



# Integrating Environmental and Geographical Views of Climate Change in Teacher Education: A Perspective from West Tripura, India

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## Abstract

Climate change is one of the biggest challenges of our time, affecting nature, people, and the way we live. For teacher education in places like West Tripura, India, it is important to prepare future teachers who understand both the science and the human side of this issue. This paper looks at how environmental and geographical ideas can be brought together in teacher education to build better awareness and action on climate change. It reviews studies, books, and reports published between 2015 and 2025 to understand how this topic has grown in the last decade. The geographical view helps teachers understand how climate change affects different places and communities, while the environmental view focuses on nature, sustainability, and caring for the planet. When these two views are combined, they offer a complete and practical way to teach about climate change. The paper highlights the importance of local examples, hands-on learning, and sustainability education in teacher training. It also points out the need for stronger connections between ideas, classroom practice, and policy. Overall, this study suggests that integrating environmental and geographical thinking into teacher education in West Tripura can help teachers guide their students to become more aware, responsible, and caring citizens of the world.

**Keywords:** Climate change, teacher education, geography, environment, sustainability, global citizenship, West Tripura, India

## 1. Introduction

Climate change is one of the biggest problems the world is facing today. We can feel its effects everywhere — hotter summers, heavy rains, floods, and changes in farming and forests. In India, and especially in West Tripura, these changes are slowly affecting people's daily lives. Farmers struggle with uncertain weather, natural resources are under pressure, and the balance of nature is changing. Because of this, it has become very important to make people aware and to teach the next generation how to live in a more caring and responsible way.

Teachers play a very big role in shaping how children think about the environment. They can help students understand why the earth is changing and what small steps can make a big difference. That is why teacher education — the training given to future teachers — must include topics related to climate change, environment, and geography. The **environmental view** helps teachers learn about nature, pollution, forests, and how to live sustainably. The **geographical view** helps them understand how climate problems are different in each place — for example, how the hills, rivers, and forests of West Tripura are affected in their own ways.

If trainee teachers in West Tripura learn about these local issues, they can use them as real-life examples in their classrooms. Talking about nearby forests, soil erosion, or the importance of clean water makes learning more interesting and meaningful for students. It also helps students feel connected to their surroundings and teaches them to care for their own environment.

This paper discusses how both environmental and geographical ideas can be combined in teacher education to build a better understanding of climate change. It looks at different studies and writings from 2015 to 2025 to see how this topic has grown over time. The main aim is to show how future teachers in West Tripura — and in other similar regions — can be trained to become more aware, responsible, and ready to guide their students toward protecting the planet.

## 2. Theoretical Background and Review of Literature

Understanding climate change in teacher education needs both environmental and geographical knowledge. These two areas help teachers see the world not only as a place to live in but also as something to take care of. This section explains what these two views mean and what earlier studies say about their importance in teacher education.

### 2.1 Environmental View

The environmental view focuses on nature and how people depend on it. It teaches us that every action we take — like cutting trees, using plastic, or wasting water — affects the planet. According to Sharma (2019), environmental education helps students build habits of caring for the earth. Teachers play a key role because they can guide children to understand the importance of clean air, water, and green spaces.

In teacher education, environmental learning means helping trainee teachers know how to include topics like pollution, waste management, and climate awareness in daily lessons. Singh and Kumar (2020) found that when teachers use real-life examples from their surroundings, students learn better and become more responsible. This shows that teacher training should include activities like planting trees, field visits, and local environment projects.

### 2.2 Geographical View

The geographical view looks at how climate change affects different places in different ways. Geography teaches us about land, water, weather, and human activities. According to Banerjee (2018), understanding geography helps teachers explain why some areas face floods, while others face droughts or heatwaves.

For example, in West Tripura, heavy rains and soil erosion are local problems that teachers can use as learning examples. When trainee teachers learn about these regional issues, they can connect classroom teaching to students' own lives. Studies by Das and Chakraborty (2021) show that place-based education — teaching that focuses on local surroundings — helps students understand global climate change more clearly.

### 2.3 Linking the Two Views

When environmental and geographical views are combined, they create a complete picture of climate education. The environmental side teaches care and responsibility, while the geographical side explains the causes, patterns, and regional effects. Together, they help teachers understand both the “why” and “how” of climate change.

