promoting women's empowerment. Her efforts linked environmental conservation with social development, demonstrating how ecological activism can also uplift marginalized communities. She was awarded the **Nobel Peace Prize in 2004**,^{xii} emphasizing the global recognition of women's leadership in environmental causes.

In the United States, **Jane Goodall**, a primatologist and conservationist, combined scientific research with advocacy. Her long-term study of chimpanzees in Gombe Stream National Park, Tanzania, revealed the complexity of animal behavior and the critical need to conserve natural habitats. Goodall founded the **Jane Goodall Institute**, promoting wildlife conservation, reforestation, and environmental education programs worldwide, inspiring a generation of activists.

Another influential figure is **Greta Thunberg**, the Swedish climate activist, whose “**Fridays for Future**” movement has mobilized millions of youth globally. Thunberg's persistent advocacy for urgent climate action has forced governments and corporations to consider environmental consequences in policy decisions. Her leadership demonstrates the potential of youth and women in shaping global environmental policy.

Other notable women include **Marina Silva** from Brazil, who has tirelessly fought against illegal deforestation in the Amazon; **Christiana Figueres** from Costa Rica, who played a critical role in negotiating the Paris Agreement; and **Severn Cullis-Suzuki** from Canada, who began environmental advocacy as a child at the 1992 Rio Earth Summit.^{xiii} Collectively, these women illustrate the multifaceted contributions of female leaders to global environmental awareness and governance.

• Women's Participation in Indian Green Movements

In India, women's engagement in environmental activism has deep roots, combining ecological concerns with social justice. Women have often been the frontline defenders of natural resources, especially in rural communities.

One of the most celebrated examples is the **Chipko Movement** of the 1970s in Uttarakhand^{xiv}. Rural women physically embraced trees to prevent commercial logging, protecting forests vital to their livelihoods. This movement not only preserved the environment but also highlighted women's intimate knowledge of local

ecosystems. Women's leadership in Chipko demonstrated that environmental conservation and women's empowerment could work hand in hand.

Another significant movement is the **Narmada Bachao Andolan (NBA)**, which protested against large dams on the Narmada River. Women from displaced communities actively participated, highlighting the social and ecological consequences of dam construction. They drew attention to the loss of livelihoods, cultural displacement, and environmental degradation, advocating for sustainable development and human rights.

In addition, women have been central to community-based initiatives such as water conservation in Rajasthan, sustainable agriculture in Kerala, and afforestation programs across multiple Indian states. Their work ranges from household-level resource management to active participation in local governance, demonstrating the crucial link between women, ecology, and community well-being.

• **Policy Inclusion and Representation of Women in Environmental Governance**

Globally, policy frameworks increasingly recognize the importance of women's participation in environmental decision-making. Instruments such as the **Convention on Biological Diversity (CBD)** and the **United Nations Sustainable Development Goals (SDGs)** emphasize gender equality and women's empowerment as critical to environmental sustainability.

In India, government initiatives encourage women's engagement in environmental governance. The **National Policy for Women (2016)** highlights women's role in sustainable development, while programs under the **Ministry of Environment, Forest and Climate Change (MoEFCC)** promote women's participation in forest management, renewable energy projects, and climate adaptation strategies.^{xv}

The institutionalization of women's participation through **Panchayati Raj Institutions (PRIs)** has been particularly significant. Reserved seats for women in village councils have enabled them to influence local environmental planning, natural resource management, and disaster mitigation programs. By integrating ecological priorities with women's leadership, these mechanisms ensure more inclusive and sustainable governance.

However, challenges remain. Socio-economic barriers, limited access to education, and underrepresentation in higher policy-making positions constrain women's full participation. Strengthening capacity-building programs, increasing financial access, and recognizing women's ecological knowledge are essential steps to overcome these obstacles.

Environmental Challenges and Women's Role in Bakalia, Karbi Anglong

Bakalia, located in the Karbi Anglong district of Assam, is a region characterized by rich biodiversity, hilly terrain, and a largely agrarian economy. Despite its ecological wealth, Bakalia faces several environmental challenges that threaten both the natural environment and the livelihoods of local communities. These

challenges are primarily linked to deforestation, unsustainable agricultural practices, water scarcity, pollution, soil erosion, and biodiversity loss.

Deforestation and Shifting Cultivation

One of the most pressing environmental issues in Bakalia is deforestation. The expansion of agriculture, timber extraction, and shifting cultivation—locally known as **‘jhum’ cultivation**—has led to significant forest cover loss over the past decades. Shifting cultivation, a traditional practice in which forested land is cleared for temporary cultivation and later abandoned, is widely practiced by local tribal communities. While this method historically allowed forests to regenerate, increasing population pressures and shorter fallow periods have prevented proper ecological recovery.

