

Deliverable 4.1

Survey on the environmental awareness of sport organisations



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Published on: November 2023

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Table of Content

1	The GAMES project	5
2	Assessing the level of environmental awareness of sport organisations and the adoption of environmental management practices in sport events.....	5
3	Methodology and Sample	7
4	Investigating the level of adoption and implementation of environmental management practices in sporting events.	10
4.1	Adoption of environmental management practices.....	11
4.2	Implementation of organisational practices, structures, or governance mechanisms to manage environmental and climate change issues	12
4.3	The adoption of actions to improve the environmental management of the sports' supply-chain	13
4.4	Carbon footprint assessment	14
5	Environmental improvements and additional benefits	17
5.1	Improvement of the organisations' environmental performances over the last 5 years.....	17
5.2	Additional benefits obtained from implementing environmental practices	18
6	Preparedness and awareness about the environmental management of sports events.....	19
6.1	Possession of the necessary knowledge and “know-how” to successfully tackle environmental impacts of sports events	20
6.2	Implementation of activities for the environmental management of sports events.....	21
6.3	Actions related to new opportunities for improving environmental aspects of sports events	22
6.4	Effectiveness in implementing organisational changes to pursue environmental and decarbonisation improvement opportunities	23
7	Barriers and challenges.....	24
7.1	Main challenges or barriers to the implementation of environmental practices in sporting events	24
7.2	Most important stakeholders in supporting sports organisations in tackling environmental aspects of sports events	25
8	Roles and responsibilities	27
8.1	Roles and responsibilities in managing environmental aspects of sport events.....	27
8.2	Direct control on the implementation of environmental initiatives during sports events ...	28
8.3	Acquisition of new skills and capabilities to improve the environmental management of sports events	29

9	Pro-environmental behaviour and environmental concern.....	30
9.1	Proactivity in implementing new environmental practices	30
9.2	Accountability of sports organisations and sports managers for the environmental and climate change impacts of sports events	31
9.3	Concern about the environmental impacts of sport events.....	32
10.	Conclusions.....	33

1 The GAMES project

ERASMUS+ GAMES is an EU-funded project with the objective of raising awareness and promoting the adoption of climate change practices among key actors in the sports industry to enhance the sustainability of sporting events. The project focuses on analysing climate change and sustainability governance and management models by international and national sport organisations, specifically in Athletics, Biathlon, and Floorball. The aim is to assist these organisations by providing useful sustainability tools. This involves developing guidelines, strategic set of objectives, programs, and a cohesive operational framework to mitigate, neutralise, or offset greenhouse gas (GHG) emissions. The project addresses the reduction of GHG emissions through strategies and interventions at both the organisational and operational level. To enhance environmental governance within sport organisations and promote an environmental culture, GAMES is also promoting workshops and webinars to enhance environmental knowledge and awareness among key stakeholders of these organisations. Additionally, GAMES leverages the popularity of sports to conduct environmental awareness initiatives targeting fans and to enhance the environmental communication activities of sports organisations.

2 Assessing the level of environmental awareness of sport organisations and the adoption of environmental management practices in sport events

Within the framework of the GAMES project and as part of WP4, a specific survey on climate change awareness was designed and launched for investigating the level of environmental awareness of sport organisations and the adoption of environmental management practices in sporting events. The survey was administered online to the environmental or sustainability managers of international and national sport federations, clubs and sport venues through the help of the project partners: the international Biathlon Union (IBU), World Athletics (WA), the International Floorball Federation (IFF), the Swedish Floorball Federation (SFF), and Touchline (the project's communication partner). This document presents the results of the survey.

The following chapter describes the sample and the methodology adopted. The other chapters delve into the results of the survey reflecting the different topics that were addressed:

- Chapter 4 examines the adoption and implementation of different environmental management practices within sport organisations;

- Chapter 5 analyses the environmental performance of sport organisations: the environmental improvements obtained through the implementation of environmental practices and the benefits obtained;
- Chapter 6 investigates the preparedness and awareness about the environmental management of sports events, including the possession of knowledge and know-how or the implementation of activities for improving these skills, as well as the effectiveness in implementing organisational changes;
- Chapter 7 explores the main barriers and challenges encountered in the implementation of decarbonisation and environmental management practices;
- Chapter 8 delves into the roles and responsibilities in the implementation of environmental initiatives during sporting events;
- Chapter 9 addresses the respondent's personal pro-environmental behavior and environmental concern.

Final considerations on the results of the survey are given in the conclusions.

3 Methodology and Sample

The data presented in this report was collected **between February 2023 and October 2023** by means of a questionnaire survey developed by the researchers of the Institute of Management of Sant'Anna School of Advanced Studies within the framework of the Erasmus+ Sport GAMES project, with the support of all project partners.

The survey targeted the **Environmental/Sustainability Manager** or other managerial roles appointed at managing the sport organisation's environmental performance and the environmental aspects of sporting events (CEO, President, Energy manager, Facility manager or similar).

The survey consisted in **27 multiple-choice questions** (divided into 7 groups). It was designed in a way as to be easy to compile and understand; for this purpose, several procedural remedies were adopted to reduce bias such as: avoiding vague concepts, complicated syntax and unfamiliar terms; keeping questions simple, specific and concise; avoiding the use of bipolar numerical scale values.

It was translated into **7 languages** (English, German, French, Spanish, Italian, Swedish, Finnish) and administered through an **online platform**.

The survey guaranteed participant anonymity, excluding any questions related to personal or organisational identification. Data management responsibilities lay with Sant'Anna School of Advanced Studies. The results were presented in aggregate form, preventing the identification of individual respondents.

Ninety-six questionnaires were collected, but the number of actual respondents varied per question due to the voluntary nature of responses. For transparency, each graph of this report indicates the number of responses received for the respective group of questions, ensuring accurate data interpretation. Table 1 shows the absolute and percentage number of respondents per geographical area. Most of the answers came from Sweden (16%), followed by Germany (11%) and Italy (11%). A high number of respondents (26%) started the survey but did not complete it until the end. Thus, in such cases, the country is unknown.

Table 1 - Geographical provenience (n=96)

Austria	Czechia	Estonia	Finland	France	Germany	Hungary	Italy	Out of EU	Romania	Slovakia	Slovenia	Spain	Sweden	Unknown
7	3	3	2	3	11	2	11	5	1	3	1	4	15	25
7%	3%	3%	2%	3%	11%	2%	11%	5%	1%	3%	1%	4%	16%	26%

The following map (Figure 1) displays the geographical percentage of respondents in Europe.

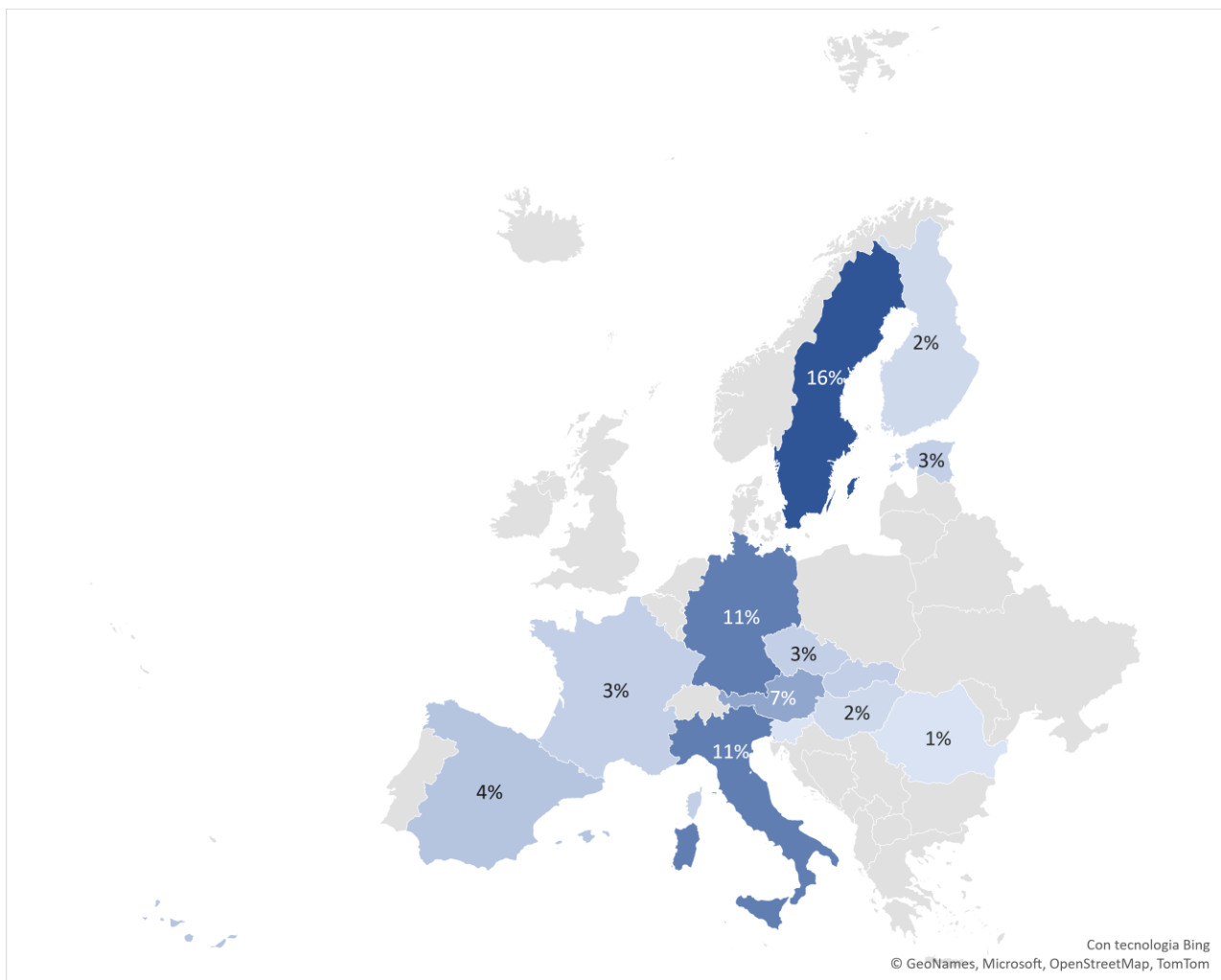


Figure 1 – Geographical provenience in Europe

Regarding the **sport sectors** in which the respondents' organisations operate (Figure 2), 27 are from Athletics (28%), 32 from Biathlon (33%), and 12 from Floorball (13%). 25 organisations did not declare their sport sectors (26%).

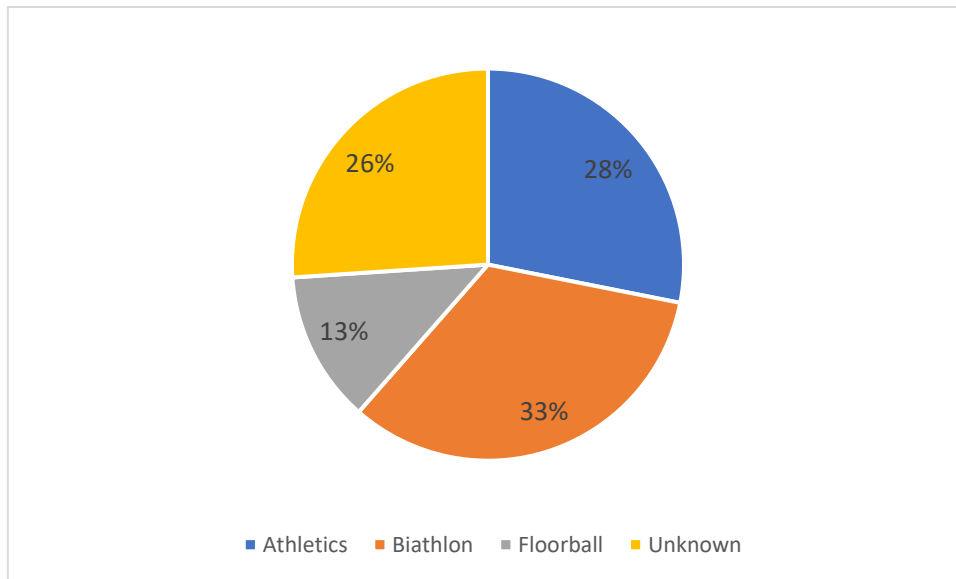


Figure 2 – Sport sector in percentages (n=96)

The survey targeted 30 Sports clubs (31%), 26 national sport federations (27%), 1 international Sport federation (1%), 25 unknown organisations (26%) and 14 different types of organisations (15%), which include sports associations, event organisers, municipalities, Local Organizing Committee (LOC), meeting organisers and Sports Agencies (Figure 3).

