

**School Governance and Climate  
Responsive Education: A conceptual  
framework for engagement in sustainable  
climate-responsive education.**

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**Abstract**

Climate change presents a profound threat to educational systems globally, particularly in developing countries like Kenya where vulnerabilities to climate-induced disruptions are high. Schools have the potential to act as transformative hubs for climate action through climate-responsive education—yet this potential remains underutilized due to governance-related challenges. This study critically examines how school governance constructs—namely leadership and vision, policy and planning, resource mobilization, and stakeholder engagement—influence the implementation of climate-responsive education in Kenya’s basic education subsector. Anchored in Transformational Leadership Theory and Ecological Systems Theory, the research adopts a desktop methodology, synthesizing policy documents, empirical studies, and international case examples. Findings reveal that visionary leadership significantly boosts environmental initiatives, but professional development

in sustainability remains limited. School-level policies often fail to reflect national climate priorities due to weak enforcement mechanisms and inadequate planning capacity. Furthermore, resource constraints and donor dependence hinder the scalability of green infrastructure, while participatory structures for community and student involvement are inconsistently implemented. The study concludes that Kenya’s education system requires a systemic shift in governance—moving from reactive administrative compliance to integrated, transformative leadership. Key recommendations include embedding climate governance into school leader training, mainstreaming climate policy into school operations, mobilizing innovative financing mechanisms, and institutionalizing stakeholder participation. The study contributes to the growing discourse on climate-smart education governance and offers a conceptual framework for reimagining schools as agents of climate resilience and environmental stewardship.

***Keywords: School governance, Climate-responsive education, Eco-literate leadership, Sustainable development, Transformational Leadership Theory, Ecological Systems Theory, Environmental sustainability in schools.***

**1.0 Introduction**

Climate change poses an urgent global challenge, necessitating transformative

action across all societal sectors, including education. Schools play a pivotal role in shaping environmentally conscious citizens equipped to lead sustainability transitions. As part of this imperative, school governance must evolve to support climate-responsive education—an approach that fosters environmental awareness, resilience, and sustainable action among learners. Within this context, school governance is more than administrative oversight; it encompasses strategic leadership, participatory engagement, effective resource management, and accountability systems that align with climate goals.

In Kenya's basic education subsector, efforts to embed sustainability into the school environment remain fragmented, often driven by individual initiative rather than institutional frameworks. Climate-responsive education requires deliberate integration into governance structures—anchored in well-defined policies, inclusive stakeholder participation, adequate resource allocation, and robust monitoring mechanisms. This study explores how these four governance constructs influence the implementation of climate-responsive education.

Guided by Transformational Leadership Theory and Ecological Systems Theory, this desktop research critically examines how school governance in Kenya can foster systemic climate-resilient education. It

contributes to the emerging discourse on sustainable leadership in schools, providing evidence and insights relevant for education policymakers, school managers, and development partners.

## **2.0 Background of the Study**

Kenya, like many developing countries, is experiencing the intensifying impacts of climate change—ranging from prolonged droughts, erratic rainfall, rising temperatures, and increased incidences of flooding (Kenya Meteorological Department, 2022). These environmental shifts not only threaten agricultural productivity and public health but also directly undermine the nation's education sector, particularly the basic education sub-sector which serves as the foundational system for national development. Schools, which are strategically positioned within communities, have a unique potential to act as transformative spaces for building climate resilience through education for sustainable development (ESD). However, this potential remains largely untapped due to weak governance frameworks that fail to fully integrate climate action into the education system.

The Government of Kenya has shown commitment to climate-responsive development through key policies and international frameworks. These include Kenya's National Climate Change Action Plan (NCCAP), the Basic Education Act

(2013), and alignment with Sustainable Development Goal 4.7, which emphasizes education that promotes sustainable lifestyles, human rights, gender equality, and global citizenship. Additionally, Kenya's education reforms—most notably the Competency-Based Curriculum (CBC) introduced in 2017—are well-suited to support learner-centered, experiential, and project-based approaches that resonate with climate education principles (KICD, 2022; UNESCO, 2021).