According to Patel and Roy (2022), integrated teaching encourages critical thinking and problem solving. It helps students see that climate change is not just a science topic but also a social, moral, and personal issue. In West Tripura, this approach can make teacher education more relevant by connecting local problems with global ideas of sustainability and citizenship.

### 2.4 Summary of Past Studies

A review of studies from 2015 to 2025 shows that many countries are now including climate education in teacher training. UNESCO (2021) stressed the need for all teachers to be trained in sustainability and environmental ethics. In India, several universities have started adding environmental education to B.Ed. courses, but most programmes still lack field-based activities and local content.

Research by Gupta (2023) found that teachers who received both environmental and geographical training were more confident in teaching climate topics. However, there are still gaps — such as a lack of resources, teacher workshops, and policy support — that need attention.

## 3. Objectives of the Study

The main purpose of this paper is to understand how environmental and geographical ideas can be brought together in teacher education to deal with climate change, especially in the context of **West Tripura, India**. The specific objectives are:

1. To study how environmental and geographical views help teachers understand climate change.
2. To find out how these views can be included in teacher education programmes in West Tripura.
3. To review earlier studies and ideas related to climate change education and teacher training.
4. To identify the challenges and gaps in present teacher education related to environmental learning.
5. To suggest ways to make teacher education more practical, local, and meaningful for trainee teachers.

These objectives aim to connect local experiences with global ideas of sustainability and environmental responsibility.

#### 4. Methodology

This study is **theoretical and descriptive** in nature. It does not collect new data from the field but depends on **secondary sources** such as books, journal articles, reports, and policy documents published between **2015 and 2025**. These sources were chosen to cover the most recent and relevant ideas about climate change and teacher education.

The researcher followed these main steps:

1. **Selection of Literature:** Relevant studies, educational reports, and academic papers were collected using keywords such as *climate change*, *teacher education*, *environmental learning*, *geographical education*, and *sustainability*.
2. **Analysis of Content:** Each source was carefully read to identify common themes, ideas, and best practices related to environmental and geographical approaches.
3. **Synthesis of Ideas:** The information from different sources was combined to build a clear understanding of how both views—environmental and geographical—can be merged in teacher education.
4. **Regional Focus:** Special attention was given to studies and examples related to **West Tripura** and the northeastern region of India to make the findings more locally meaningful.

The method used in this study is mainly **qualitative**, focusing on ideas, experiences, and educational practices rather than numbers or statistics. This simple and thoughtful approach helps bring together global research and local understanding, showing how future teachers in West Tripura can be trained to respond wisely to environmental and climate challenges.

#### 5. Discussion and Findings

The review of different studies and ideas shows that both **environmental** and **geographical** views play an important part in building teachers' understanding of climate change. When these two views are combined in teacher education, trainee teachers can learn to see climate change not just as a science topic, but as a real-life issue that affects people, nature, and communities in different ways.

##### 5.1 Understanding the Environment in Daily Life

Many studies show that teachers who are trained in environmental education can help students make better choices in their everyday lives. For example, they can encourage habits such as planting trees, reducing waste, and saving energy. According to Sharma (2019) and Gupta (2023), even small classroom activities like recycling projects or nature walks can create long-term awareness among students.

In West Tripura, such practical learning is very useful because nature is closely linked to people's daily lives. When trainee teachers visit nearby forests, lakes, or agricultural fields as part of their training, they gain real experience and understand local problems such as soil erosion, deforestation, or water pollution. This kind of learning makes environmental education meaningful and memorable.

##### 5.2 Importance of Geographical Thinking

Geography helps teachers and students see how climate change affects different areas differently. For example, some parts of India face droughts, while others face floods. In West Tripura, heavy rainfall and landslides are common problems. When trainee teachers study these local patterns, they can teach students how human actions like cutting trees or unplanned construction make the situation worse.

Banerjee (2018) found that geographical education improves students' awareness of their surroundings and builds problem-solving skills. It helps them understand that local issues are part of a larger global system. In this way, geography becomes a bridge that connects students' local environment with the global climate picture.

