Forming A Green Event Management (GEM) Guideline As An Effort To Implement Event Sustainability Development

Damara Saputra Siregar[1], Desmala Sari[2], Tina Nurzachra Latifah Rizkiliana[3], Riyan Maruly[4], Nelly Suryani[5] Muhammad Rizky Ramadhan[6] ,Dwiyati Nur Pradilla[7]

[1-7]*Politeknik Negeri Lampung, Jl. Soekarno Hatta No.10 Rajabasa-Bandar Lampung, Indonesia*

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Correspondence Email:
damarasiregar@polinela.ac.id

Abstract

This study aims to develop and validate Green Event Management (GEM) guidelines as an effort to implement Event Sustainability Development in Lampung Province. Specifically, this study focuses on four main objectives: (1) analyzing the level of understanding and application of the GEM concept by event industry stakeholders, (2) identifying challenges and obstacles to GEM implementation, (3) exploring the potential for implementing GEM guidelines in Lampung, and (4) developing GEM guidelines that are applicable and contextual to regional conditions. The research method used is a descriptive method with a mixed methods approach, involving data collection techniques through in-depth interviews, observations, literature studies, and expert validation using Content Validity Index (CVI) analysis. An expert panel consisting of event management, sustainability, and environmental experts assessed 55 indicator items in the draft GEM guidelines using a 4-point scale. The analysis results showed that most items had an I-CVI value ≥ 0.78, and an average S-CVI/Ave result of 0.93, which means the GEM guidelines have very good content validity. This guide covers three main stages of event management: pre-event, on-event, and post-event, emphasizing the principles of resource efficiency, waste management, community engagement, environmental education, and sustainability reporting. This study concludes that the GEM guideline is suitable as an operational reference for organizing sustainable events in Lampung. Its implementation is expected to strengthen the capacity of event industry players, support sustainable tourism policies, and contribute to the achievement of the Sustainable Development Goals (SDGs), particularly in the areas of sustainable cities, responsible consumption, and climate action.

1. Introduction

Tourism industry and the creative economy in Indonesia has made the events industry one of the fastest-growing sectors. Regions across Indonesia are increasingly hosting events as a means of promoting destinations and driving local economies. Lampung Province, with its strategic geographic location as the

gateway to Sumatra Island, has significant potential for developing the events and MICE (Meeting, Incentive, Convention, and Exhibition) industries.

Bandar Lampung City has been designated a priority for the development of the events and MICE industries in Lampung. In the 2019-2024 Regional Medium-Term Development Plan (RPJMD), Bandar Lampung City is designated a Regional Tourism Strategic Area (KSPD). As the provincial capital and economic center, Bandar Lampung is considered ready in terms of infrastructure and facilities for hosting events, supported by the availability of marine and cultural tourism attractions, hotels with meeting facilities, and various convention centers with varying capacities.

Throughout 2024, various events were held in Lampung, both local, national, and international, such as the Bandar Lampung Expo 2024, the Lampung Fair (PRL), the Krakatau Festival 2024, the Sekala Bekhak Festival, the WSL Krui Pro QS 5000, and concerts by renowned artists. These events have increased the number of domestic tourist visits in 2024, reaching 17.87 million tourists, an increase of approximately 25% over the target (Disparekraf, 2024).

However, the growth of events in Lampung has not only had positive impacts. These events have had negative environmental impacts, such as increased waste, excessive energy consumption, and high carbon emissions. Various news reports on social media show litter after concerts and festivals, as well as traffic congestion caused by a surge in private vehicles, which exacerbates air quality.

This situation creates an urgent need to implement sustainability principles in event management, known as Green Event Management (GEM). GEM is an approach to event planning and implementation that aims to minimize negative environmental impacts and maximize social and economic benefits for local communities (Arcana, 2014).

The purpose of this study is to analyze the understanding and application of green event management in organizing events in Lampung; identify the challenges and obstacles faced by event organizers in implementing GEM; explore the potential implementation of GEM guidelines in supporting the development of sustainable events in Lampung; and draft a Green Event Management guide that is applicable and appropriate to the local context of Lampung.