Despite these efforts, multiple studies have identified persistent gaps between policy and implementation. A review by KIPPRA (2023) found that less than 30% of public schools in Kenya had integrated climate-related indicators in their School Improvement Plans (SIPs). Similarly, the Climate-Smart Education Systems Initiative Progress Report (UNESCO, 2023) shows that climate education tends to be treated as a peripheral or co-curricular concern, rather than a strategic governance priority. This results in fragmented implementation, often reliant on ad hoc donor-funded initiatives that lack scalability or long-term sustainability.

Empirical evidence further highlights the absence of enforceable, school-level sustainability policies. For instance, most schools do not have environmental codes of conduct, green procurement guidelines, or disaster preparedness plans integrated into their management frameworks

(UNICEF, 2022). This absence creates uncertainty in roles and responsibilities for climate action, limiting accountability among school heads and Boards of Management (BoMs). Moreover, research by the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS, 2023) notes that school leadership in Kenya is rarely trained in eco-literacy or climate governance, undermining the ability of institutions to systematically address environmental risks.

The challenge of resource mobilization further exacerbates the governance deficit. Climate-smart practices—such as the construction of energy-efficient buildings, establishment of school gardens, and adoption of rainwater harvesting systems—require infrastructure, expertise, and financial investment. However, most schools operate under constrained budgets that do not allocate resources specifically for environmental education or infrastructure (BRACE, 2022). A UNICEF study (2023) found that over 60% of green school pilots in Kenya were externally funded, with only 15% of public schools maintaining internal budget lines for sustainability-related activities. This dependency limits the autonomy of schools to design and implement context-specific climate interventions.

Community and stakeholder participation is another critical area of concern. While the CBC promotes community linkages and project-based learning, these ideals are not consistently reflected in school governance practices. Research by UNEP (2023) and Logan (2024) indicates that in many rural schools, Boards of Management and Parents Associations are not actively involved in environmental planning or monitoring. Furthermore, the lack of inclusive structures to engage learners, local leaders, and NGOs weakens the feedback loops necessary for climate-responsive decision-making. Conversely, in schools where community stakeholders co-create “green action plans” and learners participate in sustainability clubs, there is stronger program continuity and local ownership (UNESCO, 2021; UNU- IAS, 2023).

Globally, there is growing recognition that education systems must not only teach about climate change but must also embody sustainability through their governance, operations, and culture. Countries such as Finland and Costa Rica have institutionalized whole-school sustainability frameworks that guide leadership development, infrastructure planning, and stakeholder collaboration (UNESCO, 2021). These models offer valuable lessons for Kenya, especially the emphasis on school autonomy, capacity building, and monitoring for environmental performance.

The urgency for Kenya’s education sector to transform into a climate-resilient system is underscored by projections from the IPCC and the World Bank, which warn of increasing climate disruptions in Sub-Saharan Africa. As noted in the “Building Climate-Smart Education Systems” report (2023), education must not be a passive sector affected by climate change; rather, it should be a frontline system for adaptation, awareness, and action.

This study responds to these challenges by exploring how school governance—operationalized through leadership and vision, policy and planning, resource mobilization, and stakeholder engagement—can be leveraged to strengthen climate-responsive education in Kenya’s basic education sub-sector. Specifically, the study seeks to understand the enabling and constraining factors that shape governance for climate action, while drawing lessons from both local innovations and international best practices. Ultimately, it aims to provide a framework that school leaders, policymakers, and education stakeholders can use to integrate sustainability more effectively into the fabric of educational institutions across Kenya.

### **3.0 Statement of the Problem (Revised)**

Despite growing recognition of climate change as an educational concern, many Kenyan schools continue to operate without structured climate-responsiveness

embedded in their governance systems. Leadership in education often prioritizes academic targets and infrastructural development, while issues of sustainability and climate preparedness remain secondary or absent.

As a result, efforts to implement environmental education and green school practices are largely uncoordinated, under-resourced, and unsustainable. The lack of governance frameworks that prioritize climate policy formulation, inclusive stakeholder engagement, resource allocation, and monitoring of environmental outcomes impedes the progress of climate-responsive education.