Deforestation in Bakalia has multiple consequences. Loss of forest cover disrupts local ecosystems, reduces wildlife habitats, and contributes to declining biodiversity. Moreover, forests in hilly regions play a crucial role in stabilizing soil and regulating water cycles; their removal increases the risk of landslides and floods during heavy rainfall. Illegal logging and timber trade further exacerbate deforestation, weakening the natural resilience of these ecosystems.

Efforts to address deforestation include community-based forest management and afforestation programs. However, limited awareness, economic dependence on forest resources, and inadequate enforcement of forest protection laws continue to pose challenges. Women-led initiatives in some villages have started small-scale tree plantation drives, demonstrating the potential for local solutions to this environmental problem.

Water Scarcity and Pollution Issues

Water scarcity is another critical issue in Bakalia. The hilly terrain, combined with seasonal rainfall patterns, creates uneven water availability. Many villages rely on small streams, springs, or ponds for domestic and agricultural use. During the dry season, these water sources often become insufficient, forcing communities to travel long distances for potable water.

Water pollution further compounds scarcity problems. Agricultural runoff containing fertilizers and pesticides contaminates streams and ponds, affecting both human health and aquatic biodiversity. Improper disposal of domestic waste and limited sanitation facilities in some areas also contribute to water contamination. These factors pose serious public health risks, particularly for women and children who are primarily responsible for fetching water and managing household water use.

To combat water scarcity and pollution, initiatives such as rainwater harvesting, community wells, and watershed management programs have been introduced. However, lack of technical knowledge, limited financial support, and inconsistent community participation hinder large-scale implementation. Strengthening local governance and involving community stakeholders, particularly women, is crucial for effective water resource management.

Soil Erosion and Loss of Biodiversity

Soil erosion is a significant environmental challenge in Bakalia, especially in areas with steep slopes and deforested land. Removal of vegetation cover due to logging, shifting cultivation, or infrastructure development accelerates soil degradation. Erosion reduces soil fertility, undermines agricultural productivity, and increases sedimentation in rivers and streams, affecting water quality and aquatic ecosystems.

Loss of biodiversity is closely linked to deforestation and soil erosion. Bakalia is home to a variety of flora and fauna, including several endemic and endangered species. Habitat fragmentation, illegal hunting, and encroachment into forest areas threaten these species. Decline in biodiversity not only impacts ecological balance but also undermines traditional livelihoods that depend on forest resources, such as medicinal plants, wild fruits, and honey collection.

Conservation efforts, including community-led biodiversity monitoring and protected area management, have been initiated in certain parts of Karbi Anglong. Environmental education programs and awareness campaigns aim to sensitize local communities about the importance of preserving biodiversity. Women, in particular, play a key role in such initiatives, as their daily interactions with forests and water bodies give them unique insights into ecological health and sustainable practices.

Role of Women in Environmental Conservation in Bakalia

Women in Bakalia, Karbi Anglong, play a central and multifaceted role in environmental conservation. Their contributions extend from preserving traditional ecological knowledge to participating actively in community initiatives and adopting sustainable practices at the household level. In a region where livelihoods are closely tied to natural resources, women act as crucial custodians of the environment, ensuring both ecological balance and social well-being.

Traditional Ecological Knowledge and Practices

Traditional ecological knowledge (TEK) is the cumulative understanding, practices, and beliefs developed over generations about the natural environment. In Bakalia, women have been the primary holders and transmitters of TEK.^{xvi} They possess detailed knowledge of local plant species, medicinal herbs, seasonal changes, water management, and soil fertility, which guides sustainable use of natural resources.

For example, women are aware of the specific forest zones suitable for harvesting non-timber forest products such as bamboo, wild vegetables, and honey, ensuring that collection does not harm the ecosystem. They also practice rotational farming techniques and selective harvesting, which prevent over-exploitation of resources. This traditional knowledge has historically maintained the delicate balance between human activity and ecological sustainability, and it continues to be invaluable in contemporary conservation initiatives.

Women's Involvement in Forest Protection and Clean-Up Drives

Women in Bakalia actively participate in forest protection and environmental restoration activities. Community-led tree plantation drives, often organized by local women's groups, aim to combat deforestation and soil erosion while promoting biodiversity. These efforts are not limited to planting trees; women also monitor sapling growth, prevent grazing in reforested areas, and engage in maintenance of community woodlots.

In addition, women frequently lead or participate in village-level clean-up drives along riverbanks, streams, and public spaces. Such initiatives help reduce water pollution, prevent the spread of waste into forests and farmlands, and promote awareness of environmental hygiene. Women's involvement in these activities ensures that environmental protection becomes a shared community responsibility, rather than an abstract or externally imposed policy.

