



ADVANCING GREEN HIGHER EDUCATION FOR SUSTAINABLE DEVELOPMENT IN VIETNAM

Avançando o ensino superior verde para o desenvolvimento sustentável no Vietnã

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ABSTRACT

As green transition and sustainable development have become global priorities, higher education plays a crucial role in developing human capital, advancing scientific research, and fostering sustainability-oriented values. This article examines the current state of green higher education in Vietnam, identifies its major achievements and challenges, and proposes strategic measures to strengthen its contribution to sustainable development. The study employs a qualitative approach based on document analysis and synthesis, combined with historical–logical and comparative methods. The analysis draws on Party documents, state policies, reports from international organizations, and relevant scholarly literature on sustainable development and green higher education. The findings indicate that green higher education in Vietnam has made notable progress in promoting green campuses, integrating sustainability-related content into academic programs, encouraging research and innovation, and enhancing students' environmental awareness. Nevertheless, its development continues to face several constraints, including institutional limitations, insufficient resources, and the uneven integration of sustainability principles across higher education institutions. Based on these findings, the article proposes a set of policy and institutional recommendations to enhance the effectiveness of green higher education and strengthen its contribution to sustainable development in Vietnam.

Keywords: Green Higher Education; Sustainable Development; Green transition; Higher Education; Vietnam

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AVANÇANDO A EDUCAÇÃO SUPERIOR VERDE PARA O DESENVOLVIMENTO SUSTENTÁVEL NO VIETNÃ

Advancing green higher education for sustainable development in Vietnam

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RESUMO

No contexto em que a transição verde e o desenvolvimento sustentável se consolidam como tendências globais, o ensino superior desempenha um papel fundamental na formação de recursos humanos, na promoção da pesquisa científica e na disseminação de valores orientados para a sustentabilidade. Este artigo analisa a situação atual do ensino superior verde no Vietnã, identificando seus principais avanços e desafios, bem como propondo medidas para fortalecer sua contribuição ao desenvolvimento sustentável. A pesquisa adota uma abordagem qualitativa baseada na análise e síntese documental, complementada pelos métodos histórico-lógico e comparativo. As fontes utilizadas incluem documentos do Partido Comunista do Vietnã, políticas governamentais, relatórios de organizações internacionais e estudos acadêmicos relacionados à Educação para o Desenvolvimento Sustentável (EDS) e ao ensino superior verde. Os resultados mostram que o ensino superior verde no Vietnã alcançou progressos significativos na criação de campi sustentáveis, na incorporação de conteúdos relacionados à sustentabilidade nos programas acadêmicos, no incentivo à pesquisa e à inovação e na promoção da conscientização ambiental entre os estudantes. Contudo, persistem desafios relacionados a limitações institucionais, insuficiência de recursos e à integração ainda desigual dos princípios de sustentabilidade nas instituições de ensino superior. Com base nesses resultados, o artigo apresenta recomendações destinadas a aumentar a eficácia do ensino superior verde e a fortalecer sua contribuição para a concretização dos objetivos de desenvolvimento sustentável no Vietnã.

Palavras-chave: Ensino Superior Verde; Desenvolvimento Sustentável; Transição verde; Ensino Superior; Vietnã

INTRODUCTION

Sustainable development has become a global imperative in response to climate change, environmental degradation, resource depletion, and the growing complexity of socio-economic challenges. Recognizing the central role of education in addressing these issues, the United Nations 2030 Agenda for Sustainable Development identifies education as a key enabler for achieving the Sustainable Development Goals (SDGs), particularly through strengthening human capabilities and fostering responsible attitudes and behaviors (United Nations, 2015; UNESCO, 2017). Within this framework, higher education institutions are increasingly expected to contribute not only to human capital development but also to knowledge production, technological innovation, and the promotion of sustainability-oriented practices (Shange et al., 2025).

In recent years, the concept of green higher education has attracted growing attention as universities seek to integrate sustainability principles into teaching, research, governance, and community engagement. Beyond reducing environmental impacts on campus, green higher education aims to cultivate sustainability competencies, support green innovation, and prepare graduates to address complex environmental and social challenges. Consequently, universities are increasingly recognized as strategic actors in advancing sustainable development at both national and global levels (Leal Filho et al., 2019; Leal Filho et al., 2020).

