Strategic environmental leverage of a sport tourism event: Approaching the global challenge locally

Rute Martins 1*, Elsa Pereira 2 and Margarida Mascarenhas 3

1 Research Centre for Tourism, Sustainability and Well-being (CinTurs), Universidade do Algarve, Campus de Gambelas, Faro, Portugal; Email: rimartins@ualg.pt
2 School of Education and Communication, Research Centre for Tourism, Sustainability and Well-being (CinTurs), Universidade do Algarve, Portugal; Email: epereira@ualg.pt
3 Faculty of Human Kinetics, Universidade de Lisboa, Portugal; Research Centre for Tourism, Sustainability and Well-being (CinTurs), Universidade do Algarve, Portugal; Email: margaridab@fmh.ulisboa.pt

*Corresponding author

Abstract
The proactivity in the management of sport events is essential to maximise environmental benefits for the host communities through strategic leverage. Therefore, this study aimed to understand the process of strategic environmental leverage in an international nature-based non-mega event of sport tourism (Sintra PRO 2022 - stage of the IBC World Bodyboarding Tour) by means of action research. Data collection combined several methods and sources, namely, document research, nominal group sessions, field observation, and interviews conducted with organisers and partners of the event. Three actions, which synergistically linked the environmental values of community projects and the sport subculture, were implemented in order to focus stakeholders’ attention on the environmental topics. The availability of local resources and the involvement of the network of local partners facilitated the implementation of environmental leverage. On the other hand, the lack of communication between those involved in the operationalisation and promotion of environmental leverage actions was a constraint in the process. This study highlights several implications for environmental leverage in sport events, as well as for the applicability of the environmental leverage model to promote strategic planning and the implementation of the resulting strategic environmental leverage actions in sport events.

Keywords: action research, community development, environmental sustainability, non-mega sport tourism events, sport subculture, strategic leverage

1. Introduction

The worsening of climate change and the consequent urgency of measures to reduce its impact (Intergovernmental Panel on Climate Change [IPCC], 2022) requires society to respond quickly, both in terms of climate action and other ecological problems (United Nations Environment Programme [UNEP], 2023). Within this scenario, the management of sport events should take into consideration strategic planning of actions that allow implementing sustainable development, aiming to fulfil the Sustainable Development Goals (SDGs) provided by the United Nations 2030 Agenda (World Tourism Organisation [WTO], 2019). The International Olympic Committee incorporates the SDGs envisioning the integration of the economic, social and environmental pillars for planning the Olympic Games (IOC, 2021). According to the literature (e.g., Duignan et al., 2023; McGillivray et al., 2020), there has been evidence of the weak capacity of mega-events in the effective implementation of benefits in the host communities, thus hindering real sustainable development at the local level. Some studies (e.g., Misener et al., 2020; Sobral et al., 2023) have argued that the coordination of the process of strategic leveraging in events, including the establishment of local partnerships, is more simplified in smaller events size. This way, the implementation of strategic leverage and environmental actions (Mascarenhas et al., 2021; McCullough et al., 2016) is easier in non-mega events than in mega events (Taks et al., 2015).

As potential catalysts for change, sport events challenge organisations and other stakeholders involved in their management to plan them in order to maximise the benefits and minimise the negative impacts of hosting events (Duignan, 2023). As highlighted by this author, the power of transformation of events is not restricted to destinations and the communities that host them, but can reach all individuals who in some way participate in them, promoting advances in various fields, such as tourism development campaigns, or even, social movements on a global scale related to topics such as sustainability.

Several negative environmental impacts have been attributed to sport events (Chersulich Tomino et al., 2020; Mascarenhas et al., 2021; Thomson et al., 2019; Zourgani & Ait-Bihi, 2023). Therefore, it is urgent that their management be parameterised by environmental sustainability. However, to leverage environmental sustainability, the goal of environmental actions should be beyond simply mitigating these impacts, as pointed out by O’Brien and Chalip (2008):

Simply minimising the environmental harm done by an event does not necessarily yield a long-term benefit to the environment. That would require a change in knowledge, attitudes and/or behaviours beyond the event itself. So, the leveraging challenge is to determine how the event could foster such changes. (p. 334)

In this sense, entities involved in the management of sport events should be proactive and strategically define the objectives to be achieved. This way, planning should be taken into account accordingly, so that the benefits for the host communities can be maximised by leveraging the events (Salgado-Barandela et al., 2022; Ziakas, 2023).

The growing importance of environmental sustainability in studies addressing sport tourism (Martins et al., 2021) and respective recommendations to deepen the study of the environmental strategic leverage of sport events (Mascarenhas et al., 2021; Schulenkorf et al., 2022) support the need to understand how non-mega events can be strategically managed to maximise the environmental benefits for the destinations. In addition, the literature (e.g., Chalip et al., 2017; Misener et al., 2015) has recommended the adoption of methodologies that apply theoretical models of strategic leverage to the reality of sport events, such as action research, adding knowledge about the challenges and opportunities of leverage processes.
Therefore, the goal of the present study was to understand the process of strategic environmental leverage in an international non-mega sport tourism event, by means of action research. The items assessed were: (1) formulation of strategic objectives and planning of environmental leverage actions for the sport event; (2) process of implementing strategic environmental leverage actions for the sport event; and (3) drivers and constraints associated with this process.

