



PlayGreen

ENVIRONMENTAL VOLUNTEERING IN SPORTS AS A TOOL TO TACKLE CLIMATE CHANGE

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ABSTRACT

This research has two main goals and as such two research questions based on: **(1)** whether climate change and environmental protection can be a driver to engage young people into playing sports and **(2)** whether grassroots 'green' events help tackle climate change and protect the environment. To do so, it develops a method to 'green' sports events with volunteers, which is tested by four UEFA Federations. To answer the two research questions, surveys and semi-structured interviews are developed to determine how environmentalism can be used as a tool to engage young people in sports events and how greening grassroots sports events can help to tackle climate change. The research suggests that climate change can be a driver to engage young people (both females and males) into doing sports. It also suggests that grassroots events with a sustainability focus contribute towards an increase of knowledge and awareness among implementers, players and staff members of the involved sports clubs.

Keywords:

volunteering, sports, environmentalism, climate change, environmental protection, sustainability, ecological footprint





LITERATURE REVIEW



Sustainability can be defined as a way to live that ensures the continued survival of future generations and other living species and natural resources (Brown et al., 1987). Having that definition in mind, a sport could be considered sustainable if it meets the needs of today's sporting community while it meets the needs of the future one and the integrity of the natural and social environment that it depends on (Lucas et al., 2017). To be able to measure the environmental impact of sports, scientists have used diverse methods, such as calculating the carbon footprint (Dolf & Teehan, 2015) or applying environmental input-output modelling (Collins et al., 2009) or life-cycle analysis (Walker, 2007) to calculate the ecological footprint of sport events (Collins & Flynn, 2008). While these could all be potential ways to measure the impact of sports events, ecological footprint and carbon footprint measurement and evaluations both specifically offer the ability to compare the data on individual consumption. In addition, the carbon footprint may be viewed as part of the overall ecological footprint, hence a sole measurement likely portrays a limited picture of the full environmental consequences.

In this context, Collins & Flynn (2008, p. 761) highlight that the “[ecological] footprint figure for visitors [can be] five times greater than that for visitors at their home location over the same time period”. Based on their study, the ecological footprint mainly comes from transport, food, drinks and infrastructure (understood as the venue lifespan). It is important to note that while there is substantial research on big sports events (Collins et al., 2009), little or no literature could be found on the environmental impact of grassroots sports events. In addition, according to Shipway & Jones (2007), when it comes to the sustainability of sports events, “priority should be placed at supporting grassroots sports”. Although the author is talking about sustainability in the broader sense (including economic, social and environmental sustainability), he argues that the greatest impact and legacy regarding the environment could be obtained at the grassroots level.

This definition however falls short of an explanation of the term ‘grassroots’. Grassroots events can be defined as “sports that are not mainstream and do not appeal to a mass audience” (Miloch & Lambrecht, 2006, p. 144). These events are usually low on budget and run by volunteers. The volunteers are most likely already engaged in sports activities but, while they might have different interests besides sports (including environmental protection and climate change), their main drive is not environmental protection, rather their desire to help their sport club to function, maintain affiliations, for the love of sport, for personal and professional growth or to help their friends or relatives to take part in sport (Koutrou & Downward, 2016; Hallmann, & Harms, 2012). According to Millette & Gagné (2008, p.12), volunteer's engagement depends on five different attributes:



“(1) skill variety, the degree to which a job requires a variety of activities in carrying out the work; (2) task identity, the degree to which a job requires completion of a whole and identifiable piece of work; (3) task significance, the degree to which the job has a substantial impact on the lives of other people; (4) autonomy, the degree to which the job provides substantial freedom, independence, and discretion; and (5) feedback from the job, the degree to which carrying out the work activities provides direct and clear information about performance effectiveness.”

As such, it is important to note that if a sport organisation is interested in involving their volunteers into environmental protection within and through sports, the volunteering activity should allow volunteers to develop autonomy and growth through tasks that are both significant and identifiable and allow the use of a plethora of volunteering skills. Moreover, individuals should be offered regular feedback on their performance. As such, since sport and sport events significantly contribute to climate change, involving young volunteers into lowering the carbon footprint of a sports organisations could be a significant identifiable cause, whereas volunteers could use their initiative, develop skills and grow. This may be a significant driver for their long-term engagement in sport and volunteering.

On the other hand, playing sport is not necessarily on the priorities of individuals who volunteer to support environmental causes. Interestingly, when it comes to environmental activism, Caiazza & Barrett (2003) suggest that female volunteers may show a higher level of engagement than males. However, the situation is different in sport, whereas more males than female volunteer, which reflects general trends in sport participation. For example, the Eurobarometer (2018, p.3) suggests that “overall, in the EU, men exercise, play a sport or engage in other physical activity more than women. This disparity is particularly marked in the 15-24 age group, with young men tending to exercise or play sport on a regular basis considerably more than young women”. As such, contributing to climate action through sports may be an opportunity to bridge the gap between the two activities and bring more female volunteers into sport. To answer the above questions and fill in the gap in the literature, a research study was conducted to explore whether and how a translational collaborative initiative could enhance opportunities for individuals to engage in sport and volunteering by focusing on climate action in sport activities. As such, we present a research of the *Erasmus+ Sport*-funded, pan-European, PlayGreen consortium and its organisation members’ responses to meet the study aims. PlayGreen formed to promote environmental sustainability through sport volunteering and comprised six sport and environmental organisations

across Europe. Out of the six organisations, four were Football Federations in their respective countries. Combining surveys of the volunteers from each of the Football Federations and interviews with sport, volunteering and environmental stakeholders, this study articulates new ideas on how to engage sport volunteering communities through environmental and sustainability issues.

While volunteering for social causes such as social inclusion of migrants and people with different abilities have been widely studied (Bailey, 2009; McConkey et al., 2013), the relationship between environmental protection and sports, both as a driver to engage young people and their impact at the grassroots level, have arguably received less attention in the academic literature. Nonetheless, Harvey et al. (2009, p. 383) argue that environmental protection forms part of a movement that supports “new forms of globalization [that urge] values of democracy, justice, environmental protection and human rights should be prioritized from purely economic concerns”. In that respect, it could be argued that the grassroots level of sport gives priority to the promotion of values, rather than economic concerns. In addition, according to Harvey & Houle (1994), cited in Harvey et al. (2009), social movements in sport lead to changes thanks to the networks they are in. But why does that matter?

In recent years, climate change and environmental impact are one of the top priorities of global governance systems (Paris Agreement, 2015). Since sports events produce a significant environmental impact and contribute to climate change (Wicker, 2019), the influence of the grassroots sport and social movements offers sports organizers and people interested in environmental protection a base of knowledge to influence the sports sector. Trendafilova et al. (2014, p.10) suggest that the “concern for sustainable management of sport triggered two types of environmental initiatives: **(1)** to reduce the ecological footprint of sports and **(2)** to use sports as a mean to raise environmental awareness”. Trendafilova et al. (2014) further argue that there are some organisations and movements working on understanding how sports events can foster awareness on environmental protection (i.e. UNFCCC¹, Green Sports Alliance², Forest Green Rovers³, LIFE TACKLE⁴). This issue transcends both at the professional and grassroots level, since organisations such as the Green Sports Alliance work at both levels of sport. It is precisely at the grassroots level where, according to Seyfang & Longhurst (2013, p. 881), “recent research on ‘grassroots innovations’ argues that civil society is a promising but [an] under-researched site of innovation for sustainability”. While their study is not in the field of sports, their argument, which builds on the multi-level perspective on sustainability transitions (Geels, 2011), states that changes in the sustainability field come from the grassroots level and influence other (typically ‘higher’) levels of the institutions and the governance landscapes they are in touch with. If we transfer this argument to the field of sports, one can argue that grassroots sports events can influence the sports field they operate in.

As previously mentioned, grassroots events are mostly run by volunteers and the literature reviewed does not provide evidence that environmental protection can, in fact, be a way to engage environmental volunteers in ‘greening’ sports events. As such, the current article will seek to contribute to this field of study by establishing two research questions (RQ): **(1)** are climate change and environmental protection drivers to engage young people into sports through volunteering? **(2)** can grassroots ‘green’ events help tackle climate change and protect the environment? The following section explains the research design used to answer the two RQs.

1 Unfccc.int. (2019). *Sports for Climate Action | UNFCCC*. [online] Available at: <https://unfccc.int/climate-action/sectoral-engagement/sports-for-climate-action> [Accessed 13 Aug. 2019].

2 Green Sports Alliance. (2019). *Green Sports Alliance*. [online] Available at: <https://greensportsalliance.org> [Accessed 13 Aug. 2019].

