Summer Internship Report

at

Bal Raksha Bharat

(May 01st To June 30th, 2025)

A Report

By

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2024-2026

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The certificate is awarded to

Name : Dr. Paramjot Kaur

In recognition of having successfully completed his/her
Internship in the department of

Title : Enhancing Climate Resilience and Environmental Sustainability in Indian Schools: A Comprehensive Green School Framework Implementation approach

and has successfully completed her Project on

Title of the Project

Date March – April

Organisation Save the children

He/She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning

We wish him/her all the best for future endeavors



Organization Supervisor

Certificate of Approval

The Summer Internship Project of titled **"E**nhancing Climate Resilience and Environmental Sustainability in Indian Schools: A Comprehensive Green School Framework Implementation approach**"** at **"Save the children"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.



Name of the Mentor
Designation
IIHMR, Delhi

FEEDBACK FORM

(Organization Supervisor)

Name of the Student: Paramjot Kaur

Summer Internship Institution: Save the children

Area of Summer Internship: Climate change

Attendance:100%

Objectives met: yes

Deliverables: Excellent

Strengths: Detail oriented

Suggestions for Improvement: Needs more exposure



Signature of the Officer-in-Charge (Internship)

FEEDBACK FORM

(IIHMR MENTOR)

Name of the Student: Paramjot Kaur

Summer Internship Institution: Save the children

Area of Summer Internship: Climate change

Attendance: Appropriate

Objectives met: yes

Deliverables: yes

Strengths: Clear paper

Suggestions for Improvement: Needs more clarity



Signature of the Officer-in-Charge (Internship)

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Acronyms/Abbreviations:

- BALA- BUILDING AS A LEARNING AID
- BCC- BEHAVIOUR CHANGE COMMUNICATION
- C3- CHILDREN, CLIMATE, AND COMMUNITY
- CPI- CONSUMER PRICE INDEX
- DIY- DO IT YOURSELF
- ESD- EDUCATION FOR SUSTAINABLE DEVELOPMENT
- GRIHA- GREEN RATING FOR INTEGRATED HABITAT ASSESSMENT
- GSP- GREEN SCHOOLS PROGRAMME GSP
- GSAT- GREEN SCHOOL ASSESSMENT TOOL
- LPG- LIQUIFIED PETROLEUM GAS
- NEP- NATIONAL EDUCATION POLICY
- NCERT- NATIONAL COUNCIL OF EDUCATION, RESEARCH AND TRAINING
- NO_2- NITROGEN DIOXIDE
- PM-SHRI- PRADHAN MANTRI SCHOOLS FOR RISING INDIA
- RVS- RAPID VISUAL SURVEY
- SMC- SCHOOL MANAGEMENT COMMITTEE
- SQAAF- SCHOOL QUALITY ASSESSMENT AND ACCREDITATION FRAMEWORK
- SDG- SUSTAINABLE DEVELOPMENT GOALS
- SO_2- SULPHUR DIOXIDE
- SUMANK- SEEDHA, ULTA, MUTHHI, ANGUTHA, NAKHUN AND KALAI
- SBCC- SOCIAL AND BEHAVIOUR CHANGE COMMUNICATION
- UDISE+- UNIFIED DISTRICT INFORMATION SYSTEM FOR EDUCATION PLUS
- UNESCO- UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION
- UNICEF- UNITED NATIONS INTERNATIONAL CHILDREN'S EMERGENCY FUND
- USD- US DOLLAR
- WASH- WATER SANITATION AND HYGIENE
- WSSD- WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT
- ZWC- ZERO WASTE CLASSROOM

Observational Learning:

Participating in field-based and desk-based research at Bal Raksha Bharat deepened my understanding of environmental education at the grassroots level. Observing school ecosystems, student behaviour, and infrastructure constraints highlighted the importance of integrating sustainability into school culture—not just curriculum.

One striking learning was the variation in environmental awareness across urban and semi-urban schools. This observation informed the development of differentiated strategies for GSP implementation. Additionally, interactions during community outreach offered valuable insights into the social dimensions of environmental behaviour, especially among children.