1.1 Literature Review

Sustainable development emphasizes fulfilling the needs of the present generation without compromising the ability of future generations to meet theirs, encompassing three core dimensions: environmental, economic, and social (Purwanto, 2020; Mutaqin, 2022). In the tourism sector, the sustainability concept is operationalized through principles aimed at minimizing environmental impacts, generating socio-economic benefits for local communities, and preserving cultural heritage (UNWTO, 2020). Sustainable creative economy also plays an essential role, promoting creativity and innovation while ensuring the responsible use of resources (Hesmondhalgh, 2021).

The integration of sustainability principles in event organization is known as Sustainable Event Management (SEM), referring to the application of sustainability across all stages of an event—pre-event, during the event, and post-event—to reduce environmental impacts, enhance social benefits, and support local economic growth (Mair, 2016; ISO 20121, 2012). From this concept emerged Green Event Management (GEM), which specifically focuses on environmentally friendly event practices through resource efficiency, waste management, sustainable transportation, and participant environmental education (Mair & Laing, 2012; UNEP, 2022). The implementation of GEM also creates additional socio-economic value, including the empowerment of SMEs and local communities (Mackay et al., 2023).

Previous studies indicate that the implementation of GEM in Indonesia continues to develop; however, it still faces several challenges, such as limited technical knowledge, the absence of specific regulations, and a lack of standardized implementation models (Hendratmo, 2024; Christantius et al., 2019). Therefore, the development

of a contextually relevant GEM implementation guideline is essential to support the advancement of sustainable event practices at the regional level, including in Lampung.

2. Research Methods

This research uses a descriptive qualitative approach to understand, analyze, and describe the concept of Green Event Management in event management in Lampung. This type of research is applicative because it aims to produce a product design in the form of a practical GEM guide that can be used by event organizers. According to Sugiyono (2022), qualitative research is used to examine the natural conditions of objects (natural settings), with the researcher as the primary instrument. Research informants were selected using purposive sampling, namely selecting informants who are considered to understand and be involved in event management, and have experience related to Green Event Management practices. Informants included: (1) Event Organizers, (2) the Lampung Province Tourism and Creative Economy Office, and (3) environmental practitioners (WALHI Lampung).

Data were collected through in-depth interviews, direct observation at several events in Lampung to observe environmental management practices, documentation in the form of photos, videos, and event notes related to the application of Green Event principles, and literature study, reviewing books, journals, regulations, and documents related to GEM and Sustainable Events. Data analysis was conducted qualitatively descriptively with the following steps according to Miles, Huberman & Saldaña (2014): Data Reduction (Selecting relevant data, grouping by theme, and simplifying information); Data Presentation (Arranging data in narrative form, tables, or diagrams to facilitate understanding); Conclusion Drawing: Formulating research results based on the analyzed data, then drawing conclusions and recommendations.

Furthermore, the GEM guideline will be validated to ensure its validity using the Content Validity Index (CVI) technique. CVI is a quantitative method used to assess the content validity of an instrument by involving a panel of experts who assess the relevance of each item. The Item-Level CVI (I-CVI) is then calculated based on the proportion of experts who rate the item as relevant, and the Scale-Level CVI (S-CVI) is the average of all I-CVIs (Polit and Beck, 2006). Each item is rated by experts using a 4-point Likert scale: 1 = Not relevant; 2 = Not relevant; 3 = Somewhat relevant; 4 = Very relevant. The data obtained are analyzed using the Content Validity Index (CVI) with the following steps:

1. Calculating the I-CVI (Item-Level Content Validity Index): The I-CVI is calculated by dividing the number of experts who scored an item 3 or 4 by the total number of experts. An item is considered valid if the I-CVI is greater than 0.78.
2. Calculation of the S-CVI (Scale-Level Content Validity Index): The S-CVI is calculated by averaging the I-CVI values of all items in the guide. An S-CVI ≥ 0.80 indicates a good level of validity.
3. Item Revision: Items with an I-CVI value < 0.78 will be revised or removed based on input from the expert panel.
4. Finalization of the Guide: The validated guide will be the final research result as a Green Event Management document to support the implementation of Event Sustainability Development in Lampung.

