

Advancing Sustainable Tourism: A Study on Eco-Tourism Policies in Indonesia and Brunei Darussalam

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Sustainable tourism, Ecotourism policy, Indonesia, Brunei Darussalam.

Abstract.

The global tourism industry has suffered significant losses due to the impact of global pandemic Covid-19. This paper examines the policies and efforts adopted by the local authorities of Indonesia and Brunei Darussalam to support their sustainable tourism industries and it seeks to draw lessons from both countries. The research will primarily focus on ecotourism issues and challenges in specific areas such as national parks, natural landscapes, and historical sites in both countries. Specific destinations within these ecotourism categories for Indonesia's; Bogor Botanical Garden, Onrust Archeological Park in Thousand Island Jakarta, and North Sulawesi Mountain Landscape. For Brunei Darussalam's; Kampong Ayer, Sumbiling Eco-Village, and Ulu Temburong National Park. This study reveals challenges in tourism industry stakeholders' participation level, inadequate and improper tourism infrastructure, a lack of skilled workforce employment. and insufficient public education on eco-tourism in both nations. Recommendations emphasize the importance of capacity building for stakeholder collaboration, infrastructure acquisition, and technology-driven knowledge transfer. The limitations of this study lie in the scarcity of research on empirical study and the unavailability of highlevel official interviews. Therefore, for future research, it is important to assess the effectiveness of Indonesia and Brunei Darussalam government's direct response such as funding mechanism policy, infrastructures development policy, and the utilization of digital platform policy. Besides, it is also important to assess the Indonesia and Brunei Darussalam government's response to and anticipation of ecotourism issues for both countries.

Kata Kunci:

Pariwisata berkelanjutan, Kebijakan ekowisata, Indonesia, Brunei Darussalam.

Abstrak.

Industri pariwisata global mengalami kerugian yang cukup besar akibat dampak pandemi global Covid-19. Tulisan ini mengkaji kebijakan dan upaya yang diadopsi oleh pemerintah daerah di Indonesia dan Brunei Darussalam untuk mendukung industri pariwisata berkelanjutan dan berupaya mengambil pelajaran dari kedua negara. Penelitian ini akan berfokus pada isu dan tantangan ekowisata di bidang tertentu seperti taman nasional, bentang alam, dan situs bersejarah di kedua negara. Destinasi khusus dalam kategori ekowisata ini untuk Indonesia; Kebun Raya Bogor, Taman Arkeologi Onrust di Pulau Seribu Jakarta, dan Lanskap Pegunungan Sulawesi Utara. Untuk Brunei Darussalam; Kampong Aver, Eco-Village Sumbiling, dan Taman Nasional Ulu Temburong. Studi ini menyebutkan tantangan di tingkat partisipasi pemangku kepentingan industri pariwisata, infrastruktur yang kurang memadai dan tepat, rendahnya penyerapan tenaga kerja terampil, dan kurangnya pendidikan masyarakat tentang ekowisata di kedua negara. Bagian rekomendasi menekankan tentang pentingnya peningkatan kapasitas untuk berkolaborasi dengan pemangku kepentingan, pengadaan infrastruktur, dan transfer pengetahuan berbasis teknologi. Keterbatasan studi ini terletak pada kelangkaan penelitian pada studi empiris dan tidak tersedianya interviu dengan pejabat tingkat tinggi. Oleh karena itu, untuk penelitian selanjutnya, penting untuk menilai tingkat efektivitas atas respon langsung pemerintah Indonesia dan Brunei Darussalam seperti kebijakan mekanisme pendanaan, kebijakan pengembangan infrastruktur, dan kebijakan pemanfaatan platform digital. Selain itu, penting juga untuk menilai respon dan antisipasi pemerintah Indonesia dan Brunei Darussalam terhadap isu ekowisata di kedua negara.

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1. Introduction

The pandemic resulted in an immense drop of 65% in the number of tourists arriving around the globe in 2020 (UNWTO, 2020). Henceforth, worsening the economy of countries that especially rely on tourism. According to the UNWTO (2023), global tourism has recovered 63% of its pre-pandemic level in 2022, showing a slow sign of recovery. According to a study by Ekka and Annamalai (2022), during the pandemic 2020-2022, there has been a large body of literatures; 184 papers, were published on the tourism industry especially on sustainable tourism. This points out that sustainable tourism is one of the ways to revive the declining global tourism industry. Nevertheless, as of 184 articles, we have come across 80 pieces of literature, focusing on eco-tourism in Brunei Darussalam and Indonesia. Therefore, we are focusing on the problem of regional context.

In this study, focusing on the problem of regional context, both Indonesia and Brunei Darussalam, as ASEAN members, are endowed with rich biodiversity and have initiated sustainable tourism policies, they face challenges in community involvement, infrastructure development, skilled workforce availability, and youth engagement in eco-tourism. The lack of community involvement in Indonesia and Brunei is evident in the Bogor Botanical Garden and Kampong Ayer (Hengky & Kikvidze, 2018; Khalid & Hussin, 2022). Inadequate infrastructure is also apparent in the North Sulawesi Mountain Landscape, Sumbiling Eco-village, and Ulu Temburong National Park (Butarbutar & Soemarno, 2013; Idris *et al.*, 2019; Tabrani *et al.*, 2015). Furthermore, the engagement of skilled workforce and youth participation are also efforts on ecotourism development in Onrust Archeological Park and Sumbiling Eco-Village (Ekadj & Karuniasa, 2022; Idris et. al., 2018). A case study on specific destinations can offer insights into addressing these challenges and optimizing ecotourism potential in the region.

Building upon the introductory context, the literature review delves deeper into the existing body of knowledge surrounding eco-tourism during the pandemic. By examining prior research, we aim to address the gap identified in the regional context, focusing on ASEAN countries specifically for Indonesia and Brunei Darussalam. Our review sheds light on the persistent challenges faced by Indonesia and Brunei Darussalam. Through regulatory frameworks and policy analysis, we aim to pave the way toward a more resilient and inclusive eco-tourism development in Indonesia and Brunei Darussalam.

