Music Meets Sustainability: First Steps Toward a Framework for Greener Festivals

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Abstract. Given their significant environmental impact, the increasing emphasis on sustainability has become a crucial factor in the organization of music festivals. These large-scale events consume substantial energy, generate waste, and contribute to carbon emissions, necessitating the adoption of sustainable practices. While some festivals have implemented sustainability measures, there is a lack of standardized, publicly accessible frameworks that provide quantitative metrics to evaluate and enhance sustainability performance. This study addresses this gap by developing guidelines for a comprehensive sustainability framework tailored to music festivals.

The proposed framework is based on existing sustainability initiatives and case study findings from the 2024 MI AMI Festival in Milan (Italy). It employs a data-driven methodology that defines impact categories, including resource consumption, waste management, food and beverage, transportation, and community engagement. The research methodology includes a literature review, structured interviews with festival staff and artists, audience surveys, and expert consultations to grasp real insights and tangible data to build the framework. Preliminary findings reveal a strong demand for sustainable festival practices among stakeholders, emphasizing the need for clear evaluation criteria. The guidelines are designed to facilitate transparency, benchmarking, and continuous improvement in sustainability performance. By providing festival organizers with a practical tool to monitor sustainability performance, this framework will reduce the environmental footprint and promote the broader goal of integrating sustainability practices within the live music industry. Practices within the live music industry.

Keywords: Sustainability Framework · Music Festival Sustainability · Sustainability Metrics · Environmental Impact Assessment

1 Introduction

1.1 Sustainability in Music Festivals

Sustainability has become a global policy priority, reflected in initiatives like the United Nations' Sustainable Development Goals (SDGs), the European Green Deal, and national climate action plans. These frameworks emphasize sustainability as essential

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for addressing climate change, resource scarcity, and social inequality through coordinated, long-term governance and systemic transformation. Consequently, this topic has become a critical focus in the event and entertainment industry, driven by increasing awareness of environmental degradation, resource depletion, and large-scale gatherings' social and economic impacts [15]. Events such as concerts, exhibitions, and music festivals consume vast resources. The events industry is now being called upon to implement sustainability strategies that reduce negative environmental impacts and contribute positively to the communities and economies they engage with [15]. According to Getz [9], events serve as both a source of cultural and economic value and a challenge in terms of sustainability, requiring organizers to balance economic viability with environmental and social responsibility.

Music festivals present significant sustainability challenges. Large-scale festivals require temporary infrastructure, extensive transportation networks, and high energy consumption to power lighting, sound systems, and digital technologies [6]. Additionally, they generate substantial waste, including single-use plastics, food waste, and discarded promotional materials. Studies have highlighted that music festivals can contribute to carbon emissions through attendee travel, energy use, and waste generation, making sustainability an essential consideration for their long-term viability [13].

The growing emphasis on sustainability across industries responds to global environmental concerns and the need for more responsible resource management [4].

The positive impact that these kinds of events can generate by improving social awareness and expanding sustainability culture among attendees is immense and increasingly recognized [1]. Nevertheless, festival organizers often encounter significant barriers in implementing sustainability measures. Financial constraints, lack of clear guidelines, and difficulties securing sustainable suppliers are among the most cited challenges [8]. Smaller or independent festivals, in particular, struggle to invest in green technologies and infrastructure, limiting their ability to adopt sustainability initiatives effectively. Moreover, festival attendees' behavior plays a critical role in achieving sustainability goals, yet research indicates that many festivalgoers prioritize convenience over environmental responsibility, making behavioral interventions essential [1]. Festivals can be platforms for engaging audiences in sustainability initiatives, from waste reduction programs to renewable energy usage and carbon offset schemes. Major festivals such as Glastonbury in the UK and Roskilde Festival in Denmark have pioneered sustainability efforts by banning single-use plastics, promoting eco-friendly transport options, and integrating renewable energy solutions [6].

Moreover, sustainability frameworks such as ISO 20121, a global standard for sustainable event management, provide guidelines that help festivals implement structured and accountable sustainability measures [16]. Such initiatives ensure that sustainability becomes an integral part of the festival industry rather than an after-thought. Integrating green technologies, circular economy models, and sustainable event design will be crucial for future developments in the music festival sector.