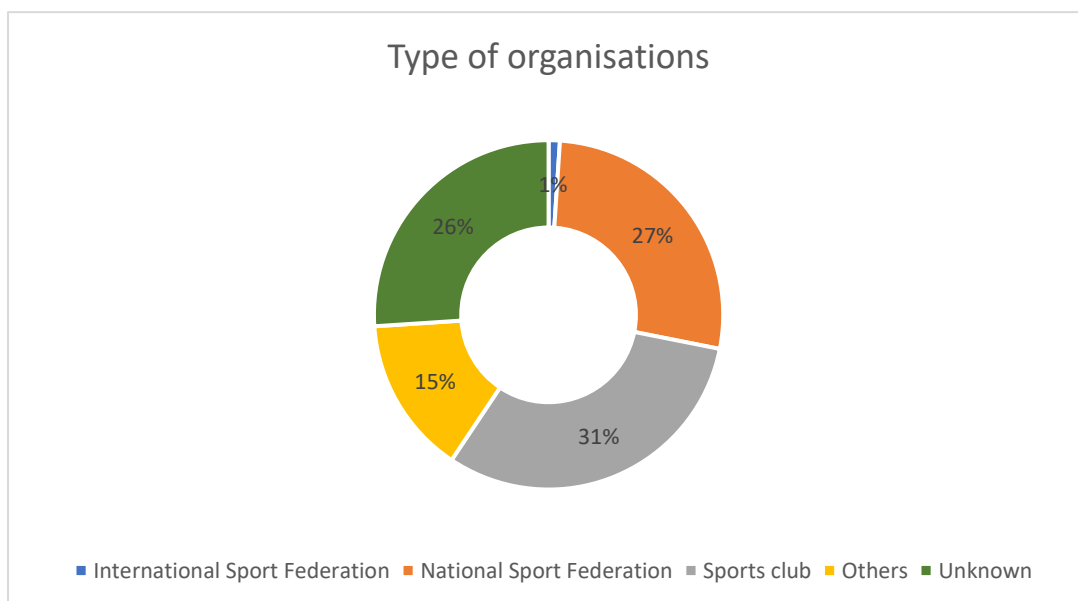


Figure 2 - Type of respondent organisations (n=96)

4 Investigating the level of adoption and implementation of environmental management practices in sporting events.

In this section of the report, the assessment focuses on the level of environmental awareness of sport managers and the adoption of environmental management practices in sports events. It does so by investigating:

1. The adoption of practices to mitigate the environmental impacts of sports events.
2. The implementation of organisational practices, structures, or governance mechanisms to manage environmental and climate change issues.
3. The adoption of actions to improve the environmental impacts of the supply chain.
4. The measurement of the organisation's carbon footprint.

4.1 Adoption of environmental management practices

The first section investigates the implementation of management practices to mitigate the environmental impacts of sporting events (Figure 4).

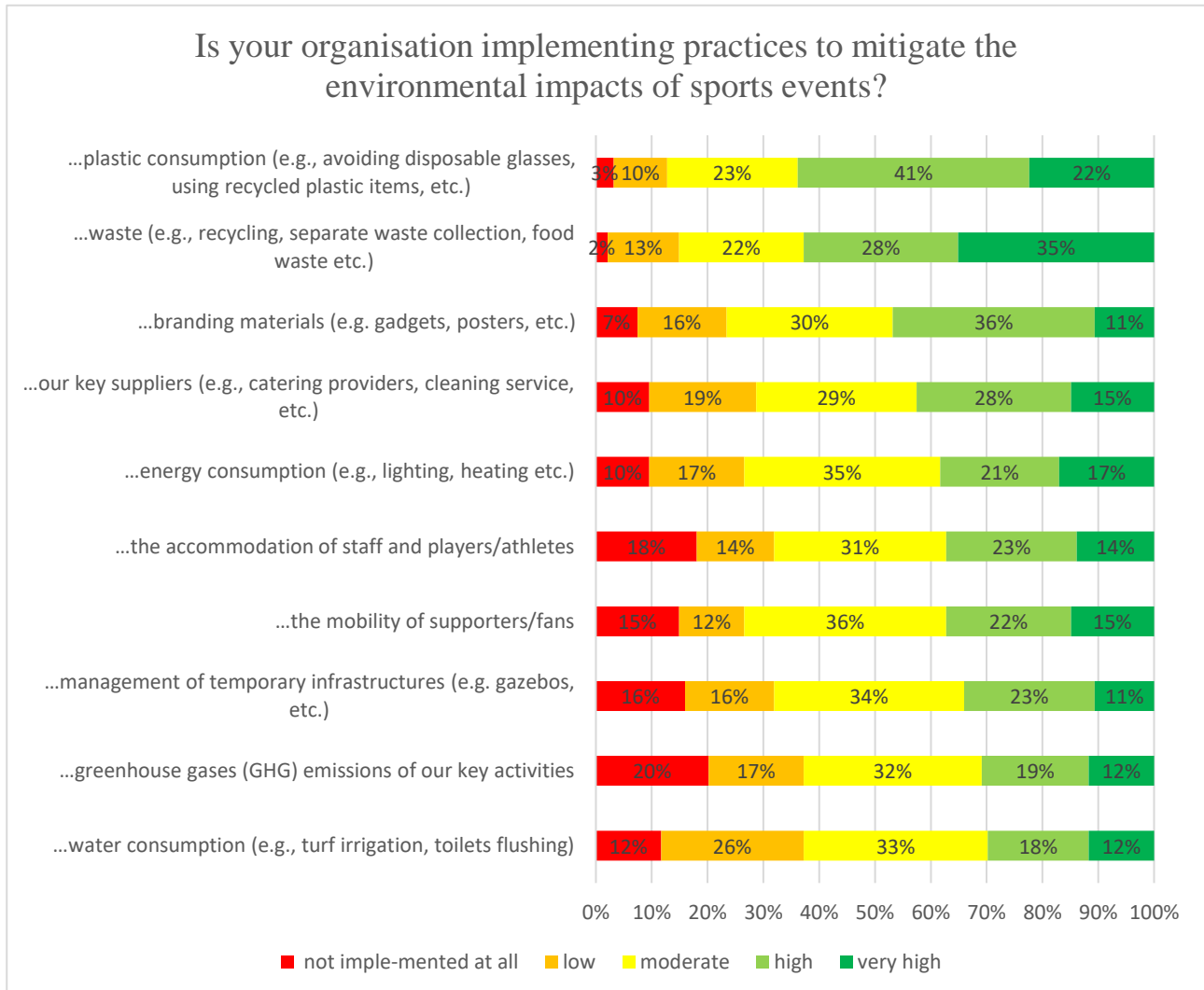


Figure 3 – Adoption of environmental management practices (n=95)

The above graph reveals that most of the interviewed organisations (63%) are decisively implementing practices to mitigate the impacts caused by **plastic consumption** and **waste**. There is also a significant commitment towards reducing or using more sustainable **branding materials** (47%) and selecting key **suppliers** that are more respectful of the environment (43%).

A lower yet relevant percentage of organisations declare their commitment to various other aspects when organising a sporting event: energy consumption (38%), accommodation for staff and players (37%), mobility of supporters (37%), management of temporary infrastructures (34%), greenhouse gas emissions from their main activities (31%), and water consumption (30%).

4.2 Implementation of organisational practices, structures, or governance mechanisms to manage environmental and climate change issues



Figure 4 - Implementation of organisational practices, structures, or governance mechanisms to manage environmental and climate change issues (n=96)

As shown in Figure 5, the survey revealed that the participating sports organisations have implemented various initiatives to address environmental and climate change issues. These initiatives range from appointing an internal Sustainability/Environmental Manager (43% of respondents) and regularly informing the Top management about relevant environmental aspects and operations (38%), to developing an environmental strategy that is periodically updated with new improvement objectives (35%).

Additionally, 31% of respondents engage partners and sponsors in sustainability initiatives, while 29% conduct internal audits to assess the organisation's environmental performance. Approximately one in four respondents (25%) declares to disclose information about the organisation's environmental performance, and an equal percentage (24%) provides environmental management training to their staff. Furthermore, 23% allocate a budget to initiatives aimed at improving environmental management.

However, fewer than one in six responding organisations have adopted written procedures or management systems to handle the environmental aspects of their operations (16%), and only 15% of organisations collect data to develop key performance indicators related to environmental aspects and greenhouse gas emissions.

4.3 The adoption of actions to improve the environmental management of the sports' supply-chain

Sport organisations have a significant “indirect” environmental impact linked to their collaboration with a series of suppliers of different goods and services, which are essential for the development of sport events and for the management of sport infrastructures.

For this reason, this question of the survey was specifically dedicated to investigating whether sport organisations are adopting actions aimed at lowering the environmental impact of their supply-chain.

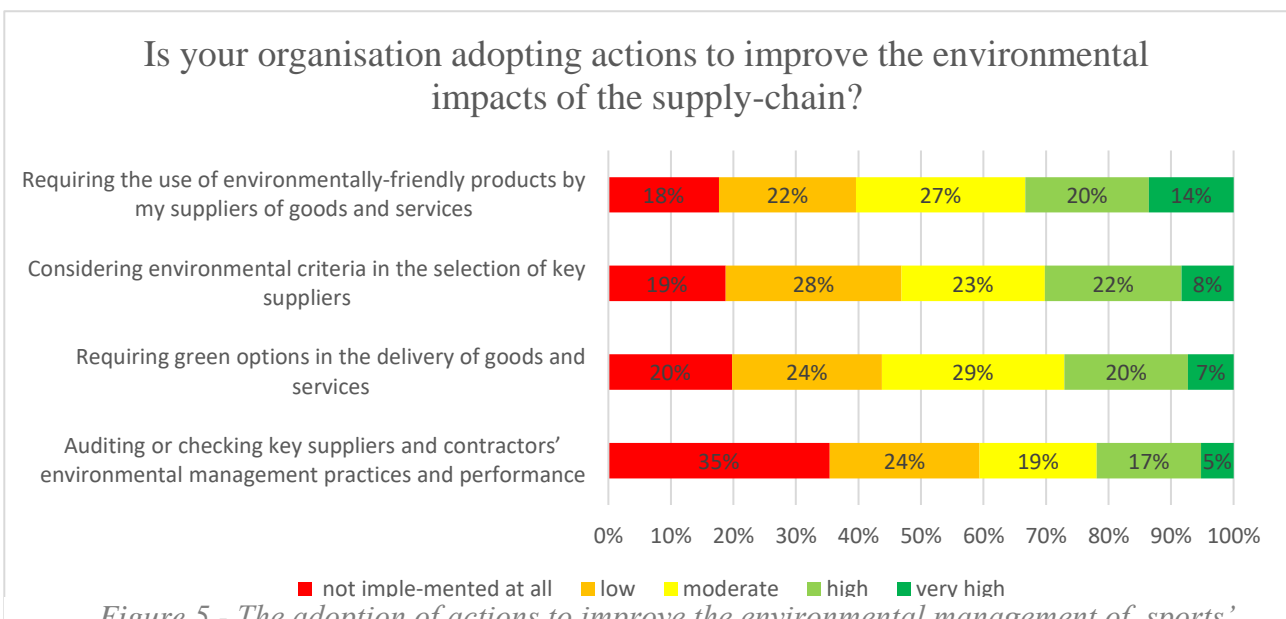


Figure 5 - The adoption of actions to improve the environmental management of sports' supply-chain (n=96)

Results show that a low yet important percentage of respondents declared to take actions to improve the environmental impacts of their supply chain (Figure 6). For instance, the survey revealed that 34% of respondents require their suppliers of goods and services to use environmentally friendly products. Additionally, 30% consider environmental criteria in the selection of key suppliers, and 27% demand green options in the delivery of goods and services.