This paper is organized into nine main sections. Section 2 reviews eco-tourism and its real-world practices. Section 3 describes the research methodology. Sections 4 and 5 examine eco-tourism policy in Indonesia and Brunei Darussalam, respectively. Section 6 explores eco-tourism policy within the ASEAN context. Section 7 is divided into two subsections, both focusing on policy recommendations for Indonesia and Brunei Darussalam. Section 8 discusses the study's limitations. Finally, the last section summarizes and concludes the paper.

2. Literature Review

The literature review discusses the definitions of ecotourism and sustainable tourism, noting that these terms are often used interchangeably. This section also provides case studies and empirical studies from other nations as examples of real-world practices.

2.1 Ecotourism and Sustainable Tourism

Eco-tourism encompasses several essential concepts that contribute to its sustainable and responsible nature. Firstly, it emphasizes the involvement of the local population in providing services, fostering

community engagement and economic benefits. Secondly, eco-tourism is guided by sustainable management practices, aiming to minimize environmental impacts while maximizing positive outcomes for local communities. Moreover, it prioritizes the preservation of natural objects and protected areas, ensuring the conservation of ecological resources (De Grosbois & Fennell, 2022; Vasilyeva, 2020).

Additionally, education plays a vital role in eco-tourism, as it aims to raise awareness and understanding among tourists about the environment, conservation efforts, and local cultures. Guo et al. (2022) highlight the importance of eco-efficiency tourism and its effects on various macroeconomic factors, such as economic scale, industrial structure, and environmental regulation. The main goal of eco-tourism is to increase tourist engagement. Ecotourism promotes responsible travel and fosters a harmonious relationship between tourists, local communities, and the natural environment (De Grosbois & Fennell, 2022). This socially significant entrepreneurial activity contributes to the sustainable development of rural regions, encompassing the enhancement of infrastructure, living standards, augmented local income, job creation, preservation of cultural heritage, and environmental conservation (Kozhukhivska et al., 2023; D'Alessandro, 2016).

Such operators adopt specific practices to promote sustainability, including prioritizing low-impact travel, engaging in carbon-offset programs, offering financial incentives for conservation, and empowering local communities. They also raise awareness of the political, environmental, and social dynamics of their operating regions (Bustam & Stein, 2023). Additionally, these operators reduce energy consumption through energy-efficient power sources, focus on water conservation, and integrate climate-friendly technology solutions to mitigate environmental impact (Plasencia, 2023). Acording to the UN Environment Program and UN World Tourism Organization, sustainable tourism refers to tourism that fully considers its present and future economic, social, and environmental effects, while addressing the interests of tourists, the industry, the environment, and local communities (GSTC, 2023; UN, 2017; UNEP, 2005). This involves reducing carbon emissions, preserving natural resources, protecting biodiversity, and maintaining ecosystems. Sustainable tourism also aims to empower local communities by involving them in decision-making processes, providing economic opportunities, and preserving their cultural heritage. It fosters positive relationships between tourists and residents, promoting mutual respect and understanding (Font et al., 2023; Khan et al., 2022; Mateoc-Sîrb et al., 2022). Besides, sustainable tourism promotes education and awareness among tourists, communities, and industry stakeholders regarding responsible tourism practices. Doing so emphasizes the importance of education and capacity-building initiatives to foster a culture of sustainability (Font et al., 2023; Khan et al., 2022; Trišić et al., 2022).

Zhang et al. (2023) conducted a study revealing that a 1% enhancement in the green governance index of developing nations corresponds to a 0.43% increase in their ecotourism, whereas a 1% rise in the globalization index leads to a 0.32% increase. Additionally, it was found that ecotourism in developing nations is more susceptible to changes in macroeconomic variables compared to developed economies. Practical evidence concerning ASEAN ecotourism encompasses research on the correlation between ecotourism and the growth of the green economy in ASEAN countries, as well as the impact of eco-innovation and tourism on environmental quality in selected ASEAN countries (Zhang et al., 2023).

2.2 Ecotourism: Case Studies and Emipirical Studies

Multiple case studies demonstrate the involvement of local populations in the ASEAN region, particularly concerning sustainable development and community engagement within biosphere reserves. Jaafar *et al.* (2023) conducted a study analyzing the factors influencing community

willingness to participate, challenges confronting communities, and potential policy solutions to enhance community engagement in biosphere reserves. The study incorporates case studies from countries such as China, Indonesia, Malaysia, and Vietnam.

Additionally, Franco *et al.* (2022) discuss case studies on traditional ecological calendars, folk medicine, and indigenous names, which are integral facets of biocultural diversity in Southeast Asia. This underscores the significance of comprehending the intricate human-environment relationship at the local level to safeguard biocultural diversity and support local communities.

The Eco-Tourism Carrying Capacity methodology uses fuzzy model recognition methods to evaluate the state of environmental tourism development in tourist destinations, considering factors such as spatial resources, ecological environments, economic resources, people's psychology, and sociocultural development. This approach helps to identify what transport capacities are about to be overloaded and to inform measures to manage the development state (Yu & Gao, 2023). Environmental compliance validation, the Receiver Operational Characteristics (ROC) curve is often used to verify the suitability of ecotourism.

This graphical representation helps to determine the best threshold values for distinguishing appropriate and inappropriate areas for the development of ecotourism. The area under curves (AUCs) are used to evaluate the performance of the model (Pathmanandakumar, 2023). In addition, a multi-criteria decision-making methodology has been applied to identify potential areas for the development of ecotourism. This approach considers multiple factors and evaluates the appropriateness of different sites for ecotourism.

The results are validated using a method such as a ROC curve (Pathmanandakumar, 2023). Using empirical models such as Conditional Logit (CL), Random Parameter Logit (RPL), and the Latent Class Model (LCM), tourists can estimate their average preferences for multi-attributes of ecotourism and the willingness to pay different attribute levels. These models can be used to investigate the heterogeneous preferences of respondents and changes in their willingness to pay at different attributes (Chen, 2020).