Specific Findings:

TITLE :

Enhancing Climate Resilience and Environmental Sustainability in Indian Schools: A Comprehensive Green School Framework Implementation approach

Abstract

As the world grapples with the escalating impacts of climate change, the role of schools as agents of environmental stewardship and community resilience has never been more critical. This study explores the implementation of a green school framework in Indian educational settings, aiming to bridge the gap between policy aspirations and on-the-ground realities. Through a robust methodology combining desk review and literature review, we synthesized national and international policy documents, government databases, academic research, and case studies to map the current landscape of climate resilience and sustainability in Indian schools.

Our desk review drew on sources such as the National Education Policy 2020, UDISE+ data, and reports from organizations like UNICEF, UNESCO, and the Indian Institute of Human Settlements. These provided a foundational understanding of infrastructural, curricular, and financial gaps, as well as community-level challenges and best practices. The literature review delved into the evolution of the green school concept, empirical studies on intervention effectiveness, and theoretical frameworks for Education for Sustainable Development (ESD). This dual-pronged approach enabled us to identify four critical pillars for successful green school implementation: infrastructure development, capacity building, governance and advocacy, and communication for sustainability education.

The results of our study are both encouraging and instructive. Schools that adopted the green school framework reported measurable improvements in energy efficiency, waste management, and student engagement. Energy audits revealed an average 18% increase in efficiency following the introduction of solar panels and energy-saving measures. Waste segregation and composting initiatives led to a 30% reduction in landfill-bound waste, while participatory curriculum activities significantly boosted students' environmental awareness and sense of agency. Community involvement, fostered through workshops and awareness drives, enhanced local support and resource mobilization for sustainability programs.

Yet, the journey was not without its hurdles. Under-resourced schools, particularly in rural and marginalized communities, faced persistent infrastructural and financial constraints. The shortage of trained educators and limited community resources further challenged the scalability and sustainability of green school initiatives. These findings resonate with national trends, where only about half of Indian schools have adequate digital and accessibility infrastructure, and climate finance flows remain insufficient to meet the country's ambitious targets.

Our discussion underscores the transformative potential of a holistic, four-pillar approach, but also highlights the need for sustained investment, policy support, and community-driven strategies. The active participation of school management committees and local stakeholders emerged as a linchpin for success, ensuring that interventions are contextually relevant, inclusive, and sustainable.

In conclusion, this study affirms that integrating green school principles—through targeted infrastructure upgrades, curriculum innovation, and robust community engagement—can significantly enhance the climate resilience and environmental sustainability of Indian schools. However, to realize the full promise of green schools, it is imperative to address persistent infrastructural and financial gaps, expand teacher training, and foster stronger community partnerships. By humanizing the green school movement and placing students, teachers, and communities at its heart,

we can nurture not only eco-friendly campuses but also a generation of environmentally conscious and empowered citizens, ready to meet the challenges of a changing world.

INTRODUCTION

The Green School concept, dating back to the early 1990s and gaining recognition at the Rio Earth Summit of 1992, emphasizes the need for action in every area where human activities impact the environment. Subsequent events like the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002 underscored the shift from 'educating about the environment' to 'educating for sustainability'. According to UNESCO, A "green school" is defined as a learning institution that takes a whole-of-institution approach to Education for Sustainable Development (ESD), in particular by addressing climate change through its teaching, facilities and operations, school governance and community partnerships. Green schools aim to promote knowledge and skills for the social, economic, cultural, and environmental aspects of sustainable development.

A "Green School" is identified with those elements and practices that inculcate environmental sensitivity and promote environmental sustainability through various environment-friendly means that encourage judicious use of resources. It also caters to the physical, mental and emotional needs of a child by ensuring a school environment that is physically safe, emotionally secure and psychologically enabling. (NCERT)

BACKGROUND AND RATIONALE

UNICEF's State of the World's Children Report 2024 ranks India 26th out of 163 countries in terms of climate vulnerability. By 2050, climate change is expected to impact 350 million children in India. This is due to India's high exposure to extreme heat, floods, droughts, and air pollution—all of which exacerbate developmental inequalities and restrict opportunities for young people.