Furthermore, more than one respondent out of five (22%) audits or checks key suppliers and contractors' environmental management practices and performance.

To assure the long-term sustainability of sport organisations, it is important to improve the environmental governance of their supply chain along with the environmental governance of the organisation itself. These results show positive signs among respondents, yet it is hoped that in the future these percentages will increase and that more and more sports organisations will place the sustainability of their supply chain at the center of their environmental strategies.

4.4 Carbon footprint assessment

This section of the report focuses on evaluating the internal carbon footprint of sports organisations. Figure 7 shows that 17% of responding organisations measure Scopes 1 and 2, while only 6% also measure scope 3. 30% of respondents declare that they are currently working on measuring their carbon footprints, the results of the survey also show that more than half of the respondents (53%) have not yet started measuring it – though nearly half of these (25%) plan to work on it in the future.

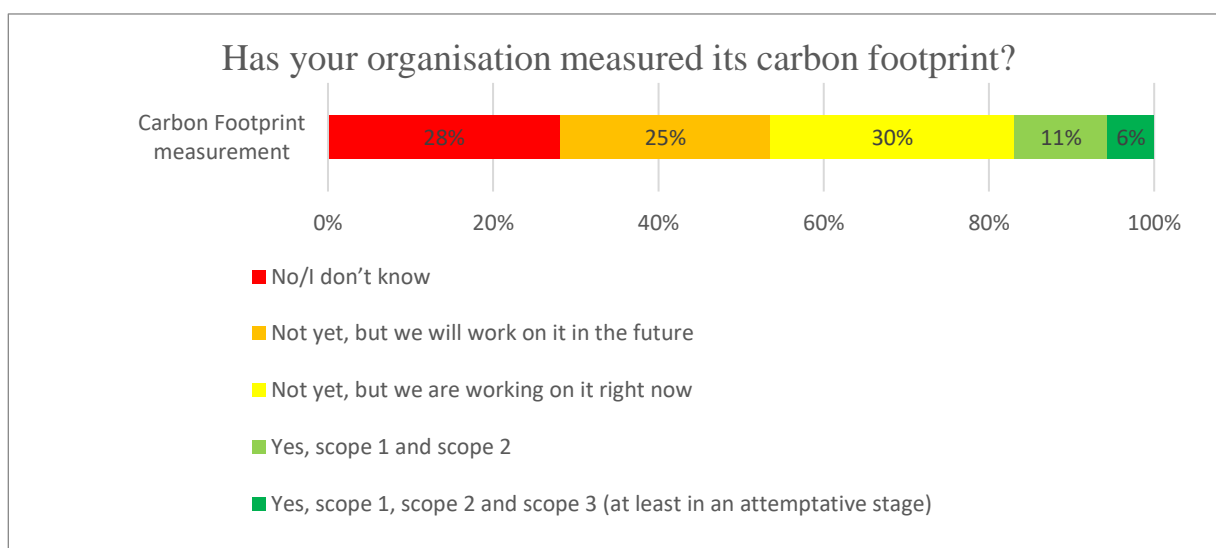


Figure 6 – Carbon footprint assessment (n=96)

Focusing on the 17% of respondents who claim to measure their own emissions, 64% come from Biathlon, 27% from Athletics, and 9% from Floorball (Figure 8).

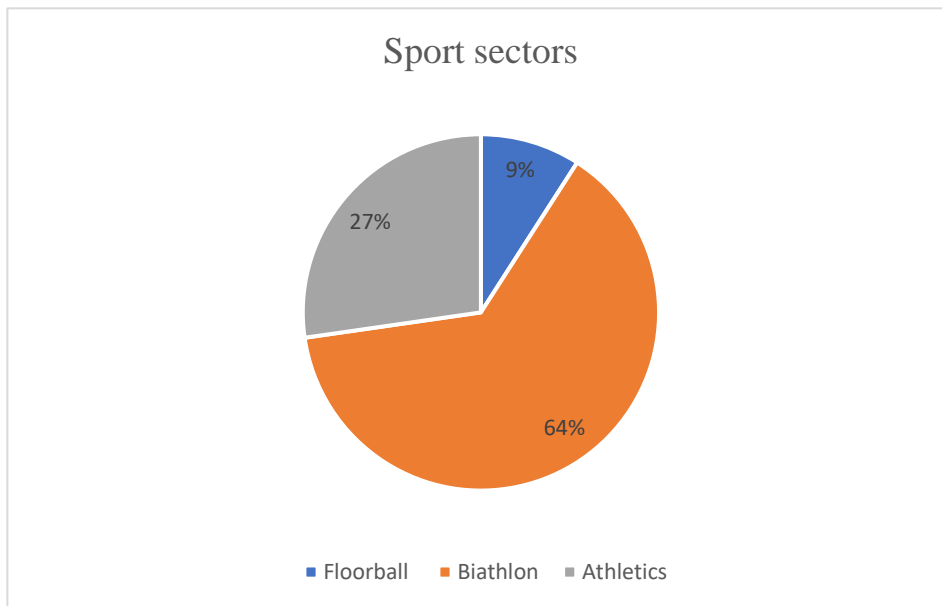


Figure 7 – Percentage of sports sectors involved in the measurement of carbon footprint (n=16)

In terms of methodologies (Figure 9), 27% of the organisations that conduct the carbon footprint measurement have not specified the one they use, while 9% apply European frameworks such as the Organisation Environmental Footprint (OEF). Additionally, 18% follow the ISO14064 protocol. The most widely used methodology is the GHG protocol, as confirmed by 45% of respondents. The fragmentation of methodologies to measure carbon footprints in sport is not anomalous, as several methodologies are present and applied in any industry.

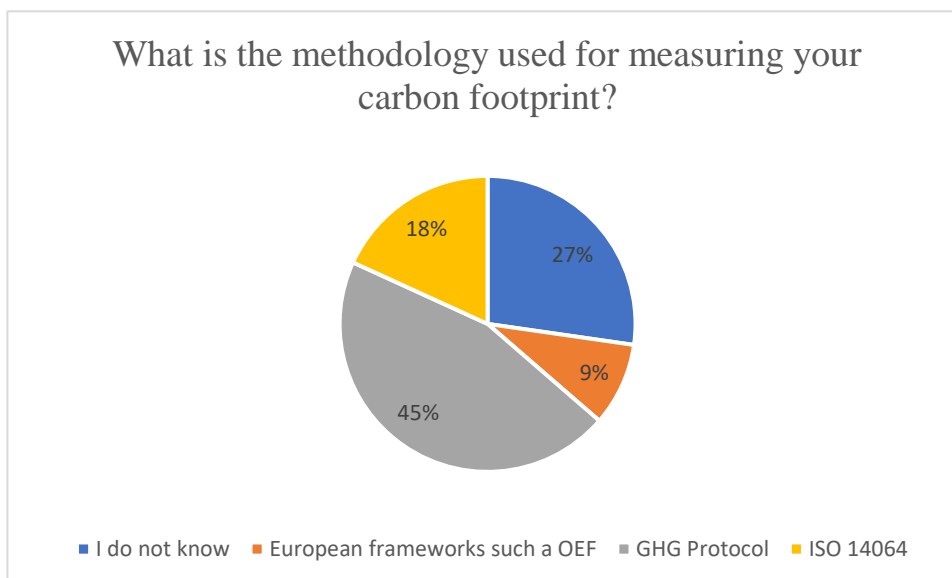


Figure 8- Methodology used by sport organisations for the carbon footprint calculation (n=16)

As shown by Figure 10, the most relevant emission source was staff and players mobility (92%), followed by transport of supplies and materials (66%), energy consumption (42%) and accommodation (41%). Materials and equipment are considered relevant sources only in 17% of cases, and no respondents found food and beverage an important emission sources.

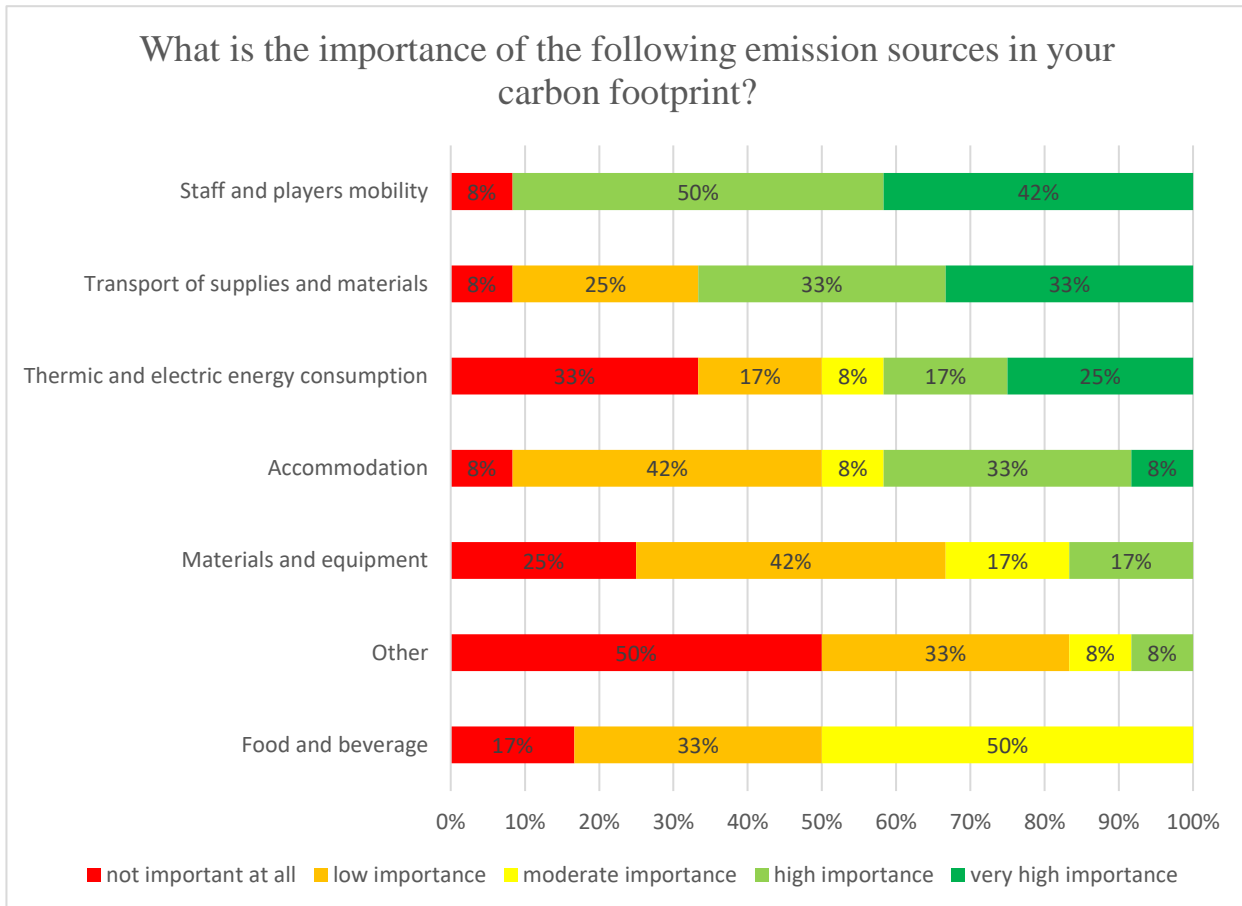


Figure 9 - Importance of emissions sources in the carbon footprint calculation (n=12)

5 Environmental improvements and additional benefits

This section of the survey focuses on the environmental improvements and additional benefits observed by sports organisations because of their management.

5.1 Improvement of the organisations' environmental performances over the last 5 years

This question investigated the improvements in terms of environmental performance registered by the sport organisation over the last five years of management. Respondents were required to evaluate the improvements of their organisation in relation to various environmental aspects: waste generation, energy and water consumption, use of materials, impact on biodiversity, GHG and noise emissions.