Ecotourism offers a sustainable solution not only to mitigate the negative environmental impacts of tourism by encompassing nature-based activities that harness the natural, cultural, and historical riches but also to bolster economic gain for the local communities (Baydeniz et al., 2024). As reported by the BBC (2024), the benefits of ecotourism can be categorized into environmental and socioeconomic realms. First, it underscores the importance of preserving rainforests as they serve as significant revenue sources through tourism, thereby discouraging deforestation. Second, ecotourism creates employment opportunities for locals, ranging from park rangers to lodge staff, offering income levels often surpassing those from traditional agricultural activities. Furthermore, educators who engage in ecotourism can impart invaluable lessons to youth, emphasizing the principles and practices of sustainable tourism, fostering cultural appreciation, and nurturing environmental consciousness.

In conclusion, multiple case studies highlight the crucial role of local populations in sustainable development and community engagement within the ASEAN region's biosphere reserves, emphasizing the need for understanding the intricate human-environment relationship to protect biocultural diversity. Various methodologies, including the Eco-Tourism Carrying Capacity model, ROC curves, and multi-criteria decision-making, effectively evaluate and manage ecotourism development by assessing environmental, economic, and sociocultural factors. Empirical models like CL, RPL, and LCM reveal tourists' preferences and willingness to pay for different ecotourism attributes, indicating the heterogeneous nature of these preferences. Ecotourism not only mitigates the negative environmental impacts of tourism but also leverages natural and cultural resources for

economic gain, creating employment opportunities and discouraging deforestation. Additionally, it fosters cultural appreciation and environmental consciousness among youth through educational initiatives. Therefore, ecotourism presents a sustainable solution that balances environmental preservation with socio-economic benefits for local communities.

3. Methodology

Meta-analysis method has been used to understand the effects of eco-tourism (Rhama, 2020) and observe patterns and trends of research done on eco-tourism (Roberts *et al.*, 2022). This method is also used to analyze the relationship of pro-environment consumer behavior towards the tourism and hospitality industry (Lin *et al.*, 2022). In this study, meta-analysis is used to analyze the common issue and draw future direction on the eco-tourism policy of both countries.

Meta-analysis is employed in the paper by collecting and sorting 80 articles for literature review. The articles were collected using the Search Engine Optimization (SEO) method by using keyword research in the Google search engine and Google Scholars with a focus on the three key concepts (eco-tourism, green tourism and sustainable tourism). In addition, for the policy case study, the key concepts were paired with the specific country names of 'Brunei Darussalam' and 'Indonesia'. The articles were chosen from the past 10 years of studies includes government policies and recent projects, non-government organizations websites, and newspaper reports on ecotourism in Brunei Darussalam and Indonesia.

However, due to the limited and various number of eco-tourism spots available in Brunei Darussalam and Indonesia respectively, and to maintain the consistency of the case study, the scope of the study is then narrowed down further to locations that possess alike features for both countries:

- 1. Bogor Botanical Garden and Ulu Temburong National Park contributes to the research and flora and fauna tourism to Brunei and Indonesia respectively.
- 2. Kampong Ayer and Onrust Archeological Park in Thousand Island Jakarta have historical and cultural significance to Brunei and Indonesia respectively.
- 3. North Sulawesi Mountain Landscape and Sumbiling Eco-village share the importance of its contribution towards the local community such as providing resources to livelihood and employment.

The locations are also selected with the characteristics of sustainable tourism by the United Nations (UN). The characteristics of UNWTO are, 1) the tourism destination should have an observation of nature and traditional cultures, 2) contain an educational and interpretation feature, 3) the local business or small group should operate the tourism object in those areas, 4) the areas should descent the negativity of natural and socio-cultural environment, 5) the places support the economic benefit for local community, employment, and increase awareness the conservation of natural and cultural resources.

The paper considers locations such as national parks, natural landscapes, and historical sites from both countries. Specific destinations within these eco-tourism categories are, for Indonesia; Bogor Botanical Garden, Onrust Archeological Park in Thousand Island Jakarta and North Sulawesi Mountain Landscape. For Brunei Darussalam; Kampong Ayer, Sumbiling Eco-Village and Ulu Temburong National Park.

4. Indonesia Evidence

(LCDI, 2024).

4.1 Journey to Paradise: Unravelling the Indonesian Sustainable Tourism Milestone

To promote sustainable tourism, the Ministry of Tourism signed a Memorandum of Understanding in 2016 with 20 tourist destinations, designating them as pilot project sites for sustainable tourism development. As per the guidelines set by the Global Sustainable Tourism Council (GSTC), the criteria for Destination Tourism encompass four key areas: Sustainable Management, which focuses on establishing effective management structures, engaging stakeholders, and addressing pressure and change; Socio-economic Sustainability, aimed at fostering local economic benefits and positive social impacts; Cultural Sustainability, emphasizing the preservation of cultural heritage and engagement with cultural sites; and Environmental Sustainability, which addresses conservation of natural heritage, responsible resource management, and waste emission control. Additionally, for effective pilot projects, opportunities can be explored through the initiatives of the Low Carbon Development Indonesia (LCDI).

Pilot projects initiated by the LCDI aim to support green investment and pioneer low-carbon development strategies, facilitated by the Ministry of Development Planning across various sectors using a Holistic, Integrative, Thematic, and Spatial (HITS) approach. These endeavors seek to enhance economic growth, improve social welfare, and reduce greenhouse gas emissions. Some projects not only promote economic development but also contribute to sustainable tourism. For instance, one project involves the Utilization of Ex-Mining Land as a Mangrove Tourism Park in Ecosystem Rehabilitation and Carbon Sequestration Efforts in Juru Seberang Village, Tanjung Pandan District & Keciput Village, Sijuk District, Belitung Regency. Implemented by Belitung Mangrove Park (Yayasan Terumbu Karang Indonesia (Terangi)), it aims to preserve beach and mangrove forests, create job opportunities through tourism, and provide mangrove mapping data to the government and the public. Measurable outcomes include an average household income of IDR 2 million and a reduction of 220,200 tons of carbon dioxide emissions annually (LCDI, 2024). Another project, titled Conservation of the Nipah Ecosystem & Eastern Buffer Forest of the Sungai Lamandau Wildlife Reserve as a Community Forest Reserve Area (HKm) in Kab. West Kotawaringin, Prov. Central Kalimantan, involves the Indonesian Orangutan Foundation (Yayasan Orang Utan Indonesia (Yayorin)). Its objectives include creating economic alternatives through fishery entrepreneur development, promoting low-carbon agriculture, and educating farming families on