3 Fgr.co.uk. (2019). *Welcome to the greenest football club in the world*. [online] Available at: <https://www.fgr.co.uk/> [Accessed 13 Aug. 2019].

4 Life Tackle Project: <https://lifetackle.eu/info>



RESEARCH DESIGN

This research uses mixed methods through questionnaires and semi-structured interviews to determine how to engage environmental volunteers into sports through volunteering. This section is divided into three parts, the first part explains the research questions, the second the case studies and the third one explains the methods used in order to answer them.

3.1 Research Questions

RESEARCH QUESTION 1:

Is climate change and environmental protection a driver to engage young people into sports?

RESEARCH QUESTION 2:

Can grassroots 'green' events help tackle climate change and protect the environment?

3.2 Case study

The research includes data from 4 pilot countries that organised 4 different environmentally sustainable sport events affiliated and endorsed by UEFA: In each country, the respective Football Association was responsible for organising the events with the assistance of newly recruited volunteers who were trained and mentored by each FA. The FAs that took part in the study were: **(1)** FA Malta, **(2)** FA Estonia, **(3)** FA Lithuania and **(4)** Flemish FA (Voetbal Vlaanderen). Due to differences in the context, particularly as relates to the organisation, governance, country and facilities, the nature of the events and their ecological impact was expected to be different. However, all four pilot projects are based on an Erasmus+ Sport co-funded project called PlayGreen, which aimed to establish a specific method to 'green' sport events with a team of environmental volunteers. The project developed specific tools and guidance to the Football Associations to enable them to mentor and train their volunteers in designing and delivering their 'green sport event'. Further, the project team created a green tool to be used by the volunteers at their events to measure their carbon footprint and a communication campaign to **(a)** engage fellow young people interested in climate and environmental matters and **(b)** communicate about best practices applied to create sustainable sports events.

3.3 Methods

In order to answer the research questions, a mixed method approach that involved surveys and semi-structured interviews was employed. In total four surveys were designed to collect qualitative and quantitative data on: **(1)** the drivers of young people to engage as volunteers on sports events and **(2)** whether they would continue their engagement with sport and volunteering following the project. The surveys were targeted to two groups: **(a)** the Green Team (volunteers that created the sporting event) and **(b)** Green Participant Volunteers (volunteers who took part in the competitions that were designed) and staff members (participants at the event and staff members of the organisation). In particular, two surveys – one for each target group – were designed to gather qualitative data at the beginning of the project as baseline information. Then a third survey was created to evaluate the change of behaviour of participants during the project implementation.

Moreover, semi-structured expert interviews were conducted with professionals and volunteers active in the fields of sports, volunteering and the environment. They were used to gather qualitative information on how the incorporation of environmental goals in sports events can be used to raise awareness about environmental sustainability, tackle climate change and explore whether and how environmental concerns could be a driver to engage young people into sports through volunteering.

3.4 Surveys

A total of three surveys were created online through google forms: **(1)** a qualitative survey to gather insight information about the Green Teams; **(2)** a qualitative survey to gather information about the Staff members and the Green Participant Volunteers (players at the PlayGreen sport events), staff members and football fans; **(3)** a final quantitative survey created to analyse information reported by PlayGreen members during the project implementation. This quantitative survey was given two moments in time, before the tournament or sport event and after. The purpose was to compare answers. The link to the surveys was distributed by the respective Football Federations to relevant participants either via email or other communication platforms including WhatsApp. To assure confidentiality and eliminate response bias, the questionnaire was anonymized.

The answers to surveys **(1)** and **(2)** allowed to have a baseline questionnaire focused on exploring the demographic characteristics, motivations and expectations of the Green Team volunteers **(1)** and Green Participant Volunteers, Staff and fans **(2)**. The baseline questionnaire also analysed the environmental habits of respondents, as well as their knowledge on climate change and the impact sports have on it. Figure 1 explains visually the procedure just described.

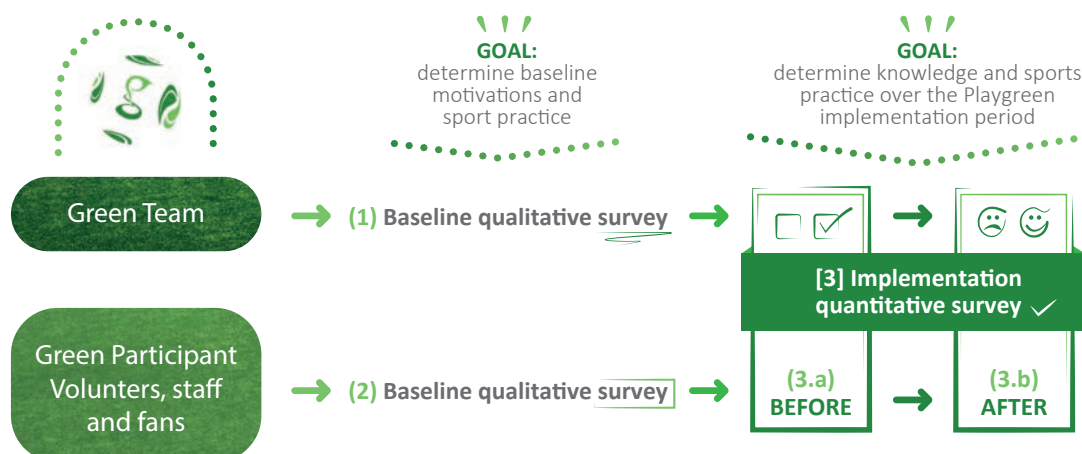


Figure 1:
Visual explanation of surveys conducted to the two project target audiences: Green Team and Green Participant Volunteers, staff and fans.

Qualitative content analysis was used to analyse the qualitative questions, using Excel to code the answers into themes. In order to mitigate possible inter-person biases in the interpretation of the coding, the study used the same researcher to code. One answer could have more than one code.

The survey **(3)**, called ‘implementation quantitative survey’, was distributed among the volunteers during the implementation phase and focused on asking their level of climate-related knowledge as well as the sports engagement. The implementation survey was done two times, once, before the sport tournament or events were celebrated **(3.a)** and once after the sport event **(3.b)**.

3.5 Semi-structured interviews

The semi-structured interviews were conducted with 10 experts in the fields of volunteering, sports, youth and the environment. Snowball sampling was done through the PlayGreen project coordinator and project partner’s contacts based on the criteria of represent diversity in terms of gender, background (see figures 2 and 3) and region which they represent. The semi structured interview questions can be found in Annex 3 along with access to the transcriptions. Interviewees from cultural and sporting backgrounds were interviewed in order to include diversity in perspectives. The interviewee asked the interviewer if she/he wanted to be anonymous. The selected questions were created by the two technical partners in the PlayGreen consortium and the interviews were carried out by the researchers at one of the technical organisations and the four pilot countries. The interviewees were selected based on the relevance of their experience

and background to the study aims. Desk-research was conducted to identify respondents who met the criteria online and through the consortium database.

Table 1 below presents the characteristics of the experts interviewed in terms of gender, age, region, field and organisation of their activity. As can be seen, the criteria described above were satisfied, providing PlayGreen with useful insights to answer the research questions.

Name	Gender	Age	Region	Field	Organisation
Giorgio Bargordo	M	43	Italy	Rowing	WWF Italy
Paul Hunt	M	50	Switzerland	General	International Platform of Sport and Development
Meritxell Martorell	F	45	Spain	Trial running	Agrupació excursionista Talaia / Club esportiu EPSEVG
Claire Azzopardi	F	21	Malta	Athletics	Pembroke Athleta / Malta Amateur Athletics Association
Monika Zažecykė-Kšivickė	F	29	Lithuania	Athletics	Be1
Katrin Talvak	F	42	Estonia	Ice hockey	Eesti Hoki
Triinu Salmu	F	31	Estonia	Other (youth)	Association for Work with Children and Youth of the Estonian Evangelical Lutheran Church
Monica Rand	F	40	Estonia	Football	FC Flora Football Club
Camilla Appelgren	F	36	Morocco	Other (environment)	Independent / Former Green Party
Marc Verneirt	M	49	Flanders	Golf	Golf Flanders

Table 1:

Table summing up the demographics (gender, age and region) and background (field and organisation) of the experts interviewed



Three of the interviewees were in the ages between 20 and 32 years old (considered young) and the rest were either between 33 and 45 (5 interviewees) or between 46 and 50 (2 interviewees). Hereunder, figures 2 and 3 collect the interviewees' descriptive statistics for gender and field of sport.