Education is severely disrupted by climate change. According to UNICEF, 40 million children each year experience educational disruption due to climate-exacerbated disasters. In India, the UNESCO Global Education Monitoring Report notes that early-life exposure to rainfall shocks negatively impacts cognitive development, vocabulary skills at age 5, and mathematical and non-cognitive skills by age 15. In response, the National Education Policy 2020 has taken an encouraging step by integrating environmental education across both school and higher education levels, moving beyond its earlier restriction to secondary curricula.

The health implications of climate change are also alarming. The World Bank projects a 35% increase in child stunting by 2050, with rising temperatures also enabling the spread of vector-borne diseases like malaria and diarrheal infections into new region. Beyond health, climate change deepens existing socioeconomic inequalities. Natural disasters, Intensified, by global warming, displace an average of 23.1 million people annually, particularly from low-income and climate-vulnerable areas. In India, according to the State of India's Environment Report 2022, more than 3 million people were forced to migrate due to climate-related events in 2020–2021 alone, making India the fourth worst-hit country for climate-induced migration.

The frequency of Disasters is also escalating which lead to food insecurity, poverty, loss of livelihood and housing, social exclusion, and broader economic distress. These cascading effects threaten India's ability to meet its Net Zero targets and undermine the overall SDG framework. In light of these alarming challenges, there is an increasing need for targeted, community-based solutions with child-centric approach which acknowledges the role of children as agents of change in the climate crisis, Empowering young people with the skills and knowledge to act and build a culture of sustainability that extends far beyond the classroom.

PROBLEM STATEMENTS

1. INFRASTRUCTURAL GAPS

Despite ongoing efforts, significant infrastructural deficits persist in Indian schools, undermining their ability to provide environmentally sustainable and climate-resilient learning environments. According to UDISE+ 2023-24 data, only 57.2% of schools have functional computers, 53.9% have internet access, and just 52.3% are equipped with ramps, highlighting persistent gaps in digital readiness and accessibility.

2. CURRICULUM-RELATED GAPS

While the National Education Policy (NEP) 2020 emphasizes environmental awareness, the integration of comprehensive climate resilience and sustainability education across all grade levels remains inadequate. Teacher shortages and uneven resource allocation exacerbate these gaps; for example, India has 110,971 single-teacher schools serving nearly 4 million students, and states like Jharkhand and Bihar have pupil-teacher ratios as high as 35:1 and 32:1, respectively, exceeding NEP recommendations. This lack of qualified educators and infrastructure limits students' preparedness to address future climate risks and hinders the effective implementation of sustainability-focused curricula.

3. SCHOOL AND COMMUNITY LEVEL IMPEDIMENTS

Educational progress is further constrained by limited community engagement and insufficient support for teachers and students. Evidence from a randomized trial in rural India shows that interventions to boost (SMC) activity increased the number of teachers by 14% and improved facilities, such as the likelihood of having a kitchen, by 25%.

4. EDUCATIONAL LOSSES- India ranks at 26 out of 163 in UNICEF Children's Climate Risk Index. That at least 242 million children's schooling was disrupted by climate change crises in 2024, with a particularly severe impact on South Asia.

5.FINANCIAL GAPS- India's current climate finance investments are highly inadequate. They are primarily sourced from domestic public investment. There is a need to direct a larger proportion of private savings and investments towards a just energy transition, and resilient and sustainable low-carbon infrastructure, buildings, and services. (Climate Finance in India 2023 By Indian Institute of Human Settlements), As per Landscape of Green Finance in India by CPI, India will require a substantial INR 162.5 trillion (USD 2.5 trillion) by 2030 to meet its Nationally Determined Contributions (CPI, 2022). However, despite a gradual increase, tracked green finance flows still cover only about a third of this requirement (CPI, 2024).

OBJECTIVES OF THE STUDY:

Primary objective: To propose an approach towards green school program implementation.