Significant challenges include the lack of a suitable coordinating mechanism for regulatory and operational procedures, the necessity for extensive engagement and communication with stakeholders across both public and non-public sectors, and the presence of sectoral and silo-based institutional structures compounded by sectoral regulations that could impede mobilization, coordination, monitoring, and evaluation efforts during implementation. Moreover, there is a notable absence of a reliable and integrated database system, a shortage of personnel with competencies, particularly in system dynamic modeling, and a finance and investment gap necessitating the formulation of resource mobilization mechanisms and strategies to tap into financial resources from the state budget, private sector, and international funds.

sustainable practices. Anticipated outputs include a rise in farmer income by approximately IDR 1 million per household and a reduction of up to 807,400 tons of carbon dioxide emissions annually

Over the years, tourism has played a vital role in Indonesia's economy, with its contribution to GDP steadily increasing until 2019, reaching approximately USD 64.7 billion or 5.9% of the country's output. Sustainable tourism prioritizes engagement among stakeholders over ensuring an equal distribution of benefits. Research conducted by Amoako *et al.* (2023) explores how various

stakeholders, including employees, government bodies, local communities, private sector entities, and individual shop owners, perceive factors that either facilitate or impede progress in the tourism sector. It identified challenges include widespread illiteracy, inadequate education for youth, limited funding and promotional efforts, and insufficient enforcement of sector regulations. Moreover, this study suggests that to promote sustainability in tourism, products must possess unique, valuable, rare, non-substitutable, and non-imitable characteristics, alongside effective advertising strategies.

The outbreak of COVID-19 in 2020 led to a decline in tourism activity, with domestic tourists' average expenditure decreasing significantly. As a result, many travel industries faced financial challenges, with approximately 90% of around 7,000 travel businesses leaving the market. The economic losses for the hotel and restaurant industries were estimated to be around USD 7.1 billion in revenue (ERIA, 2022).

In response to the pandemic and in alignment with international standards, the 'Regulation of Minister of Tourism of the Republic of Indonesia Number 14 of 2016' was revised in 2021 to further emphasize the Sustainable Development Goals (SDGs) and address prolonged disasters like COVID-19 (Ministry of Tourism and Creative Economy, 2021). These revisions were made to meet the criteria set by the Global Sustainable Tourism Council (GSTC) standards, ensuring that Indonesia's sustainable tourism efforts align with international best practices.

At the Indonesian Tourism Outlook (ITO) 2024 Conference, the Minister of Tourism and Tourism Economy and Tourism Industry attended a meeting to discuss the challenges and ways to attract investors. The Minister stated that some international institutions predicted challenges to sectoral growth at the global level. Among them are geopolitical conditions, economic troubles and environmental crises. In the future, especially in investment, the development of the tourism and creative economy should focus on environmental sustainability, and the concept of green investments should be the key to success (Widiati, 2023).

4.2 Guardian of Paradise: How Indonesian Local Authorities Regulate Sustainable Tourism

The Ministry of Tourism and Creative Economy in Indonesia has enacted the 'Regulation of the Minister of Tourism and Creative Economy/ Head of the Tourism and Creative Economy Agency of the Republic of Indonesia Number 9 of 2021' (Law 9), which outlines the Guidelines for Sustainable Tourism Destinations. The process of classifying sustainable tourism destinations involves setting standards, criteria, and indicators that align with the United Nations World Tourism Organization (UNWTO) standards, specifically the GSTC standard.

Law 9 categorizes various types of destinations, including urban, countryside, mountains, and coastal areas, both in large-scale (such as large cities, regions, regencies, and resorts) and small-scale (such as national parks, group, village tourism, and local communities). Additionally, it includes classifications like museums, festivals, public buildings, monuments, and hotels.

To regulate sustainable tourism, Law 9 incorporates four main standards: Sustainable Management, Socio-economic Sustainability, Cultural Sustainability, and Environmental Sustainability. Each standard is further broken down into criteria, indicators, and supporting evidence.

- 1. Sustainable Management: This standard focuses on management structure and framework, stakeholder engagement, and managing pressure and change.
- 2. Socio-economic Sustainability: This standard is centered around delivering local economic benefits and social welfare and impacts.

- 3. Cultural Sustainability: This standard emphasizes protecting cultural heritage and visiting cultural sites
- 4. Environmental Sustainability: These standards addresses natural heritage conservation, resource management, and waste emission management.

By implementing and adhering to these standards, Indonesia's local authorities play a vital role in ensuring sustainable tourism practices, promoting the preservation of its unique cultural and natural assets, and safeguarding the long-term viability of tourism destinations in the country.

4.3 Navigating the Path to Sustainable Tourism in Indonesia: Current Issues and Challenges

Indonesia's eco-tourism faces various weaknesses and threats that must be addressed to ensure its sustainable development. One of the weaknesses lies in the limited monitoring and implementation of management plans in certain eco-tourism areas, such as the Bogor Botanical Garden. This can hinder effective conservation efforts and potentially negatively impact the environment and biodiversity. Another weakness is the weak stakeholder participation observed in the Bogor Botanical Garden. The lack of active involvement from local communities and relevant authorities may impede the success of ecotourism initiatives and limit the positive outcomes for both the environment and the communities (Hengky & Kikvidze, 2018).

A study by Jong (2023) mentioned that in a visible hierarchy, there may be problems of elite and leadership conflicts. This leads to the situation where only a few powerful and influential local elites manage and benefit from community-based tourism, often at the expense of the rest of the community. In poor communities, greed and corruption can be a major problem. This may be because some locals feel they do not benefit sufficiently from tourism and try to obtain money through other means, such as the abuse of the authority assigned for personal gain. The management of community tourism experience can be time-consuming and difficult. If there are too many tourists, the inhabitants may feel overwhelmed and unsatisfied with the concept of tourism, which affects both the quality of the local and the visitors' experience.