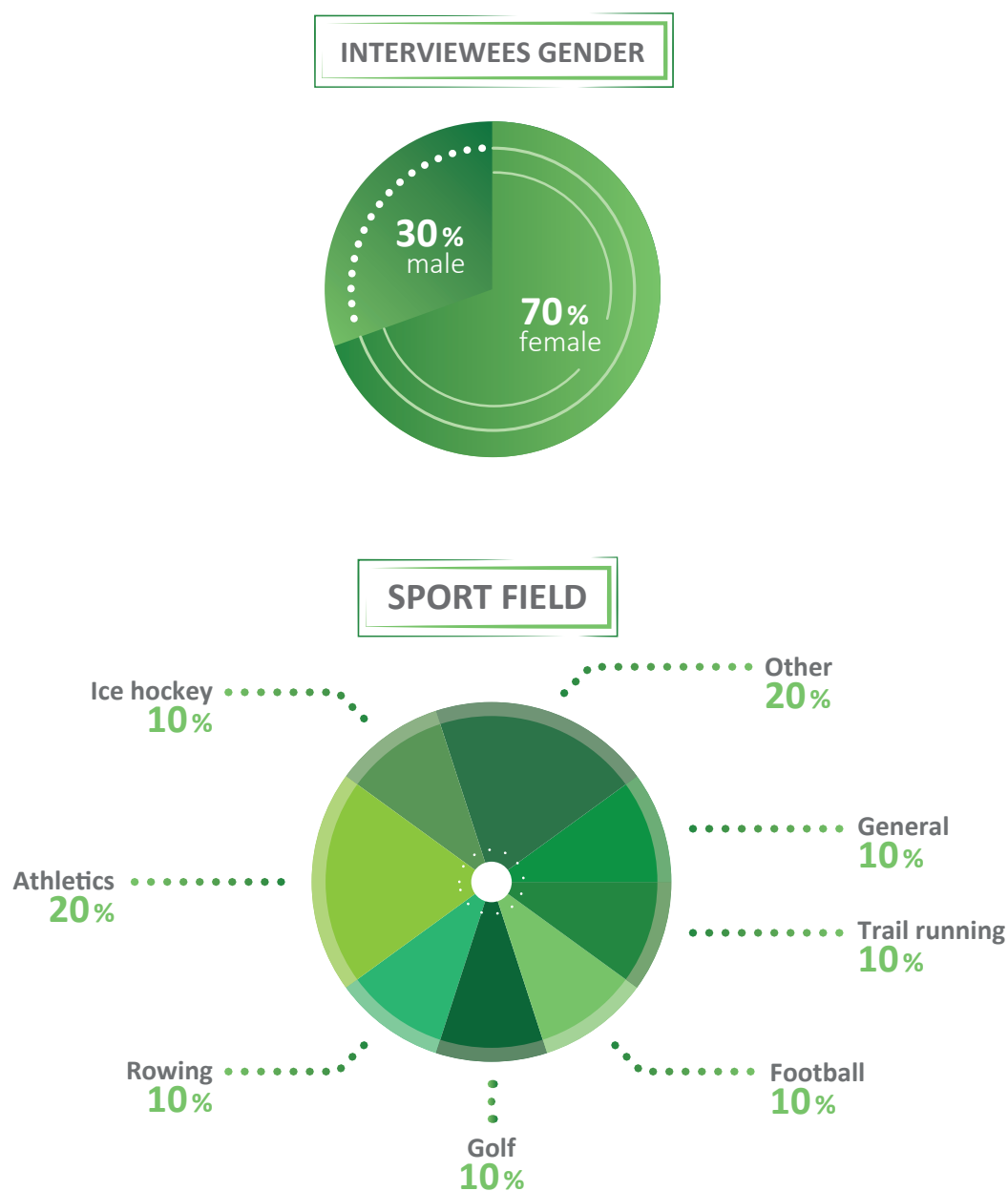


Figure 2 and 3: Descriptive statistics for interviewees' gender and sport field. General refers to an interviewee who worked in the field of sports and development and others are an environmental and youth specialists.





RESULTS AND ANALYSIS

4.1 Green Team

The PlayGreen participants were approached in two points in time: when they joined PlayGreen and after carrying out the PlayGreen event or tournament. This was in different points in time for different Football Federations during 2019 and 2020. The total number of responses was 79 between the two questionnaires. On the baseline survey, 59 respondents answered the survey, of which were 40% females and 60% males. The average age was 26 years. 86% of respondents practiced sport at some level. 14% of respondents were already volunteering in another organisation and from those 38% were volunteering in the environmental field. The others were volunteering in the social field (33%), in sports (17%) and in various different fields (13%).

From the question *what do you expect from being a green volunteer in sports?*, the motivations behind these expectations could be organised into 5 thematic areas, being: **(1)** altruistic – the motivations came from the wish to create a difference and help the environment; **(2)** egoistic – the motivations came from the wish to take something out of the contribution to PlayGreen, ranging from new professional opportunities to broaden personal horizons or expecting that the process is enjoyable; **(3)** Knowledge and skills – determining that the motivation is for the individual to acquire new knowledge and skills. This could either be for an altruistic matter or an egoistic one; **(4)** community – referring to the motivation to be with people, specialize and create a sense of community and finally **(5)** no expectations / don't know – volunteers who were not sure about what to expect. Figure 4 resumes the results of the qualitative analysis made on the stated expectations of the Green Team participants.



GREEN TEAM EXPECTATIONS

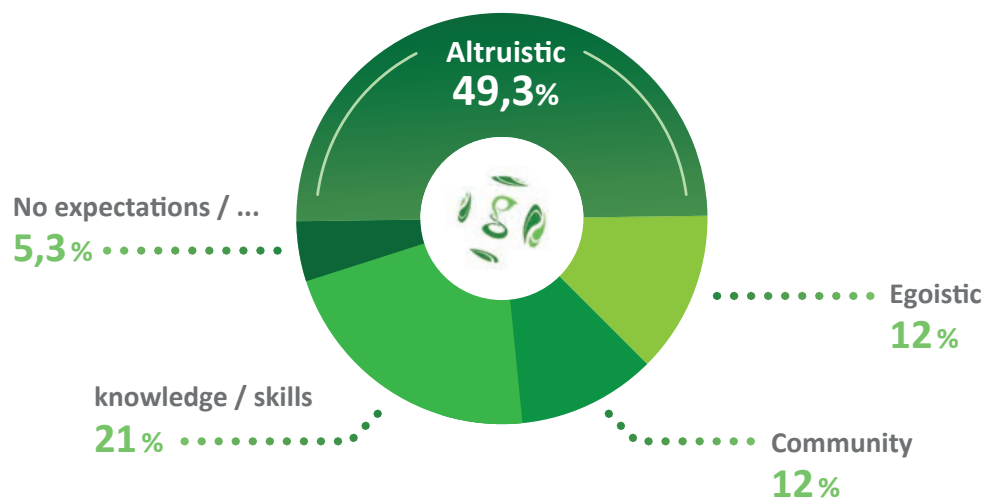


Figure 4:
Green Teams' expectations based on qualitative analysis of survey answers.

The Green Team was also asked to answer about their knowledge on climate change, regarding their perception of self-knowledge (basic knowledge 19% of respondents, some knowledge 21%, good knowledge 14% and a lot knowledge 36%), their sources of information (media and social media) and the importance of the topic. In general, the answers referred to tackling climate change as an important or very important matter, stating whether the individual, the collective or the systemic level of action was the most appropriate. In general, answers to this question suggest that respondents view the mitigation of climate change as a difficult task, with not enough being done and potential obstacles such as greenwashing. One Green Team participant mentioned: "We do not have a planet B so we need to do our best to preserve the environment" (22/10/2020-14:01)¹. That someone from the sport field uses a similar slogan, which became famous after the Fridays for Future demonstration, gives a hint of how widely the issue of climate change has entered the discourse of young people.

These answers are especially interesting when compared with the volunteer's perception on whether sports have an influence on climate change and environmental protection. In this regard, 24% of volunteers answered that they did not think or were not aware of sports impact

¹ Row data can be found here: <http://gofile.me/3b3qc/JXKcTHqpS>

on climate change. An example comes from a 21-year-old female respondent, who writes: “No I’m not aware of sports causing climate change. I am aware however that climate change can endanger [the] future of certain sports” (24/04/2020- 12:17). The other respondents were aware of the influence, blaming especially the traveling waste generated (especially plastic) and the materials, water and energy used for sporting events. The qualitative analysis further indicates that respondents also viewed the events as an important platform to advocate for a more conscious behaviour. Another 21-year-old female volunteer concludes that “...athletes flying from one country to another might contribute to climate change, however if they have a big enough platform to advocate for environmental protection (...) I’m sure their fans would take note of their words” (22/04/2020- 19:34).