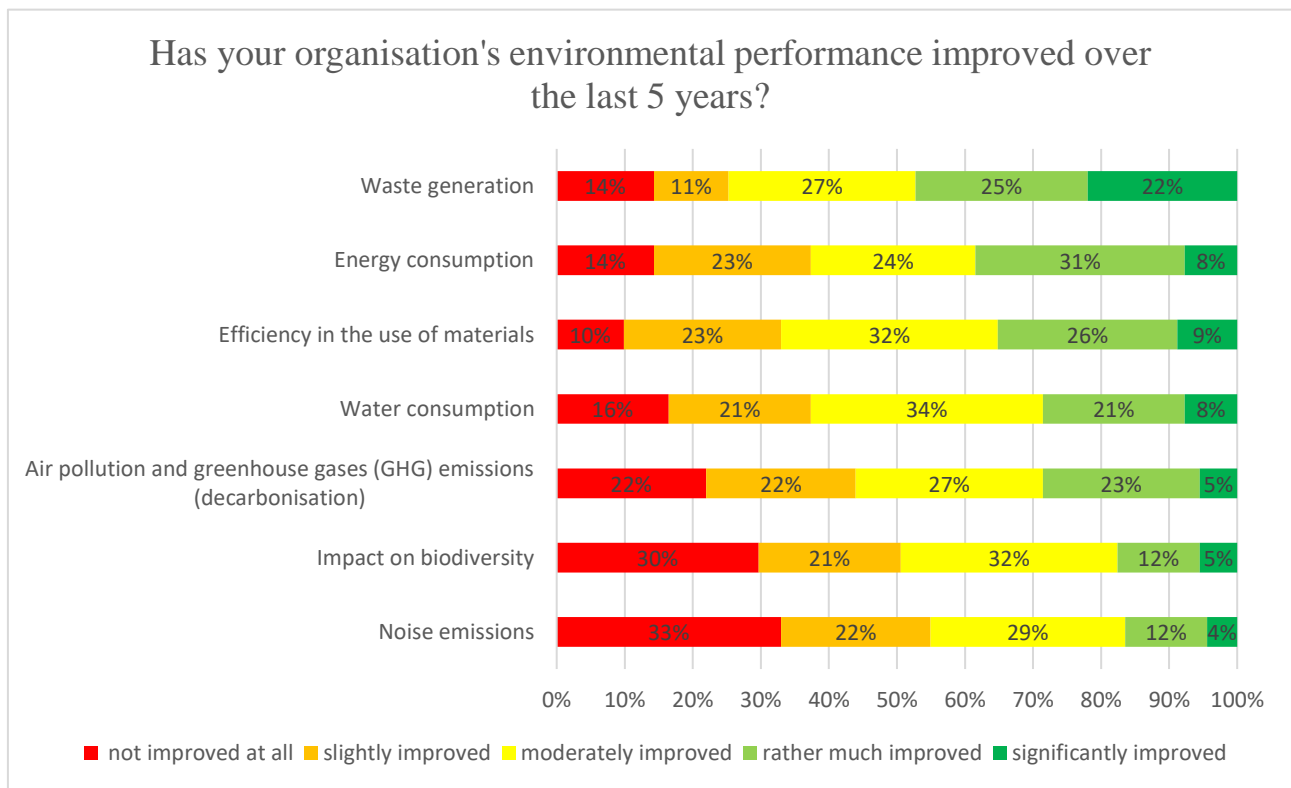


Figure 10 - Environmental improvements and additional benefits (n=91)

As shown by Figure 11, in the last 5 years sports organisations have shown more significant improvements in waste generation (47%), followed by energy consumption (39%), and efficiency in the use of materials (35%). A lower percentage of respondents declared that their organisation made significant improvements in terms of water consumption (29%), and air pollution and greenhouse gas emissions (28%).

Less than 20% of the respondents have markedly improved their performance in terms of impact on biodiversity (17%) and noise emissions (16%).

5.2 Additional benefits obtained from implementing environmental practices

This question investigated the additional benefits obtained from implementing environmental practices.

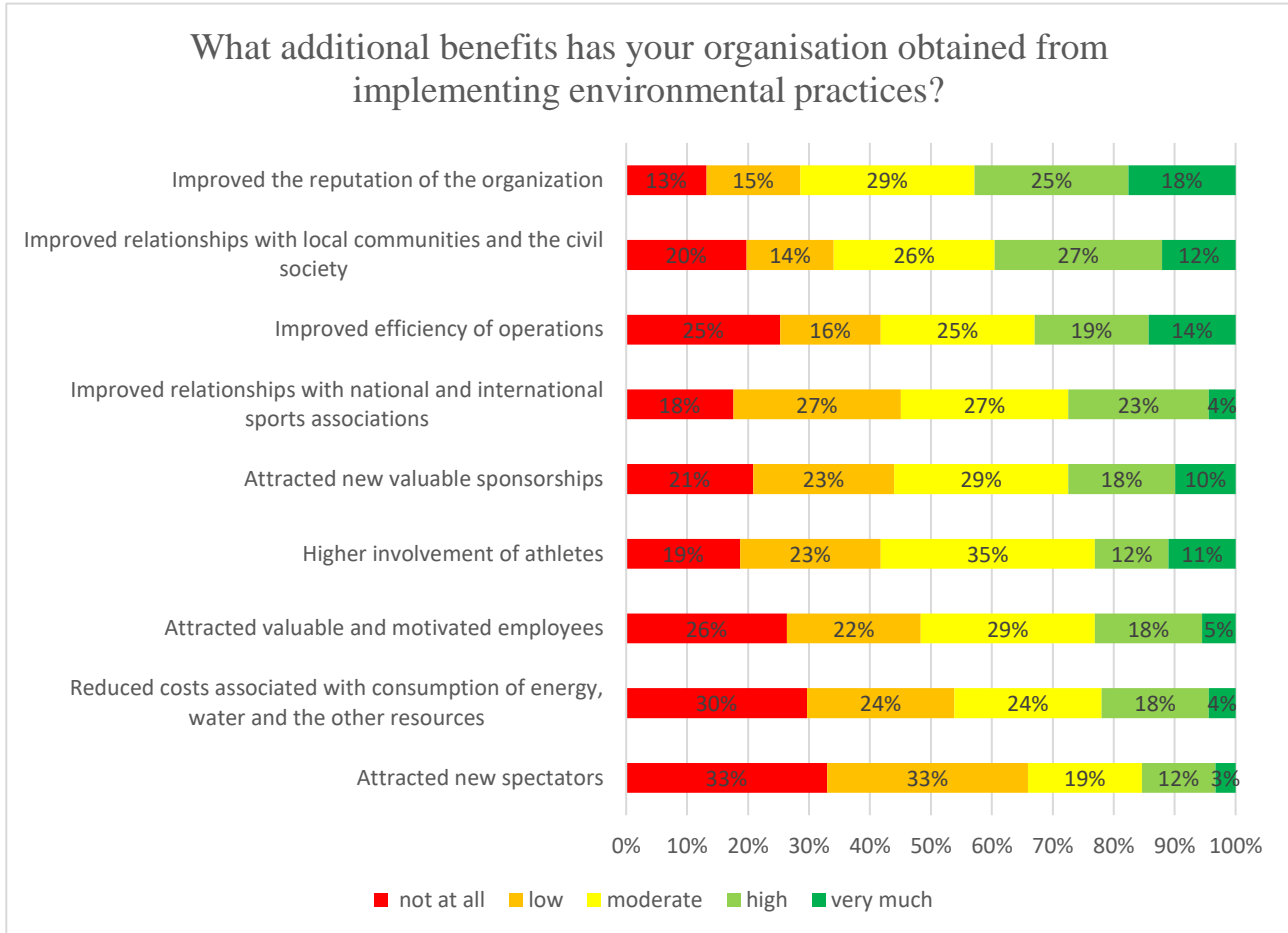


Figure 11 -Additional benefits obtained from implementing environmental practices (n=91)

According to Figure 12, the most common benefits reported by sports organisations include the improvement of the organisation's reputation (43%), better relations with the local community and the civil society (39%), enhanced operational efficiency (33%), higher involvement of athletes (28%) and improved relations with national and international sports associations (27%).

Twenty-eight percent of organisations stated that they attracted new valuable sponsorships, and 23% reported attracting valuable and motivated employees. More than one in five organisations declared that by implementing environmental practices they were able to reduce the costs associated with energy, water, and other resources consumption.

Only 15% reported that implementing environmental practices helped them attract new spectators.

6 Preparedness and awareness about the environmental management of sports events

This section of the survey focuses on the preparedness and awareness of sports organisations related to the environmental management of sports events. In particular, it investigates the following aspects:

- Possession of the necessary knowledge and “know-how” to successfully tackle environmental impacts of sports events
- Implementation of activities in order to acquire knowledge about the environmental management of sports events
- Actions related to new opportunities for improving environmental aspects of sports events
- Effectiveness in implementing organisational changes to pursue environmental and decarbonisation improvement opportunities

6.1 Possession of the necessary knowledge and “know-how” to successfully tackle environmental impacts of sports events

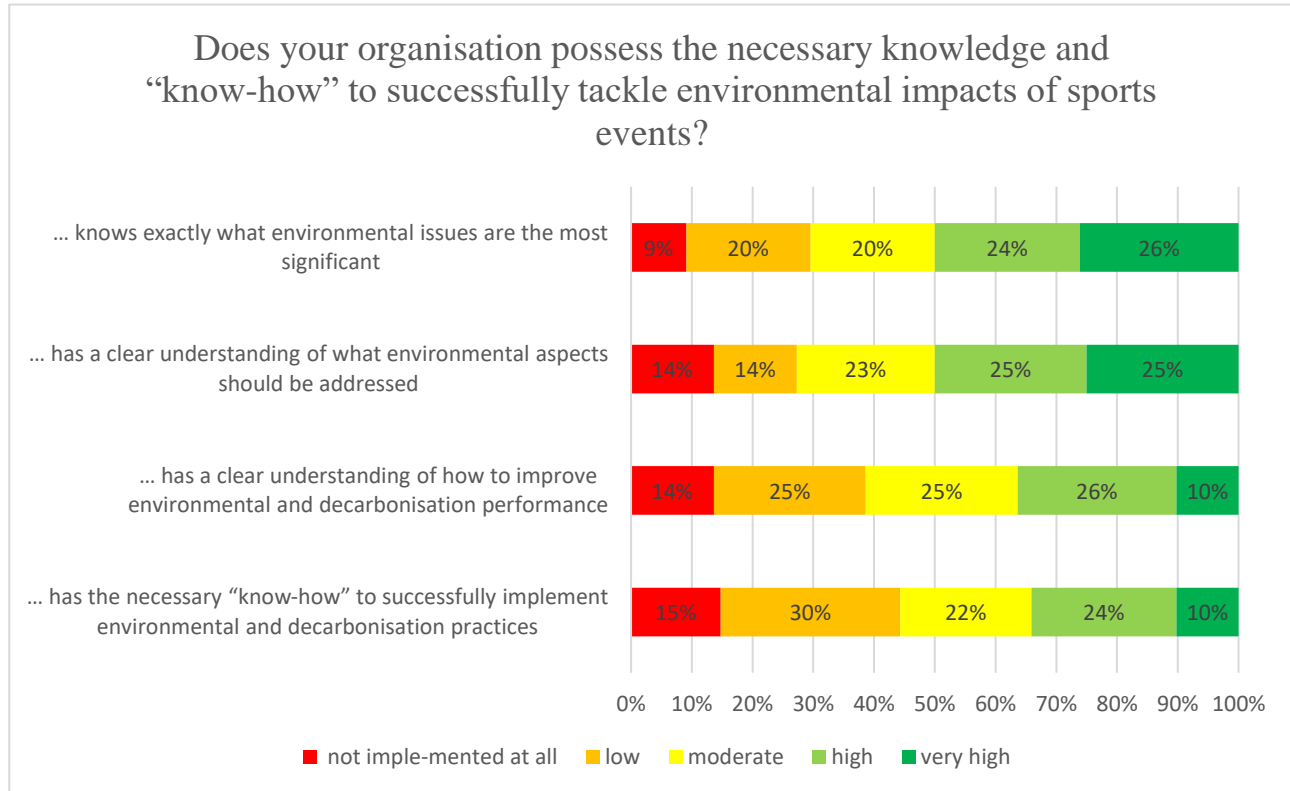


Figure 12 - Possession of the necessary knowledge and “know-how” to successfully tackle environmental impacts of sports events (n=88)

Results in Figure 13 show that just over half of the surveyed sports organisations declared to know exactly which environmental aspects are most significant in the organisation of sport events, and to have a clear understanding of what environmental aspects should be addressed (50%).