To address these challenges, there are some potential solutions: by encouraging community participation and cooperation in the development and management of tourism initiatives, it is possible to ensure that the benefits of tourism are shared equally among the members of the community, by establishing fair management structures with all stakeholders, including the members of the local community, it is possible to prevent the conflict of elites and leaders, by providing training and capacity-building programs for local communities, and by enabling them to develop the skills and knowledge needed to manage tourism effectively.

In some ecotourism destinations, such as the Onrust Archaeological Park in Thousand Islands, Jakarta, a decreasing number of tourists could adversely affect the preservation of cultural heritage areas. Insufficient cultural heritage educational experiences for tourists in this location may also contribute to the challenges in promoting appreciation and understanding of the historical significance of the site. Moving on to the threats faced by Indonesia's eco-tourism, erosion, and material accumulation within the sea dike-pond of the Onrust Archaeological Park pose a significant environmental concern. It could lead to damage to the delicate ecosystem in the area and undermine the appeal of the site for eco-tourism (Ekadj & Karuniasa, 2022; Rahardjo, 2019).

The potential negative impacts of physical constructions on the environment are another threat. The improper development of infrastructure and facilities can disrupt natural habitats and ecosystems, leading to adverse consequences for biodiversity and the overall sustainability of eco-tourism destinations in North Sulawesi mountains landscape area (Butarbutar & Soemarno, 2013). This

situation has given rise to several problems, including deforestation, habitat loss, and social disparities. The lack of proper infrastructure in the area hinders effective adaptation to these conditions and has prompted human migration (Lubis & Langston, 2015).

Indonesia is actively exploring the prospects of integrating eco-tourism and digitalization to bolster its tourism sector since it represents on the interest in ecotourism has garnered significant attention among foreign travelers where in 2022, the arrival of foreign tourists to Indonesia via air reached 121,978 and a noteworthy increase of 503,34 percent when compared to June 2023 with the amount of 735,947 foreign visitors (Ministry of Tourism & Creative Economy, 2023). In response to the growing demand for ecotourism ventures, a comprehensive digital information system management has been developed specifically catering to eco-tourism entrepreneurs in Indonesia.

The utilization of technology has the potential to influence tourists' preferences and priorities, leading to a notable shift towards digital travel experiences. This paradigm shift opens novel business opportunities for service providers to offer more tailored and relevant services (Kornita, 2023). An academic paper has been published, detailing the implementation of digitalization strategies that promote the transformation of nature-centric locations into smart tourism villages (Pranita *et al.*, 2021). It is to harness the abundant tourism potential in these areas while ensuring sustainable management practices, which have hitherto not been fully exploited under existing market conditions.

Extensive analysis has been conducted on the amalgamation of digital transformation and tourism development policies in Indonesia, focusing on policy frameworks emanating from the central government (Nanda *et al.*, 2023). It seems that Indonesia is recognizing the potential of digitalization and eco-tourism to enhance its tourism industry. While the government is issuing these policies, the entrepreneurs are developing digital information systems to cater to the needs of eco-tourism (Subekti *et al.*, 2022).

Henceforth, addressing the weaknesses and threats faced by Indonesia's eco-tourism, which lies in lack of community involvement, insufficient cultural heritage education, and improper infrastructure, is crucial for ensuring its sustainable development and preserving the country's natural and cultural treasures for future generations. This will require collaborative efforts from stakeholders, local communities, and the government to implement effective management plans and promote responsible eco-tourism practices throughout the country.

5. Brunei Darussalam Evidence

5.1 Kingdom of Unexpected Treasure: Unveilling Brunei Darussalam's Eco-tourism Milestone

Brunei Darussalam has also witnessed growth in the tourism industry. Generally, the formation of policies and the implementation of promoting eco-tourism in Brunei is done under the Ministry of Primary Resources and Tourism ("Kementerian Sumber-Sumber Utama dan Pelancongan") through the Department of Tourism Development Department (TDD). The official website: 'Brunei Tourism' provides general information on Brunei; from current events in the country to exploring Brunei's nature and culture such as, packages offered by various companies to explore unique activities from different districts of Brunei.

Based on the data provided by the Tourism Development Department (2022), prior to the Covid-19 pandemic (2016-2019), the number of international tourists arriving in Brunei has been increasing on a year-on-year (YoY) basis with an average of 2.38%; there was a drop by 1.6% in 2019. In 2019 alone, the tourism industry provided 3,219 jobs for Brunei, a positive increase from the years prior

(Ministry of Primary Resources and Tourism, 2021), this demonstrates the potential to invest more in the tourism industry.

During the 19th Legislative Council (LegCo) meeting, the minsters have casted lights on the need to increase efforts in fostering green tourism in Brunei, one of it is through private public partnership (Azahari, 2023; Bakar, 2023). Bakar (2023) has cited the partnership between the government and Sundalan Resort Pte Ltd, a subsidiary company of Singapore's Temasek Holdings in developing facilities in Ulu Temburong National Park into a luxury resort.

Azahari (2023) reported that the Tourism Development Department under MPRT plans to increase its budget and develop a Tourism Industry Roadmap with the Ministry of Finance and Economy. Strategies include partnering with local education institutions to train tour bus drivers and guides, improving tourism facilities, and working with district authorities to create attractive tourism packages and local products. Collaboration with the Ministry of Culture, Youth and Sports will focus on educating youth through cultural trips and workshops. The department will also work with the Brunei Economic Development Board to attract foreign investment in eco-tourism, simplify tourist entry processes, and promote Brunei's eco-tourism in Japan and Korea. In reflecting the eagerness to pursue green tourism in the country, the Ministry of Primary Resources and Tourism (2007) emphasized four core values for its tourism industry, which are Culture, Heritage, Nature and Contemporary Asia. These core values have circled back to the eco-tourism definition set by the United Nations.

Brunei's 11th National Development Plan (Ministry of Finance and Economy, 2020) has emphasized developing the non-oil industry to diversify the economy of Brunei as per the goal in "Wawasan Brunei 2035" (Brunei's Vision 2035). To diversify the economy, according to the 11th National Development Plan, five significant sectors were focused on, 1) Halal products and services, 2) Innovative technologies and creative industries, 3) Business services, 4) Tourism, 5) Downstream industry. Hence, to show the determination in executing the 11th NDP, the Ministry of Finance and Economy (2020) has allocated BND3.5 billion to support 186 projects that will contribute to not only the wellbeing of the economy but also the community.