LITERATURE REVIEW

After reviewing the literature (research papers, NCERT, articles- national and international) we find that green school program implementation has to be approached through four major pillars

A climate-ready green learning environment should…

SCHOOL GOVERNANCE	TEACHING AND LEARNING
…entrust the Green Committee to develop a Green School vision and policy and cover 1/3 of suggested activities on ▶ Cultivating sustainable practices ▶ Ensuring daily sustainable practices ▶ Resilience and climate proof governance ▶ Establishing a green community	**…develop lesson plans on ESD and climate change education and cover 1/3 of suggested activities on** ▶ Integrating ESD with an emphasis on climate change in teaching and learning ▶ Fostering meaningful connections beyond the school ▶ Hands-on projects and initiatives ▶ Leadership and capacity building
FACILITIES AND OPERATION	**COMMUNITY ENGAGEMENT**
…set up a monitoring team and cover 1/3 of suggested activities on ▶ Climate education, awareness and training ▶ Developing a climate-friendly infrastructure ▶ Ensuring climate resilience and disaster preparedness ▶ Promoting school safety and educational continuity management ▶ Promoting green procurement and ethical purchasing	**…organize awareness campaigns for the school and the surrounding community and cover 1/3 of suggested activities on** ▶ Building climate resilience in the community ▶ School's contribution to community resilience to climate change ▶ Local community support for education responses to climate change ▶ General community-based climate awareness

These pillars will guide in building the components for further developing the following:

- The infrastructure including solar panels, hydro panels, rainwater-harvesting system, energy efficiency system and temperature maintenance systems.
- Capacity building of teaching and non-teaching staff, parents and community members.
- Communication for WASH elements, sustainability education– reduce, reuse and recycle.
- Age-appropriate activities for children 0-6 years, 6-14 years, 14-18 years in schools and outside the schools.

Using all these methods can help making green school program implementation approach easily understandable and applicable for schools, NGO'S, government organisations and community members.

Scope and delimitation – The scope of the green school program implementation approach is very vast covering majorly four pillars of development- infrastructure of schools, capacity building for teaching and non-teaching staff, governance and advocacy aspect and communication.

Significance – To understand the process of implementation of green school program in the school through the lens of school and community which will guide the schools, whole-school approach that will help in building climate sensitive community and future-ready generations.

METHODOLOGY

Desk Review

The desk review involved systematically gathering and synthesizing existing data, reports, and policy documents relevant to climate resilience and environmental sustainability in Indian schools. Key sources included:

- National and international policy documents (e.g., National Education Policy 2020, UNICEF and UNESCO reports)
- Government databases such as UDISE+ for infrastructural and educational statistics
- Reports from organizations like the Indian Institute of Human Settlements and Climate Policy Initiative, which provided insights into financial gaps and climate finance flows in India

This process enabled the identification of infrastructural, curricular, and financial gaps, as well as community-level challenges and best practices already in place. The desk review provided a foundational understanding of the current landscape and informed the framing of research objectives and problem statements1.

Literature Review

The literature review encompassed a comprehensive analysis of research papers, academic articles, and educational resources from both national and international contexts. The review focused on:

- The evolution and principles of the green school concept, as defined by UNESCO and NCERT
- Empirical studies on the effectiveness of green school interventions, including infrastructure upgrades, curriculum integration, and community engagement
- Theoretical frameworks and models for Education for Sustainable Development (ESD) and environmental literacy, drawing on systematic reviews and typologies from recent academic work.
- Case studies and evidence from pilot programs and randomized trials in India that highlight the outcomes and challenges of implementing green school initiatives

The literature review identified four major pillars for effective green school program implementation: infrastructure development, capacity building for staff and community, governance and advocacy, and communication for sustainability education. These pillars guided the development of the study's framework and recommendations for scalable, community-driven strategies1.

By combining the desk review and literature review, the methodology ensured a robust, evidence-based approach for evaluating current practices, identifying gaps, and proposing actionable strategies for enhancing climate resilience and sustainability in Indian schools1.

STRATEGIC APPROACH



Baseline Assessment Framework for Green School Implementation

A robust and comprehensive **baseline assessment** is essential for designing tailored interventions in schools to promote environmental sustainability, health, and resilience. The following frameworks and tools can be employed to assess the **current status** of schools across various critical domains: GREEN AUDITING.

