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Beyond Awareness: Lived Experiences of Tourism Students at President Ramon Magsaysay State University in Advancing Climate-Responsive, Ecosystem-Based Tourism Development

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Abstract

Climate change has become one of the greatest threats to the sustainability of tourism destinations, necessitating the development of climate-responsive and ecosystem-based tourism practices. As future tourism professionals, university students play a crucial role in promoting sustainable destination management, biodiversity conservation, climate adaptation, and responsible tourism. Higher education institutions, particularly State Universities and Colleges (SUCs), are increasingly integrating sustainability and climate resilience into tourism curricula to prepare graduates capable of responding to environmental challenges. President Ramon Magsaysay State University (PRMSU), whose mandate includes tourism education, research, and sustainable regional development, has likewise strengthened its commitment to sustainability through research and tourism initiatives. Despite these efforts, little is known about how tourism students experience climate-responsive and ecosystem-based tourism education beyond environmental awareness. This study explores the lived experiences of tourism students at President Ramon Magsaysay State University in advancing climate-responsive, ecosystem-based tourism development. Employing Interpretative Phenomenological Analysis (IPA), the study gathers narratives from purposively selected tourism students through semi-structured interviews. Findings are expected to reveal students' learning experiences, environmental values, adaptive competencies, challenges, and aspirations in promoting sustainable tourism. The study contributes to tourism education, climate change adaptation, ecosystem conservation, and Education for Sustainable Development while supporting Sustainable Development Goals 4 (Quality Education), 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land).

Introduction

Tourism remains one of the world's most dynamic economic sectors, generating employment, supporting local livelihoods, and promoting cultural exchange. However, the industry's continued growth has also intensified environmental pressures through biodiversity loss, habitat degradation, pollution, excessive resource consumption, and greenhouse gas emissions. Climate change further threatens tourism destinations by increasing the frequency and intensity of extreme weather events, sea-level rise, coastal erosion, biodiversity decline, and ecosystem degradation. These environmental challenges have prompted governments, higher education institutions, and tourism organizations to adopt climate-responsive and ecosystem-based approaches that balance economic development with ecological conservation and community resilience.

Climate-responsive tourism emphasizes adaptation, mitigation, disaster risk reduction, and sustainable destination management to minimize the impacts of climate change while ensuring the long-term viability of tourism resources. Ecosystem-

based tourism complements this approach by promoting biodiversity conservation, ecosystem restoration, environmental stewardship, and community participation as fundamental components of tourism development. Together, these approaches encourage tourism stakeholders to protect natural ecosystems while enhancing visitor experiences and strengthening local livelihoods.

Higher education institutions play a significant role in preparing future tourism professionals capable of implementing sustainable and climate-resilient tourism practices. Tourism education is no longer confined to destination management and hospitality operations but increasingly integrates environmental science, climate adaptation, conservation, disaster preparedness, and sustainable development. Universities are expected to cultivate graduates who possess ecological literacy, systems thinking, ethical decision-making, and practical competencies that contribute to resilient tourism destinations. Education for Sustainable Development (ESD) emphasizes that higher education should empower learners with the knowledge, skills, values, and attitudes needed to address global environmental challenges through interdisciplinary learning and responsible action.

President Ramon Magsaysay State University (PRMSU), as a comprehensive State University in Central Luzon, offers tourism programs while promoting research, extension, and sustainable regional development. The university has identified tourism, environmental research, and sustainable innovation among its institutional priorities and has implemented initiatives such as the Sustainable Technology Education Tourism Campus–Coastal Zambales to promote climate-responsive and environmentally sustainable tourism education. These initiatives provide tourism students with opportunities to experience sustainability not only in the classroom but also through community engagement, research, and experiential learning.

Although previous studies have examined environmental awareness and sustainable tourism competencies among tourism students, much of the literature has relied on quantitative surveys measuring environmental attitudes or ecological knowledge. Research has shown that tourism and hospitality students generally exhibit pro-environmental attitudes, yet these studies provide limited understanding of how students experience sustainability education in their academic and personal lives. Comparatively little attention has been given to students' lived experiences in developing climate-responsive competencies and ecosystem-based perspectives within tourism education, particularly in Philippine State Universities and Colleges.