1.2 MI AMI BEATs Project

The MI AMI BEATs Project was developed within the Alta Scuola Politecnica (ASP), an interdisciplinary honors program jointly organized by Politecnico di Milano and Politecnico di Torino. As part of ASP's 20th cycle, the BEATs Project (Better Equity Actions for Tomorrow's Sustainability) focuses on enhancing sustainability practices within the music festival industry, using the MI AMI Festival in Milan as a case study. The project aims to identify key sustainability challenges in festival operations, including waste management, energy efficiency, and audience engagement. By collaborating with festival organizers and stakeholders such as staff members, artists, and event managers, the project seeks to develop practical solutions that can be implemented at MI AMI and serve as a model for other festivals in Italy and internationally. The practical value of the MI AMI BEATs Project lies in its potential to influence the broader music festival landscape by providing actionable insights and tools to promote sustainable practices. This aligns with ASP's commitment to addressing real-world problems through multidisciplinary collaboration and innovation.

1.3 Paper Structure

The paper is structured in 4 Sections. After an introduction focused on discussing the strengths and criticalities of music festivals under the sustainability perspective, Sect. 2 reviews existing literature on sustainability in music festivals, highlighting key challenges and gaps. Section 3 details the research methodology, including data collection, stakeholder engagement, and framework development. The study presents findings from the MI AMI Festival case study, analyzing sustainability indicators and industry best practices. Based on these insights, a comprehensive sustainability framework is proposed in Sect. 3.2, outlining evaluation criteria and practical implementation steps. Section 4 presents a conclusion discussing the framework's potential applications, validation process, and future developments, emphasizing its role in promoting sustainable practices within the music festival industry.

2 Research Gap and Objectives

2.1 Research Gap

Sustainability has become a crucial consideration in the organization and operation of music festivals, with various private and public entities proposing frameworks to enhance environmental, social, and economic responsibility [6, 14]. However, a significant gap remains in the availability of a quantitative, publicly accessible sustainability framework that can be replicated and used in different contexts. While existing initiatives offer guidelines and principles, they often lack clear, objective, and measurable methodologies that allow festivals to independently assess their sustainability performance [7, 18, 19]. These frameworks tend to be qualitative or require proprietary assessments, limiting their applicability for festivals seeking a transparent and standardized approach. For example, the DGTL festival (one of the most important music festivals held in the Netherlands) does not provide an actual framework but presents all the initiatives and

practices they are pursuing; although it is a great example of sustainability, it is hard to replicate. Furthermore Legambiente, the most important Italian environmentalist association, sponsored a sustainability focused festival named Festambiente that unfortunately lacks measurable indexes and figures that can be applied and calculated by other event organizers. The absence of a publicly available framework that provides an autonomous, data-driven scoring system creates a big challenge for festival organizers who wish to benchmark their sustainability efforts objectively and systematically.

2.2 Objectives

This study aims to develop guidelines for a comprehensive sustainability framework for music festivals that provide quantitative and standardized metrics. The framework will be built using insights from sustainability reports by A Greener Future, one of the biggest non-profit companies aimed at helping venue and event organizers to reduce environmental impacts, as well as on-field research conducted at the 2024 MI AMI Festival in Milan combined with expert opinions and articles closely related to the topic. This mixed-method approach will ensure that the framework is grounded in industry best practices and real-world festival operations. By establishing a data-driven and replicable scoring method, this study will provide festival organizers with a practical and transparent tool to autonomously assess and improve their sustainability performance, thereby promoting accountability and driving continuous improvement across the industry.

3 Methodology

The development of a methodology for evaluating the sustainability of a music event necessitates a multifaceted and systematic evaluation of the event itself, as well as a comprehension of the underlying processes and mechanisms.