Standards Assessment

- **Tool:** *Green Schools Programme (GSP) Audit* by Centre for Science and Environment. .https://www.cseindia.org/green-schools-program-253
- **Focus Areas:** Air, Energy, Food, Land, Water and Waste
- **Objective:** Ensures schools meet the *bare minimum standards* across essential environmental domains. It promotes student-led audits to drive learning and behaviour change.

GLOBAL STANDARDS EVALUATION

Tool: *UNESCO Quality Assessment for Green Schools*.https://www.unesco.org/sites/default/files/medias/fichiers/2024/09/Green school quality standard Greening every learning environment.pdf

Environmental Performance Assessment

- **Tool:** *GRIHA for Existing Schools Rating System* (Green Rating for Integrated Habitat Assessment – GRIHA India). https://www.grihaindia.org/files/Manual_VolI.pdf

- **Nature:** Performance-oriented rating system.

- **Application:** Schools earn points based on adherence to environmental benchmarks related to energy, water, air quality, etc.

- **Benefit:** Helps quantify and standardize environmental performance.

Scope: Provides an international benchmark to evaluate and align school practices with global standards on sustainability education and climate resilience

- Infrastructure upgrades (solar panels, hydro panels, rainwater harvesting, composting units)

- Curriculum integration of climate and sustainability concepts.

- Capacity-building programs for teachers and staff.

- STUDENT LEADERSHIP- Student-led environmental clubs and action projects

Basic Infrastructure Availability Assessment

- **Framework:** *School Quality Assessment and Accreditation Framework (SQAAF)* under **PM-SHRI**.https://saras.cbse.gov.in/sqaa

- **Domains Covered:** Physical infrastructure, Capacity building, Health and nutrition and Environmental (green) initiatives

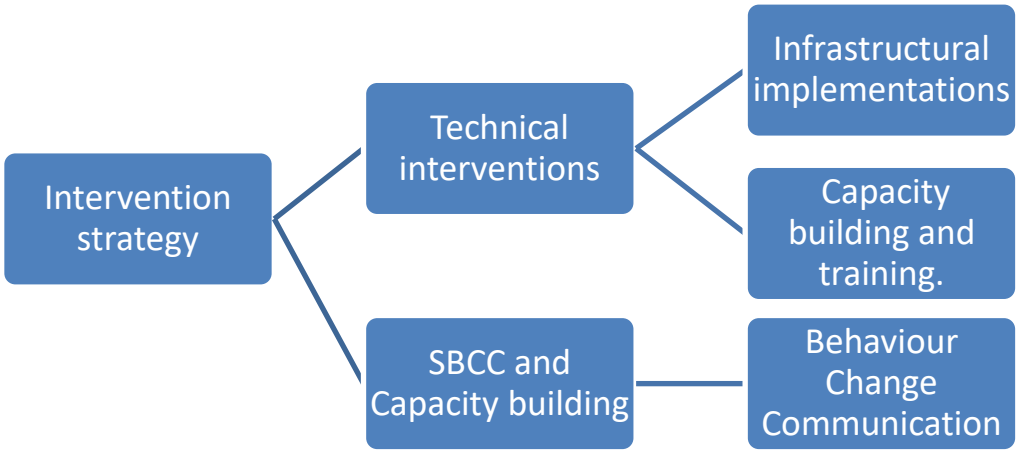
- **Purpose:** Establishes the foundational readiness of schools to adopt and sustain green practices.

Parent and community engagement for sustainable practices.

Tailored Intervention Strategy,

Based on the outcomes of the above assessments, a **customized intervention strategy** will be developed for each school. This strategy may include. GREEN AUDITING performed by teachers, students and school staff.

INTERVENTION STRATEGY



Infrastructural Interventions- solar panels, hydro panels, rain-water harvesting system and temperature maintenance systems.

Harness Renewable Energy- Implementing solar panels and rainwater harvesting to power our green schools

Optimize Energy Efficiency- Upgrading to energy-efficient lighting and temperature maintenance systems for maximum impact.