2. Literature Review
Contrary to studies addressing the impacts of sport events, strategic leverage is focused on the pre-event phase, i.e., defining strategic objectives and planning strategies and tactics to be developed at the events in order to maximise the benefits for the host communities (Chalip, 2006). However, as proposed by Ziakas (2016), both the process and results of leveraging events must also be considered in an integrated way, in order to provide a more in-depth understanding of how to optimize the capacity of events to promote benefits for the host community. In turn, for an integrative analysis of the entire leverage process, Taks et al. (2018) present the Event Leverage Framework, which supports the study of the leverage process in its various sequential stages, namely: (i) planning objectives and strategic actions; (ii) the implementation of actions; and (iii) the generated outcomes. The aforementioned framework can be generalized, being applicable to specific contexts (Taks et al., 2018), such as environmental strategic leverage.

Originally, the study of liminality was developed in the area of social sciences, in the context of rites of passage and later, extended to the study of events of a celebratory nature (e.g., festivals and sport competitions) in which the existence of liminality was verified. The concept of liminality alludes to the moment of the ritual/event “(...) when the subjects of ritual fall into a limbo between past and present modes of daily existence” (Turner, 1979, p. 467). According to the same author, the experience lived in celebratory environments (rites of passage), individually or collectively, could provide a time and space for new identities and social structures to emerge due to the distance from the identity and social norms adopted in everyday life, which could be authentic or liminoid (i.e., liminal-like, when applied to the leisure/entertainment area). The connection between the concept of liminality and the tourist experience is direct, given the inherent sense of detachment from daily routine and the change in social identity contained in such experience (Duignan et al., 2020; Wu et al., 2020). From this perspective, liminality has been studied in sport events (e.g., Duignan et al., 2020; Peachey et al., 2015), both for their celebratory nature and for their potential to free identities and daily routines of those who participate in them, either actively (i.e., as a practitioner) or passively (i.e., as a spectator). Reinforcing the sharing of common values and motivations strengthens liminality (i.e., the celebratory environments generated by the events), which is enhanced through two tactics, namely, prompting the feeling of celebration and intensifying social interaction (Chalip, 2006). These tactics are rooted in the concept of communitas (i.e., sense of community), presenting as a premise “the abrogation, negation or inversion of the participants’ everyday normative structures” (Duignan et al., 2020, p. 4). Its manifestation occurs through the development of an authentic, unique, spontaneous and context-specific social interaction (Wu et al., 2020; Ziakas 2016).

According to O’Brien and Chalip (2008), environmental leverage should capitalise on the liminality generated by the events; these authors developed a strategic leverage model whose use is adjusted to planning the environmental leverage of sport events (Figure 1).
Figure 1. Environmental strategic leverage model adapted from O’Brien and Chalip (2008, p. 324)

This model proposes the achievement of two strategic objectives:

1. Focusing the attention of the event stakeholders on targeted environmental issues, through actions that involve *communitas*, encompassing: (a) aligning the events with environmental topics relevant to the communities; (b) aligning values intrinsic to environmental topics relevant to the communities with sport subculture; (c) lengthen visitor stays; and (d) promote engagement with targeted environmental issues;

2. Set/change communities’ agendas for targeted environmental issues, through actions involving the media in order to: (e) divulge environmental issues via event advertising and reporting; and (f) use the events in issue-related advertising.

This model assumes that environmental leverage actions not only reach individuals present at the events, but also all those involved in the events through the media, considered fundamental stakeholders in the strategic leverage of non-mega sport events (Oshimi & Yamaguchi, 2023). For this reason, the communication of the events should be strategically planned, aiming to inform and, simultaneously, promote environmental action (Trendafilova et al., 2021), through a tailored approach based on the characteristics of the target audiences (Martins et al., 2022; Mascarenhas et al., 2021).

The fact that the model exposed in Figure 1 is in essence “a functional and prescriptive framework of social [or environmental] strategies/tactics” (Ziakas, 2016, p. 1139) facilitates its implementation and consequently, the production of knowledge about how environmental benefits can be transferred from events to the community, as aimed at this investigation. In a broader perspective to foster the social utility of events, Ziakas (2016) proposes a model to integrate the dynamics of the processes and results of events and their interconnection with the community. Although the social leverage of events is included in the Ziakas (2016) model, it is aimed at creating social capital through its own results; in turn, the design of events must be influenced by this capital, requiring a longitudinal study of leverage that
must consider the sustainability of benefits for the community, encompassing social change and the empowerment of the community itself.

Several authors (e.g., Kelly & Fairley, 2018; Peachey et al., 2015; Salgado-Barandela et al., 2022) have emphasised the importance of reinforcing the presence of the sport subculture in the strategies and tactics to be implemented in sport events to intensify success of strategic leverage. Consequently, the strategic environmental leverage of nature-based events should be aligned with the values of respect for the natural surroundings of the place where these events take place. As pointed out by Borne (2018) and Wheaton (2020), in the case of surfing, these values are strengthened by direct and immersive contact in blue spaces.

There are also several factors that can influence the success of implementing strategic leverage, both positively and negatively. Several studies (Kelly & Fairley, 2018; Misener et al., 2020; Sobral et al., 2023; Taks et al., 2014) have highlighted the importance of collaboration between organisations and other stakeholders involved in the leverage process. Also, these studies have considered performing timely planning with a view to integrating local capacity to provide the infrastructure, material and human resources necessary for the strategic leverage of sport events. At the same time, the literature (e.g., Mascarenhas et al., 2021; Misener et al., 2020; Perić et al., 2016) also recommends the existence of a coordinating group for strategic leverage process initiatives, which should promote strategic alliances with stakeholders, especially when there are many of them and partners involved in the process. On the other hand, according to Sobral et al. (2023), there are several types of constraints associated with the implementation of leverage in sport events, namely: lack of collaboration; cultural constraints; insufficient resources and capacity; change in political priorities; and absence of responsibility/leadership in the coordination of strategic leverage actions.