5.2 Preserving the Heart of Borneo: Brunei Darussalam Eco-tourism Regulation

It must be noted that although not mentioned directly that the tourism policy in Brunei supports ecotourism, Brunei Darussalam has been actively promoting sustainable tourism according to the definition of the United Nations. This is evident in Brunei's highly promoted tourism spots that include environmental awareness, community engagement and cultural learning.

MPRT has provided several brochures that listed tourist spots in each district in Brunei. These tourist spots encapsulate the Brunei's core tourism values. For example, in the Brunei Muara district, Kampong Ayer Cultural & Tourism Gallery and Royal Regalia Brunei are promoted under the cultural package so tourists can learn more about Brunei's culture and heritage. While in the Tutong district, Bintudoh Greenspring Resort and Eco Ponies Garden are places where tourists can enjoy Brunei's greenery and taste the local cuisine.

With the vision of increasing the arrival of tourists to promote growth in tourism related economic activities and a mission of strengthening, diversifying, improving tourist attraction, products, facilities, and services, the TDD has come up with several strategic objectives outlined in the Strategic Plan Tourism Development Department for Year 2021-2022.

Ministry of Primary Resources and Tourism (2021) has listed these strategies:

- 1. Promote each district's unique tourism spots starting with Temburong district, Kampong Ayer (Water Village) and Bandar Seri Begawan specialties.
- 2. Develop emerging tourism products such as beaches and recreational parks.
- 3. Foster activity-based tourism and annual events to attract more tourists.
- 4. Attract professionals, experts, and special interest groups by hosting MICE (Meeting, Incentives, Conventions and Exhibitions) regularly.
- 5. Nurture domestic tourism through local culinary programs and activities.
- 6. Provide training and capacity building to bolster manpower competency and quality in the tourism industry.
- 7. Strengthen cleanliness and safety regulation and improve comfort at the tourism facilities.
- 8. Collaborate with tourism and hospitality industry players through marketing and promotion activities
- 9. Bolster Public-Private Partnership (PPP) to diversify products and services and to reduce dependency on government spending and program implementation.

In addition, several laws to protect and preserve the environment have been implemented such as The Forest Act of 1934 which has stipulated the regulations on forest land and forest reserve which plays a major role in the conservation of the forest in Brunei. The Wildlife Protection Act has made it illegal to hunt protected animals in Brunei, hence spotting Proboscis monkeys is still possible to this day. Another regulation that helped Brunei to preserve its cultural identity and promote it for eco-tourism is the Brunei Malay Silversmith Guild Act which aims to raise the standard of craftsmanship, organize proper training, and promote the craft business in Brunei.

5.3 Traversing the Path of Eco-tourism in Brunei: Issue and Challenges

Brunei has been formulating and implementing various policies and programs to promote its tourism industry, especially its green tourism industry. However, several factors such as poor tourism infrastructure, unskilled labor in the hospitality and tourism industry and finally, lack of tourist attraction has caused Brunei to see a positive, but very little growth in its tourism industry (Ahmad & Hanipah, 2015; Idris *et al.*, 2019). Moreover, Yong & H H (2008) stated that engaging with international NGOs and technical experts on green tourism is urgent to build capacity and competency among the stakeholders.

Kampong Ayer (Water Village) dubbed as Venice of the East has been welcoming a growing number of tourists due to its uniqueness and beauty. Located in the heart of the capital city; Bandar Seri Begawan, tourists who visit the city can easily access the village via water taxis. The water village is not just one of the oldest settlement areas in Brunei. Historically, it was the administrative capital of the Brunei sultanate before British Residency in 1906, where the administrative center was moved to the mainland area (Bakar, 2022).

Contrary to the heavy promotion by the government, the touristification of Kampong Ayer by its local community is very limited. A groundwork by Khalid & Hussin (2022), found out that only a portion of the local resident; mainly the primary stakeholders (owners of business establishment such as living lodge) are actively involved in the touristification of the water village, to add, there is also an incoherence and lack of dependency in the touristification of Kampong Ayer among the local community themselves as many of the businesses are operated by family members only, leaving a very small room for other local resident to participate.

In addition, inadequate infrastructure, small supply of skilled workers, irregular electricity, and water supply are some of the highlighted issues present at the Sumbiling Eco-village. Located in the Temburong district, the eco-lodge is a social enterprise project between the founder; Leslie Chiang and the local *Iban* communities of the Sumbiling Lama village. Ever since its opening in 2008, the eco-village has been well received by both international and domestic tourists.

However, Idris *et al.* (2019) reported that the eco-lodge has faced several challenges such as maintenance issue on the eroding natural materials due to the humidity of the weather and salinity of the wind, difficulties in hiring skilled workers and experts in eco-tourism business, fierce competition between the outbound retreats in Miri and Sarawak and irregular electricity and water supply causing unrest for its customers.

Ulu Temburong National Park also known as the 'Green Jewel of Brunei' was declared as a national park in 1991 by the government and is protected under the Department of Forestry (Ahmad, 2014). Ever since the national park opened its gate to the public, the number of visitors to the park has been booming.

The success of Ulu Temburong National Park in amassing visitors is largely dependent on government support despite challenges faced by the economy due to a significant drop in the global price of oil and gas. A study by Tabrani *et al.* (2015), pointed out that Bruneians 'willingness to pay' (WTP) to conserve the national park for eco-tourism and biodiversity is low, hence the paper accentuate the importance of promoting small forest-based SMEs and employing public-private participation (PPP) models in promoting ecotourism projects to decrease the reliance on government funding.

Using Brunei as a focal point, a study by Chin et al. (2023), pointed out considerable discrepancy in ideology and value among the archetypical ecotourism in Brunei which are dominated by Gen-X, Gen-Y and Gen-Z. The study shows that,

- 1. Generational Gap in Ecotourism: Gen-X seeks to 'do good,' while Gen-Z seeks 'personal enrichment.'
- 2. Local Purchases: Buying local products benefits communities due to product need and fair pricing, regardless of generation.
- 3. Infrastructure Matters: Eco-tourism spots need Wi-Fi, knowledgeable guides, safe food/water, and photo ops to attract young ecotourists.