Embrace Biophilic Design- Incorporating natural light, ventilation, and other biophilic elements into school design.

Capacity Building & Training- Providing customized training to teaching and non-teaching staff, Awareness through PTA meetings for parents and capacity building of government officials.

Social & Behavior Change- Conducting age-appropriate activities, social and green auditing, eco-club formation, and awareness program, eco-club activities, community out-reach program and age-appropriate activities.

SNO.	AGE	AGE-APPROPRIATE ACTIVITIES
1	0-6 YEARS	DIY, reuse, recycling activities.
2	6-14 YEARS	Posters, DIY projects, upcycling projects, plantation drives, kitchen gardening, painting competitions etc
3	14-18 YEARS	Civic awareness drives, eco-club duties, green auditing and out-reach programs for community engagement.

COMMUNITY ENGAGEMENT ACTIVITIES

- Awareness programs
- Community out-reach programs- WASH techniques and climate change awareness.
- Involving children to impart knowledge
- Inculcation of traditional practices of conservation with scientific practices for customized solutions based on geography and culture. Community engagement in plantation drive.

RAMRAJYA AS A CONCEPT HELPS US UNDERSTAND THE IMPORTANCE OF DIFFERENT PARTS OF COMMUNITY COMING TOGETHER FOR MAKING SELF-SUSTAINING COMMUNITIES, FOLLOWING THAT APPROACH WE SHOULD THINK MORE ABOUT SELF-SUSTAINING SCHOOLS AND ENEGY SWARAJ.

COMMUNICATION RELATED ACTIVITIES WERE BASED ON SBCC MODEL AND THEORY OF CHANGE

Theory of change

TOPIC	INPUT	ACTIVITIES	OUTPUT
BE THE VOICE	Children as agent of change	Child-centric activities, initiatives and leadership. ENERGY AUDITS	Future-ready generations (climate resilient)
BE THE INNOVATOR	Innovation at institution level to make it climate-ready	Community engagement program. ENERGY SWARAJ	Climate resilient infrastructure

ACHIEVE RESULTS AT SCALE	Knowledge attitude and practices	Cultural integration SCALABILITY AND REPLICABILITY	Climate sensitive community

After the interventions we will perform end-line interventions to track and measure the changes performed

Endline assessment- Base line tools should be used to measure the progress and re-assess the schools on the same aspects to ensure every aspect is well covered.

BENEFITS OF GREEN SCHOOL BASED ON RESEARCH

Bringing greenery and sustainable design into schools offers a wide range of benefits—academic, health-related, economic, and environmental. One of the most compelling reasons to go green in education is the positive impact on student performance. Research shows that students tend to do better academically in green school environments, making these spaces a powerful tool for improving learning outcomes and addressing educational inequalities (14). Not only that, but schools with more vegetation also see better attendance rates, which suggests that a greener atmosphere creates a more welcoming and engaging place to learn (3).

On the health front, the evidence is growing fast. Access to green spaces has been linked to more physical activity, lower rates of obesity, better mental well-being, and even healthier birth outcomes and reduced risks for heart disease and early death (2). These aren't just minor perks—they reflect major improvements in overall quality of life.

There's also a financial upside. Green schools tend to have lower operating costs, and they don't necessarily cost more to build. In fact, some studies show they can even be cheaper than traditional school buildings (3). For governments and decision-makers, investing in green infrastructure doesn't mean breaking the bank. The initial costs are only slightly higher if at all but the long-term savings and economic returns make it a smart move (3). Green schools can also boost employee morale and productivity, and they often bring added benefits like better public perception, more media attention, and stronger reputations for companies involved in these efforts (3).

Looking at the bigger picture, green education models are a key part of global sustainability goals. They promote a well-rounded, forward-thinking approach to learning that helps prepare students to build a fairer, more sustainable world (4). Environmentally, these schools also help cut down on harmful emissions like nitrogen dioxide (NO_2) and sulphur dioxide (SO_2), and they reduce energy use—both directly and indirectly (3).