This study addresses this gap by exploring how specific constructs of school governance—namely, policy and strategic leadership, stakeholder participation, resource mobilization, and accountability mechanisms—relate to the implementation and sustainability of climate-responsive education in the Kenyan basic education context.

#### 4.0 Objectives of The Study

1. To examine how policy and strategic leadership in school governance influence climate-responsive education in Kenya.
2. To explore the role of stakeholder participation in promoting climate action within school communities.

3. To analyze how resource mobilization and utilization support or hinder the implementation of climate-responsive practices in schools.
4. To evaluate the role of monitoring, evaluation, and accountability mechanisms in sustaining environmental education initiatives in the basic education subsector.

#### 5.0 Research Questions

1. How does policy and strategic leadership within school governance contribute to climate-responsive education?
2. In what ways does stakeholder participation influence the integration of environmental sustainability in schools?
3. How does resource mobilization and utilization affect the implementation of green initiatives in Kenyan schools?
4. What role does monitoring and accountability play in sustaining climate education and practices in schools?

#### 6.0 Theoretical Review

This study is grounded in two interlinked theoretical foundations: Transformational Leadership Theory and Ecological Systems

Theory. Each theory provides a conceptual lens for analyzing how governance constructs in schools influence the uptake and institutionalization of climate-responsive education in Kenya's basic education subsector. Using the 4Ps framework—Proponent, Purpose, Postulates, and Proof—this section reviews the relevance and application of each theory.

### 6.1 Transformational Leadership Theory

Transformational Leadership Theory was first introduced by James MacGregor Burns (1978) and later refined by Bernard Bass (1985). The theory emerged from political leadership studies but has since been widely applied in educational leadership to explain how leaders inspire followers toward shared goals. The theory explains how leaders go beyond routine administration (transactional leadership) to drive institutional change by aligning followers with a compelling vision. In school governance, its purpose lies in helping leaders drive sustainable transformation by influencing school culture, stakeholder attitudes, and institutional goals. Transformational Leadership Theory is founded on four central constructs:

i. **Idealized Influence:** Leaders become role models who exhibit integrity and commitment to values; such as environmental stewardship.

ii. **Inspirational Motivation:** Leaders articulate a clear, compelling vision for sustainable futures, thus motivating the entire school community.

iii. **Intellectual Stimulation:** Leaders encourage innovation, critical thinking, and problem-solving; skills essential in tackling climate challenges.

iv. **Individualized Consideration:** Leaders address individual learning needs, providing mentorship and support, including eco-literacy training for teachers.

UNESCO (2021) and Musetti (2024) show that heads of basic education institutions who embody transformational qualities are more likely to promote green clubs, energy-saving programs, and cross-curricular environmental themes. In Kenya, schools where leaders received targeted training in sustainability reported more integration of rainwater harvesting, tree planting, and curriculum-linked environmental projects (KIPPRA, 2023). This evidence demonstrates that leadership style directly impacts the success of climate education interventions. This theory aligns with the governance constructs of visionary leadership and policy integration, offering a framework for cultivating school leaders as change agents for climate-responsive education.

## 6.2 Ecological Systems Theory

Urie Bronfenbrenner (1979) developed Ecological Systems Theory as a framework to explain how human development is influenced by different environmental systems that interact dynamically.

The theory aims to provide a holistic understanding of how individuals (learners, teachers) and institutions (schools) are shaped by interconnected systems—ranging from immediate settings to broader sociopolitical and cultural contexts.

Bronfenbrenner's theory delineates five nested systems:

- i. **Microsystem:** Immediate settings like classrooms where learners interact with teachers and peers—critical for instilling sustainability practices.
- ii. **Mesosystem:** Linkages between microsystems—e.g., school-home-community partnerships essential for stakeholder engagement.
- iii. **Exo-system:** External environments that indirectly affect the learner—such as education ministries, NGOs, and donors shaping school policy and resources.
- iv. **Macrosystem:** Societal ideologies, values, laws, and national/global agendas like SDG 4.7 and the

Kenyan NCCAP that influence school governance direction.