Regarding the second survey, done during the PlayGreen implementation, 65% of respondents were females, 30% males and 5% identified as non-binary. The average age was 24 years. 75% of respondents practiced sport at some level.

Regarding the practice of sport, 50% of females who answered the survey before a PlayGreen event or tournament was celebrated reported to play sports. The same question asked after playing the PlayGreen sport event reported a positive answer for 57% of female respondents.

When participants were asked whether PlayGreen influenced them into playing sports, 40% of respondents answered ‘no’, 25% ‘a little’, 30% ‘quite’ and 5% ‘a lot’. Overall, 40% stated that it did not have an influence and 60% stated that it did (Figure 5). Males seemed to be more influenced (67%) than females (54%) by PlayGreen. As an example, a 22-year-old male respondent mentions “I never thought about it but as I became a volunteer of Green Team, I knew how is [sic] big a sport impact on the environment” (29/04/2020- 17:17).

HAS PLAYGREEN INFLUENCED YOUR INVOLVEMENT/PARTICIPATION IN SPORT?

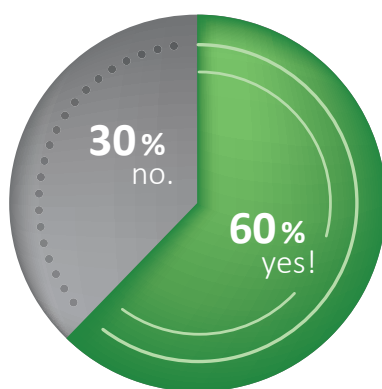


Figure 5: PlayGreen influence on participation and involvement of Green Team volunteers in playing sport.

In addition to the possible influence of volunteers into playing sports, PlayGreen also asked volunteers about climate-change knowledge and awareness. In this regard, all respondents perceived climate change as a very important problem: on a scale from 1 'not important at all' to 5 'very important', 90% of Green Team respondents answered 5 and 10% answered 4. Additionally, as Figure 6 suggests, there seems to be an increase of knowledge through the PlayGreen implementation.

GREEN TEAM SELF-PERCEIVED KNOWLEDGE ON CLIMATE CHANGE BEFORE AND AFTER THE EVENT

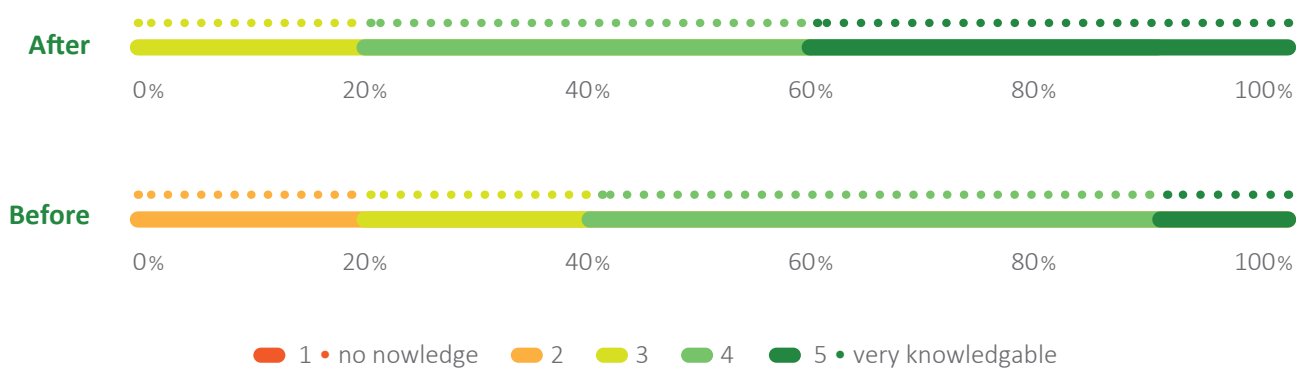


Figure 6:
Green Team self-perception of climate-change knowledge before and after a PlayGreen event.

The Green Team members who answered during the implementation tend to agree that sports have somewhat of an impact on the environment, with 45% of them assigning a score of 3 on a scale from 1 'no impact' to 5 'a great impact' (see Figure 7).



ON A SCALE OF 1-5, HOW MUCH DOES SPORT IMPACT CLIMATE CHANGE IN YOUR OPINION?

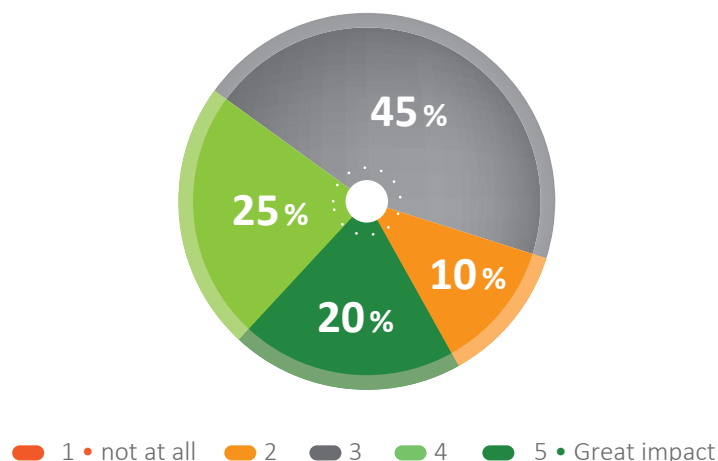


Figure 7:
Green Team opinion on how sport impact climate change.

4.2 Participants and staff

As per the Green Participant Volunteers and staff members, the participants surveyed under the baseline questionnaire, 30% were females, 69% were males and 1% preferred not to say. The average age was 39 years. The majority (82%) was not involved in any environmental organisation and most (82%) played sports. The respondents showed concern for environmental protection stating that waste, both creation and management (appeared 19 times on a total of 68), plastic (appeared 21 times/68) and travel (appeared 20 times/68) were the most important things affecting the environment during sport events.

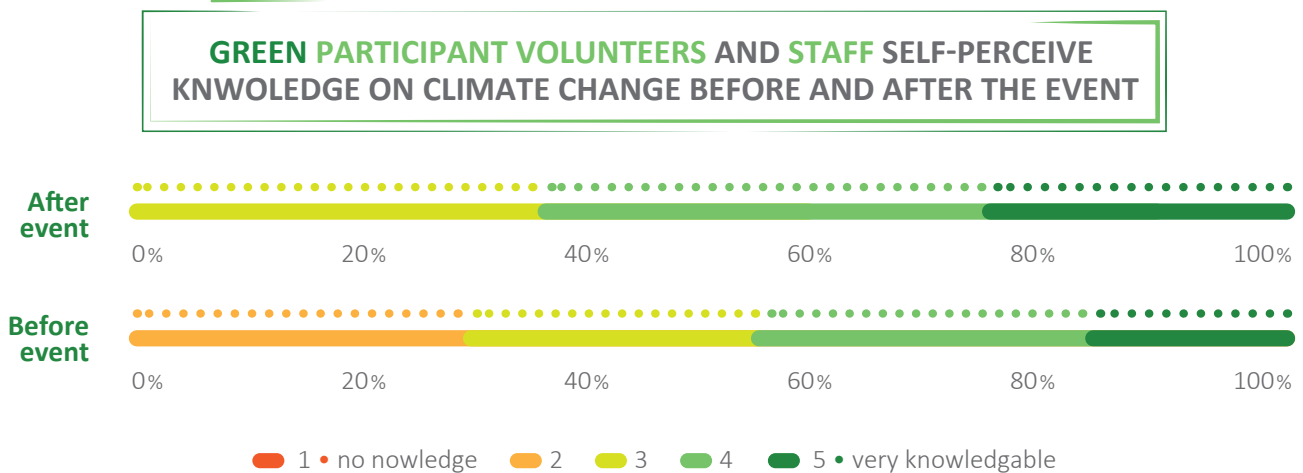
While there is consistency about the answers and concern for environmental matters, the respondents also had ideas on how sports could be a showroom on how to tackle climate change. In this regard, respondents had a variety of ideas in the area of communication and awareness and using players and football celebrities as role models. An example is “players can talk about climate change, they have a fan base” (20/04/2020- 20:10). Respondents also pointed out the need for actual implementation of sustainable design and implementation of sustainable resources and practices for instance “providing recycling bins at events and trying to reduce the overall waste [and] arranging transport [to] reduce the number of cars on the road” (21/04/2020- 20:55).