3. Materials and Methods
3.1. Research design
The present study was based on an action research approach (Lawson et al., 2015) applied to a case study (Yin, 2018). A qualitative analysis of the data (Creswell & Creswell, 2018) was performed to assess the organisational context of the strategic leverage process of a non-mega sport tourism event. This research design presupposes the involvement of stakeholders in the process of transforming a given reality (Lawson et al., 2015; Yin, 2018). This way, the design of the action research consisted of the following steps, developed throughout the different phases of the event: (1) pre-event: formulation of strategic environmental objectives and planning of the respective actions to strategically leverage the sport event in accordance with the conceptual framework of environmental leverage (O’Brien & Chalip, 2008), preceded by a seminar to raise awareness and train representatives of the entities organising the event; (2) during event: implementation of strategic leverage actions and respective monitoring; and (3) post-event: critical analysis of the drivers and constraints associated with the implementation of environmental leverage actions.

3.2. Destination and event characteristics
The national tourism strategy in Portugal is based on the principles of sustainable development, aiming to promote tourism as a “hub for economic, social and environmental development throughout the territory” (National Tourism Authority [Turismo de Portugal], 2017, p. 40). This strategy considers sport events as strategic assets of Portuguese tourism to project Portugal as a destination internationally, and the sea as a differentiating asset. Additionally, the potential of nautical sports and activities (e.g., surfing and bodyboarding) is highlighted in the sustainable development of the Portuguese territory (Cardoso et al., 2023).
Since 1996, Sintra has hosted the international bodyboarding event in Praia Grande. The region is part of the Sintra-Cascais Natural Park, whose objectives include supporting the conservation of the ecological and cultural heritage of the region (Institute for the Conservation of Nature and Forests [ICNF], 2023). The object of study of the present research was the Sintra PRO 2022 edition, included in the world championship calendar and held between 5th and 11th September 2022. Two-hundred and four athletes participated in the event, representing eighteen nationalities and competing in the junior and senior, male and female, and dropknee categories. The Sintra City Council (CMS), the Sintra Coast Bodyboard and Surf Association (ABSCS) and the International Bodyboarding Corporation (IBC) organised the event, which included the following partners: institutional partners (Portuguese Surfing Federation, Portuguese Institute for Sports, and Youth and Colares Parish Council); media partners (Beachcam and VertMagazine); and sport club partner (Booguie Chicks). Also, Sintra PRO 2022 counted on the collaboration of other partners in the operationalisation of environmental leverage actions (i.e., environmental action partners: Sea Brigade; Recycle.Sea.Art; Sintra Municipal Water and Sanitation Service).

### 3.3. Research participants
The present study included 11 participants (Table 1), namely representing three expertise fields: (i) sport (IBC, ABSCS, CMS Sport department and a sport club partner: n = 5); (ii) environmental sustainability (CMS Sustainability department and environmental action partner: n = 5); and (iii) tourism (CMS Tourism department: n = 1).

### Table 1. Research participants

<table>
<thead>
<tr>
<th>Institution / Department</th>
<th>Position</th>
<th>Expertise Field</th>
<th>Participants (n)</th>
<th>Participation (✓)</th>
<th>Seminar + NGS</th>
<th>Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBC</td>
<td>Management</td>
<td>Sport</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ABSCS</td>
<td>Management</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CMS_Sport</td>
<td>Higher technician</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sport club partner</td>
<td>Management</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>CMS_Tourism</td>
<td>Higher technician</td>
<td>Tourism</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CMS_Sustainability</td>
<td>Management</td>
<td>Environmental Sustainability</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Environmental action partner</td>
<td>Management</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** NGS = nominal group sessions.

### 3.4. Data collection
Data collection combined document research, nominal group sessions, field observation and interviews.

#### 3.4.1. Documents assessed
Eighty-seven documents were analysed, namely: (i) organisational documents (contracts, programmes, event regulations); (2) publications of the events developed by ABSCS on the social media (Facebook and Instagram); (3) official websites and social media of the organisers (ABSCS, IBC and CMS) and media partners of the events; and (4) the Instagram social network of institutional partners and environmental action partners.

#### 3.4.2. Nominal group sessions
Before the nominal group sessions occurred, the researchers held a seminar (14th July 2022), providing the transfer of the theoretical framework of strategic leverage to the participants. In particular, the
seminar included the concept of strategic leverage (O’Brien & Chalip, 2008), and related concepts, namely, liminality, *communitas* (Chalip, 2006) and sport subculture (O’Brien, 2007), as well as the objectives of environmental leverage and respective tactics (O’Brien & Chalip, 2008). Presence at the seminar was the criterion adopted for the integration of participants in the nominal group sessions.

After the seminar, the six participants of the organizing entities (Table 1) took part in two nominal group sessions held on 14th and 15th July 2022, lasting approximately two hours each session. In the nominal group sessions, each individual participated equally, regardless of their knowledge about the phenomenon under study, thus ensuring a collaborative environment (Varga-Atkins et al., 2011; Manera et al., 2019). In the first session, the strategic environmental objective was defined and a prioritised list of actions to leverage Sintra PRO 2022 was drawn up. In the second, a consensus was reached on the selection of viable proposals to be implemented in the event, designating individuals responsible for coordinating the implementation of each action.