3. Result and Discussion

3.1 Understanding and Implementation of Green Event Management in Lampung

Events are important instruments in the development of tourism and the creative economy, but they often cause significant environmental impacts such as increased waste volume, excessive energy use, noise pollution, and carbon emissions. In Lampung Province, the concept of Green Event Management (GEM) is becoming increasingly relevant to support the achievement of the Sustainable Development Goals (SDGs). The understanding and implementation of GEM in Lampung is strongly influenced by the perspectives of the actors involved, each with varying priorities and interests:

The Perspective of the Tourism and Creative Economy Office: The Tourism and Creative Economy Office understands GEM as an integral part of a sustainable tourism development strategy and added value to

destination branding. GEM is seen as aligned with central government policy to promote a sustainable creative economy and can support local MSMEs. In practice, the implementation of GEM remains predominantly normative and administrative, including: (a) encouraging the use of digital systems to reduce paper, (b) limiting single-use plastics, (c) using local products, and (d) selecting venues with better waste and energy management. The main obstacles are limited technical regulations and budget. Lampung does not yet have specific measurable GEM standards or indicators, so GEM is positioned more as a "good advice" than an obligation.

WALHI Lampung's Perspective: As an environmental advocacy organization, WALHI has a critical perspective on event management. For WALHI, GEM is a form of moral and social responsibility to reduce negative impacts on the environment, with a focus on ecological sustainability. WALHI encourages the implementation of: (a) zero single-use plastic with water refill stations, (b) integrated waste management with segregated waste bins, (c) energy efficiency by reducing the use of fossil-based generators, and (d) sustainable consumption with local and organic food. The main challenge is resistance from event organizers and sponsors who still view GEM as an additional cost, not a long-term investment.

Lampung Event Organizer (EO) Perspective: EOs view GEM through an operational and business lens. Levels of understanding vary: large event organizers are more familiar with GEM as an international standard, while medium- and small-sized event organizers have a limited understanding of GEM, often considering it merely as a way to reduce waste. The implementation of GEM by EO has begun to be seen, although not yet consistent, including: (a) waste management by reducing single-use plastic, (b) digitalization with e-ticketing and digital invitations, (c) use of local products and MSMEs, (d) logistics and transportation efficiency with carpooling, and (e) decoration with recycled materials. The implementation of GEM is highly dependent on the event budget and client requests. Events with large sponsors are more likely to implement GEM, while small events still use conventional methods due to lower costs.

3.2. Challenges and Barriers to GEM Implementation

Challenges for the Department of Tourism and Creative Economy: The Department of Tourism and Creative Economy faces various challenges: (a) limited technical regulations specifically governing GEM standards, (b) limited budgets focused primarily on promotion, (c) limited human resource capacity in understanding GEM technical aspects, (d) resistance from event organizers who believe GEM increases production costs, (e) low public awareness, and (f) pressure to promote a promotional image that focuses more on visitor numbers.
Challenges for WALHI Lampung: WALHI faces the following obstacles: (a) limited financial and human resources, (b) a lack of focus on GEM research due to its prioritization of mining and agrarian issues, (c) limited advocacy reach at major events, (d) lack of political will from the government, (e) resistance from industry players who consider the demands too idealistic, and (f) lack of sponsorship support for environmentally friendly programs.

Event Organizer Challenges: Event organizers face practical and technical barriers: (a) higher production costs for environmentally friendly products, (b) lack of technical understanding of energy efficiency and carbon emission calculations, (c) untrained human resources on the organizing committee, (d) limited availability of environmentally friendly vendors in Lampung, (e) low participant awareness, (f) lack of sponsor support focused on commercial aspects, and (g) the absence of government incentives in the form of awards or subsidies.