In Vietnam, the transition toward a green economy, digital transformation, and sustainable development has created new demands for the higher education system. Alongside their traditional mission of educating highly qualified human resources, universities are increasingly expected to contribute to research, innovation, and the dissemination of sustainability values. Over the past decade, many institutions have implemented green campus initiatives, incorporated sustainability-related content into academic programs, and promoted activities supporting environmental protection and green transition. These developments indicate that green higher education is gradually emerging as an important direction for educational reform and sustainable development in Vietnam.

Despite these positive developments, the implementation of green higher education remains uneven across institutions. Challenges persist in terms of policy coordination, institutional capacity, resource allocation, and the integration of sustainability principles into university governance, teaching, and research activities. At the same time, the growing demand for green skills, green technologies, and sustainability-oriented innovation requires higher education institutions to play a more proactive role in supporting the country's development agenda.

Against this background, this article examines the current state of green higher education in Vietnam, identifies its major achievements and challenges, and proposes policy recommendations to strengthen its contribution to sustainable development in the context of green transition and digital transformation.

1 LITERATURE REVIEW

In recent years, green education and Education for Sustainable Development (ESD) have attracted increasing scholarly attention in response to climate change, environmental degradation, and the growing demand for sustainable development. Existing studies generally agree that education plays a fundamental role in achieving the Sustainable Development Goals (SDGs) by enhancing environmental awareness, fostering sustainable behaviors, and strengthening civic responsibility. Onyeaka and Akinsemolu (2025) argue that green education contributes to sustainable development by promoting environmental literacy and empowering learners to take responsible action. At the same time, they emphasize that the effectiveness of green education depends not only on individual awareness but also on broader institutional, policy, and socio-economic conditions. This perspective reflects a shift from viewing green education primarily as a tool for environmental awareness to understanding it as an integral component of sustainable governance and development.

At the higher education level, scholars increasingly emphasize the need to embed sustainability principles across all university functions. Shange et al. (2025) contend that green universities can only achieve meaningful outcomes when governance, resource management, environmental education, and stakeholder engagement are implemented in an integrated manner. Similarly, Aboramadan (2022) demonstrates that green human resource management positively

influences pro-environmental behavior and green innovation within higher education institutions. These studies suggest that green higher education extends beyond environmentally friendly campuses and involves a comprehensive transformation of teaching, research, governance, and community engagement.

In Vietnam, research has primarily examined green education through the broader framework of ESD. Pham and Pham (2012) argue that ESD should become a key orientation of the national education system in order to cultivate sustainable knowledge, values, and lifestyles among learners. More recently, Nguyen (2025) identifies persistent challenges in implementing ESD, including policy constraints, limited educational resources, curriculum-related issues, and uneven stakeholder awareness. Focusing specifically on higher education, Tieu and Nguyen (2025) highlight the importance of sustainability strategies, green governance, technological innovation, and international cooperation based on lessons drawn from global experiences. Meanwhile, Nguyen et al. (2025) find that environmental knowledge and attitudes significantly influence students' sustainable behaviors within university settings.

Although the existing literature provides valuable insights into ESD and green higher education, several gaps remain. International studies have largely focused on governance models, theoretical frameworks, and implementation experiences in developed countries. In contrast, research in Vietnam has mainly concentrated on conceptual discussions, international experiences, or individual case studies. Consequently, there remains a lack of systematic analyses of the achievements, challenges, and development pathways of green higher education in the context of Vietnam's ongoing green transition, digital transformation, and efforts to develop a sustainability-oriented workforce. Addressing this gap constitutes the primary objective of the present study.

2 RESEARCH METHODOLOGY

This study adopts a qualitative research approach based primarily on document analysis and synthesis. The data sources include Party documents, national policies and legal frameworks related to education, green growth, and sustainable development; reports published by UNESCO, the United Nations, and other international organizations; as well as domestic and international studies on Education for Sustainable Development (ESD) and green higher education.

Through a systematic review of these sources, the study examines the theoretical foundations of green higher education, analyzes Vietnam's policy orientations, and evaluates the current achievements, challenges, and development trends of green higher education. The historical–logical method is employed to explore the evolution of educational perspectives associated with sustainable development in the context of green transition. In addition, a comparative approach is used to contrast international experiences with the Vietnamese context, thereby identifying key challenges and deriving policy recommendations for advancing green higher education and supporting sustainable development in Vietnam.