The proposed framework has been designed to provide a comprehensive evaluation tool that each festival must independently apply to its own event if it chooses to adopt. This tool assesses the festival's overall sustainability, assigning it an aggregate sustainability score. Based on this score, the event will be classified into one performance tier, with lower tiers indicating poorer sustainability performance. The framework is thus multicriteria, based on Multi-Attribute Value Theory (MAVT) [3], as the sustainability field demands, given the numerous and frequently conflictual factors to be considered.

The final score is derived from aggregating distinct sub-scores attributed to various impact categories. These categories include Energy, Materials and Waste, Food and Beverage, Travel and Transport, Water, Community and Biodiversity. Each category is evaluated using specific indicators, which are standardized with value functions, and they are assigned weights based on their relative importance and impact on overall sustainability. In particular, specific weights will be given according to the latest report of A Greener Future of 2024, in which the relative contribution of each impact category on the overall emissions is defined, resulting from the analysis of 40 different festivals in 11 different countries. For instance, it emerges that the transport category has the biggest share of emissions, accounting for 41.4% of the total, followed by food & beverage

(31.9%) [2]. Lastly, the final score is determined by applying the Weighted Linear Sum (WLS).

In this Section, the sequence of steps that were followed to design the framework will be discussed. Figure 1 provides a graphical representation of these steps, to be considered sequential, where continuous arrows are for those steps already executed, while dotted arrows indicate a step that has yet to be achieved.

The methodology employed is articulated as follows:

1. Data collection.
2. Framework development.
3. Validation and Diffusion.

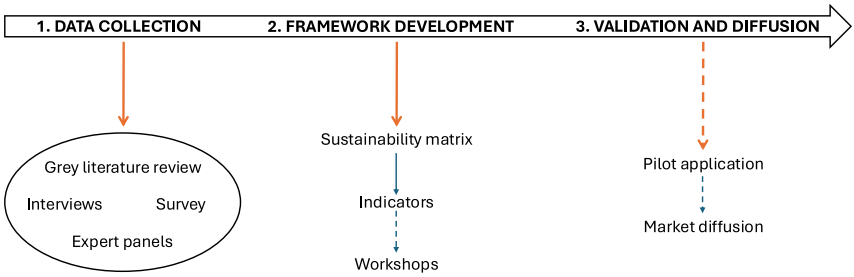

Fig. 1. Framework development process.

It is evident then that the interaction with the festival selected for the case study, MIAMI, was instrumental in catalyzing the progression and facilitation of the work.

The MI AMI Festival,[1] Musica Importante A Milano, organized by Better Days s.r.l which has been held annually since 2005 during the last weekend of May in Milan, exclusively features Italian artists from the independent and alternative musical sphere, irrespective of musical genre, with a meticulous selection process encompassing both musical and cultural dimensions. The 2024 edition featured approximately 100 artists across 5 different stages, attracting 25,000 attendees. Based on the presented evidence, the festival has been evaluated as in a state of "health", demonstrating consistent growth and ongoing development. This finding positions the festival as the most suitable case study for analysis within the context of the Milan metropolitan area.

The festival's commitment to sustainability, as reflected in its organizers' dedication to delve deeply into the subject, has been pivotal. This commitment has enhanced direct interaction and the exchange of information with individuals involved in the operational processes of a music event. Consequently, the process of collecting relevant and valuable data has undergone a considerable acceleration, along with the easing of access to the festival sites before, during, and following the event for site surveys.

The following approach entailed integrating and complementing practical and field observations with theoretical and literary findings.

[1] https://www.miamifestival.it/2025/index.php.

3.1 Data Collection

The data collection process was initiated with a review of grey literature on existing frameworks and best practices in music festivals. A comprehensive overview of the acquired information is provided in a companion paper.

The following interviews and surveys were submitted to festival stakeholders. The MI AMI 2024 provided an opportunity to carry out on-field research to collect information about the event's sustainability, with this goal being approached from multiple perspectives. Specifically, three viewpoints were of particular interest: those of the staff, the artists, and the attendees. During the three days of the events, interviews were conducted with artists and staff, while a survey was administered to the audience. The decision to differentiate the data collection approach was influenced by two primary factors: the distinct nature of the interview questions and the varying time availability of the participants. These factors will be discussed in the following sections.