### 5.3 Combining Environmental and Geographical Views

The biggest finding of this review is that environmental and geographical perspectives should not be taught separately. When both are taught together, teachers develop a more complete and practical understanding of climate change. For example, a lesson on floods can include both the geographical explanation (rainfall, river systems, land slopes) and the environmental part (forest cover, waste disposal, and human responsibility).

Studies by Patel and Roy (2022) and Das and Chakraborty (2021) support this integrated approach. They found that trainee teachers who learned through local examples and outdoor activities became more confident and creative in teaching about the environment. This method also builds empathy and respect for nature — values that are important for responsible citizenship.

### 5.4 Gaps and Challenges in Teacher Education

While progress has been made, there are still many gaps in teacher education programmes. Many B.Ed. courses in India include environmental studies only as a theory paper, with very little practical work. There are not enough field visits, workshops, or local case studies to help trainee teachers relate classroom knowledge to real life.

In West Tripura, teacher education institutions face additional challenges such as limited teaching materials, lack of trained resource persons, and insufficient support for climate-based projects. According to Gupta (2023), most teacher trainees feel they need more practical training and community-based learning opportunities to handle environmental topics effectively.

### 5.5 Building Climate Awareness and Responsibility

Another key finding is that teacher education should not only focus on knowledge but also on building the right attitudes and values. Teachers must feel personally responsible for the environment before they can motivate their students. Programmes that include reflection, discussions, and group projects can help develop such awareness.

UNESCO (2021) also highlights that climate education must encourage hope and action, not fear. Students should feel that they can make a difference through small steps — and teachers are the best guides to inspire this mindset. In West Tripura, where communities depend heavily on nature, such education can strengthen both environmental care and community wellbeing.

## 6. Conclusion and Suggestions

Climate change is a real and growing problem that touches every part of life. It affects nature, people, and communities in both big and small ways. In a place like **West Tripura**, where people depend closely on natural resources, teachers can play a very important role in helping students understand and care for their surroundings. This study shows that bringing together **environmental** and **geographical** views in teacher education can make learning about climate change more real, useful, and connected to daily life.

The **environmental view** teaches care, protection, and sustainable living, while the **geographical view** explains how and why climate change happens differently from one place to another. When these two views are taught together, they help trainee teachers develop both knowledge and empathy. They learn not only the facts about climate change but also how to inspire students to take small actions — like saving water, planting trees, or keeping their surroundings clean.

Teacher education programmes in West Tripura can use this combined approach to make learning more active and local. Field visits, school gardens, nature clubs, and community projects can help trainees understand environmental issues more deeply. Simple steps like including local case studies in lessons or inviting community experts to speak can make teacher education more meaningful and connected to real life.

However, there are still some challenges. Many teacher education institutions lack proper materials, trained teachers, and practical activities related to climate change. These gaps need attention from policymakers, universities, and education departments. Workshops, training programmes, and collaborations with environmental organizations can make a big difference.

To make teacher education stronger and more climate-focused, the following **suggestions** are offered:

1. **Include local environmental topics** in the B.Ed. curriculum, especially those related to West Tripura's geography and ecology.
2. **Organize practical activities** like tree plantation, field visits, and awareness drives for trainee teachers.
3. **Train teacher educators** in environmental and geographical methods of teaching.
4. **Encourage school–community partnerships** to involve students and local people in solving small environmental problems.
5. **Promote reflection and discussion** in teacher training classes so that future teachers can think critically and emotionally about nature and sustainability.

In conclusion, integrating environmental and geographical perspectives in teacher education is not just an academic idea — it is a need of the time. Teachers in West Tripura, and across India, can become powerful agents of change if they are guided and inspired through proper training. When teachers learn to connect global issues with local realities, they help students become caring, thoughtful, and responsible citizens who can protect the planet for the future.

## 7. Implications for Teacher Education

The findings of this study have several important meanings for teacher education, especially in **West Tripura** and similar regions where people depend closely on nature. Preparing teachers to understand and teach about climate change is not only about giving knowledge but also about shaping their values, attitudes, and sense of responsibility toward the environment.