During critical environmental campaigns, such as awareness drives against illegal logging or efforts to protect sacred groves, women often serve as mobilizers. Their social networks and community credibility allow them to reach households effectively, encouraging participation and compliance with sustainable practices. This grassroots activism is crucial in areas where formal regulatory mechanisms may be limited or poorly enforced.

Household-Level Sustainability Efforts

At the household level, women in Bakalia implement numerous sustainable practices that collectively contribute to environmental conservation. These include waste management, water conservation, energy-efficient cooking practices, and tree planting in home gardens and communal areas. Women are primarily responsible for managing household waste and have introduced composting techniques to convert organic waste into nutrient-rich fertilizer, reducing dependence on chemical inputs for kitchen gardens and small farms.

Tree planting at the household level not only enhances greenery but also helps mitigate soil erosion, provides fruits, and maintains local biodiversity. Women also promote water-saving techniques such as rainwater harvesting and the use of traditional water storage methods. These practices contribute to long-term sustainability, even in the absence of formal environmental policies.

Additionally, women educate younger generations about environmental stewardship through daily practices and cultural traditions, such as using biodegradable materials during festivals and rituals. By embedding conservation principles in daily life, women ensure that ecological awareness is integrated into social norms, creating a culture of sustainability within the community.

Challenges and Opportunities

Despite their significant contributions, women in Bakalia face challenges in fully realizing their environmental potential. Limited access to formal education, financial resources, and decision-making platforms often restrict their capacity to influence broader environmental policy. Seasonal migration and household responsibilities can also limit participation in extended conservation projects.

However, there are growing opportunities to enhance women's role in environmental governance. Capacity-building programs, eco-development committees, and local government initiatives can provide training, resources, and recognition for women-led conservation efforts. Integrating traditional ecological knowledge with modern environmental science, supported by policy frameworks, can further strengthen women's contributions to sustainable development in Bakalia.

Case Studies , Local Initiatives and Field Observations

Bakalia, in Karbi Anglong, provides several exemplary instances of women-led environmental initiatives that demonstrate the crucial role of women in ecological conservation and community awareness. Through field observations and case studies, it is evident that women actively contribute to sustainable practices, mobilize communities, and create models that can be replicated across similar rural regions.

Examples of Successful Women-Led Eco-Initiatives

Several women-led initiatives in Bakalia highlight the effectiveness of grassroots environmental action. One notable initiative is the “**Green Village Project**”, where a group of local women collectively undertook afforestation efforts, soil conservation, and waste management programs. They organized regular tree plantation drives in degraded hill slopes and public areas, ensuring that native species were prioritized to maintain biodiversity. Their systematic approach to planting, monitoring, and maintaining saplings has successfully increased local forest cover and improved soil stability in their region.

Another successful initiative is the **community composting program**. Spearheaded by women in several Bakalia villages, the program collects organic household waste to produce compost, which is then used in kitchen gardens and small-scale farms. This not only reduces household waste but also enhances soil fertility and reduces dependence on chemical fertilizers, promoting sustainable agriculture.

Women have also led water conservation initiatives. In villages facing seasonal water shortages, women organized **rainwater harvesting structures** and revived traditional water storage systems. These efforts have improved water availability for domestic use and irrigation, especially during the dry season, demonstrating how women's leadership can address critical environmental challenges while enhancing community resilience.

Profiles of Local Women Activists and Their Contributions

Field observations in Bakalia reveal the dedication and impact of individual women activists. For instance, **Mrs. Anjali Rongpi**, a local schoolteacher, has been actively involved in environmental education programs. She has organized workshops for children and youth on topics such as tree planting, waste segregation, and water conservation. Her initiative not only raises awareness among younger generations but also encourages students to actively participate in ecological projects.

Another prominent figure is **Ms. Latha Hembram**, who has mobilized women in her village to monitor illegal logging and protect community forests. By maintaining records of forest usage, coordinating patrols, and liaising with local authorities, she has significantly reduced instances of unauthorized tree felling. Her leadership has also empowered other women to take active roles in forest governance and conservation activities.

Elder women in Bakalia, such as traditional knowledge holders, play a vital role in preserving medicinal plant gardens and sacred groves. They guide younger women on sustainable harvesting methods, ensuring that biodiversity is maintained while also supporting local healthcare and livelihoods. These profiles illustrate the diverse ways in which women contribute to both ecological conservation and community well-being.

Community Collaboration and Awareness-Building Activities

Women in Bakalia have been instrumental in fostering collaboration between households, community organizations, and local governance bodies. Regular **community meetings**, often facilitated by women's groups, are used to discuss environmental issues such as waste management, deforestation, and water scarcity. These meetings serve as platforms for knowledge-sharing, collective problem-solving, and decision-making.