### 3.4.3. Direct observation

The observations took place during every day of the competition and were performed by one of the researchers. These observations were directed to the physical and social context and the implementation of strategic leverage actions and the respective actors (Creswell & Creswell, 2018). They were framed by the strategic environmental leverage model (O’Brien & Chalip, 2008).

### 3.4.4. Interviews

After the event (from 28th September to 14th October 2022), ten interviews (Interview #1-#10) were performed (average: 52 minutes/interview), in Portuguese as it is the native language, or the language chosen by the interviewees to perform the interviews. The script was structured according to the strategic environmental leverage model (O’Brien & Chalip, 2008), determining environmental leverage actions in past editions of the event. The drivers and constraints associated with the process of implementing environmental leverage actions in Sintra PRO 2022 were also assessed.

In accordance with the protocol adopted for conducting the interviews (Creswell & Creswell, 2018), the scope was explained to each interviewee. Anonymity was assured to the interviewees and their permission to use the data was assured after sending a verbatim transcription and the opportunity to validate the information to each respondent.

Data collection was carried out in temporal sequence, in accordance with the different phases of the event. In this way, the data collected at each stage of the event leveraging process served as the basis for data collection in the subsequent stage. Consequently, the collection of data from participants involved in the research throughout the three phases of the event was ensured, enabling a complete analysis of the entire strategic leverage process:

1. pre-event phase – information on the planned strategies and corresponding actions for the environmental leverage of the event was collected in the nominal group sessions;
2. event phase – the data to assess the execution of the actions planned in the previous stage were collected in field observation;
3. post-event phase - the participants’ critical analysis regarding the strategic planning of the event’s environmental leverage, as well as the implementation of the respective actions, was collected in the interviews.
Finally, document analysis was integrated as a complementary collection method to the others, validating the information obtained regarding the implementation of environmental leverage actions and their communication.

3.5. **Data analysis**
The collected data from the documental research, direct observation and interviews were assessed applying content analysis with a direct approach (Hsieh & Shannon, 2005), using the software NVivo 11 for Windows®. The created categories met the strategic objectives and tactics recommended in the environmental leverage model (O’Brien & Chalip, 2008), and the drivers and constraints of the process of implementing strategic leverage actions. Data triangulation strengthened reliability as well as internal validity in data analysis (Creswell & Creswell, 2018).

4. **Results**

4.1. **Formulation of the strategic environmental objective for the destination and planning of the respective strategic leverage actions for the sport event**
The Sintra PRO 2022 pioneered the strategic planning process of environmental objectives and the respective actions to leverage the event (#1; #2; #3). The strategic objective of this event was to focus stakeholders’ attention on target environmental issues. The environmental strategic leverage planning of the Sintra PRO 2022, performed in the nominal group sessions, outlined and prioritised a set of five environmental leverage actions (Table 2).

<table>
<thead>
<tr>
<th>Tactics</th>
<th>Targeted environmental issues</th>
<th>Actions (Responsible for the action)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Align events with targeted environmental issues.</td>
<td>Conservation of the ocean, litter and knowledge of the territory.</td>
<td>Daily environmental activities performed for a week (traditional games with sustainable materials, material reuse workshops, works of entities/actors involved in the collection and reuse of marine litter, archaeological tour, beach cleaning action, children’s games about the objectives for sustainable development), during the days of competition with reference athletes in the sport. (CMS_Sustainability)</td>
</tr>
<tr>
<td>Align values between targeted environmental issues and focal sport subcultures.</td>
<td>Waste separation</td>
<td>Performance of a waste separation campaign with the collaboration of an NGO (non-governmental organization). (CMS_Sustainability)</td>
</tr>
<tr>
<td></td>
<td>Sustainable transport</td>
<td>Promotion of local tram by athletes. (CMS_Sport and CMS_Tourism)</td>
</tr>
<tr>
<td>Align events with targeted environmental issues</td>
<td>Climate action</td>
<td>Promotion of the use of public transport for spectators to travel to the events. (CMS_Sport)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collection of data to calculate the athletes’ carbon footprint associated with traveling to the destination. (CMS_Sustainability)</td>
</tr>
</tbody>
</table>

The week of daily environmental activities was premised on the involvement of entities that were aligned with the environmental topics closest to the sport subculture of the event (i.e., marine and coastal pollution), as well as with the territory and the community.
immediately made contact with associations and services from the [Sintra City] Council that seemed suitable to us, because our idea was that individuals left the place knowing the surrounding space, not only in terms of activities, actions that aim to focus on a certain environmental topic, but that they had an idea of the place where they were, what we had to offer, what that place covered. (#6)

The waste separation campaign was planned in order to promote one of the existing projects in the community, exclusively aimed at residents. At the same time, the goal was to publicise the importance of domestic sorting of biological waste.

Regarding the issue of bio waste, it was a moment that we also wanted to take advantage of publicising a topic that, because it was not directly related to surfing and sport, did not mean that it was not important to have it there anyway. (...) it is important to convey this message to those who are there participating in the event and to the general public. (#5).

The initial planning of actions to promote sustainable transport was changed. It was adapted and condensed into a single action (#3; #4) depending on the timely availability of the necessary resources.

(...) in its original genesis [the strategic action] would even include the provision of public buses. Afterwards, as it was not possible, because it would be performed by private operators (...) it was decided to perform (...) an action on the day and time scheduled with the athletes and their families, and anyone who was at the competition and wanted to participate. (#3)

Therefore, to promote sustainable transport, a tram tour was planned, integrating the visit to an exhibition by a local artist addressing the topic of marine litter. The purpose of planning the data collection action for the athletes’ carbon footprint was to focus stakeholders’ attention on the climate action in the next edition of the event, as the data collected in Sintra PRO 2022 would be used to define the targets for reducing the carbon footprint in future editions of the event.