- v. **Chronosystem:** Time-bound changes such as curriculum reforms or climate events that alter education trajectories.

UNEP (2023) and UNU-IAS (2023) show that successful green school models are those that operate across systems—building connections between schools and environmental organizations, engaging families, and aligning with national climate goals. Empirical work in Kenya reveals that schools partnering with local government and NGOs (exo-system) exhibit stronger capacity to implement climate-smart infrastructure (UNESCO, 2023).

This theory explains how school governance must respond to stakeholder dynamics, resource ecosystems, and policy environments. It supports the idea that schools do not act in isolation, and leadership must manage systemic interactions to enable climate-responsive outcomes.

## 6.3 Synthesis and Relevance to the Kenyan Context

The convergence of Transformational Leadership Theory and Ecological Systems Theory creates a robust explanatory model for school-based climate governance in Kenya. Transformational Leadership focuses on agency—how school heads

inspire, motivate, and innovate to lead sustainability efforts from within. Ecological Systems Theory emphasizes structure—highlighting the multilevel relationships between the school, community, national policy, and global agendas.

In Kenya, the Competency-Based Curriculum (CBC) demands instructional and institutional shifts that go beyond technical implementation. School leaders must be visionary, adaptive, and networked across systems. Both theories, therefore, support the governance constructs central to this study:

- i. **Policy and Planning:** Guided by vision (Transformational) and context-aware alignment (Ecological).
- ii. **Stakeholder Engagement:** Driven by collaboration across systems (Ecological).
- iii. **Resource Mobilization:** Influenced by external networks and leadership initiative.
- iv. **Accountability and Monitoring:** Enhanced through systemic awareness and leadership modeling.

By applying these theories, this study positions school governance not merely as administrative control but as a dynamic interplay of leadership vision and systemic

connectivity essential for advancing climate-responsive education in Kenya's basic education sub-sector

## 7.0 Methodology

This study adopts a desktop research methodology to investigate how specific school governance constructs influence the integration of climate-responsive education in Kenya's basic education subsector. Given its conceptual nature, the study systematically analyzes and synthesizes existing data from policy documents, case studies, academic literature, and program reports.

### 7.1 Research Design

This study employs a desktop research approach, analyzing secondary sources to examine the four governance constructs:

1. Policy and Strategic Leadership
2. Stakeholder Participation
3. Resource Mobilization and Utilization
4. Monitoring, Evaluation, and Accountability

These constructs are analyzed as independent variables, with climate-responsive education as the dependent variable. The methodology focuses on the critical review and synthesis of existing literature, policy documents, and case

studies related to climate-responsive education.

## 7.2 Data Collection Methods

The following key data collection methods are utilized:

### a) Document Analysis

This involves reviewing and analyzing national policy documents, environmental education frameworks, institutional publications from KICD, TSC, and KEMI and reports from UNESCO, UNEP, World Bank, and related development agencies

### b) Case Study Analysis

Examines selected Kenyan schools and programs (e.g., Green Schools Initiative, Eco-Schools Kenya) that demonstrate varying levels of climate-responsive governance. These case studies provide practical evidence on how different governance constructs are operationalized.

### c) Comparative Analysis

Compares governance models and climate education outcomes in different school contexts (e.g., urban vs. rural, public vs. private) and draws lessons from other countries implementing green school strategies (e.g., Finland, South Africa).

### d) Thematic Analysis

Themes are organized around the governance constructs, viz a viz:

- i. How strategic policies are framed and implemented
- ii. Levels of stakeholder engagement in green programs
- iii. Nature and sufficiency of resource allocation for climate projects
- iv. Mechanisms for monitoring sustainability progress

## 7.3 Scope and Limitations

As a non-empirical, literature-based study, this research does not include primary field data. Instead, it offers a comprehensive synthesis of secondary data to provide a conceptual model linking governance structures to climate-responsive outcomes in schools.