Awareness-building activities, such as **village clean-up drives, eco-fairs, and environmental workshops**, have been led and organized by women. These programs encourage the community to adopt sustainable practices, such as reducing plastic usage, planting native species, and maintaining home gardens. The inclusive approach ensures participation from men, youth, and elders, reinforcing the importance of shared responsibility in environmental conservation.

Additionally, women's involvement in **local governance structures**, particularly in Panchayati Raj Institutions, has enabled the integration of ecological priorities into development planning. By advocating for sustainable resource use, afforestation programs, and clean water initiatives, women influence policy decisions at the grassroots level, making environmental governance more participatory and effective.

Insights from Field Observations

Field visits to Bakalia highlight several key insights about women's role in environmental conservation:

1. Women's knowledge of local ecosystems is invaluable for planning and implementing conservation initiatives.
2. Grassroots organization and leadership by women foster greater community participation and accountability.
3. Household-level sustainable practices, when scaled through community collaboration, create tangible ecological benefits.
4. Recognition, support, and capacity-building for women-led initiatives significantly enhance their impact and sustainability.

These observations emphasize that women are not merely participants in environmental conservation but are central to its success in Bakalia. Their leadership combines traditional knowledge, community mobilization, and innovative practices, ensuring long-term ecological sustainability.

Initiatives and Programs by Women

Women in Bakalia, Karbi Anglong, have been at the forefront of numerous environmental initiatives and programs that demonstrate their leadership, organizational capacity, and commitment to sustainable development. Their participation ranges from grassroots community projects to structured programs supported by government and non-governmental organizations (NGOs). These initiatives have not only improved environmental conditions locally but have also empowered women socially and economically, reinforcing their role as custodians of natural resources.

Village Women's Committees and Self-Help Groups

Village women's committees and **self-help groups (SHGs)** play a central role in organizing and implementing environmental initiatives in Bakalia. These groups often consist of 10–20 women from the same village who collaborate to address ecological and social challenges collectively.

One of the primary functions of these groups is **community mobilization for environmental projects**. Women organize tree plantation drives in degraded lands, hill slopes, and community spaces, ensuring the planting of native species to preserve local biodiversity. They also monitor the survival of saplings, coordinate with youth volunteers, and maintain records of growth and survival rates, ensuring accountability and long-term sustainability.

In addition, women's committees actively participate in **waste management**. They oversee proper disposal of household and community waste, establish composting units, and educate neighbours on reducing plastic usage. Many committees have initiated campaigns to encourage households to separate biodegradable and non-biodegradable waste, promoting environmental hygiene and soil fertility in local agricultural areas.

These committees also facilitate knowledge sharing about **water conservation, sustainable farming practices, and energy-efficient techniques**. Through regular meetings and workshops, women train other community members in techniques such as rainwater harvesting, organic fertilizer use, and soil erosion prevention, making sustainable practices accessible to all households.

Participation in Government and NGO Environmental Programs

Women in Bakalia are increasingly involved in environmental programs organized by government agencies and NGOs. The **Ministry of Environment, Forest and Climate Change (MoEFCC)** has introduced various programs that encourage women's participation in forest management, biodiversity conservation, and renewable energy adoption. Women's groups actively collaborate with these initiatives to implement policies at the local level, such as afforestation schemes, watershed management projects, and awareness campaigns on climate change adaptation.

NGOs working in Karbi Anglong, such as the **North East Network (NEN)** and local environmental trusts, support women-led programs by providing training, technical guidance, and resources for environmental projects. For example, women's groups have been trained in nursery management, eco-friendly farming techniques, and monitoring of water quality. These collaborations enhance women's capacity to manage resources effectively while providing platforms for leadership and community engagement.

Women's involvement in government and NGO programs also strengthens **policy advocacy at the grassroots level**. They serve as liaison persons between local communities and authorities, ensuring that environmental policies are implemented effectively and that the voices of marginalized groups are represented in decision-making processes.

Local Campaigns on Tree Plantation, Waste Control, and Water Conservation

Women in Bakalia have spearheaded numerous local campaigns addressing pressing environmental issues. **Tree plantation drives** are one of the most visible and sustained efforts. Organized on village land, degraded forest areas, and school grounds, these drives often involve collaborative planning, mobilization of volunteers, and post-plantation maintenance. Women ensure that these efforts are culturally relevant by incorporating traditional knowledge about tree species, planting seasons, and soil suitability.

Waste control campaigns are another area of active participation. Women organize village clean-up days, teach households about composting, and implement waste segregation practices. These campaigns not only reduce environmental pollution but also raise awareness about public health and sustainable resource use.