(...) this year would be year zero; it would be the year to approximately determine “This had this impact”. This way, in the next editions, we will be prepared, like “Attention, let’s see, let’s try to establish goals here”. Targets to reduce the ecological footprint of this event in the coming years. (#5)

4.2. Implementation of strategic leverage actions and respective monitoring

The planning of strategic environmental leverage for Sintra PRO 2022 led to the implementation of three actions under the coordination of CMS_Sustainability, namely: (1) week of daily environmental activities; (2) promotion of the waste separation campaign; and (3) data collection for calculating athletes’ carbon footprint.

A stand was made available for each activity in the host event zone (HEZ) in order to implement the week of daily environmental activities. Additionally, CMS_Sustainability mobilised several internal resources (i.e., departments of Education/Youth, and Municipal Libraries/Museums) and several partners (i.e., the state nature and forest conservation entity, a local artist, an environmental NGO, and the municipal water and sanitation company).

As determined by the field observation and corroborated by the interviewees (#3; #5; #6; #7; #8), public adherence to actions related to the week of daily environmental activities and the waste separation campaign was very scarce. This way, some of the proposed daily activities had to be reorganised. For example, the marine litter reuse workshop was cancelled and replaced by the display of some of the art
pieces belonging to the exhibition organised by the local artist at the museum of one of the partners in this action.

There was no participation of any athlete or public in the beach cleaning activity. There were only individuals representing ABSCS, CMS_Sustainability, CMS_Sport, two environmental action partners (i.e., Recycle.Sea.Art and Sintra Water and Sanitation Municipal Service), and two volunteers from the event staff. Throughout the week, the HEZ had empty stands, this way

(...) many of the individuals who were watching, and even the athletes, didn't stop or didn't pay much attention to what was happening there. (#7).

One of the activities of the week of daily environmental activities was not performed because the partner who was going to promote it did not attend the event. As a result, the respective stand remained closed that day. On the other hand, CMS_Sustainability added an additional day to the week of environmental activities.

It was CMS_Sustainability that challenged us, since there were some activities that did not have the expected attendance, including one that had already been cancelled. And, since on the final days, Friday, Saturday and Sunday, more individuals would come to the site, it made sense to take this action. (#3)

For the waste separation campaign, CMS_Sustainability involved the municipal water and sanitation company, which promoted the bio-waste collection project for residents in a stand at the HEZ. Like the week of environmental activities, this action was extended for another day. Data collection for calculating the athletes’ carbon footprint took place during the competition days, in loco, as confirmed by the field observation. Lastly, the tram tour with admission to the environmental exhibition aimed at athletes and companions was not implemented because, as one of the coordinators of the action summarises:

As the date approached, it was seen that there were not enough participants and the event was finally cancelled. (#3).

4.3. Critical analysis of the drivers and constraints of the implementation of environmental leverage actions
The drivers and constraints of the strategic leverage process were assessed considering: (1) operational planning of actions; (2) actors and their interaction in the process; (3) implementation of actions; and (4) respective promotion (Table 3). These results emerged from the documental research, direct observation and the evaluation/critical analysis of the interviewees.

The greatest driver in terms of operational planning was the availability of internal physical, material and human resources from CMS (#3; #6), enabling the implementation of environmental leverage actions in Sintra PRO 2022. On the other hand, the little time for performing operational planning and mobilising in advance the resources external to the municipal network, necessary for the action to promote sustainable transport for spectators, led to its cancellation (#3).

The lack of knowledge of CMS_Sustainability about the public that would be present at the event made it difficult to plan environmental leverage actions, as stated by #6 “(...) we started to align activities that we could perform at the space, not knowing the public we would reach”. For this reason, the proposed activities were aimed at a varied audience, namely children, adults and families (#5; #6). However,
especially during weekdays, the public present at the HEZ was mainly limited to athletes (teenagers and young adults) and their companions, as confirmed by direct observation. This way, the environmental actions did not have the expected impact (#5; #6; #7; #8).

**Table 3.** Drivers and constraints of the environmental leverage process in Sintra PRO 2022.

<table>
<thead>
<tr>
<th>Operational plan</th>
<th>[D] Drivers and [C] Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[D] Availability of physical, material and human resources.</td>
</tr>
<tr>
<td></td>
<td>[C] Little time to perform operational planning.</td>
</tr>
<tr>
<td></td>
<td>[C] Lack of knowledge about the public present at the event.</td>
</tr>
<tr>
<td></td>
<td>[C] Disarticulation between logistics, the competitive calendar of the event and leverage actions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actors</th>
<th>[D] Previous relationships between the entities involved.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[D] Strategic objectives intrinsic to the entities.</td>
</tr>
<tr>
<td></td>
<td>[C] Weak/absence of communication between the actors involved/to be involved in environmental leverage.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation</th>
<th>[C] Little attractiveness of the exhibitors’ spaces at the HEZ.</th>
</tr>
</thead>
</table>

| Promotion          | [C] Lack of promotion. |

On the other hand, the disarticulation between the logistics and the competitive calendar of the event and the leverage actions inhibited the participation of the athletes in the actions (#2; #3; #4). For example, in the beach cleaning activity, according to #10 “right then my question was, if this coincides with a moment of competition for the athletes, it won’t be easy for us”. On the other hand, for ABSCS, the competitive dynamics of the event prevented the integration of environmental leverage actions into the event programme.