This method is appropriate for informing policy advocacy, guiding institutional reforms, and shaping future empirical research on climate governance in education.

## 8.0 Literature Review: Empirical Studies

### 8.1 Introduction

Climate-responsive education has emerged as a global imperative in response to the increasing risks posed by climate change. Within the education sector, particularly in Kenya's basic education

sub-sector, the ability of schools to serve as hubs of climate transformation depends significantly on the governance frameworks that support climate education and action. This literature review critically synthesizes empirical studies organized around four interconnected governance constructs—leadership and vision, policy and planning, resource mobilization, and stakeholder engagement—to assess their collective and individual influence on the promotion of climate-responsive education. The analysis draws from Kenyan experiences and global best practices, grounded in recent academic and policy literature.

## 8.2 Leadership and Vision

Transformational leadership is essential for embedding sustainability values in the school system. Transformational school leaders promote shared visions, inspire collaboration, and act as change agents within their institutions. According to UNESCO (2021), 'school leadership is the cornerstone of climate-responsive education,' influencing how environmental principles are adopted and practiced institutionally.

Empirical evidence from Kenya supports the view that school leaders who are trained in climate literacy are more proactive in integrating environmental themes across the curriculum, school events, and community outreach. Musetti

(2024) observed that schools led by eco-literate principals not only incorporated environmental education in academic programming but also implemented structural initiatives like water harvesting and sustainable gardening. These leaders employed 'Earth-centric leadership,' characterized by ecological mindfulness and collaborative engagement.

Logan (2024) further emphasizes that when school heads adopt an inclusive leadership style, they stimulate teacher agency and student participation in climate projects. The BRACE report (2022) confirms that visionary leadership correlates positively with the uptake of climate resilience measures, especially in public schools located in ecologically vulnerable zones.

Globally, leadership development in countries like Finland and Japan includes formal training in sustainable development goals (SDGs), enabling school heads to effectively champion climate initiatives (UNESCO, 2021). In contrast, in Kenya, climate literacy remains marginal in most leadership development programs (UNU-IAS, 2023). Consequently, the opportunity to mainstream climate action through leadership remains underutilized, with only 12% of school administrators having completed sustainability-related professional development (GPE, 2023).

### **8.3 Policy and Planning**

Policies and planning frameworks are crucial in institutionalizing climate-responsive education. Kenya's policy landscape has made strides in integrating environmental sustainability, particularly through the Competency-Based Curriculum (CBC), which emphasizes inquiry-based, experiential learning aligned with sustainability goals (KICD, 2022). Despite these gains, empirical evidence indicates that a gap persists between national climate education policies and their implementation at the school level (KIPPRA, 2023; GPE, 2023).

The UNESCO (2023) Climate-Smart Education Systems Bi-Annual Report found that fewer than 30% of Kenyan schools had updated their School Improvement Plans (SIPs) to reflect climate adaptation or mitigation targets. Moreover, most existing plans treated climate education as co-curricular, without integrating it into whole-school strategies. This observation is consistent with findings from the BRACE report (2022), which noted that 'fragmented policy planning undermines the systemic potential of education to advance climate resilience.'

The National Climate Change Action Plan (NCCAP) (2018–2022) mandates cross-sectoral integration of climate goals, including in education. Yet, KIPPRA (2023) highlights that only 20% of school

development plans in Kenya included indicators aligned with the NCCAP. This disconnect stems from a lack of enforcement mechanisms, insufficient capacity among school leaders, and the absence of localized policy interpretation tools.

Globally, case studies from Vietnam and Costa Rica reveal that effective planning for climate education requires clear policy alignment from national to school levels, coupled with data-informed monitoring tools (UNESCO, 2021). These countries have embedded climate action into inspection frameworks and school quality standards—a practice that Kenya can emulate to ensure accountability.

### **8.4 Resource Mobilization**

Resource mobilization underpins the actualization of climate-responsive programs in schools. This encompasses financial allocations, infrastructure, human capital, and learning materials. Empirical literature shows that inadequate funding is among the greatest barriers to sustainability in education (UNICEF, 2022; BRACE, 2022).