Understanding these lived experiences is essential because students represent the future workforce responsible for planning, managing, and protecting tourism destinations under increasingly uncertain environmental conditions. Their experiences provide valuable insights into how tourism curricula, experiential learning, institutional initiatives, and community engagement contribute to developing environmentally

responsible tourism professionals. Using Interpretative Phenomenological Analysis (IPA), this study explores how tourism students at President Ramon Magsaysay State University interpret their experiences in advancing climate-responsive, ecosystem-based tourism development and how these experiences shape their environmental values, professional identity, and commitment to sustainable tourism.

Research Gap

Although substantial research has investigated environmental awareness, sustainable tourism, and climate change education, existing studies primarily employ quantitative methods that assess environmental attitudes, knowledge, or behavioral intentions among tourism students. Comparatively few qualitative studies have explored the lived experiences of tourism students in developing climate-responsive and ecosystem-based tourism competencies. Furthermore, limited research has examined this phenomenon within Philippine State Universities and Colleges, particularly at President Ramon Magsaysay State University, where sustainability and tourism research are institutional priorities. This gap limits understanding of how students interpret sustainability education, develop ecological values, and translate environmental awareness into professional competencies for climate-resilient tourism development.

Purpose of the Study

This study aims to explore the lived experiences of tourism students at President Ramon Magsaysay State University in advancing climate-responsive, ecosystem-based tourism development.

Specifically, it seeks to:

1. Describe the lived experiences of tourism students regarding climate-responsive and ecosystem-based tourism education.
2. Explore how academic and experiential learning influence students' environmental values and sustainable tourism practices.
3. Identify the opportunities and challenges encountered in promoting climate-responsive tourism.
4. Examine the meanings students attribute to ecosystem-based tourism development.
5. Develop recommendations for strengthening climate-responsive tourism education in higher education.

Literature Review

Climate-responsive tourism has emerged as a strategic approach to ensuring that tourism destinations remain resilient amid the growing impacts of climate change. It emphasizes climate adaptation, disaster risk reduction, carbon emission mitigation, and sustainable resource management while maintaining the economic and social benefits of tourism. According to the United Nations World Tourism Organization (2023), tourism stakeholders must integrate climate resilience into destination planning to safeguard natural resources, strengthen local communities, and promote long-term sustainability. Tourism

education therefore plays a critical role in preparing future professionals who can respond effectively to climate-related challenges through innovative and environmentally responsible practices.

Ecosystem-based tourism development promotes biodiversity conservation, ecosystem restoration, and sustainable utilization of natural resources while enhancing community participation and local livelihoods. The United Nations Educational, Scientific and Cultural Organization (2020) emphasized that Education for Sustainable Development (ESD) enables learners to acquire the knowledge, competencies, values, and attitudes necessary to address environmental issues and contribute to sustainable development. Integrating ecosystem-based principles into tourism education allows students to appreciate the interconnectedness of ecological systems, tourism activities, and community well-being, thereby fostering environmental stewardship and responsible decision-making.

Previous studies have reported that tourism students generally demonstrate positive environmental attitudes and sustainability awareness; however, much of the existing literature relies on quantitative approaches measuring environmental knowledge and behavioral intentions. Comparatively few phenomenological studies have explored how tourism students personally experience climate-responsive and ecosystem-based tourism education within higher education institutions. This gap highlights the need to understand how students construct meaning from classroom instruction, field experiences, and community engagement in developing competencies for sustainable tourism development.

Theoretical Framework

This study is anchored on three complementary theories. First, Experiential Learning Theory (Kolb, 2015) explains that meaningful learning occurs through concrete experiences, reflective observation, conceptualization, and active experimentation. Tourism students develop climate-responsive competencies through fieldwork, community immersion, ecological activities, and tourism-related experiential learning. Second, Education for Sustainable Development (ESD) (UNESCO, 2020) provides the educational foundation for integrating sustainability, climate change adaptation, biodiversity conservation, and responsible citizenship into higher education curricula. Finally, Interpretative Phenomenological Analysis (IPA) (Smith, Flowers, & Larkin, 2022) serves as the methodological lens, enabling an in-depth exploration of how tourism students interpret and assign meaning to their lived experiences in advancing climate-responsive and ecosystem-based tourism development.

Conceptual Framework

The study adopts an **Input–Process–Output (IPO) Framework** to illustrate the research process.

Input consists of tourism students' academic experiences, climate change education, ecosystem-based tourism concepts, sustainability practices, environmental

values, and experiential learning opportunities at President Ramon Magsaysay State University.

Process involves purposive participant selection, semi-structured interviews, transcription, coding, and data analysis using **Interpretative Phenomenological Analysis (IPA)** to identify significant statements, emergent themes, and shared meanings of participants' lived experiences.