The issues of eco-tourism in Brunei ecotourism lies in the limited involvement of the local community and private sector in ecotourism industry, inadequate infrastructure and facilities at the tourism area, rare supply of skilled workers specialized in eco-tourism and the eroding spirit of ecotourism among the youth. Therefore, such challenges must be overcome by working together with the industry's stakeholders to successfully stimulate the eco-tourism industry in Brunei.

6. Unraveling Eco-tourism Journey in ASEAN: Beyond Indonesia and Brunei Darussalam

Zhang et al. (2023) propose the TLEG (The Tourism-Led Economic Growth) hypothesis, suggesting a positive and linear relationship between the Tourism Sustainable Development Index and the Green Economic Growth Index. This hypothesis reinforces the idea that sustainable tourism practices can contribute to green economic growth and foster a harmonious relationship between economic development and environmental conservation. For instance, Boracay Island in the

Philippines experienced a significant surge in tourist arrivals, witnessing a 160% increase between 2011 and 2017.

However, this rapid growth resulted in environmental degradation, prompting the temporary closure of the island for environmental rehabilitation in 2018. Subsequently, the government introduced stricter regulations and sustainable tourism practices to safeguard the environment and bolster the local economy (ADB SEADS, 2022). Moreover, tourism made substantial contributions to the gross domestic product (GDP) of several Southeast Asian nations in 2019, with figures such as 25.8% in Cambodia, 22.5% in the Philippines, and 20.3% in Thailand (OECD, 2019). These instances underscore how sustainable tourism can foster positive economic growth while mitigating adverse environmental and social impacts across Southeast Asia.

The advancements in digitization and technologies have the potential to transform tourism experiences. Embracing digital innovations can enhance convenience, personalization, and engagement for tourists, enriching their overall travel experiences (Balsalobre-Lorente *et al.*, 2023). This digitalization can lead to good eco-tourism governance. Lukman (2022) analyzes that the term 'governance' has undergone a huge change in its actor; shifting from the government or states when the term was first coined, to other stakeholders (non-governmental agencies) in managing resources effectively. However, in his study, Keping (2018) outlined the term 'governance' as a collective responsibility between the government and the public society to achieve a set of goals while also highlighting the importance of autonomous self-governing network of actors, so not to solely rely on the government power.

In 2022, Forbes Magazine published 'The World's 50 Most Beautiful Countries' based on the natural beauty and the accessibility of nature-based activities present in the countries. Among the list of countries, several ASEAN members were mentioned, including Indonesia, The Philippines, Malaysia, Thailand and Myanmar (ASEAN, 2022d). This is not possible without the influence of good governance in the tourism policy of respective countries.

The Malaysian government has published its latest 'National Eco-tourism Plan 2016-2025' that outlines several strategies and initiatives (MOTAC, 2017). There are five focus areas such as 1)Increasing investment opportunities on ecotourism activities, 2) Promoting tourism concession utilizing public-private partnership as a method for sustainable financing, 3) Emphasizing synergy between ecotourism and conservation to improve local community involvement, 4) Improving ecotourism marketing by adopting digital technology and 5) Developing ecotourism cluster to create economies of scope due to the existing disadvantage of small business size, low capital and manpower (Kamaruddin, 2017). The Malaysian 'National Ecotourism Plan' echoes the essence of good governance by being inclusive and participatory which resulted as the backbone to the long-standing success for Malaysia in the ecotourism market.

To boost the tourism industry, the ASEAN Tourism Strategic Plan 2016-2025 highlights two main directions: diversifying tourism products through marketing, promotions, capacity building, and standardizing tourism standards among member countries; and increasing involvement of local communities and private sectors, protecting heritage sites, and improving responses to climate change and environmental protection. These strategies were reiterated at the 22nd Meeting of ASEAN Tourism Ministers Plus Three, emphasizing capacity building, promoting sustainable tourism, facilitating digital transformation, enhancing marketing strategies, strengthening MSMEs in tourism, and identifying new policies for the future. The ASEAN Chairmanship Statement of February 2023 emphasized expediting digital tourism transformation and sustaining resilience through the Mutual Recognition Arrangement for Tourism Professionals (MRA-TP), the ASEAN-India Tourism Work Plan 2023-2027, and the ASEAN-Japan Technical Cooperation Agreement. Additionally, the Polytechnic of Tourism in Indonesia, in collaboration with the National Tourism Professional Board,

launched a Tourism Professional Certification Board to encourage the adoption of competency standards for tourism professionals across ASEAN member states (ASEAN, 2023a, 2023b, 2023c, 2015).

In conclusion, as mentioned in ASEAN chairman's statement highlights, the collective commitment is to enhance global tourism. It aligns with previous research emphasizing the significance of promoting sustainable tourism. Consequently, it is imperative for governments, relevant agencies, and other stakeholders to actively engage in translating this agenda into tangible actions.

7. Future Directions

7.1 Indonesia Ecotourism Policy Recommendations

a. Improving the engagement with the local community.

It is essential to cultivate the emergence of future leaders, foster collaboration across various sectors for support, and establish effective funding mechanisms. Capacity building and benchmarking studies for local communities is of utmost importance to ensure the long-term viability of community-based tourism. Sustainable tourism plays a pivotal role in harmonizing economic development, social well-being, and environmental preservation. An example of a successful ecotourism project is The Tangkahan Tourism Foundation, a North Sumatra-based organization, involves locals in managing Tangkahan as an ecotourism destination. It offers activities such as elephant riding, caves, forest treks, river cruises, optimizing local potential and providing income sources for local communities without threatening the environment (Nirwandar, 2014).

b. Developing a proper infrastructure

Encouraging the adoption of green infrastructure is crucial, and this can be achieved by sourcing ecofriendly designs and materials from local small and medium enterprises (SMEs). Green infrastructure practices play a pivotal role in reducing the adverse environmental effects and contribute significantly to the overall sustainability of the destination. A case study from Bali, The Pangrango Tree Adoption Program, initiated by Green Radio, focuses on green issues and engages the community in activities and establishment of local institutions. As a result, 6,000 trees were planted, soil quality improved and alternative production opportunities provided to local farmers (Nirwandar, 2014).