On the idea that environmental volunteering can help young people practice more sports, respondents mention that environmental practices can help by “providing them [the volunteers] with a different approach to sports they weren’t aware of” (01/04/2020- 15:58). In this regard, by being pioneers in sustainability, sport organisation “would facilitate young people’s participation

in sports as they want to be associated with this positive trend” (09/06/2020 - 10:34) and implementing “environmental initiatives during sports events [could] help young people who are not interested in sports to be more engaged in the sports world” (31/08/2020- 10:06).

The members surveyed during the implementation phase the PlayGreen events were 65% females, 13% males and 7% non-binary. The average age was 29 years. The surveyed participants show an increase perception of knowledge of climate change after a PlayGreen event (see Figure 8). This correlates on their reporting about whether PlayGreen taught them how to reduce their environmental footprint or be more sustainable (see Figure 9).

The perceived knowledge did not change the perception on how they believed climate change mattered. Overall, 61% of respondents believe it was very important matter (scored 5 on a scale from 1-5). Respondents did not see the impact of sporting events into climate change (average score 3.4/5) as big of an issue as climate change itself (average answer 4.6/5).



HAS PLAYGREEN TAUGHT YOU HOW TO REDUCE YOUR SPORT EVENTS FOOTPRINT AND/OR BE MORE ENVIRONMENTALLY FRIENDLY?



Figure 8 and 9:

Climate-change self-perceived knowledge of UEFA staff and Green Participant Volunteers (players) before and after a PlayGreen event and knowledge acquired related to the environmental footprint and sustainability through PlayGreen.

Regarding the sport practice, 71% of the Green Participants Volunteers which answered after a PlayGreen event or tournament reported to play sports, as compared to 67% of those who answered before. Additionally, 51.5% of the respondents reported that PlayGreen influenced them into playing sports. The figure is similar for those who reported to not practice sports in their life, 53% of whom reported that PlayGreen influenced them into playing sports.

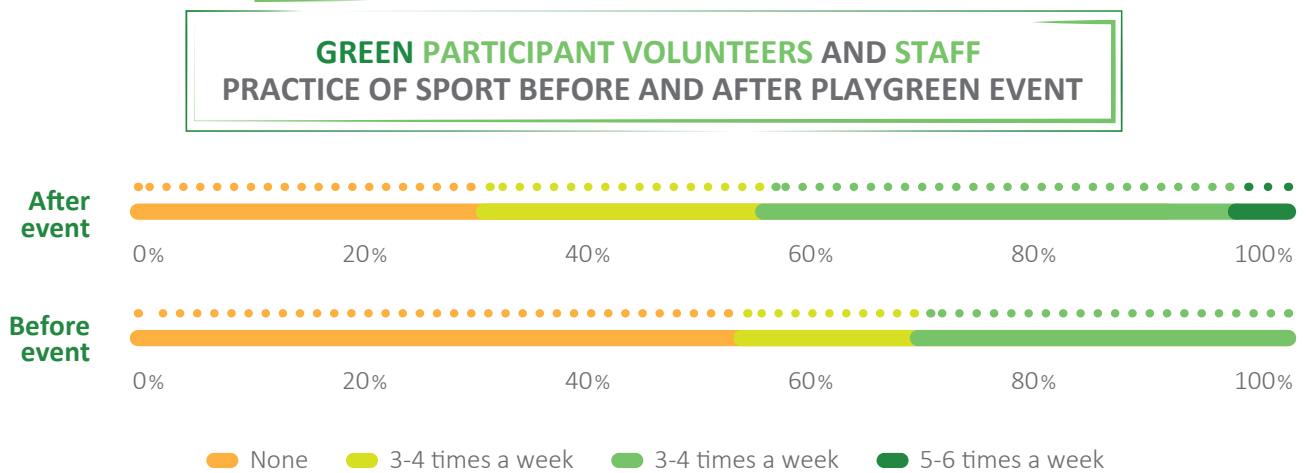
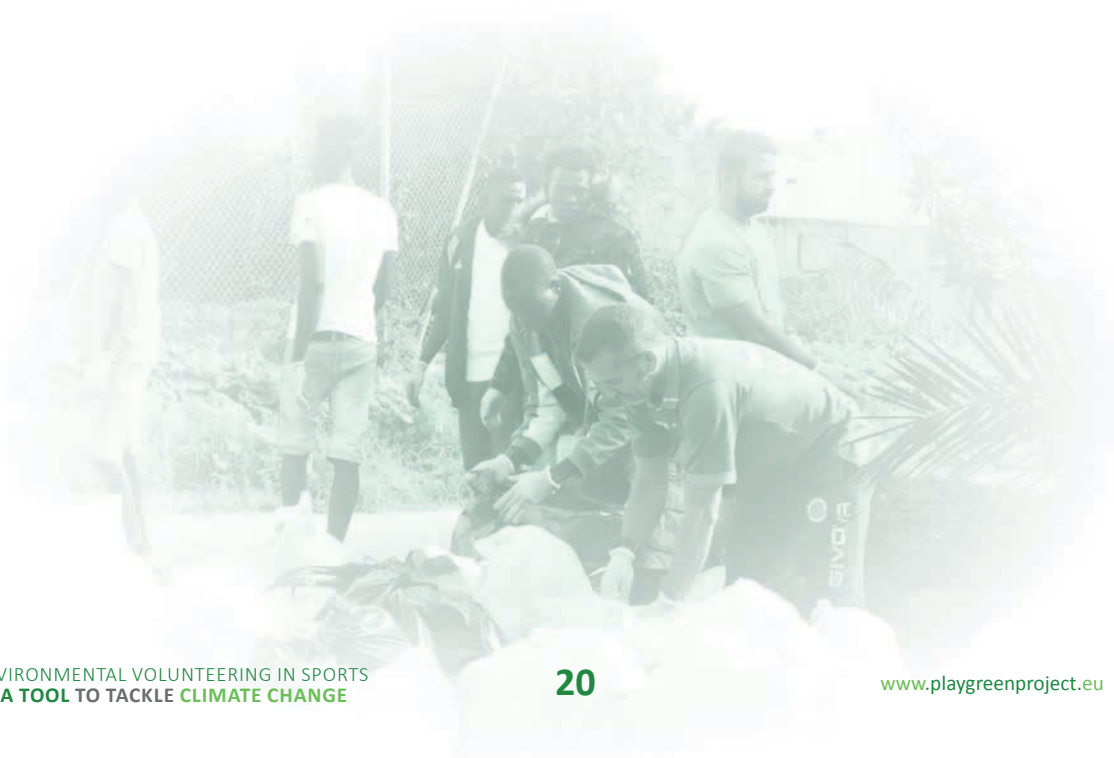


Figure 10:
Sport practice before and after PlayGreen event or tournament

Finally, respondents after a PlayGreen event also reported to practice sports more often than those who answered before (Figure 10). Taken together, those results suggest that PlayGreen managed to reach its goal of engaging sports participation through environmental volunteering.





DISCUSSION

This section offers further insights into the two research questions of the study: **(1)** ‘is climate change and environmental protection a driver to engage young people into sports through volunteering?’ And **(2)** ‘can grassroots “green” events help tackle climate change and protect the environment?’ The questions are discussed taking into account: **(a)** the series of semi-structured interviews with experts from the fields of sport, volunteering and environmental sustainability and **(b)** the main findings of the surveys addressed to the Green Team and Green Participant Volunteers, staff and fans. The discussion is divided into two parts: the first one answers research question 1 and the second one answers research question 2.

5.1 Climate Change and environmental protection as a driver to engage young people into doing sports

In the context of PlayGreen, climate change arguably indicates to be a driver to engage young people into doing sports. Both the experts interviewed, and the survey analysis supports this argument. Regarding the survey, from the Green Team (volunteers who were actively involved in the process), 60% answered that PlayGreen indeed influenced them to practice sport. PlayGreen influenced Green Participants Volunteers, staff and fans less, still 48% had a positive answer. Here it is interesting to note that the Green Team was the one who had a longer involvement with PlayGreen and as such, a larger opportunity to get involved into playing sports after having analysed the sustainability of grassroots sport events. This suggests that studies that include a sizeable involvement might be needed to be carried out in order to get a better sense on how time and exposure to environmental ideas liked to sport can influence the engagement into playing sport.