However, only a little more than one-third of respondents stated that they have a clear understanding of how to improve environmental and decarbonisation performance (36%) and that they have the necessary “know-how” to successfully implement environmental and decarbonisation practices (34%).

6.2 Implementation of activities for the environmental management of sports events

This question aimed at assessing whether and how frequently sports organisations implement activities aimed at acquiring knowledge for improving the environmental management of sporting events.

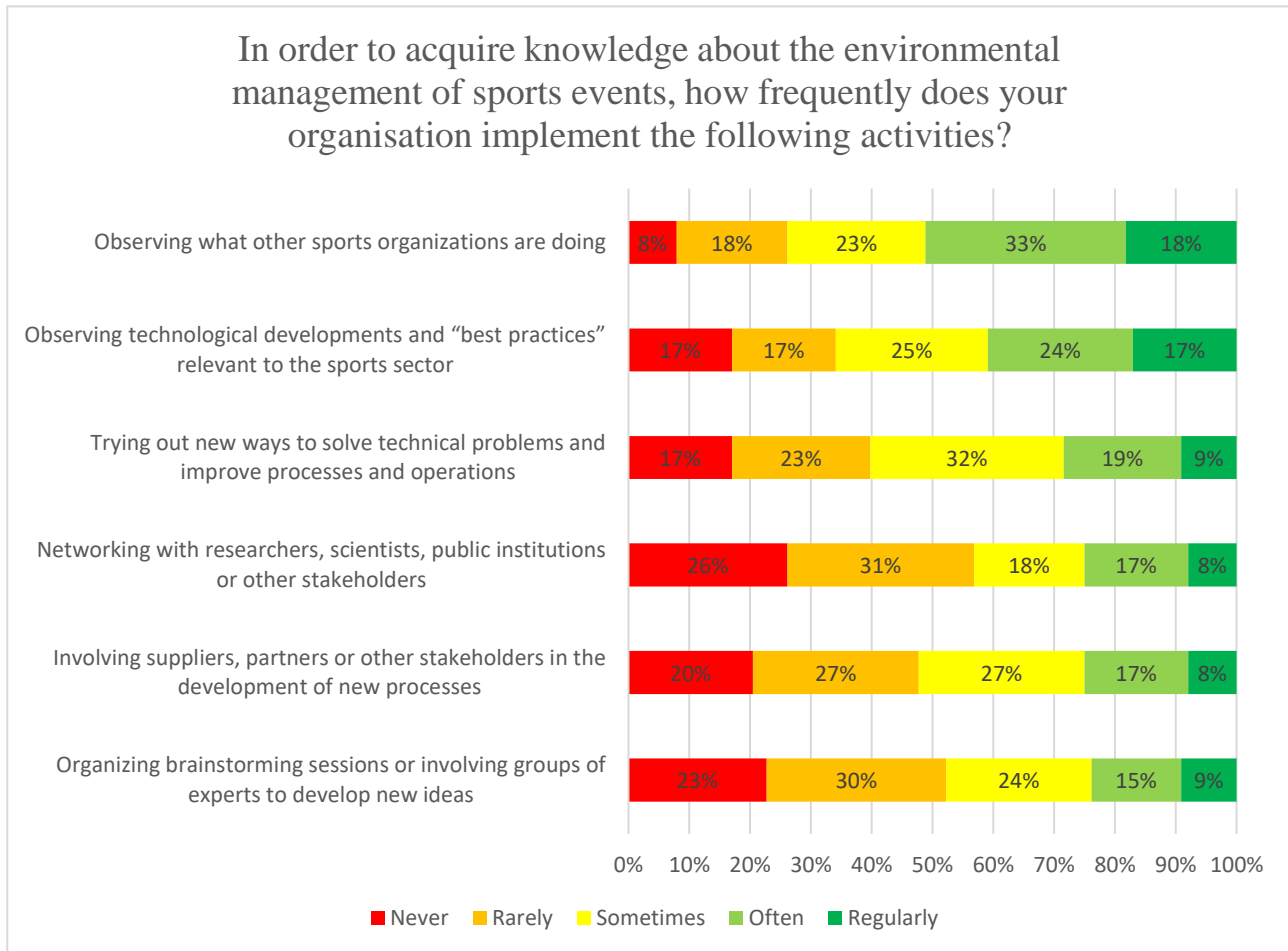


Figure 13 - Implementation of activities for the environmental management of sports events (n=88)

Results in Figure 14 highlight that 51% of the responding organisations observe what other sports organisations are doing for the environment, and 41% observe technological developments and relevant best practices in the sports sector. Less than 3 out of 10 respondents try new approaches to solve technical problems and improve processes and operations (28%). Twenty-five percent of respondents network with researchers, scientists, public institutions, or other stakeholders, and involve suppliers, partners, or other stakeholders in the development of new processes. A similar percentage reported organising brainstorming sessions or involving groups of experts to develop new ideas (24%).

6.3 Actions related to new opportunities for improving environmental aspects of sports events

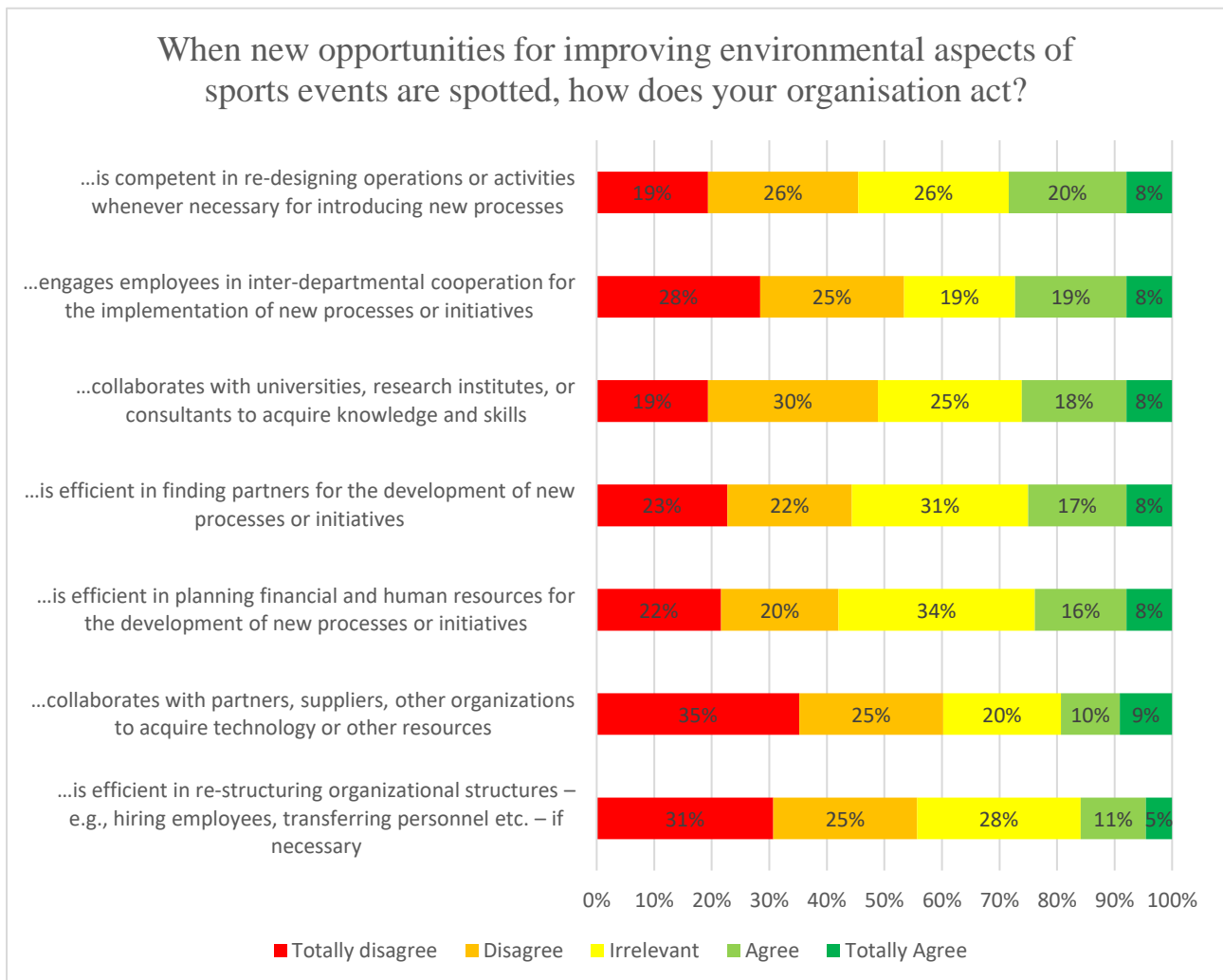


Figure 14 - Actions related to new opportunities for improving environmental aspects of sports events (n=88)

Faced with new opportunities to improve the environmental aspects of sport events (Figure 15), nearly 3 out of 10 responding sports organisations declare competence in redesigning operations or activities whenever necessary to introduce new processes (28%) and engaging employees in inter-departmental cooperation for the implementation of new processes or initiatives (27%).

About one in four organisations, on the other hand, collaborate with universities, research institutes, and consultants to acquire knowledge and skills (26%), declare to be efficient in finding partners for the development of new processes and initiatives (25%), and in planning financial and human resources for the development of new processes or initiatives.

Nineteen percent of respondents collaborate with partners, suppliers, and other organisations to acquire technologies or other resources, while 16% are efficient in restructuring organisational structures if necessary.

6.4 Effectiveness in implementing organisational changes to pursue environmental and decarbonisation improvement opportunities

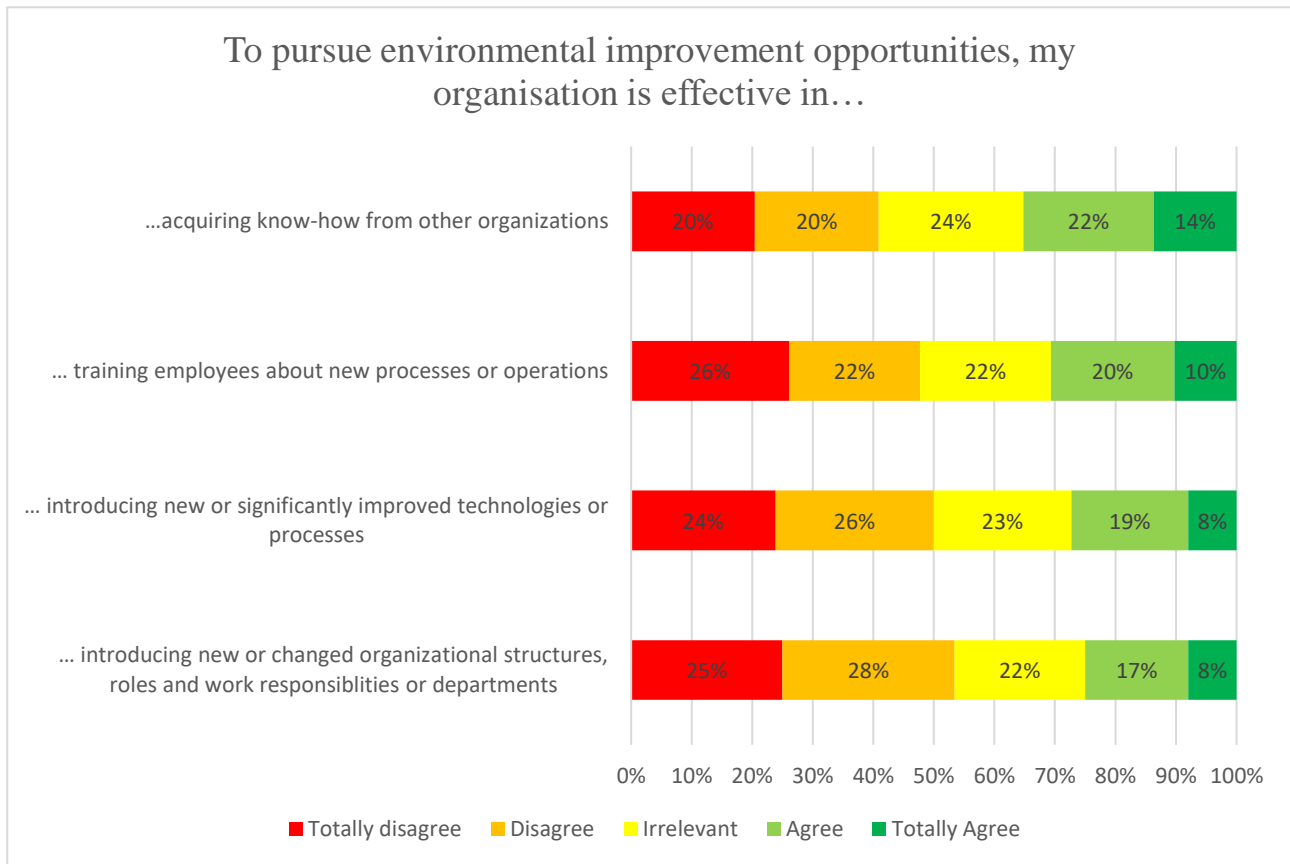


Figure 15 - Effectiveness in implementing organisational changes to pursue environmental and decarbonisation improvement opportunities (n=88)

This question assesses whether and how the sport organisation is effective in implementing organisational changes in order to pursue environmental and decarbonisation improvement opportunities. Results in Figure 16 show that 34% of the interviewed sports organisations acquire the “know-how” from other organisations, 30% trained employees about new processes or operations, and 27% and 25% respectively introduced new or significant technological improvements and new or modified organisational structures, roles, and work responsibilities within their departments.