c. Developing a cultural heritage knowledge and institutional dimension:

Digital transformation can effectively address challenges related to heritage knowledge dissemination and institutional management in tourism through the implementation of smart digital platforms, technology-driven cultural experiences, and digital information system management. These advancements enable efficient access to information, enhance cultural engagement, and improve the transparency and effectiveness of tourism management practices. The Bali App serves as a valuable resource for travelers visiting the island, offering curated recommendations for activities and facilitating ticket purchases through various payment methods. Additionally, applications developed by the Bali Island Communication Center, such as the Bali Media Center and Love Bali, incorporate QR scanning functionality to access information on numerous tourist sites, travel history, and channels for feedback and suggestions. These apps also provide timely notifications and updates on developments related to tourism activities in Bali (Afifa, 2024).

7.2 Brunei Darussalam Ecotourism Policy Recommendation

a. Investing in human capacity building:

Tourist guides should be fluent or able to communicate in another language, other than Malay and English. According to the Strategic Plan (2020-2022) by the MPRT, Brunei has an inadequate number of skilled workforces in the tourism and hospitality industry especially in term of language barrier. Therefore, foreign language course and knowledge-sharing training should be offered to the tourist guide and frontliners to make Brunei as an attractive and tourist friendly spot.

Other than the advantage to the health of the mind (Kroll & Dussias, 2017; Pokhilko, 2019; Axatovna 2022; Irgazhevic *et al.*, 2022), knowledge in foreign language plays an important role especially in the tourism and hospitality industry. A case study done in Greece showed that being fluent in foreign language contributes to the success of the business in terms of understanding the customers' request, avoiding intercultural misunderstanding and prevention of customer loss and negative advertisement (Tziora *et al.*, 2016). Irgashevic *et al.* (2022) emphasize the role of education in the case of Uzbekistan and thus, suggested that the education institution must increase the number of language exchange programs and collaboration with other foreign education institutions, encourage the positive outlook on tourism industry to the students and employing qualified tourism masters.

b. Proper tourism infrastructure and providing adequate facilities for tourist through technology

Providing easy access to tourism destination using technology needed to be emphasized in Brunei especially for public transportation, from making accessible bus schedule information, repairing and posting bus schedule or bus route on bus stops to using audio tour guide application will bring great benefit in the long run. Therefore, by repairing and providing adequate public transport facilities, Brunei will be a more eco-tourism friendly place.

Public transport is regarded as a more environmentally friendly option and is the most important element in developing the tourism industry (Samková & Navrátil, 2023). Investing in public transport infrastructure can promote more responsible tourism landscape while also protecting the authenticity and cultural richness of the area (Zientara *et al.*, 2024). In addition, application of technological innovation in public transportation system will increase the development of the tourism industry (Hashim *et al.*, 2019). In a case study on Lebanon's public transportation infrastructure issues by Hassan *et al.* (2021) mirrors the issues Brunei is having, such as having more than three cars for each household and the lack of strategic plan for public transportation, hence the paper suggests providing consumer an easy access on route information system and electronic timetable that shows real-time schedule will improve and promote sustainable tourism.

c. Diminishing the reliance on government spending through Public-Private Partnership projects

A devastating drop in the price of oil and gas globally has stricken the Brunei's economy as oil and gas is the main export commodity and contributed to a large percentage of the country's GDP, hence, minimizing the opportunity cost should be the priority. Public-private partnership projects can lessen the burden bore by the government and promote the growth of local SMEs in the eco-tourism industry.

Amedanou (2023) agrees that Public Private Partnership (PPP) projects results in higher economic and social benefit as it provides incentives to the private sector and at the same time the government is able to transfer the risk; a win-win situation. Liu *et al.* (2024) showed that PPP can also foster innovation in an industry. In the case of privately managed Marine Protected Areas (MPA); Chumbe

Island in Tanzania, the case study shows that private sector can play a significant role of environmental conservation by lobbying the government and PPP between the private sector (Chumbe Island Coral Park Ltd) and the government of Tanzania can yield success (Riedmiller, 2003).

d. Educating the public, especially the younger generation on responsible and sustainable living, including the importance of supporting the green economy

The perception of sustainable consumption among the youth of Brunei is alarming as the understanding of sustainability is tainted with simply following the current trend. Thus, the message of fulfilling the SDGs does not resonate well with the youth. Therefore, proper approach needed to be taken to create awareness, educating, and practicing responsible consumption to the younger generation to further emulate the agenda of SDGs.

A study conducted by Cini and Passafaro (2019), highlighted that the younger generation lacks the general knowledge of nature and characteristic of ecotourism. Therefore, the role of education in nurturing the motivation and skills to preserving the environment and human health should be emphasize (Morar & Peterlician, 2012). In the case of Monviso Transboundary Biosphere Reserves (MTBR) in Italy, the study by Mondino and Beery (2018) shows by promoting projects coupled with exciting outdoor activities can bolster deeper understanding on conservation and sustainable development objectives among the younger generation.

8 Conclusion

In conclusion, both Brunei Darussalam and Indonesia's eco-tourism industry is suffering with similar point at issue. Limited involvement of tourism industry stakeholders especially the local communities and private sector (SMEs), inadequate and poor tourism infrastructure, scarce number of skilled workers in the industry and insufficient of the public lecture on sustainable tourism are the major concerns for both countries. Recognizing the vital role of engagement between the private sectors, government bodies and policymakers in ensuring the industry's continued growth and sustainability, this study acknowledges the need for further research to enrich its findings.

The limitation of this study lies in the dearth number of empirical studies in this areas and the unemployment of high-level official interviews. Employing purposive sampling methods for selecting interviewees would enable a more targeted and insightful exploration of the potential of direct intervention. This approach would provide a deeper understanding of the challenges and opportunities inherent in the relationship between government policy and public-private partnership opportunity in eco-tourism, thereby strengthening the comprehensiveness of the research.

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