3.3 Potential Implementation of the GEM Guidelines

Potential for the Tourism Office: Potential implementation of the GEM guidelines includes: (a) strengthening Lampung's branding as a pioneering green tourism destination in Sumatra, (b) policy and regulatory instruments as mandatory standards for event permits, (c) increasing the competitiveness of events to attract international tourists and sustainability-conscious sponsors, and (d) facilitating multi-stakeholder collaboration.
Potential for WALHI: Potential for WALHI includes: (a) environmental control and advocacy as an independent monitoring partner, (b) public education and campaigns through workshops and green lifestyle promotions,

(c) collaboration with event organizers to provide technical recommendations, and (d) promoting circular economy practices through recycling and local products.

Potential for Event Organizers: Potential for event organizers includes: (a) differentiation and selling points with competitive advantages, (b) operational efficiency that reduces production costs, (c) sponsorship opportunities from environmental CSR companies, (d) access to global markets with ESG standards, and (e) increased credibility and long-term reputation.

3.4 Development of Green Event Management Guidelines

1. GEM Guidelines Principles:

The GEM Guidelines are based on the following principles: (a) Resource Efficiency, (b) Waste Reduction with the 3Rs, (c) Local Involvement by empowering MSMEs and Lampung communities, (d) Public Education, transforming events into environmental campaign spaces, (e) Transparency and Accountability with sustainability reports, and (f) Contextualization of Local Culture by utilizing tapis, bamboo, and Lampung products.

2. Stages of Developing the GEM Guide

The stages of developing the GEM guide are integrated into the event implementation cycle: 1) Pre-Event Stage: Venue planning with waste management and energy efficiency facilities, Digitalization of promotions to minimize paper use, Selection of eco-friendly local logistics and vendors, and GEM socialization and education for participants; 2) On-Event Stage: Waste management with segregated bins and clear signage, Reducing single-use plastics with water refill stations, Consuming local Lampung-based food, Decorations using recycled materials, bamboo, and tapis cloth, Eco-friendly transportation with shuttle buses and carpooling, and Participant education through environmental booths and social media campaigns; 3) Post-Event Stage: Environmental impact evaluation with waste and carbon emission calculations, Published sustainability reports, Utilization of remaining materials through donations or recycling, and Legacy programs in the form of tree planting or environmental CSR.

3. GEM Guidelines Design

The GEM Guidelines are designed using a checklist with a Likert scale (1-5) to measure compliance levels, with the following interpretations:

1 = Not implemented
2 = Small Partially implemented
3 = Partially implemented
4 = Mostly implemented
5 = Fully implemented

Percentage values are calculated and categorized into five levels:

1. Green Aware (0-25%): Initial stage of awareness with the "Learning to Go Green" branding
2. Green Starter (26-50%): Beginning to integrate some aspects of GEM with the "Growing Green" branding
3. Green Practitioner (51-75%): Implementation is consistent with the "Active Green" branding
4. Green Leader (76-90%): Comprehensive and integrated implementation with the "Superior Green" branding
5. Green Champion (91-100%): Perfect compliance with the "Green" branding "Global"

This level system serves as motivation and recognition for event organizers who consistently implement GEM, while also strengthening Lampung's position as a sustainable event destination.

The indicators in the GEM guide are structured based on the event implementation cycle, from pre-, during, and after the event:

a. Pre-Event Stage

Table 1. Indicators of GEM guide on pre-event

No	Main Indicator	Sub-Indicator Details	Score (1–5)	Notes
1	Venue Selection – Environmentally Friendly	- Venue has eco-friendly certification (item 1) - Water management facilities (water saving, grey water recycling) (item 2) - Optimal natural ventilation and lighting (item 3) - Venue has zero single-use plastic policy (item 4)	☐ ☐ ☐ ☐	
2	Promotion & Publication	- Digital promotion dominates (≥80%) (item 5) - Tickets, brochures, maps, catalogs via App/QR Code (item 6) - GEM information shared via social media (item 7)	☐ ☐ ☐	
3	Vendor & Logistics Selection	- Vendor has sustainability commitment (certification/written) (item 8) - Eco-friendly products: biodegradable packaging, plastic-free (item 9) - Vendor transport uses energy-efficient vehicles (item 10) - Vendor involves local workers (≥50%) (item 11)	☐ ☐ ☐ ☐	
4	GEM Education & Socialization	- Committee trained on GEM implementation (item 12) - EO provides written internal GEM guidelines (item 13) - GEM info in video/infographic format (item 14) - Incentives for eco-friendly practices (e.g., discount for own bottle) (item 15)	☐ ☐ ☐ ☐	