7 Barriers and challenges

This section focuses on the main barriers and challenges encountered by sport organisations in implementing environmental practices during sporting events. It also aims at identifying the most important stakeholders that support sport organisations in tackling the environmental aspects of sports events.

7.1 Main challenges or barriers to the implementation of environmental practices in sporting events

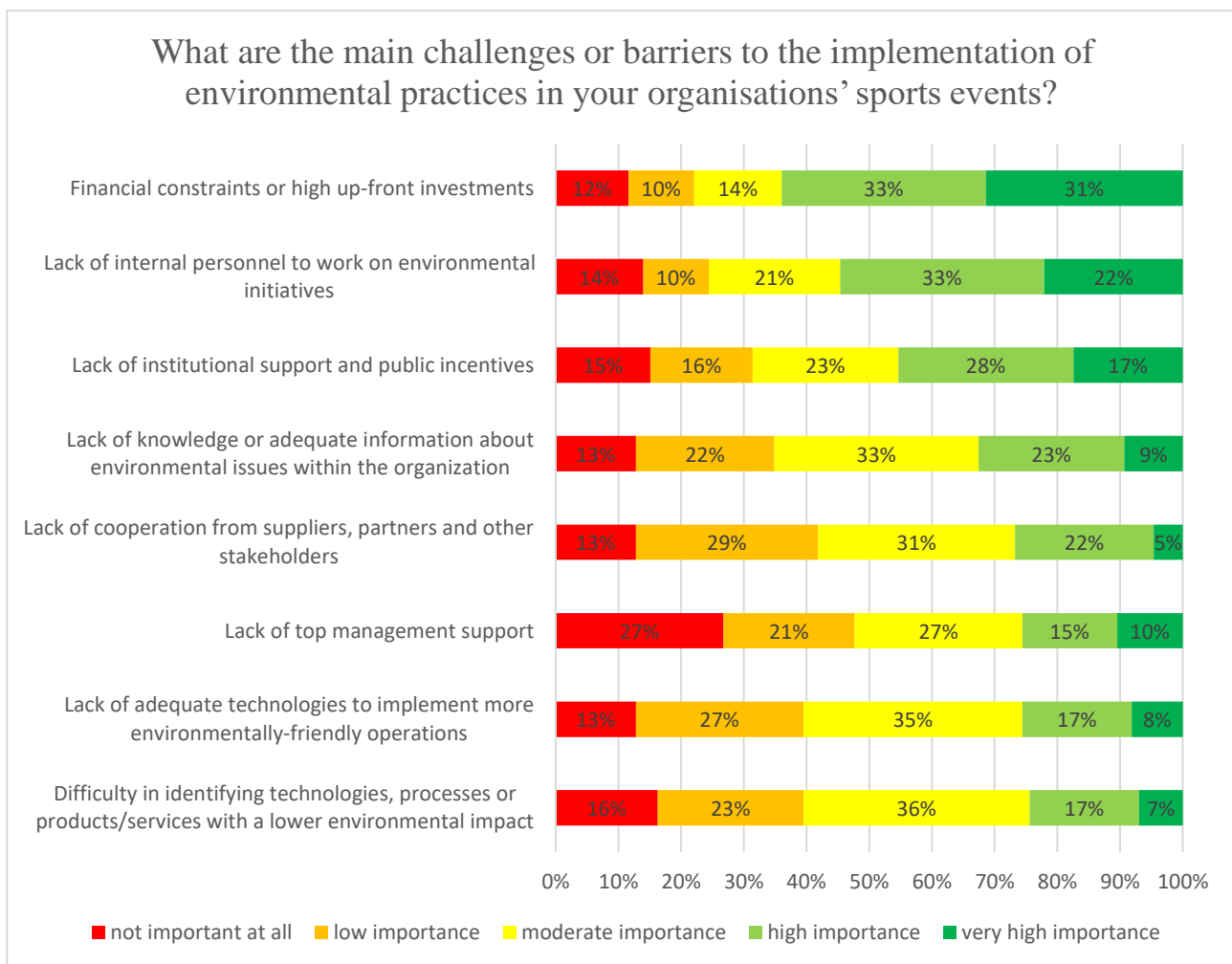


Figure 16 - Main challenges or barriers to the implementation of environmental practices in sporting events (n=86)

Results highlight that financial and human resources are the main challenges to the implementation of environmental practices (Figure 17): for instance, the majority of respondents (64%) identified financial constraints or high upfront investments as the main barrier, while 55% pointed out the absence of adequate in-house staff to work on environmental initiatives.

Nearly half of the sports organisations that took part in the survey (45%) lament the lack of institutional support and public incentives. The lack of internal expertise and cooperation from suppliers, partners, and other stakeholders is reiterated by 32% and 27% of the respondents, respectively.

One in four organisations expresses a lack of support from the top management (25%), insufficient technologies to implement more environmentally friendly operations (25%), and difficulty in identifying solutions with lower environmental impact (24%).

7.2 Most important stakeholders in supporting sports organisations in tackling environmental aspects of sports events

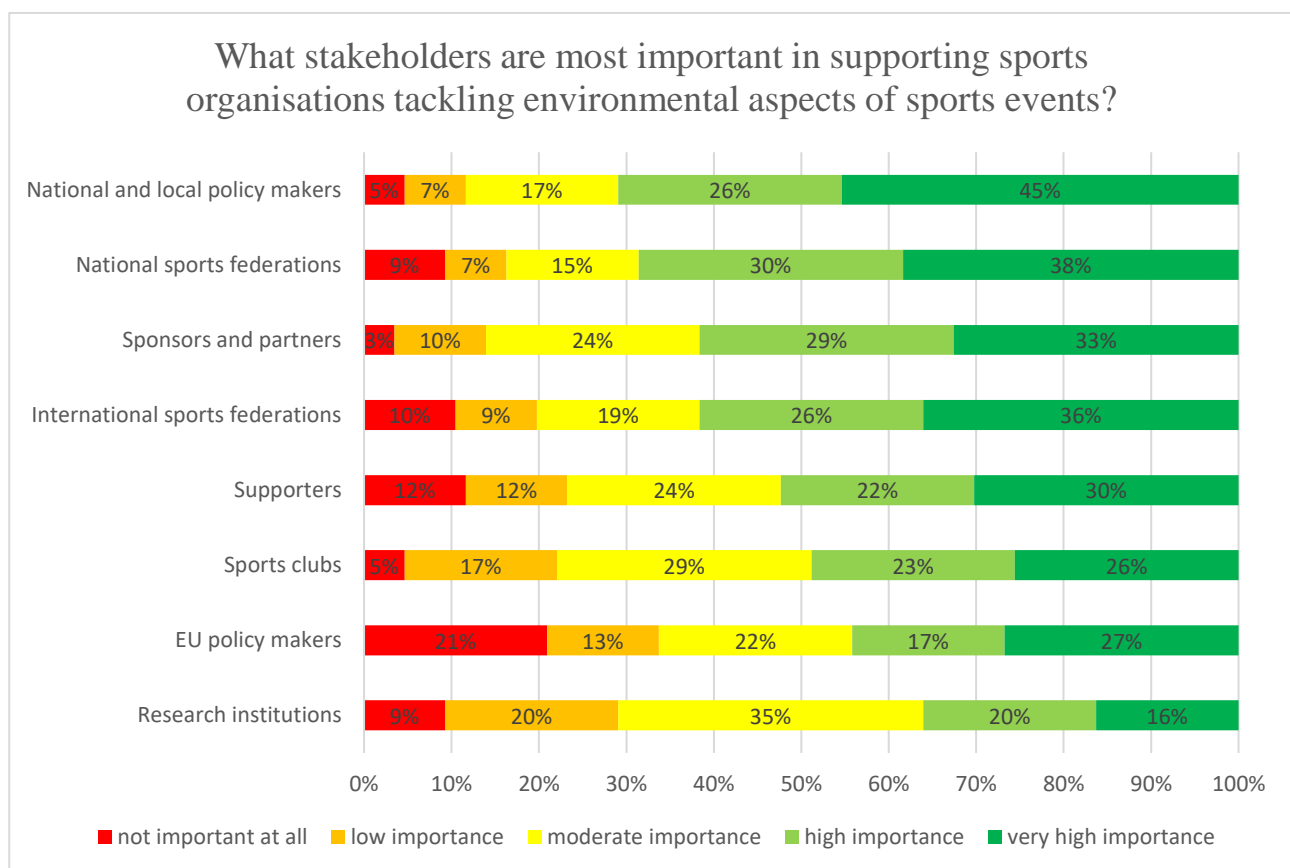


Figure 17 - Most important stakeholders in supporting sports organisations in tackling environmental aspects of sports events (n=86)

Among the most important stakeholders in supporting sports organisations in tackling environmental aspects of sports events, 71% of the respondents identify national and local policy makers, 68% recognize national sports federations, and 62% acknowledge sponsors, partners, and international sports federations.



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Fifty-two percent consider supporters a key figure, and 49% mention sports clubs as significant contributors. However, only 44% attribute a decisive role to EU policy makers, and 36% acknowledge the importance of collaborating with research institutions.

8 Roles and responsibilities

This section explores the roles and responsibilities related to the management and implementation of environmental aspects of sports events.