In Kenya, a 2023 review by UNICEF found that over 60% of green school pilots relied heavily on external donors, while only 15% of public schools had allocated specific budgets for environmental programs. According to the GPE (2023), 'climate financing for education remains

largely donor-driven, with minimal integration into national school funding formulas.'

The BRACE (2022) study observed that schools lacked technical guidance on sustainable procurement, green infrastructure design, and budgeting for resilience. Teachers interviewed in Kitui and Machakos counties cited difficulty in accessing funds for school gardening tools, solar lighting, and water-saving technologies.

However, promising practices are emerging. Some schools have partnered with environmental NGOs like the Green Belt Movement and WWF Kenya to implement permaculture gardens and tree planting initiatives. Logan (2024) documents how schools in Narok have successfully integrated climate-smart agriculture into vocational training with support from local community-based organizations.

At the global level, decentralized financing systems in Finland, South Korea, and Bhutan allow schools to develop customized sustainability plans and raise funds autonomously (UNESCO, 2021). This autonomy is complemented by climate performance metrics that determine future funding—an approach that could significantly benefit Kenyan schools if adopted.

## **8.5 Stakeholder Engagement**

Stakeholder engagement represents the fourth pillar of climate-responsive school governance. Schools function within social ecosystems, and the extent to which students, teachers, parents, civil society, and communities are involved in environmental education significantly influences the effectiveness and sustainability of such programs (UNU-IAS, 2023; UNEP, 2023).

In Kenya, empirical studies confirm that participatory approaches—especially through student clubs, teacher-led projects, and inclusive Boards of Management—enhance buy-in and local ownership of sustainability initiatives. UNEP (2023) and Logan (2024) report that schools with active 'Green Committees' drawn from learners, teachers, and parents were more likely to institutionalize environmental topics across subject areas and establish school gardens, water harvesting systems, and recycling programs.

The BRACE report (2022) highlights that in areas such as Kajiado and Turkana, indigenous knowledge and community participation have enriched the curriculum, helping learners contextualize resilience in relation to local ecological challenges. In such settings, elders and local leaders were invited to schools to co-teach about weather patterns, drought coping mechanisms, and

resource conservation—offering a culturally grounded model of education for sustainability.

Teacher agency is another crucial dimension. According to Logan (2024), teachers who are empowered to initiate climate-themed activities tend to create more innovative and context-specific learning experiences. Yet, most teachers lack access to structured professional development in climate education. The UNESCO (2023) Earth Education Toolkit provides open-access resources for teachers to guide learners in co-creating climate stories and sharing local projects through global digital platforms, enhancing transnational learning.

However, stakeholder engagement remains inconsistently practiced due to structural and cultural constraints. According to UNICEF (2022), bureaucratic inertia and rigid school hierarchies often limit student and parent voices. Additionally, few BoMs are trained in participatory governance or equipped with frameworks to facilitate environmental dialogue and planning.

### **8.6 Synthesis of Literature**

A holistic view of the empirical literature reveals that the four governance constructs—leadership, policy, resources, and engagement—must function as an integrated system for effective climate-responsive education. Leadership provides

strategic direction, policy offers institutional alignment, resources operationalize plans, and stakeholder engagement ensures legitimacy and local relevance.

Where these elements are siloed, sustainability efforts become fragmented and unsustainable. For example, visionary leadership without aligned policy leads to isolated good practices without scalability. Resource availability without stakeholder buy-in results in infrastructure that is underutilized or poorly maintained. Similarly, policy reforms without leadership capacity or adequate funding result in implementation paralysis.

The Kenyan experience illustrates this interdependence. Schools with robust governance—evidenced by strong leadership, integrated climate plans, local partnerships, and innovative financing—show measurable gains in learner engagement, community involvement, and school resilience (GPE, 2023; KIPPRA, 2023; UNESCO, 2021). However, most schools remain constrained by policy fragmentation, limited autonomy, weak leadership pipelines, and under-resourced stakeholder engagement mechanisms.