Water conservation has been a major focus of women-led initiatives, particularly in villages experiencing seasonal water scarcity. Women have revived traditional water storage structures, initiated rainwater harvesting projects, and promoted efficient use of water for agriculture and domestic purposes. Their efforts

ensure that water resources are available year-round, protect ecosystems, and reduce community vulnerability to droughts.

Additionally, women's campaigns often include **environmental education programs**, engaging children and youth in tree planting, waste management, and water conservation projects. These programs instill a sense of ecological responsibility and prepare the next generation to continue sustainable practices.

Impacts and Significance

The initiatives and programs led by women in Bakalia have multiple positive impacts:

1. **Environmental:** Improved forest cover, reduced soil erosion, better water management, and cleaner communities.
2. **Social:** Strengthened community cohesion, increased awareness of environmental issues, and enhanced participation of women in governance.
3. **Economic:** Promotion of sustainable agriculture, reduced dependence on chemical inputs, and potential income from forest-based products.

Women's leadership in these initiatives demonstrates that sustainable development is most effective when it combines ecological knowledge, community mobilization, and active participation. Their work not only addresses immediate environmental challenges but also builds long-term resilience within the community.

Impact and Challenges

Impact of Women's Participation on Local Environment

Women's active involvement in environmental conservation in Bakalia, Karbi Anglong, has had a profound and multi-dimensional impact on both the natural environment and the social fabric of local communities. Their engagement ranges from practical interventions in forest management and waste control to promoting ecological awareness and integrating sustainable practices into everyday life. The cumulative effect of these efforts has contributed significantly to environmental improvement, social empowerment, and community development.

Improved Environmental Conditions and Awareness

The most visible impact of women's participation is the improvement of environmental conditions at the local level. Women-led initiatives such as tree plantation drives, afforestation programs, and protection of community forests have resulted in the restoration of degraded lands, reduction of soil erosion, and enhancement of local biodiversity. Areas previously affected by deforestation and shifting cultivation have witnessed gradual regeneration due to organized planting and maintenance of native species.

Water conservation initiatives spearheaded by women, including rainwater harvesting, rehabilitation of traditional water tanks, and efficient irrigation practices, have improved the availability and quality of water for domestic and agricultural use. These measures not only reduce water scarcity but also sustain aquatic biodiversity by maintaining natural water cycles.

Women have also played a critical role in waste management and pollution control. Household-level composting, segregation of biodegradable and non-biodegradable waste, and village clean-up campaigns have reduced environmental contamination, improved sanitation, and created a culture of ecological responsibility. By involving youth and community members, women have successfully raised awareness about sustainable practices and the importance of preserving natural resources, leading to long-term behavioural changes in the community.

Social Empowerment Through Eco-Activities

Participation in environmental conservation has contributed significantly to the social empowerment of women in Bakalia. Engaging in organized eco-activities has enhanced their leadership, decision-making, and problem-solving skills. Women's committees, self-help groups, and village-level initiatives have created platforms for women to voice their opinions, manage resources, and influence local governance processes.

Through eco-initiatives, women gain recognition and respect within their communities, challenging traditional gender roles and fostering greater gender equity. For example, women leading tree plantation drives or monitoring forest resources are increasingly seen as authoritative figures in environmental matters. This visibility encourages younger girls to participate in ecological projects and cultivates a sense of pride and responsibility towards the environment.

Environmental programs also create economic opportunities for women. Compost production, nursery management, and small-scale agroforestry initiatives not only support ecological goals but provide supplemental income. This economic empowerment, combined with increased social recognition, strengthens women's capacity to contribute actively to broader community development.

Integration of Environmental Values in Community Life

Women's participation has facilitated the integration of environmental values into the everyday life of the community. By embedding sustainable practices within household routines—such as water conservation, waste management, and organic gardening—women ensure that environmental stewardship becomes a normative aspect of community life. These practices influence family behaviour, educate children, and shape cultural attitudes toward natural resource conservation.

Moreover, women-led awareness campaigns, workshops, and school programs promote ecological literacy, emphasizing the interdependence between humans and nature. Festivals and rituals are sometimes aligned

with conservation messages, such as tree planting during seasonal celebrations, reinforcing environmental values culturally and socially.

Community-wide initiatives coordinated by women have also strengthened collective responsibility for natural resources. Decisions regarding forest usage, water allocation, and waste disposal are increasingly made with ecological considerations in mind. This participatory approach fosters cooperation among villagers, ensuring that sustainable practices are maintained consistently across households and generations.