8.1 Roles and responsibilities in managing environmental aspects of sport events

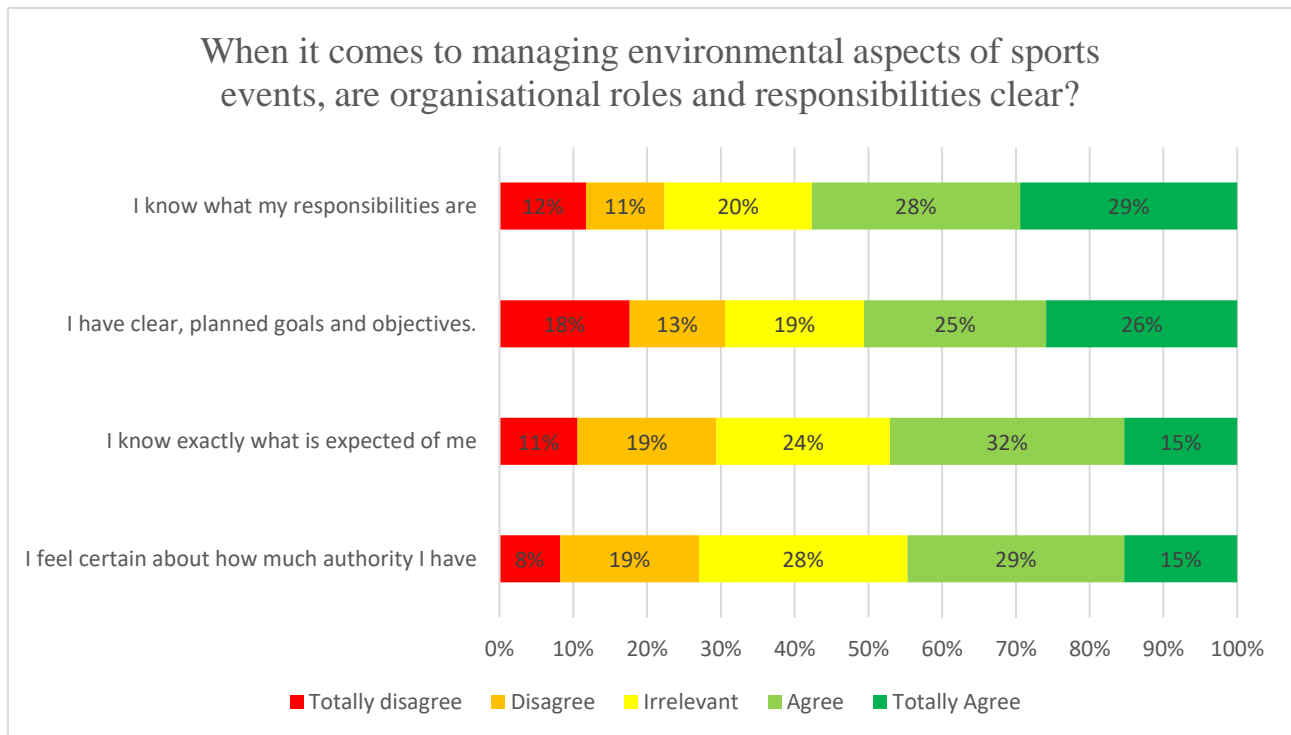


Figure 18 - Roles and responsibilities in managing environmental aspects of sport events (n=85)

Over half of respondents (Figure 19) declare to know their responsibilities in event management (57%) within their organisations. Only half of the respondents (51%) has clear and planned goals and objectives, and knows exactly what is expected from them (47%). In addition, 44% feel certain about how much authority they have.

8.2 Direct control on the implementation of environmental initiatives during sports events

Respondents were then asked if the implementation of environmental initiatives during sporting events is under their direct control (Figure 20).

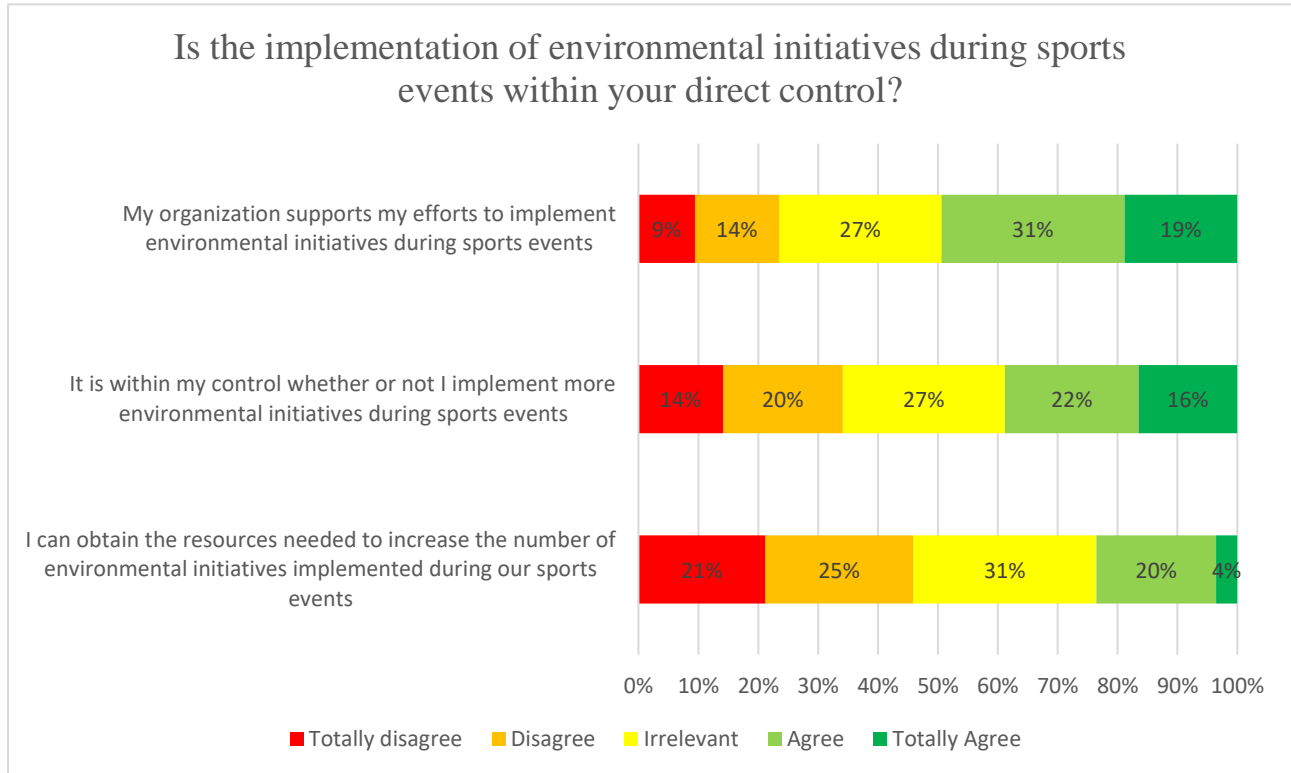


Figure 19 - Direct control on the implementation of environmental initiatives during sports events (n=85)

Half of the respondents (50%) stated that they receive support from their organisation in implementing environmental initiatives; 38% operate with full autonomy, and only 24% can obtain the necessary resources to increase the number of environmental initiatives implemented during sports events.

8.3 Acquisition of new skills and capabilities to improve the environmental management of sports events

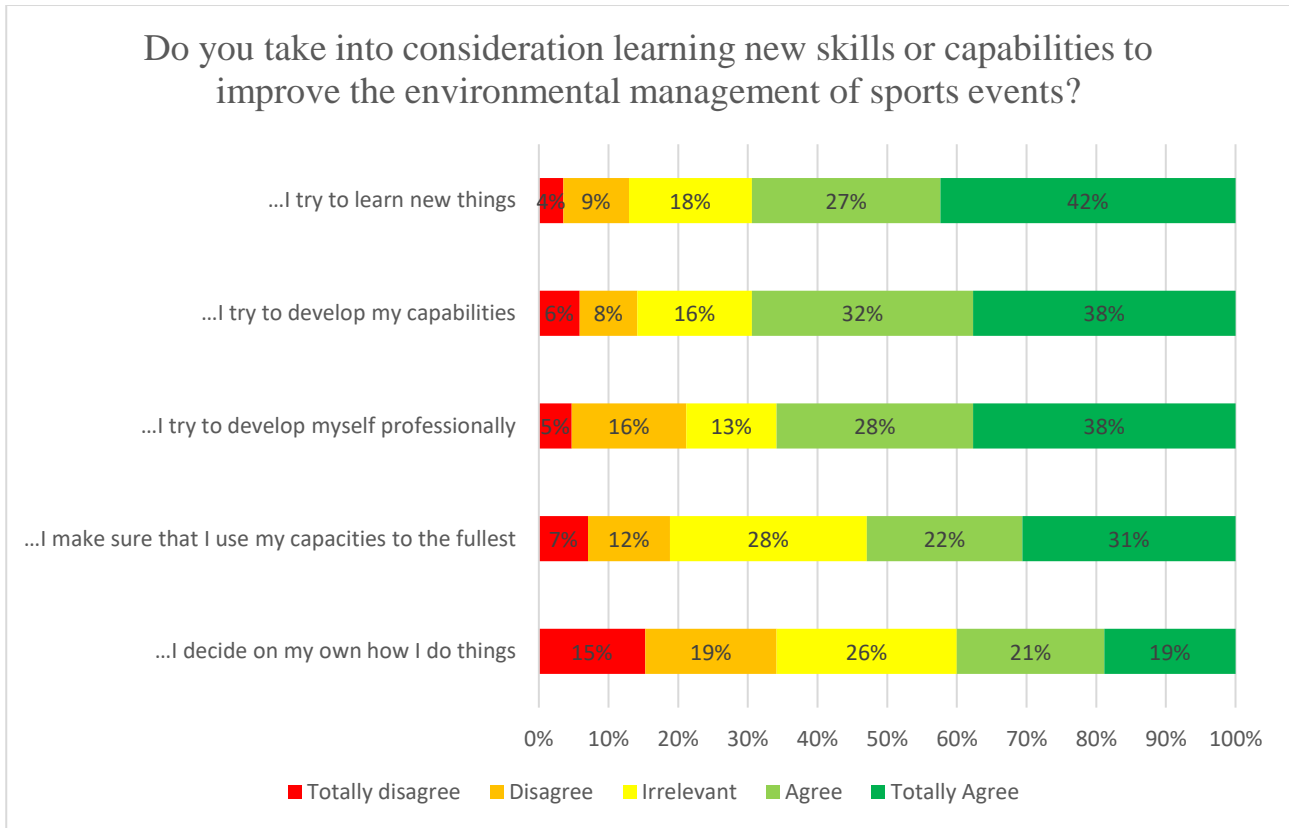


Figure 20 - Acquisition of new skills and capabilities to improve the environmental management of sports events (n=85)

In the context of improving the environmental management of sports events, 69% of respondents stated that they try to acquire new knowledge and develop their skills, and 70% aim to enhance themselves professionally. This demonstrates the willingness of sport managers to improve their environmental skills and capabilities and develop professionally for improving the environmental management of sporting events.

Fifty-three percent ensure they fully utilise their abilities, while 40% independently decide how to manage things.

9 Pro-environmental behaviour and environmental concern

This section focuses on the proactivity of sports organisations in implementing new environmental practices and the level of accountability and concern regarding the environmental impacts associated with sports events.

9.1 Proactivity in implementing new environmental practices

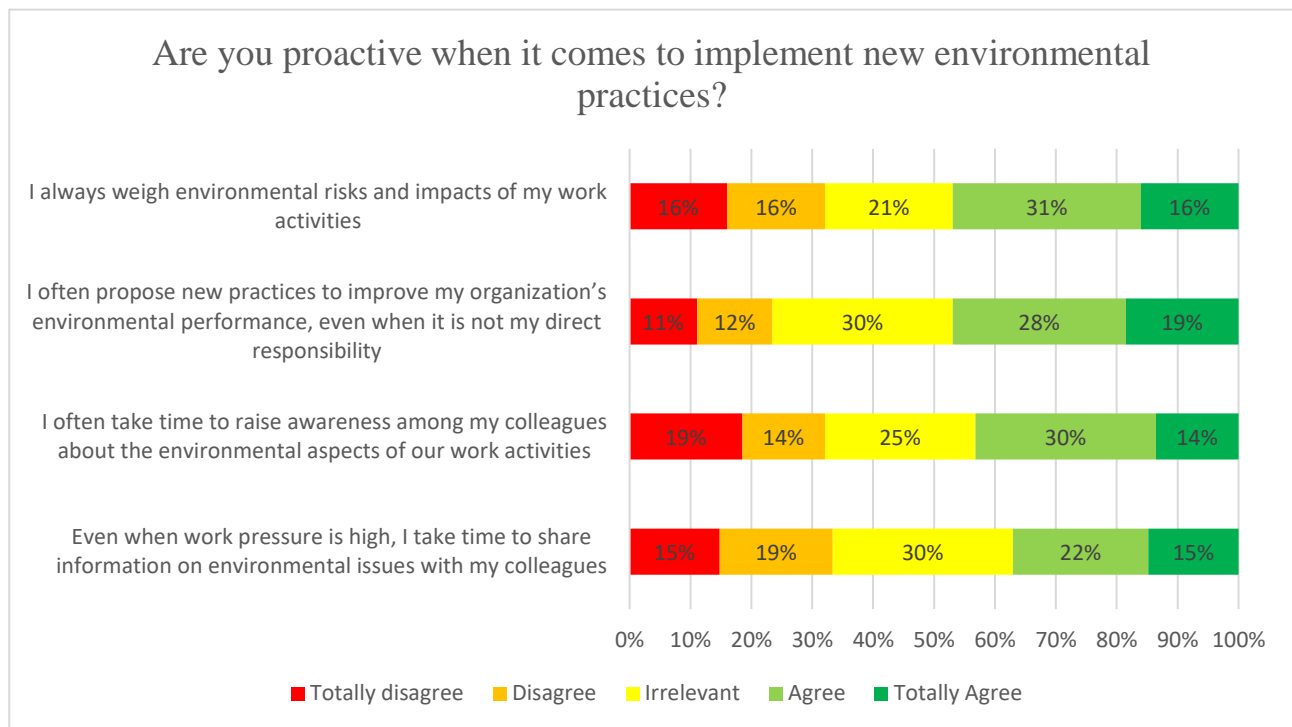


Figure 21 - Proactivity in implementing new environmental practices (n=81)

Regarding their proactivity in implementing new environmental practices, 47% of the interviewees stated that they always consider the risks and environmental impacts related to their activities. They also frequently propose new practices to improve the environmental performance of their organisation, even when it is not under their direct responsibility.