3 RESULTS AND DISCUSSION

3.1 Concept of Green Higher Education

Green higher education refers to an educational approach that integrates the principles of sustainable development into teaching, research, governance, and community engagement in order to equip learners with the knowledge, skills, values, and responsibilities necessary to address contemporary economic, social, and environmental challenges (UNESCO, 2017). According to Leal Filho (2018), this approach extends beyond the inclusion of environmental topics in academic curricula and requires a comprehensive transformation of higher education institutions toward sustainability-oriented development.

From an institutional perspective, sustainability should be embedded in organizational structures, governance mechanisms, and decision-making processes across the university system (Leal Filho et al., 2020). Consequently, green higher education should not be viewed merely as a form of environmental education. Rather, it represents a holistic process through which universities align their core functions with the objectives of sustainable development, balancing economic viability, social responsibility, and environmental stewardship. Shange et al. (2025) further argue that such

transformation can only be effective when teaching, research, resource management, and stakeholder engagement are implemented in an integrated and coordinated manner.

Based on these perspectives, green higher education can be understood as a comprehensive institutional transformation that incorporates sustainability principles into teaching, research, governance, and community service. As such, it provides an essential foundation for universities to contribute actively to green transition processes and broader sustainable development goals.

3.2 The Role of Green Higher Education in Sustainable Development

In the face of climate change, environmental degradation, and increasing pressure on natural resources, education has become a key driver of sustainable development. UNESCO (2017) emphasizes that Education for Sustainable Development (ESD) not only enhances knowledge but also cultivates the values, competencies, and attitudes required to address complex economic, social, and environmental challenges. Within this context, green higher education has emerged as an increasingly important component of national and global sustainability strategies.

One of its primary contributions lies in the development of human capital capable of supporting the transition toward a green and sustainable economy. By integrating sustainability-related topics - including circular economy principles, environmental, social, and governance (ESG) practices, green technologies, and social responsibility - into academic programs, universities equip students with both professional expertise and sustainability competencies. Such capacities are essential for fostering innovation, adaptability, and responsible decision-making in rapidly changing labor markets (UNESCO, 2017; Leal Filho et al., 2019).

Beyond education and training, green higher education serves as a catalyst for research and innovation. Universities increasingly function as knowledge hubs where solutions related to renewable energy, resource management, circular economy models, digital transformation, and climate adaptation are developed and disseminated. As noted by Leal Filho et al. (2020), higher education institutions play a critical role in linking scientific research with societal needs, thereby generating innovative responses to sustainability challenges.

Green higher education also contributes to the promotion of sustainability values and social responsibility. Through teaching, research, community engagement, and institutional governance, universities help foster environmentally responsible behaviors and encourage more sustainable lifestyles among students and wider society. According to Onyeaka and Akinsemolu (2025), green education influences not only environmental awareness but also long-term behavioral change and civic engagement in support of sustainable development.

These functions are particularly relevant in Vietnam, where green growth, digital transformation, and international integration are reshaping development priorities. In this context, universities are expected not only to provide highly skilled graduates but also to contribute to innovation ecosystems, knowledge transfer, and sustainability-oriented development. Green higher education therefore serves as an important bridge between human resource development, scientific and technological advancement, and the achievement of sustainable development goals.

Taken together, these perspectives suggest that green higher education extends far beyond the creation of environmentally friendly campuses. Rather, it represents a comprehensive transformation encompassing teaching, research, governance, and social responsibility. Building on the literature reviewed above, this study analyzes green higher education in Vietnam through four interrelated dimensions: (1) institutional and policy frameworks; (2) green human resource development; (3) research and innovation for green transition; and (4) sustainability culture and social responsibility within the university community. This framework provides the basis for assessing current developments and identifying pathways for advancing green higher education in Vietnam.

3.3 Current State of Green Higher Education for Sustainable Development in Vietnam

3.3.1 Policy Orientations of the Communist Party of Vietnam on Green Higher Education and Sustainable Development

Although the term *green higher education* does not explicitly appear in Party documents, the Communist Party of Vietnam has established important policy foundations through its orientations on educational reform, human resource development, green growth, and sustainable development. These strategic directions have provided a favorable environment for the gradual emergence and development of green higher education in Vietnam.