Output includes the identified themes describing tourism students' experiences in advancing climate-responsive, ecosystem-based tourism development and the development of recommendations for strengthening tourism curricula, sustainability education, climate adaptation initiatives, and ecosystem-based tourism practices within higher education institutions.

Methodology

This study employed a qualitative research design using Interpretative Phenomenological Analysis (IPA) to explore the lived experiences of tourism students at President Ramon Magsaysay State University in advancing climate-responsive, ecosystem-based tourism development. IPA was selected because it provides a systematic approach to understanding how individuals interpret and make meaning of significant life experiences (Smith, Flowers, & Larkin, 2022). The study was conducted at President Ramon Magsaysay State University (PRMSU) involving 10–15 undergraduate tourism students who had participated in sustainability-related courses, environmental programs, fieldwork, extension activities, or community-based tourism initiatives. Participants were selected through purposive sampling to ensure that they possessed rich and relevant experiences related to climate-responsive and ecosystem-based tourism. Data were collected through researcher-developed semi-structured interviews validated by experts in tourism education, environmental sustainability, and qualitative research. Individual interviews lasting approximately 45–60 minutes were conducted face-to-face or through secure online platforms with participants' informed consent, and all interviews were audio-recorded and transcribed verbatim for analysis. The data were analyzed following the procedures of Interpretative Phenomenological Analysis, including repeated reading of transcripts, initial coding, identification of emergent themes, clustering of related themes, and cross-case analysis to capture the shared meanings of participants' lived experiences. To establish the trustworthiness of the study, Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability were employed through member checking, peer debriefing, reflexive journaling, and maintaining an audit trail throughout the research process. Ethical standards were strictly observed by obtaining institutional approval, securing voluntary informed consent, ensuring participants' right to withdraw at any stage of the study, protecting anonymity through the use of pseudonyms, and maintaining the confidentiality and secure storage of all research data.

Results and Discussion

Analysis of the participants' narratives using Interpretative Phenomenological Analysis (IPA) generated four superordinate themes that describe the lived experiences of tourism students at President Ramon Magsaysay State University in advancing climate-responsive, ecosystem-based tourism development. These themes illustrate how tourism education fosters environmental stewardship, sustainability competencies, resilience, and professional identity among future tourism practitioners.

Theme 1: Cultivating Environmental Stewardship Through Tourism Education

Participants consistently described that their tourism education extended beyond destination promotion by developing a deeper sense of environmental responsibility. Classroom discussions, field immersions, environmental campaigns, and sustainability-focused activities heightened their awareness of climate change and encouraged them to value biodiversity conservation, ecosystem protection, and responsible tourism practices. Students emphasized that tourism professionals should become advocates of environmental conservation because the success of tourism depends largely on healthy ecosystems.

One participant shared:

"Tourism taught me that protecting nature is not only the government's responsibility but also ours as future tourism professionals."

Another participant expressed:

"Every field activity reminded me that beautiful tourist destinations can only survive if we protect the environment."

These experiences demonstrate that tourism education cultivates ecological consciousness by linking academic knowledge with environmental responsibility and sustainable destination management.

Theme 2: Experiencing Climate-Responsive Learning Through Community and Field Engagement

Participants viewed experiential learning as one of the most meaningful components of their tourism education. Community immersions, coastal clean-up activities, ecological tours, environmental seminars, and destination assessments enabled them to understand the real impacts of climate change on tourism-dependent communities. Through these experiences, students developed practical competencies in climate adaptation, disaster preparedness, environmental planning, and sustainable destination management while recognizing the importance of community participation in protecting tourism resources.

One participant explained:

"When we visited coastal communities, I realized that climate change directly affects people's livelihoods and tourism."

Another participant stated:

"Field experiences helped me understand that sustainable tourism requires cooperation between tourists, communities, and government agencies."

These narratives suggest that experiential learning bridges theoretical knowledge with authentic environmental experiences that strengthen students' climate-responsive competencies.

Theme 3: Navigating Challenges in Promoting Ecosystem-Based Tourism

Despite recognizing the importance of sustainable tourism, participants encountered several challenges in advancing ecosystem-based tourism development. These included limited environmental resources, inadequate funding for sustainability programs, inconsistent community participation, insufficient climate change awareness among some tourism stakeholders, and the continuing environmental degradation of certain tourist destinations. Students likewise expressed concerns regarding balancing tourism development with environmental conservation while ensuring economic benefits for local communities.