b. On-Event Stage

Table 2. Indicators of GEM guide on-event

No	Main Indicator	Sub-Indicator Details	Score (1–5)	Notes
1	Waste Management	- Separate bins with clear labels (item 16) - Waste handled by professional partner (item 17) - Waste-to-value recycling program (item 18) - Waste volume recorded real-time (item 19)	☐ ☐ ☐ ☐	
2	Plastic Reduction	- Water refill stations with signage (item 20) - Food containers: leaves, recycled paper, bamboo (item 21) - Eco-friendly local souvenirs (cloth bags, tumblers, tapis crafts) (item 22) - No single-use plastic bottles (item 23)	☐ ☐ ☐ ☐	
3	Local & Eco-Friendly Consumption	- ≥80% food locally sourced (Lampung) (item 24) - ≥60% from local farmers/MSMEs (item 25) - ≥20% vegetarian/plant-based menu (item 26) - No food waste policy (surplus donation) (item 27)	☐ ☐ ☐ ☐	
4	Decoration & Stage	- 70% of materials recycled/bamboo/tapis (item 28) - Digital backdrops (LED screens) (item 29) - Live plants as main décor (item 30) - All props reused/recorded (item 31)	☐ ☐ ☐ ☐	
5	Transportation & Mobility	- Eco-friendly shuttle bus provided (item 32) - Carpooling encouraged (item 33)	☐ ☐ ☐	

		- Bicycle/pedestrian lanes provided (item 34) - Transport emissions estimated (item 35)	☐	
6	Public Education & Participation	- Environmental education booth with games (item 36) - Creative recycling contest (item 37) - GEM campaign on social media (#hashtag) (item 38) - GEM info displayed on main event screen (item 39)	☐ ☐ ☐ ☐	

c. Post-Event Stage

Table 3. Indicators of GEM guide on post-event

No	Main Indicator	Sub-Indicator Details	Score (1–5)	Notes
1	Evaluation & Monitoring	- Segregated waste volume calculated & analyzed (item 40) - Energy use (kWh) reported (item 41) - Event carbon footprint estimated (item 42) - Participant engagement recorded (item 43)	☐ ☐ ☐ ☐	
2	Sustainability Report	- Report prepared & published (item 44) - Submitted to Tourism Office & Public (item 45) - Includes recommendations for next events (item 46) - Visual documentation attached (item 47)	☐ ☐ ☐ ☐	
3	Utilization of Remaining Materials	- Decorations/properties donated to community (item 48) - Leftover food distributed socially (item 49) - Non-organic waste sold to waste bank (item 50) - Electronics/logistics stored for reuse (item 51)	☐ ☐ ☐ ☐	
4	Legacy Program	- Event leaves sustainable legacy (tree planting, CSR) (item 52) - Decorative plants replanted in public areas (item 53) - Long-term collaboration with local communities (item 54) - Legacy report published (item 55)	☐ ☐ ☐ ☐	

4. Content Validity Index (CVI) and Scale-Level Content Validity Index (S-CVI) Analysis.

Content validity analysis was conducted to ensure that each item in the draft Green Event Management guidelines had a high level of alignment with the concept and objectives of its development. The method used in this study was the Item-Level Content Validity Index (I-CVI), a quantitative technique that assesses the extent to which experts assess each item as relevant to the construct being measured. The assessment was conducted by a panel of experts consisting of event organizers (expert 1), environmentalists or Walhi Lampung (expert 2), and the government or the Lampung Provincial Tourism and Creative Economy Office (expert 3). Each expert assessed each item in the guidelines using a 4-point scale:

1 = Not relevant
2 = Less relevant
3 = Quite relevant
4 = Very relevant

Next, the I-CVI score was calculated by dividing the number of experts who scored 3 or 4 by the total number of experts. The I-CVI score reflects the proportion of agreement among experts regarding the relevance of an item. I-CVI (Item-Level Content Validity Index) Calculation: The I-CVI is calculated by dividing the number of experts who scored an item 3 or 4 by the total number of experts. An item is considered valid if the I-CVI score

is ≥ 0.78. Items scoring below this threshold are considered less relevant and require revision, editorial adjustments, or even removal from the guide.

The following table summarizes the expert assessments obtained:

a. Pre-Event Stage

Table 4. assessment results on pre-event

Item	Nilai Ahli 1	Nilai Ahli 2	Nilai Ahli 3	I-CVI	Status
Item 1	3	4	4	1.00	Valid
Item 2	3	4	4	1.00	Valid
Item 3	3	4	4	1.00	Valid
Item 4	2	4	4	0.66	Not Valid
Item 5	4	4	4	1.00	Valid
Item 6	4	4	4	1.00	Valid
Item 7	3	4	4	1.00	Valid
Item 8	3	4	4	1.00	Valid
Item 9	2	3	4	0.66	Not Valid
Item 10	3	2	4	0.66	Not Valid
Item 11	4	4	4	1.00	Valid
Item 12	4	4	4	1.00	Valid
Item 13	3	4	4	1.00	Valid
Item 14	4	4	4	1.00	Valid
Item 15	4	3	4	1.00	Valid

b. Tahap On-Event

Table 5. assessment results on-event

Item	Nilai Ahli 1	Nilai Ahli 2	Nilai Ahli 3	I-CVI	Status
Item 16	3	4	4	1.00	Valid
Item 17	3	3	4	1.00	Valid
Item 18	3	2	4	0.66	Not Valid
Item 19	3	3	4	1.00	Valid
Item 20	4	4	4	1.00	Valid
Item 21	2	4	4	0.66	Not Valid
Item 22	3	4	4	1.00	Valid
Item 23	3	4	4	1.00	Valid
Item 24	3	4	4	1.00	Valid
Item 25	3	4	4	1.00	Valid
Item 26	2	2	4	0.33	Not Valid
Item 27	3	4	4	1.00	Valid
Item 28	2	2	4	0.33	Not Valid
Item 29	3	3	4	1.00	Valid
Item 30	3	4	4	1.00	Valid
Item 31	3	4	4	1.00	Valid
Item 32	4	2	4	0.66	Not Valid
Item 33	3	2	4	0.66	Not Valid
Item 34	3	4	4	1.00	Valid
Item 35	3	3	4	1.00	Valid
Item 36	4	4	4	1.00	Valid
Item 37	4	3	4	1.00	Valid
Item 38	3	4	4	1.00	Valid
Item 39	4	4	4	1.00	Valid

c. Pasca-Event

Table 6. assessment results on post-event

Item	Nilai Ahli 1	Nilai Ahli 2	Nilai Ahli 3	I-CVI	Status
Item 40	4	3	4	1.00	Valid
Item 41	3	4	4	1.00	Valid
Item 42	3	4	4	1.00	Valid
Item 43	4	4	4	1.00	Valid
Item 44	3	4	4	1.00	Valid
Item 45	3	3	4	1.00	Valid
Item 46	4	4	4	1.00	Valid
Item 47	4	4	4	1.00	Valid
Item 48	3	4	4	1.00	Valid
Item 49	4	4	4	1.00	Valid
Item 50	4	4	4	1.00	Valid
Item 51	3	4	4	1.00	Valid
Item 52	4	4	4	1.00	Valid
Item 53	4	4	4	1.00	Valid
Item 54	4	4	4	1.00	Valid
Itrm 55	4	4	4	1.00	Valid