The international literature supports this synthesis. Countries with successful climate education programs have adopted governance frameworks that embed climate literacy at all levels—national, school, and classroom (UNESCO, 2021;

UNU-IAS, 2023). Such systems not only ensure whole-school alignment but also promote cross-sector collaboration and continuous feedback.

## 9.0 Results/Findings

The synthesis of empirical literature, policy documents, and case studies reveals that school governance plays a pivotal role in operationalizing climate-responsive education in Kenya. The findings below are aligned with the four governance constructs that anchor the study:

### 9.1 Leadership and Vision

Evidence strongly affirms that visionary leadership is a foundational driver of sustainability in schools. Transformational leadership practices—marked by inspiration, modeling of eco-conscious behavior, and the ability to mobilize collective effort—are significantly associated with the successful implementation of green school initiatives. According to Musetti (2024), school heads in Kenya who embody “Earth-centric leadership” often spearhead projects such as tree planting, school greening, and community-driven climate forums. The UNESCO Global Monitoring Report (2021) further highlights leadership as the strongest determinant of education for sustainable development (ESD) implementation. However, leadership training for sustainability remains underdeveloped in Kenyan teacher

education and professional development programs (UNU-IAS, 2023).

### 9.2 Policy and Planning

Despite Kenya’s progressive curriculum reforms and national policies such as the Climate Change Act (2016) and NCCAP (2018–2022), integration at the school level is weak. KIPPRA (2023) found that less than 20% of school development plans include climate resilience indicators. Many schools operate without school-level policies on waste management, environmental conservation, or disaster preparedness. While the Competency-Based Curriculum (CBC) supports inquiry and experiential learning, its implementation lacks strategic planning at the institutional level to ensure environmental goals are integrated across the school governance framework (KICD, 2022; UNESCO, 2023).

### 9.3 Resource Mobilization

A critical barrier to climate-responsive education is the lack of sustainable financing. Most public schools depend on government capitation or external donor funds, which rarely cover sustainability infrastructure or capacity-building for climate action. According to the BRACE report (2022), over 60% of green projects in Kenyan schools were externally funded, with little provision for continuity. The GPE (2023) and UNICEF (2022) highlight the need for performance-based financing

tied to environmental indicators, yet such mechanisms are largely absent in Kenya's basic education funding models. Innovative partnerships, local fundraising, and integration of green projects into vocational training remain untapped.

#### **9.4 Stakeholder Engagement**

The literature consistently underscores the importance of inclusive stakeholder engagement in promoting climate education. Schools that involve Boards of Management, parents, students, and local organizations in environmental governance show stronger program adoption and continuity (UNEP, 2023; Logan, 2024). However, most schools lack structured avenues for participation, such as green committees or environmental planning forums. Teacher agency is constrained by hierarchical governance and limited professional development, and learners are often excluded from decision-making processes despite their demonstrated enthusiasm and creativity in climate action (UNESCO, 2023; UNU-IAS, 2023).

### **10.0 Conclusions and Recommendations**

#### **10.1 Conclusions**

The findings affirm that climate-responsive education in Kenya's basic education subsector is contingent upon the strength and coherence of school governance structures. Transformational

leadership, when present, catalyzes change—but is not widespread due to limited training and institutional support. Similarly, while national policies exist, there is a significant gap in translating these into actionable school-level frameworks. Resource constraints—particularly for climate infrastructure and training—are compounded by the absence of localized financing models. Finally, stakeholder engagement remains sporadic and tokenistic rather than systemic, hindering collective ownership and long-term sustainability of school-based climate initiatives.

In essence, climate-responsive education in Kenya is not hindered by lack of intent or policy frameworks, but by the absence of governance mechanisms that align leadership, planning, financing, and participation toward common environmental goals. For schools to become transformative spaces for climate action, governance must shift from reactive compliance to proactive, integrated leadership that builds capacity, mobilizes resources, and empowers communities.

#### **10.2 Recommendations**

##### **1. Leadership Development for Sustainability**

Incorporate climate change and sustainability governance into pre-service teacher education and in-

service training for school leaders. Modules on eco-literacy, disaster risk reduction, and green school management should be mainstreamed into training provided by institutions like KEMI and TSC. Peer mentorship programs could support knowledge transfer between schools with successful green models and those beginning the journey.