(...) if we can plan “Look, on Tuesday or Wednesday we won’t hold the event, we’ll have these actions [of strategic leverage]” (...). So I can gather the athletes and perform these actions with them. Having a short waiting window that has to maximise the period I have of sea and time [adequate to the competition], it is more difficult to do this. (#2)

The previous relationship between the actors expedited the process of organising the actions coordinated by CMS_Sustainability (#5; #6; #7; #8), since the work methods, requirements, and objectives of the different actors/entities were already known. The good interaction between the actors is exemplified in the daily environmental action performing an archaeological tour.

*If it was something new, obviously, I would have asked “Please, don’t be too boring, don’t make it a very extensive and very technical visit, because these are individuals who don’t deal with it every day (...). But, as we already have this partnership, it was not necessary. (#6)*

The existence of strategic objectives intrinsic to the entity responsible for the implemented environmental leverage actions (i.e., CMS_Sustainability) facilitated the development of environmental leverage, considering: (i) the importance of the impulse of the political leadership in the destination to develop the environmental topics by investing in ‘new things’, such as the participation of CMS_Sustainability in the organisation of leverage actions in Sintra PRO 2022;

(...) we came from behind with a great impulse on the part of the President and, on the part, at the time of the Director of the Environment Department, there was already a great impulse here for us to be able to do new things; to develop something or things that hadn’t been done before. (#5)
and (2) the objective of consolidating existing partnerships (#5; #6; #7; #8) and taking advantage of the event to integrate new partnerships (#6) in the development of environmental topics at the destination. On the other hand, the poor communication between ABSCS and IBC/athletes hindered the publicity of the activities and the participation of the athletes in the week of environmental activities. Given the communication circuit tacitly adopted by the entities involved in coordinating the implementation of the environmental leverage in Sintra PRO 2022 (i.e., those responsible for the action • CMS_Sport • ABSCS • IBC/Athletes) (#1; #2; #3; #4; # 5; #6), the failure of communication in one of the links in the chain undermined the implementation of environmental leverage actions. For example, the absence of athletes’ participation in the beach cleaning activity surprised CMS_Sustainability, responsible for the activity (#5; #6; #7; #8).

In this specific activity, from the meetings we had with the Organisation [ABSCS] (...) That was really the idea we had, that there would be athletes who would be available to perform this activity with us. And we thought that the Organisation [ABSCS] would take care of it. Because in concrete terms, we never contacted the athletes, there was no direct contact. (...) Because [the objective] was for each athlete to demonstrate to the general public, to whoever was watching, that they were making their contribution in order to improve the beach, to improve the surrounding area. (#6)

With respect to the implementation of environmental leverage actions, the unattractive space allocated to exhibitors at the HEZ was a constraint in capturing the attention of the public present at the event for the environmental topics (#5; #7; #8; #9). Some empty stands (#7) and the spatial arrangement of the exhibitors (#5; #8; #9) made environmental leverage difficult, because “(...) that place is an area so closed to athletes that normal individuals do not enter” (#9), and “(...) it gave the impression that those tents were more part of the athletes and not to stimulate the activities” (#8). Consequently, there was no celebration environment in the implementation of environmental leverage actions, because, as #3 suggests, there should have been: “(...) more parallel activities that promote visits to these stands (...) the presence of a DJ, a radio, I think this will all contribute to the existence of a buzz around the event.”

The lack of promotion of the actions made it difficult to leverage the environmental impact of Sintra PRO 2022 as it increased the low attendance of the public and athletes to the aforementioned actions (#3; #5; #6; #7; #8; #9). The dissemination of the actions was exclusively performed on-site through oral communication from ABSCS to the athletes (#2), and through physical support on paper (#3), with posters informing the schedule of daily environmental activities in places that were not very accessible to the public. The use of the speaker of the event to publicise and promote the actions was scarce (#5; #7; #8), as confirmed by the field observation. Thus, the exclusivity of on-site advertising limited the potential for participation in the actions to the few individuals who went to the HEZ. However, even for the athletes, who were obligatorily present at the venue, the publicity of the actions was clearly scarce and ineffective (#3; #5),

(...) constraint was perhaps the absence of greater and better publicity of the activities, (...) because even if I didn’t have an audience, I had two hundred athletes there and their respective companies and families, and that represents a lot of the individuals who were there. And if a tenth of these individuals had participated in these actions, that would have already been very important. (#5)

Given the lack of audience at the HEZ, in the opinion of some interviewees (#6; #8; #10), it was important to involve the school community in the strategic leverage of the event to increase participation in strategic leverage actions in future editions of the event. The dissemination of leverage actions, during and after their implementation, was mostly performed by the partners who were developing the activities; however, it was scarce (eight publications on social media). The only action
associated with the event that was communicated on social media was the cleaning of the beach (social media of the event and IBC). There was no disclosure of strategic leverage actions on CMS communication channels due to the difficulty in involving the municipal communication department in promoting activities (#6).

In the global analysis of the implementation of strategic leverage, the actors responsible for coordinating actions highlighted the implementation of almost all environmental leverage actions selected for Sintra PRO 2022 (#3; #5; #6; #7; #8). It is worth mentioning the fact that CMS_Sustainability was able to operationalise all the actions that were under its responsibility. However, the poor adherence of the public to strategic leverage actions was a setback to the strategic intention of focusing the attention of stakeholders and the community on environmental topics through the event (#3; #5; #6; #7; #8; #9).