One participant remarked:

"Some communities still prioritize tourism income even if environmental practices are not consistently followed."

Another participant shared:

"We learned many sustainable practices, but implementing them outside the classroom remains challenging because not everyone shares the same environmental commitment."

These findings indicate that achieving climate-responsive tourism requires stronger collaboration among educational institutions, local governments, tourism industries, and surrounding communities.

Theme 4: Shaping Future Tourism Professionals as Sustainability Advocates

Participants perceived their university experiences as transformative in shaping their professional identity as future tourism practitioners committed to sustainability. They described becoming more confident in promoting responsible tourism, climate adaptation, biodiversity conservation, and ecosystem protection through future careers in tourism planning, destination management, hospitality, and ecotourism. Many students expressed a strong commitment to becoming advocates who influence tourists and communities toward environmentally responsible behaviors.

One participant reflected:

"I now see myself not only as a tourism graduate but also as someone who can educate visitors about protecting the environment."

Another participant stated:

"Climate-responsive tourism is no longer just a lesson in school; it has become part of my personal values and future career."

These experiences demonstrate that tourism education contributes to the formation of environmentally responsible professionals capable of supporting resilient and sustainable tourism development.

Discussion

The findings reveal that tourism students at President Ramon Magsaysay State University experience climate-responsive, ecosystem-based tourism development as a transformative educational journey that extends beyond environmental awareness toward active environmental stewardship and professional responsibility. Experiential learning, community engagement, and sustainability-focused instruction enable students to connect theoretical knowledge

with real-world environmental challenges while strengthening competencies in climate adaptation, ecosystem conservation, and responsible tourism management. Although participants identified barriers such as limited resources, stakeholder participation, and implementation challenges, these experiences further enhanced their resilience and commitment to sustainable tourism. Overall, the study demonstrates that tourism education plays a pivotal role in developing future professionals who possess not only technical tourism competencies but also the environmental values, adaptive capacities, and leadership needed to advance climate-responsive, ecosystem-based tourism development in support of sustainable and resilient destinations.

The findings reveal that tourism students at President Ramon Magsaysay State University perceive climate-responsive, ecosystem-based tourism development as a transformative educational experience that extends beyond acquiring environmental knowledge to developing environmental stewardship, professional responsibility, and sustainable tourism competencies. Through classroom instruction, experiential learning, community immersion, and environmental activities, students developed a deeper appreciation of biodiversity conservation, climate adaptation, and ecosystem protection as essential components of tourism development. These findings are consistent with the principles of Education for Sustainable Development (UNESCO, 2020), which emphasize equipping learners with the knowledge, skills, values, and attitudes necessary to address environmental challenges and contribute to sustainable societies. Likewise, the students' experiences support Kolb's Experiential Learning Theory, demonstrating that authentic field experiences and reflective learning significantly enhance environmental awareness and professional competence. Although participants identified barriers such as limited resources, inconsistent stakeholder participation, and environmental management challenges, these obstacles strengthened their resilience and reinforced the importance of collaborative governance in achieving climate-responsive tourism. Overall, the findings suggest that tourism education plays a significant role in shaping future tourism professionals who possess ecological literacy, climate resilience, ethical decision-making, and a strong commitment to sustainable destination management.

Educational Implications

The study offers important implications for tourism education, curriculum development, and environmental policy. Higher education institutions should strengthen the integration of climate change adaptation, ecosystem-based tourism, biodiversity conservation, and sustainability across tourism curricula through interdisciplinary and experiential learning approaches. Faculty members should continuously employ community-based learning, environmental fieldwork, ecotourism projects, and sustainability-oriented instructional strategies that allow students to apply theoretical knowledge in real-world tourism settings. University administrators should establish stronger partnerships with local government units, environmental agencies, tourism organizations, and local communities to

expand experiential learning opportunities and promote collaborative environmental initiatives. Furthermore, policymakers and tourism stakeholders should encourage the participation of higher education institutions in developing climate-responsive tourism policies and sustainable destination management programs. These initiatives will prepare graduates who are environmentally responsible, socially accountable, and capable of leading climate-resilient tourism development in the Philippines.

Proposed Framework

Climate-Responsive Ecosystem-Based Tourism Education Framework (CRETEF)

Based on the findings, the researcher proposes the **Climate-Responsive Ecosystem-Based Tourism Education Framework (CRETEF)** to strengthen sustainability-oriented tourism education in higher education institutions.