After assessing the content validity at the item level using the I-CVI analysis, the next step is to measure the overall content validity of the scale or instrument through the Scale-Level Content Validity Index (S-CVI) calculation. The S-CVI analysis is used to assess the consistency and level of agreement of experts on the overall content of the guide, so that it can be determined to what extent the Green Event Management guide design is considered relevant and comprehensively representative. In this study, the S-CVI was calculated using the S-CVI/Ave (average) approach, namely by calculating the average of all I-CVI values for each guide item that has been validated by experts. The S-CVI/Ave value provides a general overview of the level of content validity of the guide as a whole, not just per item. The following is the S-CVI calculation:

$$S - CVI/Ave = \frac{\sum I - CVI}{Number\ of\ Item}$$

$$S - \frac{CVI}{Ave} = \frac{51{,}28}{55} = 0.93$$

Based on the calculation results above, the S-CVI/Ave value is 0.93. This value is obtained from the average of all I-CVI (Item-Level Content Validity Index) calculated for each guideline item based on expert assessments of the level of relevance, clarity, and suitability of the content to the purpose of developing the guideline. Thus, the S-CVI/Ave value = 0.93 indicates that overall the items in the guideline have a very high level of agreement among experts. Based on the criteria put forward by Polit and Beck (2006), a value of ≥ 0.80 is categorized as excellent content validity so that it can be considered conceptually and substantively feasible to be used as a guideline in the practice of organizing sustainable events (Green Events).

5. Finalization of the Green Event Management Guide

The finalization of the Green Event Management (GEM) guide was carried out after a content validity analysis process that included an I-CVI (Item-Level Content Validity Index) and S-CVI (Scale-Level Content Validity Index) assessment. This analysis aimed to ensure that all components in the guide had a high level of relevance to sustainability principles and could be practically applied in the context of event management. The analysis results showed that most items in the guide received an I-CVI score of ≥ 0.78, indicating that these items were deemed relevant and representative by experts in the fields of event management, sustainability, and the environment. Meanwhile, the overall scale analysis showed an S-CVI/Ave score of 0.93, indicating that the guide

generally had excellent content validity. Based on these results, a final refinement process (finalization) of the guide was carried out by reviewing several items with below-average I-CVI scores, particularly regarding editorial aspects, technical clarity, and integration between components. The revision process retained the core content but improved the clarity of the narrative to make the guide easier to understand and implement. The following is the finalized GEM guideline, eliminating items with scores below the standard, or <0.78:

a. Pre-Event Stage

Table 7. final GEM guidlne on pre-event

No	Main Indicator	Sub-Indicator Details	Score (1–5)	Notes
1	Venue Selection – Environmentally Friendly	- Venue has eco-friendly certification (item 1) - Water management facilities (water saving, grey water recycling) (item 2) - Optimal natural ventilation and lighting (item 3) - Venue has zero single-use plastic policy (item 4)	☐ ☐ ☐ ☐	
2	Promotion & Publication	- Digital promotion dominates (≥80%) (item 5) - Tickets, brochures, maps, catalogs via App/QR Code (item 6) - GEM information shared via social media (item 7)	☐ ☐ ☐	
3	Vendor & Logistics Selection	- Vendor has sustainability commitment (certification/written) (item 8) - Vendor involves local workers (≥50%) (item 11)	☐ ☐	
4	GEM Education & Socialization	- Committee trained on GEM implementation (item 12) - EO provides written internal GEM guidelines (item 13) - GEM info in video/infographic format (item 14) - Incentives for eco-friendly practices (e.g., discount for own bottle) (item 15)	☐ ☐ ☐ ☐	