Additionally, a series of meetings were held with sustainability experts, including those with a primary focus on environmental issues and those with a specialized understanding of music events. These sessions aimed to delve into specific areas of interest. For instance, an ornithologist was consulted to assess the potential acoustic impact of the event on local birdlife. Two separate meetings were conducted with green certification managers from Triadi [20] and Ecoevents [7] to gain insight into their methodologies, strengths, and challenges. Triadi assisted in understanding the importance of involving local actors in the decision and the design process, from the citizens to the supply chain, as they are directly affected by the implemented measures. Ecoevents offered insights into various potential solutions that a festival could adopt to enhance its sustainability, along with an overview of their framework and the process which led to its development.

Interviews

During the festival weekend of 24–26 May 2024, interviews were conducted with all those who expressed interest and availability. Specifically, 30 individuals were interviewed, including 13 artists and 17 staff members.

The prompt focused on four primary categories, for a total number of questions posed of approximately 15:

1. General information: Here, the aim was to gather background information on the interviewees, their role in the festival, and their professional experience to better understand their perspective.
2. The MI AMI festival: This category explores the interviewee's experience with the festival, their level of involvement, and their impressions of the event. Additionally, it explores feedback on how the festival compares to others.
3. Sustainability: Here, the interviewee's awareness of the festival's sustainability efforts is assessed. Their opinion on existing initiatives is investigated, as well as potential areas of improvement. Moreover, environmental challenges related to their profession are identified, if any.
4. Suggestions: Lastly, the intention is to gather recommendations on how the festival can enhance its social and environmental sustainability. Best practices from other festivals are sought.

The responses provided were instrumental in identifying significant critical issues, exploring potential solutions, and gathering suggestions. For instance, 62.7% of the interviewees requested an increase in recycling points, while 57.7% suggested exclusive use of biodegradable materials. Artists, conversely, noted the absence of waste sorting in the dressing rooms. Other salient points included green mobility in terms of agreements with local transport authorities and car-sharing companies and a preference for more sustainable food and beverages.

Survey

The survey was submitted in two ways: initially, at the festival, and subsequently, via the internet, due to its dissemination on the festival's social media platforms and the project's Instagram profile. The total number of responses collected was 718, corresponding to 3% of the total number of attendees. It was challenging to capture the public's attention, and they were often reluctant to fill in a form.

The survey was structured into five distinct sections, enumerated below, comprising 25 questions, some of which permitted open responses and others closed-ended responses.

1. Socio-Demographics: A range of demographic and socio-economic information about the attendee is collected, including age, gender, occupation, and place of residence. This helps define the audience profile.
2. Behavioral habits: This section explores the attendees' knowledge about environmental issues, willingness to pay more for sustainable products, participation in sustainability-related events, eco-friendly habits, and dietary choices.
3. Festival participation: The aim here is to understand the reasons for attending the festival, how attendees discovered it, their level of participation, and their feedback on potential improvements. Additionally, the social impact of the event on the city of Milan is investigated.
4. Perception of the Sustainability of the Festival: The objective is to evaluate attendees' perceptions of the festival's sustainability efforts, their awareness of existing green initiatives, and their satisfaction with them. Also, they're asked about other festivals that are considered more sustainable and what their best practices are.
5. Mobility: An assessment of the transportation habits of attendees is conducted. The data collected includes how they arrived at the festival and their propensity to use sustainable mobility options such as carpooling.

The findings revealed a notable interest among the audience in topics related to sustainability, as evidenced by their responses. For instance, more than 63% of the participants were willing to pay a premium for tickets in exchange for a more sustainable festival. Suggestions proposed by the participants included enhancing recycling amenities, incorporating biodegradable materials, and promoting sustainable merchandise.

Generally, the staff members, artists, and attendees appeared to share a congruent vision of the festival's sustainability, with their comments and contributions reflecting a shift toward this common perspective.

3.2 Framework Development

The development of the framework followed the second phase illustrated in Fig. 1. The initial step involved creating a sustainability matrix to identify the most common criteria and parameters used to assess sustainability in music festivals, as well as in existing frameworks and protocols. Once these criteria are established, it becomes more straightforward and more systematic to determine which can be transformed into robust and objective indicators for the framework.