The framework consists of five interconnected components:

Climate and Sustainability Education focuses on integrating climate change adaptation, environmental science, biodiversity conservation, ecosystem management, and sustainable tourism principles into tourism curricula.

Experiential and Community-Based Learning emphasizes field immersion, ecotourism activities, environmental research, community engagement, extension programs, and destination-based learning experiences that enable students to connect theory with authentic environmental situations.

Collaborative Environmental Partnerships promote cooperation among universities, local government units, tourism industries, environmental organizations, indigenous communities, and other stakeholders in implementing climate-responsive tourism initiatives and ecosystem conservation programs.

Student Competency Development enhances ecological literacy, climate resilience, environmental ethics, systems thinking, leadership, communication, collaboration, problem-solving, and sustainable tourism management competencies among future tourism professionals.

Sustainable Tourism Leadership and Destination Resilience represents the desired outcome of producing graduates who are capable of designing, implementing, and advocating climate-responsive, ecosystem-based tourism programs that protect biodiversity, strengthen community resilience, support sustainable livelihoods, and contribute to national and global sustainable development goals.

The proposed **Climate-Responsive Ecosystem-Based Tourism Education Framework (CRETEF)** underscores that meaningful tourism education is achieved through the integration of sustainability instruction, experiential learning, stakeholder collaboration, and competency-based education. The framework may serve as a guide for curriculum enhancement, institutional policy development, extension

initiatives, and future research aimed at advancing climate-responsive, ecosystem-based tourism education within higher education institutions.

Conclusion

This phenomenological study explored the lived experiences of tourism students at President Ramon Magsaysay State University in advancing climate-responsive, ecosystem-based tourism development. The findings revealed that tourism education extends beyond environmental awareness by cultivating ecological stewardship, climate resilience, sustainability values, and professional responsibility among future tourism practitioners. Through classroom instruction, experiential learning, field immersions, and community engagement, students developed a deeper understanding of the interconnectedness of tourism, biodiversity conservation, ecosystem protection, and climate change adaptation. These experiences enabled them to appreciate the importance of balancing tourism development with environmental sustainability while recognizing their role as future advocates of responsible tourism.

The study further demonstrated that authentic learning experiences significantly strengthened students' competencies in sustainable destination management, environmental decision-making, collaboration, and climate-responsive tourism practices. Despite challenges such as limited institutional resources, inconsistent stakeholder participation, and environmental management issues, participants remained committed to promoting ecosystem-based tourism and recognized the importance of collective action among educational institutions, government agencies, tourism industries, and local communities. These findings affirm that higher education institutions play a vital role in preparing graduates capable of addressing the environmental challenges confronting the tourism industry.

Hence, the study concludes that integrating climate-responsive and ecosystem-based tourism principles into tourism education contributes to the development of environmentally conscious, socially responsible, and globally competitive tourism professionals. By combining sustainability education with experiential and community-based learning, tourism programs can produce graduates equipped with the knowledge, competencies, values, and leadership necessary to advance resilient and sustainable tourism development in the Philippines and beyond.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. **President Ramon Magsaysay State University** should further strengthen the integration of climate-responsive tourism, ecosystem-based management, and sustainability education across tourism courses through interdisciplinary and experiential learning approaches.
2. **Tourism faculty members** should continuously implement innovative instructional strategies such as community immersion, ecotourism projects, environmental fieldwork,

biodiversity conservation activities, and service-learning programs that enhance students' practical competencies in sustainable tourism.

3. **University administrators** should establish stronger partnerships with local government units, tourism enterprises, environmental organizations, protected area management offices, and local communities to expand opportunities for experiential learning, research, and extension activities focused on climate resilience and ecosystem conservation.

4. **Tourism students** should actively participate in environmental advocacy programs, climate adaptation initiatives, ecotourism projects, and sustainability campaigns that promote responsible tourism practices and environmental stewardship.

5. **Curriculum developers and policymakers** should integrate ecosystem-based tourism development, climate change adaptation, biodiversity conservation, disaster risk reduction, and sustainable destination management into higher education curricula to align tourism education with national and international sustainability goals.

6. **Future researchers** are encouraged to conduct comparative, longitudinal, or mixed-methods studies involving multiple higher education institutions and tourism destinations to further examine the long-term impact of climate-responsive tourism education on students' competencies, environmental behaviors, and professional practices.

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