The Party has consistently emphasized the central role of education in national development. Resolution No. 29-NQ/TW on fundamental and comprehensive educational reform identifies the goals of “raising intellectual standards, developing human resources, and nurturing talent” to meet the demands of industrialization, modernization, and international integration. Building upon this foundation, the Documents of the 14th National Congress reaffirm that “education and training, together with science and technology, constitute the top national policy, the future of the nation, and a key driving force for national development” (Communist Party of Vietnam, 2026, Vol. II, p. 60). This perspective highlights the importance of educational transformation in enhancing human capital and responding to emerging development challenges.

At the same time, sustainable development has become a core principle of Vietnam’s development strategy. The Documents of the 13th National Congress emphasize the need to pursue “rapid and sustainable development based primarily on science and technology, innovation, and digital transformation” (Communist Party of Vietnam, 2021, Vol. I, p. 214). This orientation reflects a transition from resource-intensive growth toward a knowledge-based and innovation-driven development model. Within this framework, higher education institutions are expected not only to provide skilled graduates but also to generate knowledge and contribute to sustainable development through research and innovation.

A further step was taken with Resolution No. 71-NQ/TW (2025) on breakthrough reforms in education and training, which calls for the development of a modern, open, flexible, and adaptive education system closely linked to science, technology, innovation, and digital transformation. Consistent with this vision, the 14th National Congress stresses the need to “strongly promote science and technology, innovation, and national digital transformation in order to create breakthroughs in productivity, quality, efficiency, and competitiveness” (Communist Party of Vietnam, 2026, Vol. II, p. 274). These policy orientations reinforce the role of universities as centers of research, innovation, and knowledge transfer capable of supporting the country’s green transition.

Taken together, these strategic directions suggest that the development of green higher education is not merely an educational reform initiative but also an integral component of Vietnam’s broader sustainable development agenda. By strengthening human resource development, fostering innovation, and promoting sustainability values, higher education institutions can make a significant contribution to green growth and long-term sustainable development.

3.3.2 Achievements of Green Higher Education for Sustainable Development in Vietnam

In recent years, green higher education in Vietnam has made notable progress, reflecting a gradual shift from traditional educational models toward approaches that place greater emphasis on environmental responsibility and sustainability. These achievements can be observed in several areas, including green campus development, institutional governance, curriculum innovation, sustainability-oriented research, and the promotion of environmental awareness among students.

One of the most visible developments is the adoption of greener management and operational practices across higher education institutions. According to the British University Vietnam (BUV), approximately 80% of its campus area is dedicated to green spaces, water features, and open landscapes. The university also employs energy-efficient LED lighting systems that reduce electricity consumption by around 75% compared with conventional systems, while rainwater harvesting and organic waste recycling are integrated into campus management (Vu, K., 2024). Such

initiatives indicate a transition from isolated environmental activities toward more systematic and sustainable resource management practices.

The development of green learning environments and sustainability-oriented campus cultures has also gained momentum. After five years of implementing its Green University Program (2019-2024), the University of Social Sciences and Humanities, Vietnam National University Ho Chi Minh City, reported significant progress in expanding green spaces, promoting waste segregation, reducing plastic consumption, and encouraging student participation in community-based environmental initiatives (University of Social Sciences and Humanities, VNU-HCM, 2024). These efforts demonstrate that sustainability initiatives increasingly extend beyond physical infrastructure and contribute to the cultivation of environmentally responsible lifestyles within academic communities.

Another important achievement is the growing international recognition of Vietnamese universities in sustainability rankings. According to the UI GreenMetric World University Rankings, two Vietnamese institutions - Ton Duc Thang University and Tra Vinh University - were ranked among the world's top 200 green universities, placing 114th and 138th, respectively (Thanh Nien, 2022). Given that the ranking evaluates universities across dimensions such as infrastructure, energy efficiency, climate action, waste management, water use, transportation, and environmental education, these results highlight the increasing alignment of Vietnamese higher education institutions with global sustainability standards.

Beyond campus sustainability, universities have also begun integrating sustainable development principles into academic programs. UNESCO (2017) emphasizes that Education for Sustainable Development should equip learners with the knowledge, competencies, and values needed to address global challenges and contribute to a sustainable future. In response, several Vietnamese universities have incorporated topics such as climate change, green economy, circular economy, ESG governance, and social responsibility into their curricula (Vu, K., 2024). This shift suggests a gradual transition from “greening campuses” to “greening curricula,” thereby expanding the educational dimension of sustainability.