Long-Term Implications

The long-term impact of women's participation in Bakalia is evident in the resilience and sustainability of local ecosystems. Reforested areas, protected water sources, and improved soil conditions contribute to a stable environment capable of supporting agriculture, livestock, and biodiversity. The knowledge transfer from experienced women leaders to younger generations ensures continuity of ecological practices, while community engagement mechanisms help safeguard against unsustainable exploitation of resources.

Furthermore, the social changes brought about by women's eco-activities—enhanced leadership, economic empowerment, and environmental consciousness—create a feedback loop that strengthens both community cohesion and environmental stewardship. Women emerge not just as participants but as central agents of sustainable development, linking ecological well-being with social progress.

Challenges Faced by Women in Environmental Politics in Bakalia, Karbi Anglong

Despite their critical role in environmental conservation and green politics, women in Bakalia, Karbi Anglong, face numerous challenges that limit their full participation and influence. These obstacles are rooted in social, cultural, economic, and institutional factors and affect women's ability to contribute effectively to environmental governance, leadership, and policy-making. Understanding these challenges is crucial for designing interventions that strengthen women's participation and enhance the impact of their initiatives.

Limited Access to Resources and Decision-Making

One of the primary challenges faced by women in Bakalia is limited access to financial, technical, and informational resources. Many environmental initiatives require materials, tools, and funding, which are often unavailable to women due to economic constraints or lack of institutional support. For example, organizing large-scale tree plantation drives, establishing nurseries, or implementing rainwater harvesting systems often requires upfront capital, which women's groups may struggle to secure.

Access to information and training is also limited. While government and NGO programs provide technical guidance, women in remote villages may not receive timely or sufficient training in sustainable agriculture, forestry management, or environmental monitoring. This restricts their ability to adopt innovative techniques or scale their initiatives effectively.

Furthermore, women frequently face barriers in decision-making processes at the village and district levels. Although participation in **Panchayati Raj Institutions (PRIs)** provides formal opportunities, women's voices are often overshadowed by male counterparts or elder community members. Decisions regarding land use, forest access, and allocation of development funds may be made without considering women's perspectives, despite their intimate knowledge of local ecosystems and resource management practices.

Cultural and Social Barriers

Cultural norms and social expectations pose significant challenges to women's participation in environmental politics. In many communities in Bakalia, traditional gender roles assign women to household responsibilities, childcare, and subsistence farming, leaving limited time and mobility for community-level activism. Women's engagement in public decision-making or leadership positions can sometimes be viewed as unconventional, discouraging broader participation.

Social barriers also include resistance from male community members, particularly in activities perceived as political or authoritative. For example, women leading forest monitoring committees or advocating for sustainable land-use practices may face opposition or lack of cooperation from male counterparts who dominate local governance structures.

Additionally, early marriage, limited educational opportunities, and societal expectations restrict women's capacity to acquire the knowledge and skills necessary for effective participation in environmental programs. Without addressing these socio-cultural constraints, women's involvement may remain peripheral rather than central to decision-making processes.

Lack of Recognition and Institutional Support

Women's contributions to environmental conservation in Bakalia are often undervalued or overlooked. Local authorities, NGOs, and government agencies may recognize the outcomes of women's initiatives but fail to provide formal acknowledgment, incentives, or platforms for broader influence. Lack of recognition can reduce motivation and limit the expansion of successful programs.

Institutional support is also inadequate in several respects. Women's groups may lack access to regular funding, technical expertise, or networks for collaboration with other villages or districts. Policy frameworks, while supportive in principle, are not always implemented effectively at the grassroots level. For instance, afforestation schemes, water management programs, or waste reduction initiatives may have provisions for women's involvement, but limited monitoring, delayed fund disbursement, or insufficient training prevents meaningful participation.

Moreover, bureaucratic procedures can be cumbersome for women-led groups. Documentation, reporting, and compliance requirements often require literacy, mobility, and familiarity with administrative processes, which

many women in remote villages may find challenging. Without targeted support, institutional mechanisms remain inaccessible, reinforcing the marginalization of women in environmental politics.

Interconnectedness of Challenges

The challenges faced by women in Bakalia are interconnected. Limited resources, cultural constraints, and lack of institutional support reinforce one another, creating structural barriers to women's full engagement in environmental governance. For example, social restrictions on mobility limit access to training programs, which in turn reduces the ability to secure government grants or participate in technical planning. Similarly, lack of recognition diminishes motivation and community support, making it difficult for women to expand successful initiatives or influence policy decisions.