The survey answers go in line with the interviewees’ opinions who agreed that environmental volunteering can be a tool to engage young people into sport participation. But how? The experts provided further insights, arguing that getting involved in sports through an environmental project can provide a safe space and a new perspective for people that see sports as aggressive or too competitive. Hunt (2020) argues that schools (where youngsters play sports) may not be the healthiest environment since the sports playground can be gendered and hyper-competitive. As he puts it, one may have an “allergic reaction [to sports since] (...) the whole kind of image around it is seen as negative” (Hunt, 2020, p. 4). The idea is backed by one respondent of the baseline questionnaire who proposes to adopt “more friendly games and no competition” (13/05/2020 09:38:33) to engage young people into practicing sports. In that sense, sustainability can be a driver to engage people whose idea and image of sports do not go along with their values, since according to Hunt (2020, p.8) “environmental sustainability can

help to create a softer image of sports and show that it's much, much broader than that". To this end, initiatives like PlayGreen could be of help in bringing a more diverse range of participants into sport by enabling individuals who wish to participate motivated by helping to create more sustainable sports to experience and by relating sports to the cooperative and "kindness" values associated with sustainability.

On a similar note, Martell (2020) argues that a sustainability activity with a 'having fun' approach can be a good introduction to sports. An example, she draws on an orientation race organised for families with children to collect as much waste as possible within a certain time and passing through check-in points. This second perspective allows to argue that using nature as a place to play sports and doing an environmental activity allows volunteers to relate sports and environment to having fun and, therefore, they are more likely to be persuaded with the idea of both, thanking care of nature and playing sports. While further research needs to be done to ensure this is the case, Martell adds to Hunt's perspective and allows to argue that environmental protection can be a driver to engage people into playing sports because it provides a fun environment when it is done as an activity in nature with the incentive to protect nature because it appeals to volunteers who want to help the environment and are drawn to playing sports. In this regard, a respondent to the questionnaire proposes "combining sports events with sustainability events- for example, running to a beach, doing a clean-up (...)" (11/05/2020 - 22:27:57) as promising activities to raise awareness.

A third argument on how climate change and environmental protection can be a driver to engage young people into doing sport comes from Bagordo (2020) that suggests that sustainability and sport "go hand by hand". He argues that, for instance, "after the Coronavirus a lot of work has been done to increase cycle paths" (ibid, p. 4) and that by doing so, cities are actively inviting people to do more sports that do not damage the environment. With his argument, he suggests that offering more sustainable options can lead to more active lifestyles. That is, by creating an infrastructure that helps reduce emissions and therefore mitigating climate change, cities are also developing an infrastructure that leads people to doing sport. One respondent to the baseline questionnaire reinforces this opinion, stating that "it can help if people could practice more sports in open spaces equipped and controlled made available by municipalities". The argument can be applied to green spaces leading people to be active through running, for example. This is arguably easy to justify when it comes to creating cycling lanes of green spaces for running but what about other sports? And does that mean that people, and especially young people would be more likely to play sports in general? Bagordo (2020) argues that it is also true with sports that are deeply connected to the environment, such as rowing. As he puts it: "rowing is done a lot on rivers. Now, it is unlikely that people are going to go rowing if the rivers are polluted, are dirty, are not accessible... so, improving the river environment and the water quality, then it is more likely that people will then get involved in water sports" (ibid. p4). While this is applied to the general population, it is possible to extrapolate it to young people because they may see the value to having clean and natural spaces where they can play with family and friends. Note that more research would need to be done to establish how the creation of green and clean natural places can influence young people into doing sports.

To reinforce the previous argument, Applegren (2020, p.28) believes that, since "we enjoy our time in the environment while doing sport [...] we have an obligation to keep it clean". Talvak (2020), a hockey manager, takes this point to a wider range, noting that no kind of sport could

exist without the environment. As she puts it: “you really can’t train on stadium when you do not have a clear air to breath, right?” (ibid p. 19). On a similar but more behavioural-based argument, she believes that environmental protection can be a good motivator to involve young people into playing sports because sport is considered to be dependent on a healthy environment. That is, creating awareness among young people on the impact of sport events can approach them into wanting to make a difference and ultimately engaging them into playing sports.

Azzopardi (2020, p.14) agrees on the key role that awareness play on behaviour change. As she puts it “the awareness is present therefore people will be engaged more readily”. As an athlete, she believes that environmental protection can be a driver to engage young people to playing or volunteering in sports because of the increasing awareness there is in the world among young people. Taking her argument, it seems reasonable to assume that if the sports club is more sustainable it would attract people who care about sustainability because it will appeal to their values and, by being engaged, people will realize that it also makes residents’ life healthier. Hunt (2020, p.8) extends the argument to the whole society, in his opinion even controversial debates around greenwashing and carbon offsetting are “a positive reflection of a change of mindset in society”. He appreciates how the widespread awareness in society forces all organisations to dedicate budget into “addressing environmental sustainability and different social issues”, even if just in “tiny amounts” or if “they view it as a marketing tool”.

Similarly, Zažeckytė-Kšivickė (2020) argues that sport and environmental protection currently are hot topics among youngsters and by combining those topics, at Be1 (organisation), they have been able to unite their audience and engage more people into doing sports. During the interview, she explains that they combine the sustainable topic (caring for the environment) with the sports topic (being active) to make more attractive events. It is interesting to learn that the volunteers at Be1 are both the ones who prepare the event and make it sustainable and take part in sport activities as participants. A similar argument is brought by Rand, (2020, p.25) who argues that “young people are increasingly speaking out on environmental issues, and that the new generation is paying close attention to [the] issue” of climate change. The argument is shared with various respondents, which claim that in general young people are “socially responsible and aware of environmental problems” (14/09/2020- 11:19) and “really involved in making things better” (30/10/2020- 12:37).

The results of the interviews allow us to suggest that climate change can act as a driver to engage people into doing sports. This can be because: **(1)** it provides a safe space for a new target group of people who used to see sport as a competitive activity and can start seeing it as a kind space to be active; **(2)** it provides a fun environment when it is done as an activity in nature with the incentive to protect nature because it appeals to volunteers who want to help protect the environment and are drawn to playing sports; **(3)** in general terms sustainability and sport can go “hand by hand” and offering more sustainable options such as clean rivers for water sports, green spaces for running and cycling lanes for cycling, can lead to more active lifestyles; **(4)** sports is considered to be dependent on a healthy environment and, as such, environmental protection can be a good motivator to involve young people into playing sports; **(5)** if a sports club is more sustainable it would attract people who care about sustainability appealing to their values.

5.2 Grassroots events contribution to green sustainability

The second research question (RQ2) is based on the idea that promoting sustainable values among grassroots sport organisations / clubs, the knowledge and ideas will be transferred into other clubs and organisations in the field of sports that are linked to the grassroots and make decisions at the “top level”. As such, to answer the second research question, emphasis was put into the transfer of knowledge.

Since PlayGreen is a grassroots project and method, the findings reported under the results section allow to argue what would seem a rather obvious answer: the knowledge gained among volunteers who are part of a sustainability program increase their knowledge in environmental matters. Interestingly, though, not only the main volunteers (Green Team) but also the participants at the events and staff and fans also increased their knowledge on sustainability and sport. If one takes into account that the Green Team is the core group (and as such direct target group) and the participants and staff the indirect group, is it possible to argue that knowledge is gained in both groups, although in different levels. Since PlayGreen did not distinguish between the different type of indirect groups, it would be interesting for further research to see how the different groups involved in a sustainability project gain knowledge.

But what impact could knowledge transfer actually have on the overall management of sport organisation? If it is assumed that pressure from grassroots organisations can influence big clubs and mega-events, knowing how knowledge is spread can be used to understand how to transfer it. In this regard, Bagordo (2020) argues that sport can be a driver for tackling climate change through (grassroots) volunteering projects because at the grassroots level there are a lot of volunteers and people involved which are keen on being active to make a difference. This, merged with the fact that the sports is a sector with a great scope for increasing sustainability, allows grassroots sports clubs to become a niche for environmental awareness.

While the theory stands, the issue remains on how the knowledge could be transferred. As Bagordo (2020) suggests, using sports ambassadors could be a potential way to go. He makes special emphasis on athletes, which are, according to him, fantastic envoys. In his words, “if you are young and you see athletes as being kind of heroes, getting them involved can be really good. So, it is a win-win-win situation. That is what we really want to try to do more” (ibid p.5). As an example, the WWF expert explains that involving athletes who mainly have a vegetarian diet and explaining that this diet does not mean less performance, in fact, quite the opposite, can help provide young people with real example role models. This is especially true if campaigns are linked to the impact that meat has on the environment. On this line, different respondents of the baseline questionnaire speak of the platform athletes have on their fan base and the possibility to have them as ‘influencers’ (11/05/2020- 22:27) and “role models in teaching best practices [...] that help towards climate change” (13/05/2020- 10:21). However, Hunt (2020) warns professional athletes can act as ambivalent figures. He believes that when young people watch sports at the professional level, which is quite often related to money, players don’t always set the best examples. Further research would be important to understand how changing important sport figures can influence in spreading the need to mitigate climate change.