Research and innovation have emerged as another important area of progress. For example, the Posts and Telecommunications Institute of Technology developed the WoodID artificial intelligence system for timber identification, drawing on a database of nearly 3,000 samples from 260 wood species and achieving a reported accuracy rate of 98.6%. The institution has also implemented the P-Coin green credit system, engaging approximately 30,000 students, faculty members, and staff in environmentally responsible activities (Ministry of Science and Technology, 2025). These initiatives illustrate how universities are increasingly contributing to sustainability not only through education but also through innovation and technology-based solutions.

In parallel, many institutions have strengthened efforts to promote sustainable lifestyles among students through activities such as waste sorting, reducing single-use plastics, conserving energy, and participating in environmental campaigns. Recent studies indicate that such initiatives help enhance environmental awareness, encourage sustainable consumption patterns, and strengthen students' sense of social responsibility toward sustainability challenges (Industry and Trade Magazine, 2024).

Taken together, these developments demonstrate that green higher education is gradually becoming an important component of Vietnam's sustainable development agenda. Beyond creating environmentally friendly learning environments, it contributes to the development of human capital equipped with the knowledge, skills, and social responsibility required for green transition and digital transformation. As Vietnam continues to prioritize science, technology, innovation, and digital transformation as key drivers of sustainable growth, universities are expected to play an increasingly significant role in supporting the transition toward a green economy and a more sustainable future.

3.3.3 Challenges of Green Higher Education for Sustainable Development in Vietnam

Despite the progress achieved in recent years, the development of green higher education in Vietnam continues to face a number of challenges that may limit its long-term effectiveness and sustainability.

One major challenge concerns the uneven understanding and implementation of green higher education across institutions. While some universities have incorporated sustainability goals into their development strategies and

governance models, others continue to approach the concept primarily through environmental campaigns or campus beautification initiatives. As a result, sustainability is not always integrated systematically into teaching, research, governance, and community engagement activities. The absence of a unified national framework for assessing and recognizing green universities further complicates efforts to establish clear objectives, monitor progress, and develop coherent institutional strategies.

Financial and technological constraints also remain significant barriers. The transition toward sustainable campus management requires substantial investment in green infrastructure, renewable energy systems, energy-efficient technologies, waste management facilities, and digital transformation initiatives. However, many universities—particularly public institutions with limited financial autonomy—continue to face difficulties in mobilizing the resources necessary to support large-scale sustainability projects. These disparities contribute to unequal levels of progress among higher education institutions.

Another challenge relates to the integration of sustainability into teaching and research. Although topics such as climate change, green economy, circular economy, ESG governance, and sustainable development have gradually entered university curricula, their incorporation remains uneven across disciplines and institutions. Interdisciplinary approaches are still relatively limited, and research outputs addressing green transition challenges have yet to fully reflect the potential of the higher education sector. Furthermore, collaboration among universities, businesses, and government agencies in green innovation and technology transfer remains insufficient, reducing the practical impact of research outcomes.

The development of sustainability-oriented cultures and lifestyles within university communities also presents ongoing difficulties. Although environmental awareness campaigns have become more widespread, awareness does not always translate into consistent behavior. Practices such as waste segregation, energy conservation, reducing single-use plastics, and participation in environmental initiatives have not yet become routine habits among many students and staff members. This suggests that the transition toward green universities involves more than infrastructure upgrades or curriculum reform; it requires a long-term transformation of institutional values, social responsibility, and sustainability-oriented behaviors across the academic community.

Taken together, these challenges indicate that green higher education in Vietnam remains in a transitional stage. Addressing them will require coordinated efforts involving policy development, institutional capacity building, resource mobilization, curriculum innovation, research enhancement, and the cultivation of sustainability-oriented cultures. Such efforts are essential if higher education is to make a more substantial contribution to Vietnam's long-term sustainable development goals.

3.4 Policy Recommendations for Advancing Green Higher Education in Vietnam

Strengthening Institutional Frameworks and Developing a National Strategy for Green Higher Education

Although green higher education initiatives have been introduced across a growing number of universities in Vietnam, their development remains fragmented due to the absence of a comprehensive national policy framework. Differences in institutional priorities, implementation approaches, and sustainability objectives highlight the need for stronger coordination and strategic direction at the national level. Furthermore, the lack of dedicated assessment and accreditation standards makes it difficult to monitor progress and evaluate institutional performance.