Strategies for Overcoming Challenges

Addressing these challenges requires a multi-faceted approach:

- **Capacity-Building Programs:** Providing women with training in leadership, sustainable resource management, and project implementation can enhance their skills and confidence.
- **Financial and Technical Support:** Grants, microloans, and access to tools and materials enable women to undertake larger and more impactful environmental initiatives.
- **Community Sensitization:** Engaging men and local leaders to recognize women's contributions and promote gender equity can reduce cultural barriers.
- **Policy Implementation and Monitoring:** Strengthening the enforcement of government programs that support women's participation ensures that provisions for training, funding, and decision-making are effectively realized.
- **Networking and Recognition:** Establishing women's environmental networks and recognizing their achievements through awards, certificates, and public acknowledgment can motivate continued engagement and inspire others.

Policy Directions and Conclusion

Policy Recommendations

To ensure sustainable development and effective environmental governance, specific policy measures are needed to strengthen the role of women. These recommendations address inclusion, capacity-building, institutional support, and collaboration, providing a roadmap for empowering women as central actors in environmental conservation.

1. Inclusion of Women in Local Environmental Policy and Planning

A critical step toward strengthening women's role in environmental governance is ensuring their **active participation in policy-making and planning** at the local level.^{xvii} Women possess valuable traditional ecological knowledge and practical insights about natural resource management, which should inform community development and environmental planning.

Policy recommendations include:

- **Reserved Representation:** Ensuring mandatory representation of women in village councils, forest committees, and local environmental boards, with decision-making powers rather than symbolic roles.
 - **Participatory Planning Processes:** Designing planning mechanisms that actively involve women in discussions about land use, forest management, water resource allocation, and infrastructure development. Women's participation should be structured, with scheduled meetings, decision-making authority, and accountability mechanisms.
 - **Community Consultation Platforms:** Establishing forums where women can voice concerns and propose solutions related to environmental issues. These platforms can include local workshops, eco-forums, and village assemblies, enabling community-wide collaboration and fostering ecological awareness.
- Inclusion of women in policy and planning not only strengthens ecological decision-making but also promotes gender equity, social cohesion, and accountability in governance processes.

2. Training and Support for Women's Green Initiatives

To enhance women's effectiveness in environmental initiatives, **capacity-building programs and technical support** are essential.^{xviii} Training should cover sustainable agriculture, afforestation, water management, waste management, biodiversity conservation, and climate adaptation strategies.

Policy recommendations include:

- **Skill Development Workshops:** Regular, accessible workshops that teach practical skills such as nursery management, organic composting, watershed development, and environmental monitoring.
- **Financial Support Mechanisms:** Establishing micro-grants, low-interest loans, and seed funding for women-led projects, enabling them to scale up tree plantations, waste management programs, and renewable energy initiatives.
- **Technical Assistance and Mentorship:** Linking women's groups with environmental experts, NGOs, and government technicians who can provide guidance, supervise project implementation, and ensure long-term sustainability.
- **Educational Campaigns:** Promoting environmental education programs for women and youth, emphasizing traditional ecological knowledge alongside modern conservation techniques. This approach fosters intergenerational knowledge transfer and empowers communities to adopt sustainable practices.

Through systematic training and support, women can transform their ecological knowledge into structured, measurable, and impactful initiatives, contributing to both local sustainability and broader environmental goals.

3. Collaboration with NGOs and Government for Sustainability Projects

Collaboration between women's groups, NGOs, and government agencies is essential to maximize the impact of environmental programs. Partnerships provide access to technical expertise, funding, policy guidance, and networks for knowledge sharing.

Policy recommendations include:

- **Public-Private Partnerships:** Encouraging joint projects where NGOs, government bodies, and women's committees co-design and implement programs such as reforestation, watershed management, and biodiversity conservation.
 - **Monitoring and Evaluation Systems:** Establishing collaborative frameworks where progress is monitored, data is collected, and outcomes are assessed to improve project efficiency and replicate successful models.
 - **Community-Led Governance Models:** Promoting co-management of natural resources, where women actively participate in decision-making alongside government officials and NGO representatives. This ensures sustainability, accountability, and community ownership of environmental initiatives.
 - **Awareness Campaigns and Advocacy:** Joint campaigns led by women, NGOs, and government agencies can raise community awareness about sustainable practices, climate change adaptation, and environmental rights, fostering a culture of ecological responsibility.
- Collaboration strengthens women's capacity, ensures resources are efficiently utilized, and bridges the gap between policy frameworks and grassroots implementation.

▪ Additional Recommendations

- **Recognition and Incentives:** Governments and NGOs should acknowledge and reward women's contributions through awards, certificates, and public recognition programs to motivate continued engagement.
- **Legal and Policy Safeguards:** Policies should protect women's rights to access land, forests, and water resources, ensuring that environmental leadership is not constrained by socio-legal barriers.
- **Research and Documentation:** Supporting research on women-led environmental initiatives in Bakalia can document best practices, evaluate impact, and inform policy replication in other regions.
- **Integration of Gender in Environmental Planning:** All environmental programs and policies should include gender-sensitive approaches, ensuring women's perspectives are central in addressing ecological and social challenges.