b. On-Event Stage

Table 8. final GEM guidlne on-event

No	Main Indicator	Sub-Indicator Details	Score (1–5)	Notes
1	Waste Management	- Separate bins with clear labels (item 16) - Waste handled by professional partner (item 17) - Waste volume recorded real-time (item 19)	☐ ☐ ☐	
2	Plastic Reduction	- Water refill stations with signage (item 20) - Eco-friendly local souvenirs (cloth bags, tumblers, tapis crafts) (item 22) - No single-use plastic bottles (item 23)	☐ ☐ ☐	
3	Local & Eco-Friendly Consumption	- ≥80% food locally sourced (Lampung) (item 24) - ≥60% from local farmers/MSMEs (item 25) - No food waste policy (surplus donation) (item 27)	☐ ☐ ☐	
4	Decoration & Stage	- Digital backdrops (LED screens) (item 29) - Live plants as main décor (item 30) - All props reused/recorded (item 31)	☐ ☐ ☐	
5	Transportation & Mobility	- Bicycle/pedestrian lanes provided (item 34) - Transport emissions estimated (item 35)	☐ ☐	
6	Public Education & Participation	- Environmental education booth with games (item 36) - Creative recycling contest (item 37) - GEM campaign on social media (#hashtag) (item 38) - GEM info displayed on main event screen (item 39)	☐ ☐ ☐ ☐	

c. Post-Event Stage

Table 8. final GEM guidlne on post-event

No	Main Indicator	Sub-Indicator Details	Score (1–5)	Notes
1	Evaluation & Monitoring	- Segregated waste volume calculated & analyzed (item 40) - Energy use (kWh) reported (item 41) - Event carbon footprint estimated (item 42) - Participant engagement recorded (item 43)	☐ ☐ ☐ ☐	
2	Sustainability Report	- Report prepared & published (item 44) - Submitted to Tourism Office & Public (item 45) - Includes recommendations for next events (item 46) - Visual documentation attached (item 47)	☐ ☐ ☐ ☐	
3	Utilization of Remaining Materials	- Decorations/properties donated to community (item 48) - Leftover food distributed socially (item 49) - Non-organic waste sold to waste bank (item 50) - Electronics/logistics stored for reuse (item 51)	☐ ☐ ☐ ☐	
4	Legacy Program	- Event leaves sustainable legacy (tree planting, CSR) (item 52) - Decorative plants replanted in public areas (item 53) - Long-term collaboration with local communities (item 54) - Legacy report published (item 55)	☐ ☐ ☐ ☐	

This finalization has resulted in a conceptually and substantively validated version of the Green Event Management guide, which can be used as a practical and academic reference for applying sustainability principles to event planning, implementation, and evaluation. With strong content validity and a comprehensive structure, this guide is expected to serve as a credible guideline for supporting the implementation of environmentally friendly, resource-efficient, and socio-economically impactful events.

4. Conclusions

This study successfully developed and validated the Green Event Management (GEM) Guidelines as an effort to implement Event Sustainability Development in Lampung Province. The results of the study indicate that the level of understanding and application of the GEM concept in Lampung has shown a positive direction, although it is still partial and has not yet become an integrated operational standard. The implementation of GEM in this region still faces obstacles such as limited technical regulations, low human resource capacity, and minimal policy and sponsorship support. Nevertheless, the potential for GEM implementation is very large because it involves the strategic roles of local governments, environmental organizations, and event industry players in promoting sustainable tourism. The developed guideline consists of 55 indicators covering three stages of event implementation (pre-event, on-event, and post-event) with the principles of resource efficiency, waste reduction, local involvement, and reporting transparency. The results of the content validity test showed an I-CVI value ≥ 0.78 and an S-CVI/Ave of 0.93, which indicates a very good level of content validity. Therefore, this guideline is declared suitable for use as an official reference for implementing sustainable events in Lampung Province. As a recommendation, a cross-sectoral collaborative strategy is needed between the government, academics, communities, and event industry players to strengthen the understanding and application of GEM principles. Local governments are advised to develop policies or technical regulations that support GEM implementation, as well as provide incentives and rewards for event organizers who implement environmentally friendly practices. This GEM guideline can be adopted as an official instrument for licensing and event evaluation under the coordination of the Tourism and Creative Economy Agency. Pilot projects should be conducted at several major events as examples of best practices for GEM implementation in

Lampung. Furthermore, ongoing training and outreach are recommended to increase human resource capacity and the development of quantitative evaluation instruments for future research to assess the impact of GEM implementation on economic, social, and environmental aspects.

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