This indicator definition phase will also be supported by on-field research conducted during the MI AMI 2024 festival, allowing for alignment between the theoretical matrix and the practical realities observed on-site.

Finally, once the set of indicators is defined, they will undergo a validation phase through dedicated workshops involving experts and key stakeholders from the festival sector, ensuring their relevance, reliability, and applicability.

Matrix

Given the analysis previously performed the six dimensions of sustainability mentioned in Sect. 3 (i.e. Energy, Materials and Waste, Food and Beverage, Travel and Transport, Water, Community and Biodiversity) can be considered as the main drivers to better investigate relevant protocols, frameworks, reports, and case studies of recognized sustainable festivals to explore how these topics have been measured. By analyzing the intersections between these dimensions and the selected references, we can determine which best practices or criteria each report, framework, and festival adopts for each specific sustainability dimension.

The six sustainability dimensions were selected and defined based on the European Green Festival Roadmap, developed by Yourope [21] and supported by the European Union. Table 1 shows the different dimensions.

Regarding the selection of the different references, although the focus was initially on existing protocols and reports, many are either not publicly available or difficult to access. To address this limitation, the matrix also includes festivals recognized as sustainable, either through official certifications or their demonstrated commitment to sustainability.

The selected protocols include the *European Green Festival Roadmap* developed by Yourope [21], the *Music Innovation Hub* by Triadi [17]—a spin-off of POLIMI, RP Legal & Tax, and MIH—the *GreenFEST* framework [10], and the *Super-Low Carbon Live Music* initiative led by the Tyndall Centre [11]. Additionally, guidelines such as the *Guidelines on Sustainable Event Organization* issued by the German government [12] and *The Guide to Sustainable Events* published by the Stockholm municipality [5] provide essential frameworks for sustainable event management.

Regarding sustainable festival case studies, the matrix includes notable examples such as the *DGTL Festival* in Amsterdam, Netherlands, and *Massive Attack's* sustainability-focused initiatives in Bristol, UK.

Not directly included in the matrix but part of the preliminary analysis, the following festivals were also selected: Boom (Idanha-a-Nova, PR), Cambridge Folk (Cambridge, UK), Paradise City (Perk, BE), We Love Green (Paris, FR), Terraforma (Milan, IT), Diluvio Festival (Brescia, IT).

Table 1. Sustainable dimension descriptions.

Dimension	Description
Energy	Measures the festival's energy consumption and its reliance on renewable or low-impact energy sources
Materials & Waste	Evaluates the use of sustainable materials and waste management strategies, including reduction, recycling, and reuse
Food & Beverage	Assesses the sourcing, sustainability, and environmental impact of food and drinks offered at the festival
Travel & Transport	Examines the carbon footprint of attendee and staff transportation, promoting sustainable mobility options
Water	Focuses on water consumption, conservation, and wastewater management to minimize environmental impact
Community & Biodiversity	Considers the festival's impact on local communities and ecosystems, ensuring social responsibility and ecological preservation

Once the matrix was completed, it became evident that all the selected protocols and frameworks address the dimensions of Energy, Travel, & Transport. Nearly all of them cover Waste & Materials, Food & Beverage, and Community & Biodiversity. However, the Water dimension is included in only 5 of the 8 protocols and frameworks analyzed.

Then, further analysis identified the most common and relevant criteria or best practices for each sustainability dimension, as shown in Table 2.

Based on these shared best practices, the sustainability indicators for the festival framework will be defined.

Sustainable Indicators Framework

Combining the sustainability matrix with on-field research conducted through the MI AMI 2024 case study made it possible to define festival sustainability indicators with greater accuracy and precision. The matrix helped identify the most common best practices found in sustainable protocols, frameworks, and festivals. At the same time, the case study highlighted which indicators were most suitable for the proposed framework, for instance, which metrics were most straightforward to measure and most relevant to real-world application.