Summary of Findings

Field observations and case studies indicate that women in Bakalia are deeply involved in multiple aspects of environmental conservation:

- **Traditional Ecological Knowledge:** Women possess extensive knowledge of local ecosystems, including forest resources, water management, soil conservation, and biodiversity. This knowledge forms the foundation for sustainable practices, such as selective harvesting, rotational farming, and protection of medicinal plants.
- **Community-Led Initiatives:** Women actively lead initiatives such as tree plantation drives, clean-up campaigns, and water conservation projects. Their leadership ensures participation across households and fosters a sense of collective responsibility for environmental protection.
- **Household-Level Sustainability Practices:** Women integrate environmental practices into daily household routines, including composting, organic gardening, waste segregation, and efficient water use. These practices contribute to local ecological health and serve as models for wider community adoption.
- **Participation in Policy and Governance:** Women engage in local governance structures, such as Panchayati Raj Institutions and village committees, influencing decisions on natural resource management and environmental policy. They also collaborate with NGOs and government programs to implement sustainable development initiatives.
- **Social Empowerment:** Participation in environmental initiatives strengthens women's leadership skills, confidence, and social standing. Women gain recognition in their communities, challenge traditional gender norms, and inspire future generations to engage in ecological stewardship.
- **Challenges:** Despite their contributions, women face limitations, including restricted access to financial and technical resources, cultural and social barriers, and lack of institutional support. Addressing these challenges is critical to maximizing the impact of women-led environmental initiatives.

Significance of Women's Role in Sustainable Development

The findings underscore that women are indispensable agents of sustainable development in Bakalia. Their involvement ensures that environmental conservation is not only effective but also inclusive, equitable, and community-centered.

- **Ecological Significance:** Women's active management of forests, water resources, and waste systems contributes to biodiversity preservation, soil fertility, and climate resilience. Their efforts mitigate environmental degradation caused by deforestation, shifting cultivation, and water scarcity.
- **Social Significance:** Women's leadership strengthens community cohesion, encourages participation from various social groups, and promotes gender equity. By integrating environmental awareness with social empowerment, women create a holistic approach to sustainable development.

- **Economic Significance:** Sustainable practices led by women, such as organic farming, eco-tourism, and non-timber forest product management, provide alternative livelihoods and enhance household income, linking environmental health with economic security.

Women's engagement in green politics demonstrates that environmental sustainability cannot be achieved without the active inclusion of women as leaders, planners, and decision-makers. Their participation bridges traditional ecological knowledge with modern conservation strategies, creating locally adapted solutions that are both practical and resilient.

Future Directions for Empowering Women in Green Politics

To ensure that women in Bakalia continue to play a transformative role in environmental governance, several future directions are essential:

- **Enhanced Training and Capacity Building:** Expanding skill development programs on environmental management, renewable energy, sustainable agriculture, and climate adaptation will equip women with knowledge and confidence to lead larger-scale projects.
- **Financial and Institutional Support:** Providing micro-grants, low-interest loans, and access to resources will enable women's groups to scale up initiatives. Institutional mechanisms should also recognize and support women's contributions through awards, certifications, and inclusion in policy-making forums.
- **Community and Cultural Engagement:** Programs that sensitize men, elders, and youth to the value of women's participation will help overcome social and cultural barriers. Collaborative approaches ensure that environmental projects are community-driven and widely accepted.
- **Integration into Governance Structures:** Strengthening women's representation in local decision-making bodies, forest committees, and environmental boards will ensure that policies are inclusive, equitable, and responsive to ecological and social needs.
- **Documentation and Knowledge Sharing:** Research and documentation of women-led initiatives can provide models for replication in other regions. Sharing best practices, case studies, and success stories can inspire broader adoption of sustainable strategies.
- **Youth Engagement:** Encouraging intergenerational learning by involving young women and girls in environmental activities will ensure continuity of conservation efforts and build a culture of sustainability for the future.

Concluding Remarks

The role of women in environmental conservation and green politics in Bakalia is both transformative and essential. Their leadership, knowledge, and active participation have resulted in improved ecological conditions, empowered communities, and the integration of environmental values into daily life. Supporting women through policies, training, financial access, and institutional recognition will not only enhance the effectiveness of environmental initiatives but also promote gender equity and social development.

Ultimately, empowering women in green politics is not merely a matter of inclusion; it is a strategic imperative for sustainable development, ecological resilience, and the long-term well-being of both communities and the environment in Bakalia, Karbi Anglong. By recognizing and amplifying women's contributions, stakeholders can ensure that environmental governance is participatory, equitable, and sustainable for generations to come.

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