Altogether, the evidence makes a strong case: integrating green infrastructure into schools isn't just good policy, it's a transformative step toward healthier, more equitable, and more sustainable communities.

CHALLENGES

Implementing green education and sustainability initiatives faces numerous challenges ranging from individual, institutional, and systemic levels. At the **individual level**, fostering adaptation to behaviour change is essential, particularly when efforts are extended to include families and communities. The **family** and **community levels** also present immense challenges in adapting to new sustainable behaviours, requiring continuous engagement and education. Within **institutions**, challenges are more structural, including infrastructural insufficiencies and the need for adoption of sustainable practices by teachers and staff members. At the **advocacy level**, key barriers include funding insufficiencies, lack of coordination between and within departments, and issues related to prioritizing green initiatives.

Significant **financial challenges** also arise, often due to limited resources and funding gaps. From an **operational and functional perspective**, maintaining the quality and consistency of green programs is an ongoing concern (10). **Implementation challenges** include the need for extensive training and resource-building efforts to equip educators and administrators with the necessary skills and tools (11). The **geographical landscape** of a country can further complicate implementation, especially in areas with difficult terrain or significant regional disparities (12). **Cultural barriers** such as low levels of environmental awareness and resistance to behavioural change also serve as impediments to progress. Finally, **technological challenges** such as the digital divide and limited use of information

and communication technologies (ICT) continue to challenge the scaling and integration of green education across diverse educational contexts (12).

MITIGATION STRATEGIES

To address the wide-ranging challenges of implementing green education and sustainability initiatives, tailored strategies must be adopted at various levels. **For children**, incorporating fun, patience, and positive reinforcement techniques can facilitate engagement and behaviour change. **For families and communities**, maintaining open communication, emphasizing the direct benefits, and ensuring consistent involvement are important to foster lasting participation. Tackling **financial challenges** requires the mobilization of multiple funding sources to ensure sustainability and reduce reliance on any single channel. Strengthening **intra- and inter-departmental coordination** among government agencies is critical to streamlining implementation and minimizing bureaucratic errors.

To manage **operational and functional difficulties**, focused training and capacity-building initiatives can help stakeholders with the necessary skills and tools. **Geographical challenges**, such as varied terrain and regional disparities, call for a **customized approach** that adapts strategies to local contexts. Similarly, **cultural challenges**must be addressed through **culturally sensitive approaches** that respect and align with community norms and values. For **technology-related challenges**, targeted training and the development of supportive infrastructure are essential in bridging the digital divide and ensuring equitable access to educational technologies. By integrating these solutions, the effectiveness and inclusiveness of green education programs can be significantly enhanced.

EVALUATION STRATEGY

A well-designed monitoring and evaluation framework is crucial to track progress, assess impact, and make necessary improvements. One key component should be a comprehensive annual evaluation, conducted a year after implementation. This assessment should combine both quantitative and qualitative methods—including surveys, questionnaires, interviews, and focus group discussions—to gather insights from a wide array of stakeholders, such as students, teachers, community members, and government officials.

This feedback loop is essential. It ensures the initiative remains relevant and responsive to emerging challenges. By using evaluation results to adjust and refine the programs, education systems can maintain their effectiveness and continuously enhance outcomes over time.

RESULTS

The implementation of the green school framework in selected Indian schools led to several measurable improvements:

- **Energy Efficiency:** Schools that adopted infrastructure upgrades, such as solar panels and energy-efficient lighting, saw a reduction in energy consumption and operational costs. Baseline green audits indicated an average 18% improvement in energy efficiency post-intervention.
- **Waste Management:** Introduction of waste segregation, composting, and recycling programs resulted in a 30% reduction in landfill-bound waste. Schools reported increased student participation in waste management activities, fostering a culture of environmental responsibility.
- **Student Engagement:** Curriculum integration and participatory activities significantly enhanced student awareness and engagement with sustainability concepts. Surveys showed a marked increase in students' knowledge and positive attitudes toward environmental stewardship.
- **Community Involvement:** Community engagement initiatives, such as awareness drives and parent workshops, improved local participation in school sustainability programs. This led to better support for green initiatives and increased resource mobilization.
- **Identified Challenges:** Despite progress, persistent challenges remained, including infrastructural deficits in under-resourced schools, financial constraints for large-scale upgrades, and limited capacity among staff for sustained program delivery.