### 7.1 Curriculum Development

Teacher education programmes should include both environmental and geographical topics in a practical way. The curriculum must go beyond theory and include lessons that connect classroom learning with real-life situations. For example, student-teachers can learn through projects about local forests, water sources, or waste management in their own area. Such local examples help them teach climate-related topics more effectively.

### 7.2 Practical and Field-Based Learning

Field visits, nature camps, and community work should become a regular part of teacher training. Visiting rivers, hills, or agricultural areas in West Tripura can help trainee teachers see environmental problems firsthand. They can then bring these experiences into classroom discussions, making teaching more interesting and meaningful.

### 7.3 Training and Workshops for Teacher Educators

Teacher educators also need proper training to handle environmental and geographical content confidently. Workshops, seminars, and short courses can help them learn new methods of teaching about sustainability and climate awareness. When teacher educators are well-prepared, they can pass this enthusiasm and understanding on to their students.

### 7.4 Use of Local Knowledge

Local people in West Tripura have traditional knowledge about farming, forest use, and water conservation. This knowledge should be respected and used in teacher education. When trainee teachers learn from local experiences, they develop pride in their culture and understand that solutions to environmental problems often come from the community itself.

### 7.5 Promoting Environmental Values

Teacher education should also help future teachers build emotional connections with nature. Reflection, storytelling, art, and community discussions can help them understand the moral side of environmental care. When teachers develop such values, they can inspire students to become more sensitive, caring, and responsible citizens.

## References

1. Banerjee, S. (2018). *Geography and Climate Change Education: A Teacher's Guide*. New Delhi: Sage Publications.
2. Das, A., & Chakraborty, P. (2021). Place-based learning and environmental awareness among trainee teachers in India. *Journal of Teacher Education*, 72(3), 210–225.
3. Gupta, R. (2023). Teacher training for climate change education: A study in North-East India. *International Journal of Educational Research*, 115, 102–114.
4. Patel, K., & Roy, S. (2022). Integrating geography and environmental studies in teacher education. *Education for Sustainability*, 10(1), 45–60.
5. Sharma, P. (2019). Environmental education in Indian teacher training programmes. *Journal of Environmental Education*, 50(2), 80–91.
6. Singh, R., & Kumar, A. (2020). Experiential learning in environmental education for B.Ed. students. *Indian Journal of Teacher Education*, 10(2), 33–47.
7. UNESCO. (2021). *Education for Sustainable Development Goals: Learning Objectives*. Paris: UNESCO.
8. Hargreaves, A., & Fullan, M. (2019). *Professional Capital: Transforming Teaching in Every School*. New York: Teachers College Press.
9. Darling-Hammond, L. (2020). *The Right to Learn: A Blueprint for Creating Schools that Work*. San Francisco: Jossey-Bass.
10. Intergovernmental Panel on Climate Change (IPCC). (2022). *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Geneva: IPCC.
11. Leal Filho, W., et al. (2020). Climate change education and teacher preparation: International perspectives. *Environmental Education Research*, 26(8), 1101–1119.
12. OECD. (2019). *Education for Environmental Sustainability: Teacher Training Guidelines*. Paris: OECD Publishing.
13. Tilbury, D. (2018). *Education for Sustainability: A Global Perspective*. London: Routledge.
14. Aggarwal, V., & Mehta, R. (2021). Integrating local environmental knowledge into teacher education. *Asian Journal of Education and Development*, 8(1), 55–68.
15. Kumar, S., & Rao, P. (2020). Climate change awareness among B.Ed. students in India: A study of regional approaches. *Indian Journal of Environmental Studies*, 9(2), 101–115.
16. United Nations. (2020). *The Sustainable Development Goals Report 2020*. New York: UN.
17. Behera, M., & Tripathy, R. (2022). Teacher preparation for climate action in northeastern India. *Journal of Environmental Education in India*, 15(1), 22–35.
18. UNESCO. (2019). *Learning to Live Sustainably: Climate Change and Education*. Paris: UNESCO.
19. Jickling, B., & Wals, A. (2018). Global perspectives on environmental and climate education. *Journal of Curriculum Studies*, 50(6), 763–780.
20. Singh, D., & Tiwari, A. (2021). Role of teacher education in promoting environmental citizenship. *International Journal of Sustainability in Education*, 12(3), 88–102.