In addition to the possible influence “from the grassroots to the top”, Hunt (2020, p.8) argues that there are two different ways grassroots sports can help to tackle climate change: **(1)** through advocacy and **(2)** implementing practices which ensure the environmental sustainability of their own projects. In this regard Azzopardi (2020) adds that advocacy from umbrella organisations made through sport idols and other role models could have a positive effect on the actions of individuals. As a professional sport worker at the grassroots level, she offers an insight on what she and other people are doing to be more sustainable and help tackling climate change at a personal level. These actions include carpooling or avoiding single use plastics. Nonetheless, despite the feat that the population is aware of the problem, she believes that there is lack of actions from the sport clubs. In her opinion, in the field of sports the burden is often left to the individual user, who can only act at a personal level. In this case, little could be done if, for instance, the club does not have a waste management system in place. Azzopardi (2020) is positive that access to international examples on the impact of climate change and what is being done by other clubs could help closing the gap between individual action and organisations’ governance. In her opinion “the athletes are the ones who are the most conscious about this issue. However, [when] the organisation’s committee members have just changed and with it comes a shift of mind, [...] hopefully, these issues can be tackled in due time” (Ibid. p.13).

Zažeckytė-Kšivickė (2020, p.15) also emphasizes the role of individuals, by noting that “athletes usually take care of their internal and external health [and] with that also comes an awareness of caring for the outside in a broad sense- not just yourself, but the environment in which you are [in]”. But the expert is able to extend the individual approach to an organisational experience, referring to an environmental project they launched at Be1 called ‘VISI VAROM’I trainings’. The project developed a tool to communicate environmental issues (sorting, recycling, natural resources) through sport activities. They chose to implement nature conservation measures independently within their organisation, but also decided to advocate and discuss the topics during their events with the wider public. This could be seen as an example of a bottom-up project where a club moves from individually-focused actions to direct involvement in communicating and implementing environmental actions.

Talking about the individual level, Salmu (2020) also stresses the importance of the individual part and focuses on the idea that, no matter how complex, it all comes down to arguably four things: **(1)** personal level, especially with the role of the staff members and **(2)** procurement organisations; **(3)** the systems that are in place. As she puts it: “my perception is that during a sporting event there are many moving parts and many partners who have to work together. The game or the match itself is a very small part of it. It is the catering (food services, kiosks etc.), transportation, campaigns and promotional gifts that need to be more environmentally friendly and sustainable. We also can’t leave out the production of sporting goods and the brands that are supporting sports” (ibid, p.22).

From a different perspective, Bagordo (2020) makes a similar point when he states that the contribution to greening sports within the volunteering field comes from working with local providers, businesses and schools and, in fact, by involving every possible member. He argues that by involving everyone you are creating an infrastructure of knowledge. As he explains as an example, WWF Italy consistently works together with the Rowing Federation around clean water. Similar collaborations with non-profit associations are seen by Martorell (2020) as a way



to enhance the sport organisation's environmental performance. Still, she argues, there could be more guidance and support in place for this kind of synergies to arise.

Hunt (2020, p.22) also refers to the importance to organize activities about environmental sustainability and sports, by involving "various networks and [having] contact with Federations such as UEFA, which is one of [their] partners". In the same line of thought, Talvak (2020) underlines the role of every single actor of the sport system, from 'grassroots' organisations and 'governing bodies', being each just one part of the jigsaw. Indeed, she believe grassroots events contribute to bringing the environmental sustainability to the sports agenda and that "if sustainability is not coming on grass-root level, nothing will change" (ibid. p.19). However, she points out that a key aspect influencing clubs decisions is "money [which] unfortunately decides too much of the choices" (ibid).

Talvak (2020) also proposes complementary top-down actions coming from higher levels of the sports governance field. She argues that a good initiative would be for "the roof-organisations (IIHF in hockey, FIFA in football, etc.) [to] roll out the environmental campaigns and send out the invitations for athletes to participate (World Cleanup Day, for example)" (ibid. p.19). The common recognition that collaboration is needed suggests that the Sustainable Development Goal number 17 "Partnership for the Goals" is key to tackling climate change in the field of sports.

Finally, on the active role of governing bodies, Verneirt (2020) talks about incentives that can be given to clubs to achieve climate goals. In the field of golf, for instance, the 'Golf Environment Organisation' emits labels that clubs can obtain with a correct water management. Regarding events, he believes that using a carbon footprint is the best way of quantifying efforts. This methodology, as suggested by PlayGreen, can be a useful tool in grassroots events to decide which 'green activities' could be organised.

All in all, there are arguably at least 5 ways that grassroots events can contribute to environmental sustainability: **(1)** knowledge that goes from grassroots levels to higher levels (who have more impact); **(2)** individual people engagement at the grassroots levels through their connections and actions in the club – advocacy for change; **(3)** stablishing permanent systems in the organisation that enhance sustainability – sustainable governance to reduce energy consumption, ... ; **(4)** ensuring that procurement organisations are sustainable (i.e. catering); **(5)** though "famous sportspeople" to engage and disseminate on sustainability to change behaviour.



CONCLUSION

The current article analysed four PlayGreen pilot sport events in four locations and particular times (during COVID-19). The countries where the PlayGreen events took place were Estonia, Malta, Flanders and Lithuania. Each country developed PlayGreen events with different particularities. This study used the four PlayGreen pilot events to carry out an evaluation on whether: (RQ1) climate change and environmental protection were a driver to engage young people into doing sports and (RQ2) determine whether creating sustainable grassroots events can help tackle climate change and protect the environment. This was done through a series of semi-structured interviews to experts in the field of environment and sport and to surveys to volunteers of the PlayGreen project and participants as well as sportspeople staff.

Answering to RQ1, the study found that volunteering for climate change mitigation and environmental protection could be effective drivers to engage young people into doing sports. Indeed, 60% of the Green Team members stated that the experience as environmental volunteers influenced their participation in sports. The awareness of young people on climate change, their involvement in environmental and other types of volunteering and the benefits on individuals' health have been pointed out as the main potential motivations for practicing more sports. In order to bring more young people into sports the study identified the need to provide opportunities for them to practice in 'safe environments', where they can "have fun" and 'connect with nature'. Investment in sustainable infrastructure, targeted awareness campaigns and trainings on the importance of promoting environmental values, support schemes and dedicated funding in place for grassroots sports organisations and schools have been identified as integral action to achieve this goal. To further facilitate this, partnerships among sport and non-sport organisations would facilitate transversal initiatives and joint actions that can appeal to a broader public. This collaboration would also ensure the sustainable management of such endeavours, making a greater impact on the engagement and retention of more environmentally-sensible participants and volunteers into the world of sports.

Regarding RQ2, grassroots events seem to be a promising platform to influence and move towards a more sustainable world of sports. Sustainable actions were proposed at all levels, from individuals to governing bodies, with a recurrent call for collaboration between different entities (also from outside the sports field) and all relevant stakeholders (i.e. players, families, retailers, kiosks). The discussion favoured a bottom-up approach with a predominant role of the grassroots level, in the form of local clubs, since they have the means to both advocate for environmental sustainability, thus having an impact on the behaviour of individuals, and to monitor and change their current practices towards more sustainable ones (i.e. avoid single use plastic in stadium). Top-down initiatives from the higher levels of the sports governance field were also considered useful, especially in terms of advocacy from famous athletes,

which can use their platform to promote sustainability to their fan base, and of guidance, support and incentives from the institutions with knowledge and financial resources.

Nonetheless, more studies need to be done in the field to validate this study. Further research connecting the fields of sports and sustainability should focus on how knowledge transfer to different target groups can help change environmental behaviour and environmental governance as a latter goal. In addition, focus needs to be put on the level of commitment and the amount of knowledge transferred between environmental volunteers in sports and the different type of indirect groups, such as staff and supporters, which were tackled as a whole by this study. Other research directions which can follow this research include: **(1)** the relationship of influence between individual sportspeople, their grassroots organisation and the governing bodies; **(2)** understand how access to a protected natural environment can invite people into doing more outdoor activities and the impact on their health; **(3)** the impact of role models in the environmental habits of their fan base.

In general, more projects with the features of PlayGreen, dedicated to introducing sustainable practices to grassroots sports organisations, can represent an important platform to collect data and insights on how people can conciliate their daily activities, being it related with sports or not, with the changes of behaviour and consumption patterns which are required to minimise the effects of climate change and move towards a more sustainable, conscious and just society.