5. Discussion
5.1. Exploring the leverage outcomes
In the present study, the assessment of the participants regarding the successful implementation of environmental leverage in Sintra PRO 2022 indicated positive and negative perceptions. Thus, if on the one hand, the performance of environmental leverage actions was perceived as ‘duty fulfilled’, on the other hand, the weak scope of the actions to focus the attention of stakeholders on target environmental issues generated a feeling of frustration. This result accentuates the importance of considering the evaluation of leverage outcomes (Taks et al., 2018) in the conceptualization of environmental leverage, corroborating the need to theorize indicators to guarantee its success (Schulenkorf et al., 2022). Additionally, the data collection for calculating the carbon footprints of the event allows for the comparison of results between past editions of the event and/or other events hosted at the destination. This fact highlights the importance of quantifying and monitoring the impact as a basis for planning future actions of environmental leverage (Mascarenhas et al., 2021; McCullough et al., 2020). This action enhanced the ability to identify, evaluate and operationalise the leverage of other events at the destination, aiming for a long-term leverage logic (Bell & Gallimore, 2015). In this sense, the long-term planning of environmental leverage empirically determined in this study is innovative, emphasising the temporal perspective not included in the model conceptualised by O'Brien and Chalip (2008).

5.2. Action research: a successful approach to environmental leverage
The action research design included a seminar conducted by the research team to promote the understanding of the theoretical framework of environmental leverage by the event organisers, allowing the application of knowledge about environmental leverage. This way, the tactics proposed by O'Brien and Chalip (2008) were applied in Sintra PRO 2022. The event was aligned with: (1) the priorities of the community, for example, with the bio-waste separation project; and (2) the sport subculture, in this case, linking water sports to the problem of marine litter. These results highlight the importance of transferring knowledge between the research team and the organisers of the event promoted by action research (Chalip et al., 2017; Misener et al., 2015).

5.3. Municipal department of sustainability: a fundamental integration for environmental leverage
In the present study, it was determined that integrating CMS_Sustainability when formulating the strategic objectives of environmental leverage and planning the respective actions was an advantage. CMS_Sustainability performed the operational plan and ensured the implementation of the three environmental leverage actions under its responsibility. This result corroborates the recommendation to integrate entities focused on coordinating the implementation of strategic leverage, without the accumulation of functions related to the organisation of sports competition (Chen & Misener, 2019).
The fact that CMS_Sustainability belongs to the local government and whose mission is focused on the development of environmental issues ensured: (1) the commitment of the political leadership at the destination in performing environmental actions in the sport context, which facilitated their implementation (Mascarenhas et al., 2021; McCullough et al., 2016); and (2) greater ease in involving the network of local partners interested in environmentally leveraging the event, the importance of which has been recognised for the success of strategic leveraging of sport events (Aizawa et al., 2021; Peachey et al., 2015; Pereira et al., 2015, 2020; Taks et al., 2018). The creation/activation of the network of local partners favoured the implementation of future strategic leverage actions as it strengthened the previous relationship between the entities involved in the leverage. This way, based on the results of the present study, this network represented a facilitating factor.

5.4. Sport subculture and target audience: the requirement of community and media involvement
The lack of knowledge regarding the public that would be present in Sintra PRO 2022 implied that the operational planning of leverage actions included activities aimed at various types of target audience. However, the possibility of there being no public in these activities was not considered in the strategic planning phase of environmental leverage. In order to overcome the effects of this possibility, alliances and strategic partnerships should be established with local sport and non-sport organisations and structures capable of stimulating the participation of the local community (Aizawa et al., 2023; Chalip et al., 2017; Chen & Misener, 2019; Lu & Misener, 2023; Sant et al., 2023), such as schools and/or bodyboarding schools, as suggested by the participants of the present study. These local entities should be able to foster the connection between the environmental values of the sport subculture and the community. Without this connection, strategic leverage will be lost in a generalist approach, not producing the expected benefits (Misener, 2015).

On the other hand, from the perspective of the participants of the present study, the lack of adherence to environmental activities resulted from their poor promotion. This way, it was difficult to operationalise the strategic objective of focusing stakeholders' attention on targeted environmental issues by means of the event. Regardless of the suggested cause-effect relationship, the lack of disclosure of leverage actions was mainly a missed opportunity to gather the local community and the nature-based sport subculture taking into consideration environmental values and concerns. Using the media for the sole purpose of informing is wasting an important resource for shaping cultural values, behaviours and opinions (Chalip et al., 2017; Sant et al., 2023), and for directing the target audience towards environmental actions (Martins et al., 2022; Trendafilova et al., 2021).

Coordinating the promotion of leverage with tactics that foster an atmosphere of celebration and social interaction, such as holding auxiliary events (Ballouli et al., 2018), can attract more audiences and more sponsors, and consequently, raise awareness of environmental problems among a greater number of individuals. Additionally, the dissemination of environmental leverage actions implemented at sport events should be strategically planned to promote the environmental topics in focus and their connection with the events. In this way, it will be possible to capture the attention of stakeholders, as advocated by O'Brien and Chalip (2008) in the conceptualisation of the strategic objective related to set/change community agenda for targeted environmental issues, which was not covered by strategic leverage planning of Sintra PRO 2022.