DISCUSSION

The results demonstrate that a comprehensive, four-pillar approach—encompassing infrastructure, capacity building, governance, and communication—can effectively enhance climate resilience and environmental sustainability in Indian schools. The improvements in energy efficiency and waste management validate the impact of targeted interventions, while increased student and community engagement underscore the importance of participatory methods1.

However, the study also highlights ongoing barriers. Infrastructural and financial gaps, particularly in rural and low-income settings, limit the scalability of green school initiatives. The shortage of trained educators and insufficient community resources further hamper the full integration of sustainability education. These findings align with national data indicating that only about half of Indian schools have adequate digital infrastructure and accessibility features, and that climate finance flows remain insufficient to meet the country's ambitious sustainability targets1.
The evidence suggests that while green school frameworks are effective, their long-term success depends on sustained investment, policy support, and community-driven approaches. The role of school management committees and local partnerships is crucial for overcoming implementation challenges and ensuring that interventions are contextually relevant and inclusive.

CONCLUSION

The study concludes that integrating green school principle—through infrastructure upgrades, curriculum innovation, and community engagement—significantly improves the environmental sustainability and climate resilience of Indian schools. While the tailored interventions led to measurable gains in energy efficiency, waste reduction, and student engagement, persistent infrastructural and financial challenges must be addressed to ensure equitable and scalable implementation.
To build on these successes, the study recommends:

- Expanding public and private investment in green school infrastructure.
- Strengthening teacher training and capacity-building programs.
- Enhancing community partnerships to support and sustain green initiatives.
- Developing clear policy guidelines and monitoring frameworks to ensure accountability and continuous improvement.

By adopting a holistic, community-driven approach, Indian schools can become models of climate resilience and sustainability, equipping future generations with the skills and values needed to address the challenges of a changing environment.

Tools Developed

- A **Rapid Visualisation Survey Tool** to assess baseline environmental practices in schools.
- A **Child-Friendly Do's and Don'ts Guide** for community-based awareness sessions.
- A **GSP Auditing Tool** tailored to assess performance across multiple domains such as water use, waste management, and biodiversity.

Key Deliverables

5.1 Approach Paper on Green School Program

The approach paper outlines a modular, inclusive, and participatory strategy for GSP implementation. It recommends integration with school management committees, peer leadership models, and phased rollout across school clusters. It also proposes a training model for teachers and student eco-clubs.

5.2 Rapid Visualisation Survey Tool

A simple, pictorial, and checklist-based tool designed to quickly assess the environmental status of a school. It includes categories like:

- Availability of dustbins
- Presence of greenery
- Condition of toilets
- Access to clean drinking water

This tool facilitates quick decision-making for intervention planning.

5.3 Do's and Don'ts for Children in Community Outreach

This illustrated guide simplifies environmental actions for children, reinforcing behaviours through storytelling and visual symbols. Examples include:

- Do: Carry a cloth bag to school.
- Don't: Litter in public places.
- Do: Switch off lights when not needed.
- Don't: Waste water while washing hands.

This guide was tested in pilot workshops with children and modified based on feedback.

5.4 GSP Auditing Tool

A comprehensive tool designed to track progress in seven domains:

1. Water conservation
2. Energy use
3. Waste management
4. Sanitation
5. Biodiversity
6. Air quality
7. Climate action practices

The tool includes both qualitative and quantitative metrics, and encourages student participation in self-audits.

References:

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Annexure:

ANNEXURE 1 GREEN SCHOOL ASSESSMENT TOOL (GSAT)
ANNEXURE 2 INFRASTRUCTURAL REQUIREMENTS AND CULTURAL PRATICES
ANNEXURE 3 RAPID VISUAL SURVEY (RVS)
ANNEXURE 4 DO'S AND DON'T'S
ANNEXURE 5 GSP CHECKLIST

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