Below, in Table 3, is a list of the indicators, each briefly described and grouped according to the various dimensions of sustainability. In addition to the six sustainability dimensions outlined in Sect. 3.1 of the Matrix, an additional section, Emissions Monitoring and Communication, has been introduced. Unlike the other dimensions, this section does not focus on a single aspect of sustainability but encompasses broader indicators spanning multiple sustainability dimensions.

This list is still a draft of the final set of indicators that will form the complete framework. However, it serves as a strong foundation, covering the key indicator categories necessary for a comprehensive assessment and analysis of a festival's impact.

Table 2. List of the standard criteria in festivals divided by sustainable dimensions

Category	Criteria	Description
Energy	Energy monitoring and measurement	Baselines and automated systems
	Energy efficiency	Low-energy technologies and strategies
	Renewable energy sources	Replacing diesel and onsite generation
	Green contracts and offsetting	Certified electricity and carbon compensation
	Stakeholder and user engagement	Awareness and responsibility
	Innovation	R&D for sustainable solutions
Materials & Waste	Recycling systems	Ensure clear signage, sufficient collection points, and composting options
	Sustainable materials	Prioritize eco-label products, durable designs, and modularity
	Circularity	Track materials, promote reuse, and engage with recycling markets
	Engagement	Educated stakeholders and incentivize sustainable practices
	Monitoring and compliance	Implement waste quantification and continuous improvement strategies
Food & Beverage	Plant-based menus and local sourcing	Promote vegetarian/vegan food options and using locally grown, seasonal ingredients to minimize environmental impact)
	Reusable and compostable serve ware	Use environmentally friendly, reusable or compostable plates, cups, and utensils instead of single-use plastic items
	Food waste management and donation	Minimize food waste by carefully planning portions and donating leftover food to local charities or shelters

(*continued*)

Table 2. (*continued*)

Category	Criteria	Description
	Special dietary options	Offer a variety of food choices to cater to different dietary needs such as gluten-free, vegan, or allergen-free
	Collaboration with sustainable suppliers	Work with food and beverage vendors who prioritize sustainability in their practices, including sourcing, packaging, and transport
Travel & Transport	Sustainable Mobility	Promote walking, cycling, and public transport
	Parking reduction	Eliminate parking spaces to encourage greener alternatives
	Accessible location	Choose venues accessible by eco-friendly transport
	Travel Surveys	Gather data to improve sustainable practices
	Emission Tracking	Monitor CO2 from stakeholder travel
Water	Water Points	Provide free drinking water facilities
	Tap Access	Ensure free tap water availability in public spaces
	Water Conservation	Educate and promote efficient water use
	Efficient Appliances	Use water-saving equipment
	Reduce Consumption	Minimize overall water use
Community & Biodiversity	Stakeholder Involvement	Include locals in planning for better outcomes
	Local Partnerships	Collaborate with community organizations
	Biodiversity-safe Locations	Select venues with minimal ecological impact
	Accessible Guidance	Provide systems for individuals with impairments
	Waste Management	Minimize overall waste use

Table 3. List of sustainable indicators.

Category	Indicator	Description
Emissions monitoring & Communication	*GHG emissions intensity*	Total GHG emissions (measured in CO2e) divided by the number of festival participants
	Sustainability communication	Measures the frequency of sustainability-related communications during different phases of the festival: pre-event, during the event, and post-event
Energy	*Energy intensity*	Total energy consumption divided by the number of festival participants
	Share of renewable energy	Percentage of total energy sourced from renewable sources (solar, wind, hydro, etc.) and/or biodiesel
Materials & Waste	*Recycling rate*	Percentage of total waste directed to recycling. Waste volume is estimated using bin capacity and collection frequency, with an average weight per waste type measured
	Waste generation intensity	Average waste generated per participant per festival day
Food & Beverage	*Vegetarian and vegan option*	Percentage of vegetarian or vegan options in the total menu offerings
	Compostable cutlery and reusable cups	Availability of both compostable cutlery and reusable cups to minimize festival waste
Travel & Transport	*GHG emissions intensity from audience transport*	Total transport related GHG emissions (measured in CO2e) divided by the number of festival participants

(*continued*)

Table 3. (*continued*)