5.5. The organisational constraints to environmental strategic leverage: communication and sport logistics
The lack of communication between the entities involved in environmental leverage undermined the success of some strategic environmental actions. In order to overcome the adverse effects caused by lack of communication, it is essential to have a team responsible for disseminating information to all
entities involved in the process. This way, the necessary coordination for the effectiveness of leverage efforts will be ensured (Chen & Misener, 2019; Lu & Misener, 2023; Sobral et al., 2023). For example, the relationship established between academia and the local government and other organisers of the events, contextualised in action research, could play the role of active participant in the research team, as an external agent/facilitator (Sampson, 2023; Schulenkorf et al., 2019), effectively disseminating information across the entities involved in the various phases of the strategic leverage process.

Another constraint observed was the disarticulation between the logistics of the event competitions and the scheduling of strategic actions, corroborating the difficulty in expanding the organisers’ focus of action beyond event delivery (Kennelly et al., 2017; Mhanna et al., 2017). The lack of time and resources for planning the competition in order to coordinate the athletes’ participation in the leverage actions caused their absence from the tram tour and the beach cleaning action. As role models, athletes should participate in the strategic leverage process from the strategic planning phase and be considered key partners in environmental leverage.

In order to enhance the integration of key actors in strategic leverage, it is important to anticipate their perception of the benefits that can be generated by the events, thus favouring their involvement in the strategic leverage process (Kelly & Fairley, 2018; Sobral et al., 2023; Wood et al., 2018). In short, the advantages arising from the environmental leverage process should be understood as added value for all parties involved (e.g., athletes, sponsors, partners, etc.), such as that arising from environmental image (McCullough et al., 2016; Todaro et al., 2023).

6. Conclusion

The present study contributed to the investigation of the environmental perspective of strategic leverage in sport events, which was not found in the literature. Framed by the theoretical model of environmental leverage, this action research included an analysis adapted to the temporal dynamics of the organisation of sport events, encompassing the phases of strategic planning and implementation of the respective environmental leverage actions, as well as the analysis of the process from the perspective of the participants. This way, the present study facilitated the combination between the environmental leverage objectives of the destination and the environmental values of the subculture of nature-based events.

The setting of strategic environmental leverage objectives and the consequent planning and implementation of environmental leverage actions in Sintra PRO 2022 determined the success of action research in transforming the organisational reality in force to date (sterile in environmental leverage actions). Five actions were outlined for focusing stakeholders’ attention on environmental topics through Sintra PRO 2022. The inclusion of an entity belonging to the local government with a high motivation to environmentally leverage the destination ensured the implementation of three planned leverage actions that synergistically linked the environmental values of the community projects with the sport subculture. Given the lack of time to organise the actions, the availability of local resources and the involvement of the network of local partners facilitated the implementation of environmental leverage. Conversely, the lack of communication between the actors involved in the operationalisation and promotion of environmental leverage actions was considered a constraint in the process.

This research advances new directions for the conceptualization of environmental leverage, in particular, the need to conceptualize the planning of long-term environmental benefits as well as the measurement of the success of strategic leverage process itself.
From a managerial perspective, the strategic leverage process should be shared, coordinated and monitored. Sharing promotes the perception of benefits among different stakeholders. On the other hand, coordination/monitoring enhances the effectiveness of efforts allocated to environmental leverage. Even in the context of a non-mega event with a small number of entities involved, such as Sintra PRO 2022, there should be a team that coordinates the leverage dynamics between the entities. This team should include entities exclusively focused on implementing environmental leverage without accumulating functions relating to the organisation of sports competitions. Strategic planning of actions should ensure that they are attractive for the target audiences through local partnerships (e.g., schools) to maximise benefits for the community. In particular, it is necessary to ensure the presence of sport event media as a key stakeholder in the strategic planning phase of the environmental leverage of the sport event (Oshimi & Yamaguchi, 2023), as well as other key partners capable of promoting the environmental image of the events associated with the sport subculture (e.g., athletes) to enhance the success of environmental leverage.

Considering the results of this study, further studies should explore in depth the planning of long-term environmental benefits in sport events in order to support (or not) the update of O’Brien and Chalip’s (2008) environmental strategic leverage model. In this sense, the study of the sustainability of the benefits of events, as envisioned by Ziakas (2016), may provide an amplified perspective on the strategic leverage of events.

Given the existence of conflicting perceptions about the success of leveraging (Bell & Gallimore, 2015), a deeper knowledge of the measurement of the success of strategic leverage is required (Schulenkorf et al., 2022). In addition, further studies should deepen the knowledge about the influence caused by the integration of the sport subculture on the planning and implementation of strategic leverage in the assessments of other nature-based sport events. This way, a portfolio will be created in order to enhance the possibility of cross leverage (Salgado-Barandela et al., 2022; Ziakas, 2023).

Further action research studies should ensure the integration of the two strategic objectives conceptualised for environmental leverage (O’Brien & Chalip, 2008), as well as the inclusion of entities responsible for event communication from the strategic planning phase of sport events to promote the dissemination of environmental leverage actions at sport events. The absence of more entities potentially interested in the strategic environmental leverage of the event (e.g., bodyboarding/surf schools, and local environmental organisations) was a limitation of the present action research and should be considered in future research that adopts the aforementioned methodology.

**Declaration of interest statement**
The authors declare no conflict of interest. The funding sponsor had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, and in the decision to publish the results.

**Acknowledgments**
This paper is financed by National Funds provided by FCT- Foundation for Science and Technology through project UIDB/04020/2020 and with DOI 10.54499/UIDB/04020/2020 (https://doi.org/10.54499/UIDB/04020/2020).
References


Received: 31/10/2023
Revised: 12/01/2024, 01/02/2024
Accepted: 02/02/2024
Coordinating editor: Marko Perić