To address these challenges, Vietnam should develop a national strategy for green higher education aligned with broader objectives related to green growth, sustainable development, and educational reform. At the same time, a national assessment framework should be established, drawing selectively on international standards such as the UI GreenMetric ranking system while remaining responsive to Vietnam's specific developmental context. Such an institutional framework would not only facilitate quality assurance and policy implementation but also encourage universities to contribute more effectively to the country's sustainability agenda.

Reforming Curricula to Develop Green Human Capital

The expansion of green industries, circular economy models, and digital transformation is reshaping labor market demands across multiple sectors. Nevertheless, sustainability-related topics-including ESG governance, green technologies, sustainable development, and innovation-remain unevenly integrated into many academic programs. This situation creates a gap between higher education outcomes and the competencies required for emerging green economies.

Universities therefore need to adopt more interdisciplinary curricula that incorporate sustainable development, digital transformation, artificial intelligence, and green technologies into teaching and learning activities. Beyond disciplinary knowledge, greater attention should be paid to developing systems thinking, adaptability, and problem-solving skills. Such reforms are essential for preparing graduates capable of supporting green transition processes while enhancing productivity and long-term economic competitiveness.

Enhancing Research, Innovation, and Technology Transfer for Sustainable Development

Research and innovation constitute core functions of higher education and are increasingly important in addressing sustainability challenges. However, many studies related to renewable energy, environmental technologies, circular economy practices, and sustainable governance have yet to achieve substantial practical impact. In addition, collaboration among universities, businesses, and government agencies remains limited, reducing opportunities for technology transfer and the commercialization of research outcomes.

Strengthening research capacity therefore requires greater investment in laboratories, research centers, and university-based innovation ecosystems. Priority should be given to interdisciplinary projects that address real-world sustainability challenges and support green transition objectives. Expanding partnerships with industry can further enhance the societal relevance of academic research and facilitate the transformation of scientific knowledge into practical solutions. This direction is consistent with Vietnam's commitment to promoting breakthroughs in science, technology, innovation, and digital transformation as key drivers of national development (Communist Party of Vietnam, 2026, Vol. I, p. 147).

Promoting Sustainability Culture and Social Responsibility within Universities

The success of green higher education ultimately depends not only on infrastructure, governance reforms, or curriculum innovation but also on the values and behaviors of university communities. Sustainable development principles need to be embedded throughout university life, including teaching, research, extracurricular activities, and community engagement.

Active participation in initiatives such as energy conservation, waste segregation, environmental protection projects, and sustainability-oriented community programs enables students to translate knowledge into everyday practice. Over time, these experiences help cultivate environmental responsibility, civic engagement, and sustainability-oriented lifestyles.

From a broader educational perspective, fostering a sustainability culture represents a process of nurturing the values and competencies required of responsible citizens in contemporary society. When sustainability becomes an integral part of institutional culture, universities contribute not only to workforce development but also to the formation of socially responsible individuals capable of addressing complex sustainability challenges at local, national, and global levels.

CONCLUSION

Green higher education is increasingly recognized as a strategic component of sustainable development and green transition efforts in Vietnam. Beyond its traditional educational functions, it serves as an important mechanism linking human capital development, scientific research, innovation, and social responsibility, thereby contributing to broader sustainability goals. The findings of this study indicate that Vietnamese higher education institutions have

made meaningful progress in promoting green campuses, integrating sustainability-related content into academic programs, and expanding research and innovation activities that support sustainable development.

Despite these achievements, the development of green higher education remains constrained by institutional, financial, and governance-related challenges, as well as the uneven integration of sustainability principles across teaching, research, and university management. Addressing these limitations requires coordinated and long-term efforts involving government agencies, higher education institutions, businesses, and other stakeholders. Strengthening policy frameworks, enhancing research capacity, fostering interdisciplinary education, and cultivating sustainability-oriented university cultures will be essential for accelerating this transition.

As Vietnam advances its green growth agenda, digital transformation, and international integration, higher education is expected to play an increasingly significant role in supporting sustainable development. Investing in green higher education should therefore be viewed not merely as an educational priority but as a strategic investment in the country's future. By developing sustainability-oriented human resources, fostering innovation, and promoting responsible citizenship, universities can make a substantial contribution to building a greener economy and a more sustainable society.

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