## 2. **Integrate Climate Policy into School Governance**

Review and revise school-level policies, including School Improvement Plans, codes of conduct, and infrastructure guidelines, to align with Kenya's Climate Change Act (2016), the NCCAP, and the SDGs. The Ministry of Education should develop a national framework for green school accreditation, with school governance benchmarks that reflect climate-responsiveness.

## 3. **Innovative and Sustainable Financing Mechanisms**

Promote public-private partnerships (PPPs), alumni networks, and devolved climate funds to support environmental infrastructure, training, and learner-driven initiatives. Schools

should be empowered to access green grants and climate finance instruments through simplified application and reporting processes. Additionally, incorporate climate indicators into national budget allocation formulas for education.

## 4. **Institutionalize Participatory Structures**

Establish and formalize Green School Committees comprising teachers, learners, BoMs, and community representatives. These should be tasked with planning, implementing, and monitoring environmental activities. Encourage learner voice through student councils and peer-led eco-clubs, supported by curriculum-linked projects that foster leadership and citizenship.

## 5. **Develop Monitoring and Evaluation Tools**

Introduce climate-responsive indicators in the Teacher Performance Appraisal and Development (TPAD) system, as well as in Quality Assurance and Standards (QAS) tools. These should assess not only academic outcomes but also school practices in sustainability, resilience, and stakeholder engagement. A

national dashboard on climate action in schools could support data-driven planning and benchmarking.

#### 6. Build Institutional Alliances and Learning Networks

Facilitate inter-school collaborations, district-level green school clusters, and partnerships with universities, civil society, and international organizations. Shared learning platforms can help scale innovations, promote context-relevant practices, and create a collective movement toward climate-smart schooling across Kenya.

#### References

- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Psychology Press.
- BRACE. (2022). *Building resilience and climate-smart education systems in Africa*. African Union.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Burns, J. M. (1978). *Leadership*. Harper & Row.
- Global Partnership for Education (GPE). (2023). *Toward climate-smart education systems: A policy brief*. <https://www.globalpartnership.org>
- Kenya Institute for Public Policy Research and Analysis (KIPPRA). (2023). *Assessment of climate action in basic education sector: A policy brief*. Nairobi: KIPPRA.
- Kenya Institute of Curriculum Development (KICD). (2022). *Basic education curriculum framework*. Nairobi: Ministry of Education.
- Kenya Meteorological Department. (2022). *Annual climate review 2022*. Nairobi: Ministry of Environment and Forestry.
- Logan, P. (2024). *Teachers as climate leaders: Agency, pedagogy, and school culture in East Africa*. Commonwealth Education Review, 56(1), 24–39.
- Musetti, J. (2024). *Earth-centric school leadership: A grounded theory study of sustainability practices in rural Kenya*. Environmental Education Research, 30(2), 210–229.
- Republic of Kenya. (2016). *Climate Change Act, No. 11 of 2016*. Government Printer.

Republic of Kenya. (2013). *Basic Education Act, No. 14 of 2013*. Government Printer.

UNESCO. (2021). *Learn for our planet: A global review of how environmental issues are integrated in education*. Paris: UNESCO.

UNESCO. (2023). *Climate-smart education systems initiative: Biannual progress report*. Paris: UNESCO.

UNEP. (2023). *Youth, education, and climate action: Toolkit for schools*. Nairobi: United Nations Environment Programme.

UNICEF. (2022). *Green schools for all: Accelerating climate education in Eastern and Southern Africa*. Nairobi: UNICEF Regional Office.

UNICEF. (2023). *Financing environmental education in sub-Saharan Africa*. Nairobi: UNICEF Africa Office.

United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS). (2023). *Education for sustainable development: Policy brief No. 40*. Tokyo: UNU-IAS.

World Bank. (2023). *Building climate-smart education systems in Sub-Saharan Africa*. Washington D.C.: The World Bank.