Category	Indicator	Description
	Sustainable transport initiatives	Presence of initiatives promoting sustainable transport, such as no-parking policies, bicycle parking, shuttle services, partnerships with public transport, and car-sharing options
Water	*Free water access for participants*	Number of free water access points proportionate to the number of participants per day
	Water consumption intensity	Total water consumption divided by the number of festival participants
Community & Biodiversity	*Accessibility for people with disabilities*	Full accessibility across festival grounds for wheelchair users and individuals with mobility impairments
	Biodiversity initiatives	Presence of projects focused on preserving, monitoring, and enhancing local flora and fauna

Certainly, one of the most fundamental but also most complex steps is the definition of the scoring system and threshold values for each individual indicator. In fact, where possible, efforts are made to gather data from reliable online sources. However, when indicators are being defined for the first time and no trustworthy data is available, it becomes necessary to rely on expert opinions to ensure accuracy and relevance. A possible example of a threshold can be found in the indicator *Sustainability Communication*: to achieve the maximum score, a festival could be expected to actively communicate its sustainability initiatives through its social media channels both before and during the event, and to publicly disclose its environmental impact after the event.

At the same time, it will also be crucial to specify the types of festivals to which these indicators can be applied. Possible variables to consider are certainly the size of the venue, the number of participants, and the location of the festival.

3.3 Future Steps

The list of indicators presented in Sect. 3.2, as previously mentioned, is still under revision to ensure maximum accuracy; these indicators must first be validated through dedicated workshops involving experts and key stakeholders from the festival industry. This process is essential to establish precise value scales for each indicator, ultimately

enabling the calculation of a final sustainability score. The validation of the indicators is essential, as it must ensure their scientific validity and significance. The validation process will therefore be carried out with particular care. Experts will be selected from industry professionals and faculty members from technical universities in order to provide a clear and informed perspective. Furthermore, the indicators will be supported by industry-wide research and academic literature to substantiate their validity as thoroughly as possible.

Once the framework is finalized, the next step will be its practical application. A trial implementation will occur at the MI AMI Festival in Milan in May 2025.

Finally, as the last phase, the framework will be introduced to the market and promoted for adoption by other festivals, encouraging widespread implementation within the industry.

4 Conclusions and Limitations

The growing focus on sustainability in the music festivals reflects a broader global movement toward environmental responsibility. While festivals have the potential to contribute positively to social and economic sustainability, they also present significant environmental challenges, including energy consumption, waste generation, and carbon emissions. Developing a comprehensive sustainability framework is therefore necessary to minimize negative impacts and promote industry best practices.

This study outlined creating a publicly accessible sustainability framework for music festivals, offering an easy-to-use and replicable assessment tool. Integrating insights from existing literature, sustainability reports, and field research conducted at MI AMI Festival 2024, the framework identifies key dimensions of sustainability, divided into the following categories: Emissions monitoring & Communication, Energy, Materials & Waste, Food & Beverage, Travel & Transportation, Water, and Community & Biodiversity. Each category includes specific, measurable indicators designed to assess a festival's sustainability performance.

However, this work is still ongoing, as the list of indicators has not yet been finalized. Indeed, to ensure accuracy and effectiveness, the framework requires further validation through dedicated workshops with industry experts and festival organizers. These sessions will help refine the indicators and establish standardized evaluation scales, ultimately ensuring that the framework is practical and widely applicable across different festival contexts.

Finally, once the workshops evaluate and finalize the indicators, the developed framework will be implemented and tested at the MI AMI 2025 Festival. Following this initial application, it will be further refined if necessary and eventually made available for adoption by other festivals, promoting broader industry-wide sustainability practices.

There are also some limitations of this project that should be noted. First, our framework requires active involvement from the festival organizer in adapting to the framework and measuring the various indicators. This could create friction and hinder the widespread adoption of the solution. Moreover, the default language of the project is English, which could also represent a limitation for its expansion into regions such as Asia. Additionally, the standardization of measurement units for the indicators is another

constraint that could lead to friction in countries where different systems are used, such as the U.S. or parts of Asia.

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