Forty-four percent often dedicate time to raise awareness among their colleagues about the environmental aspects relevant to their work activities. Additionally, 37% of respondents claim to do so even when work pressure is high.

9.2 Accountability of sports organisations and sports managers for the environmental and climate change impacts of sports events

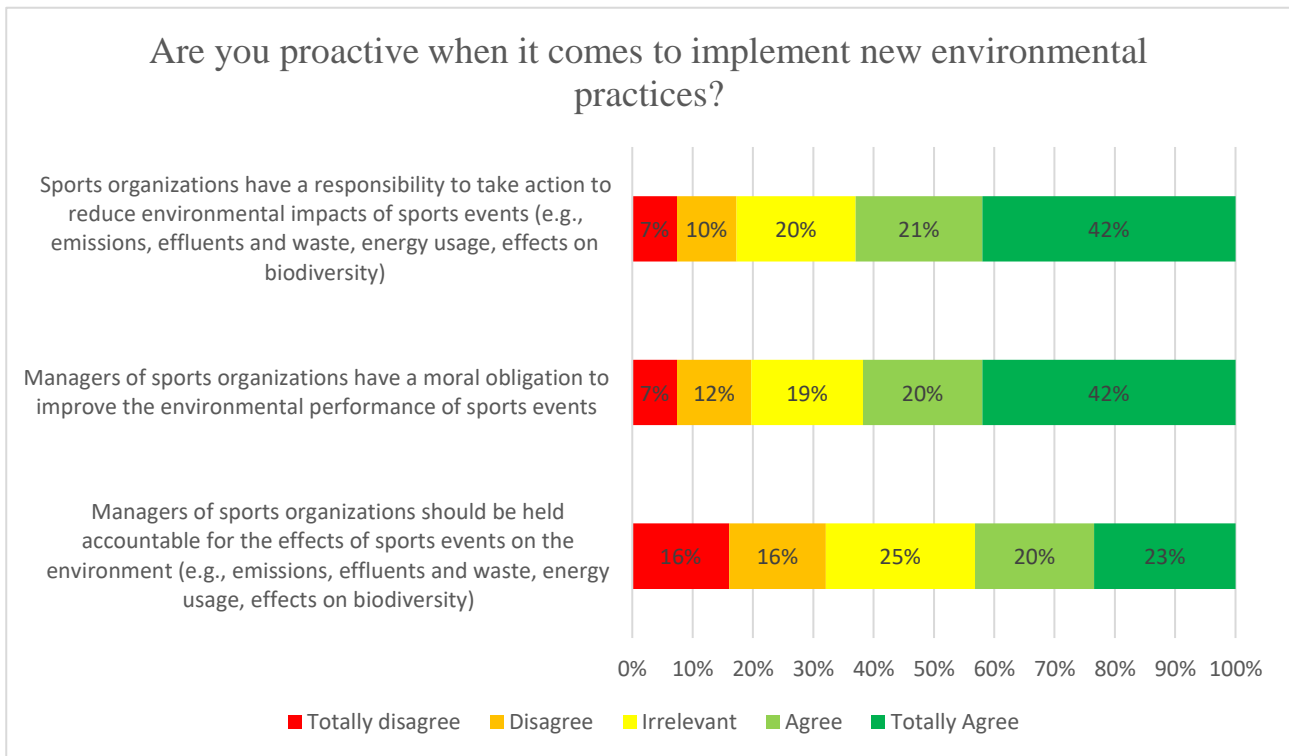


Figure 22 - Accountability of sports organisations and sports managers for the environmental and climate change impacts of sports events (n=81)

As shown in Figure 23, most of respondents (63%) feel that the sport organisation that they belong to is responsible for taking action to reduce the environmental impact of sports events (in terms, for example, of lowering emissions, energy use, waste management, impact on biodiversity). Additionally, 62% feel that sport managers have a moral obligation to improve the environmental performance of sports events. A lower percentage of respondents (43%) believe that managers of sports organisations should be accountable for the effects of sports events on the environment.

9.3 Concern about the environmental impacts of sport events

Respondents were asked to express their level of concern over different environmental impacts of sports events (Figure 24).

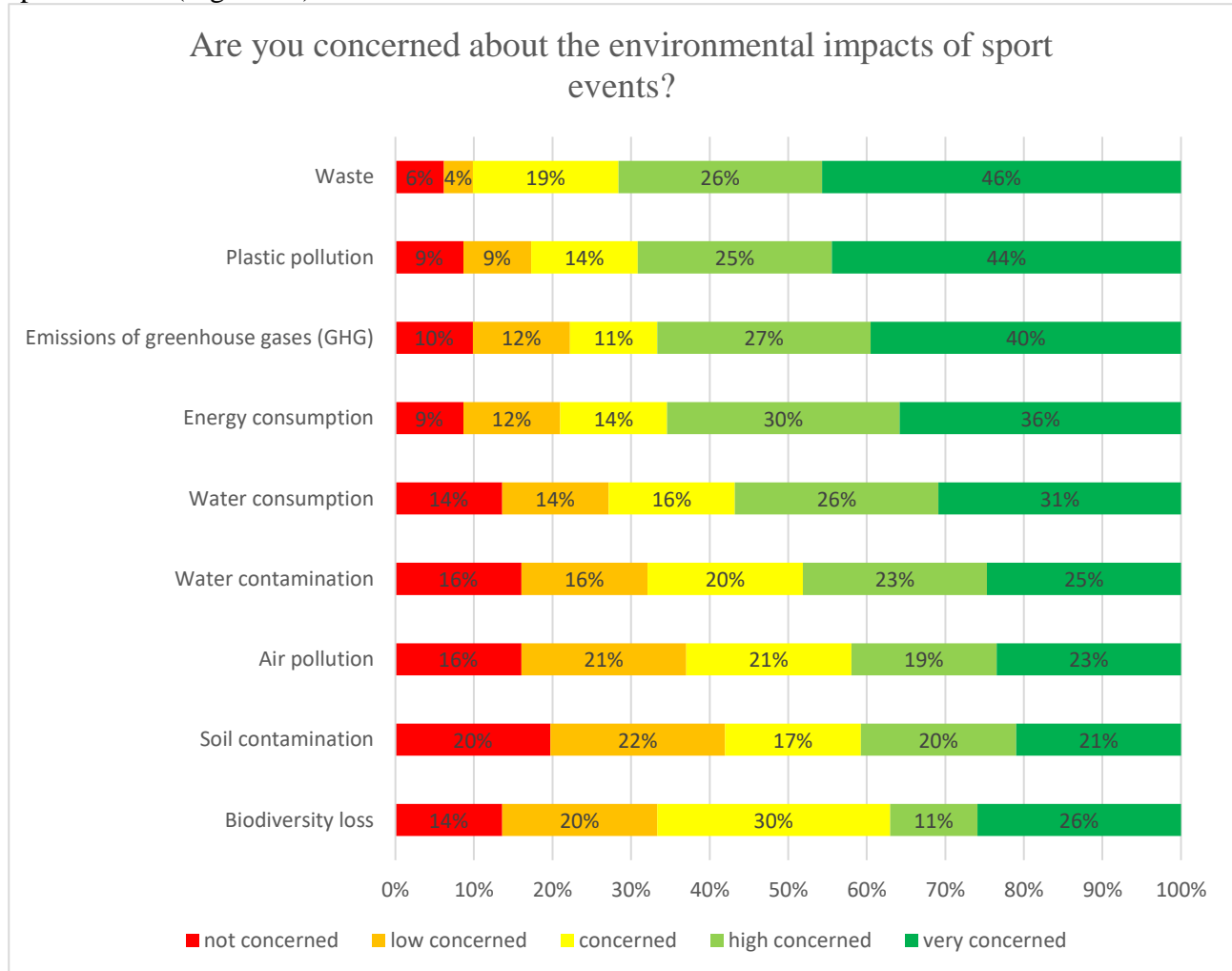


Figure 23 - Concern about the environmental impacts of sport events (n=81)

Waste generation (72%) and plastic pollution (69%) are perceived as the most important environmental impacts by respondents. This reflects the efforts made by sport organisations over the last 5 years, which have brought more significant improvements in terms of waste generation among various environmental aspects (see Chapter 4, paragraph 4.1)

A high percentage of respondents (67%) also expressed concern about greenhouse gas emissions, and 66% about energy consumption. With regard to water, 57% of the interviewees expressed concern about water consumption, and 48% are worried about water contamination.

Lower concerned is posed on air pollution (42%), soil contamination (41%), and biodiversity loss (37%).

10. Conclusions

The survey was administered through international federations and reached a total of 96 organisations, allowing for general conclusions regarding the state of environmental awareness and management in sports and sporting events. Specifically, Athletics, Biathlon, and Floorball are three sports with diverse characteristics played in different infrastructures and situations, making them a good proxy for the entire sports industry. In terms of European relevance, Sweden, Germany, and Italy exhibited the highest number of responses. Regarding response types, the results primarily pertain to clubs and national federations.

The aggregated survey results indicate that the sports sector is aware of the importance of environmental issues and climate change and is beginning to implement adequate environmental management practices. In terms of operational best practices, waste management, energy consumption, and water usage appear to receive the most attention. In recent years, organisations report improvements in waste management and energy consumption, but biodiversity and noise pollution still receive insufficient attention. Governance best practices seem to lag behind operational ones, following a general trend that can be seen across industries. Nevertheless, many sports organisations seem to have already appointed a sustainability officer with clear understanding of their roles, which can be considered as the first step to include good environmental governance and management within organisations. The supply chain theme seems underdiscussed in sport, although some organisations are starting to ask suppliers for environmental criteria and to develop supplier selections based on sustainability requirements.

Only 17% of organisations measure their environmental footprint, and only 6% consider indirect environmental impacts (scope 3), limiting awareness of their negative contributions to climate change. Results suggest that the most significant emission source is linked to the mobility of sports events, which is confirmed also by empirical studies present in literature. However, aspects such as accommodation, materials, and equipment falling under scope 3 may not be well-calculated as they are within scope 3. Also, expanding measurements from carbon footprints to environmental footprints could provide a better perspective on the environmental impacts of a sports event.

In terms of benefits, environmental event management seems to be primarily associated with the perceived enhancement of reputation and the ability to establish collaborations and partnerships.

However, despite the desire to improve environmental management, few organisations possess the organisational structures and internal competencies to manage all environmental aspects. In this sense, organisations seem to learn by observing the best practices of others. When organisations are inclined to implement sustainable solutions, the major barriers they face are financial constraints, a lack of dedicated personnel, and a lack of public incentives. When possible, implementation relies mainly on local and national stakeholders. Collaboration with universities, research institutes, consultants, and knowledge exchanges with other organisations should be further explored.

Although the number of respondents may not have been so relevant, this survey paints the state of the art on environmental management of sport organisations and events. On the one hand, it unequivocally revealed high environmental awareness within the realm of sports. On the other hand, it underscored the need as well as the potential for enhancements in environmental management in sport organisation and events.