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ANNEXES

ANNEX 1 • Survey questions to the target group 1: Green Team

SURVEY 1 /// BEFORE THE PLAYGREEN PILOT PROJECT

Basic data

- Gender you identify with
- Age
- Nationality

Background

- What do you study?
- What are your interests?
- Are you involved in any environmental organisation?
- Why did you join PlayGreen?
- What is PlayGreen to you?
- What do you see yourself doing?

Environmental approach as a motivator to practice sports and which specific aspects motivated them

- What do you know about environmental protection and climate change?
- What do you think about climate change/climate emergency?
- Do you think/know if sport events influence on climate change and environmental protection? Why/Why not?
- What specific aspects motivate you?
- What do you expect from being a green volunteer?

Incorporation of more physical activities in their daily life: which activities, frequency, and how this could be strengthened through volunteering

- Do you practice sport?
- What sport do you practice?
- How often do you practice sport?
- What motivates you to doing sport?

Skills acquired

- What skills you are hoping to acquire?
- What knowledge are you hoping to acquire?

Other

- Is there any other thing you want to say?



SURVEY 2: /// AFTER THE PLAYGREEN PILOT PROJECT

Basic data

- Gender you identify with
- Age
- Nationality

Environmental approach as a motivator to practice sports and which specific aspects motivated them

- Are you involved in any environmental organisation?
- What do you think about climate change?
- Do you think/know if sport events influence on climate change and environmental protection? Why/Why not?
- What specific aspects motivate you?
- What do you expect from being a green volunteer?

Incorporation of more physical activities in their daily life: which activities, frequency, and how this could be strengthened through volunteering

- How often do you practice sports?
- Why do you or why don't you practice sport?

Skills acquired

- What skills you are hoping to acquire?

Satisfaction with the volunteering program

- On a scale from 1-10 how satisfied were you with PlayGreen?
- What did you like the most?
- What would you improve?
- What did you think about the green methodology?
- How would you improve the green methodology?



ANNEX 2 • Survey questions to target group 2: Green Participant Volunteers and Staff members

The participant players, staff of the Football Associations' facilities and audiences involved in any way in the pilot tournaments

SURVEY 1 /// BEFORE THE PLAYGREEN PILOT PROJECT

Basic data

- Gender you identify with
- Age
- Nationality

How the approach led them to more sustainable behaviours

- What do you do at your house to take care of the environment?
- What does your organisation do to protect the environment?
- Are you aware of the sustainable development impact of sport events?

Do you know your ecological footprint? If so, what is it?

- key messages that have had more impact in them
- What would make you do more to protect the environment?

Evaluation of the program

- What do you think your sport club could do tackle environmental impact and climate change?

SURVEY 2: /// AFTER THE PLAYGREEN PILOT PROJECT

How the approach led them to more sustainable behaviors

- On [insert dates], [insert organisation name] organised a green sport competition. Did you learn something about sport events and environmental protection?
- Have you changed or do you think you will change your behaviours? Why? How?

Key messages that have had more impact in them

- What influenced you the most from the event?

Evaluation of the program

- What do you think about the event?

Other

- Is there any other thing you want to say?



ANNEX 3 • Semi-structured interviews

Basic data

- F/M
- Age
- Region
- Sport field
- Organisation

1) Qualitative interview introduction

Length: 15 minutes

This interview is part of the PlayGreen project and will be used to identify drivers and experiences of environmental volunteering in sports. Your involvement is voluntary and you are free to withdraw at any point.

All data collected will be anonymised and no personal data will be retained or passed on to any third party members. The research team of the PlayGreen consortium will only have access to your personal data which will be analysed in the aggregate ensuring they will be treated in absolute confidentiality. Should you choose to withdraw from the study at any time, your personal data will be removed from our database.

There are no right or wrong answers. Please try and answer all of the questions if possible, as accurately and honestly as you can. Your opinions and views will make a difference to national and international policy decisions with regards to environmental volunteering in sport events and sport clubs. Thank you for taking the time for us to interview you. Would you like to participate in this interview?

2) Background Information

- Overview: Invite interviewee to briefly tell me about herself/himself
- General information about background... mostly about experiences and perspectives on issues surrounding sport and volunteering.

3) Experience tackling environmental impact in sports

- Can you tell me about your experience tackling environmental impact?
- What is your perception?
- What are you or your organisation currently doing to tackle climate change?
- There are different methods that are used: ecological footprint, carbon footprint... which one do you use?
- Who is doing most of the effort within your organisation to make sports environmentally sustainable?
- What are the biggest challenges to make sports environmentally sustainable from your organisation perspective?

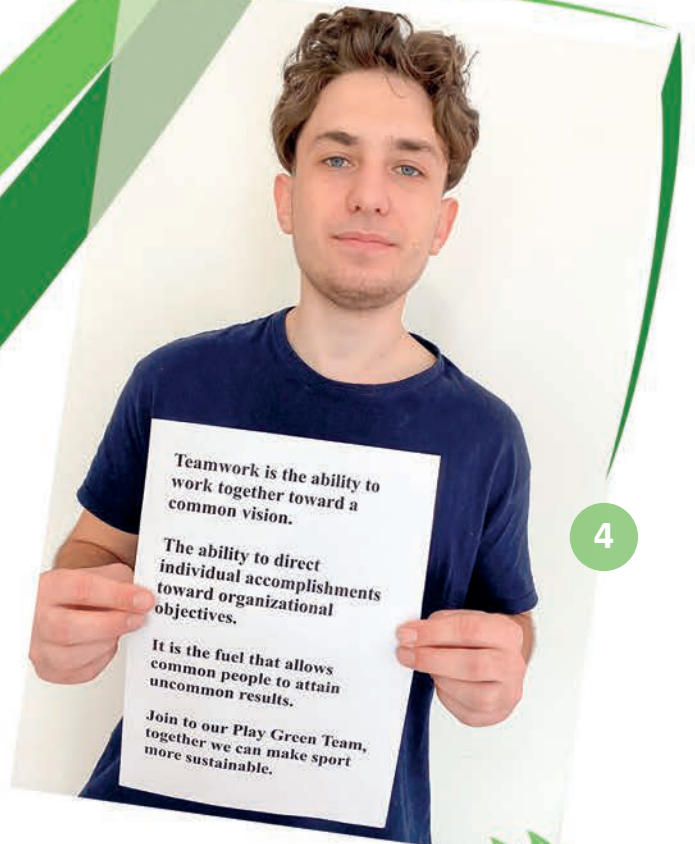
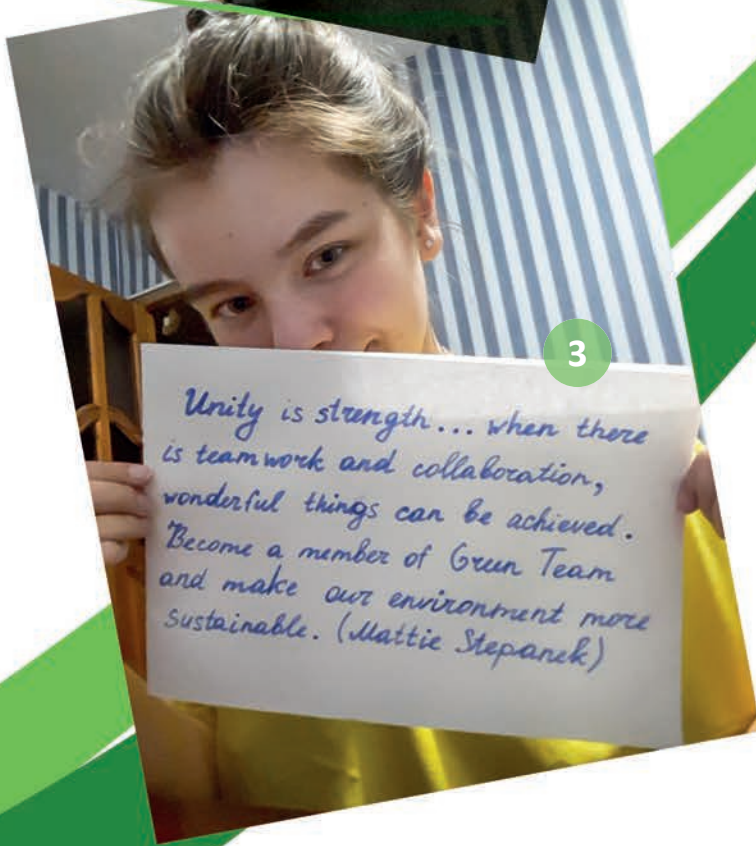
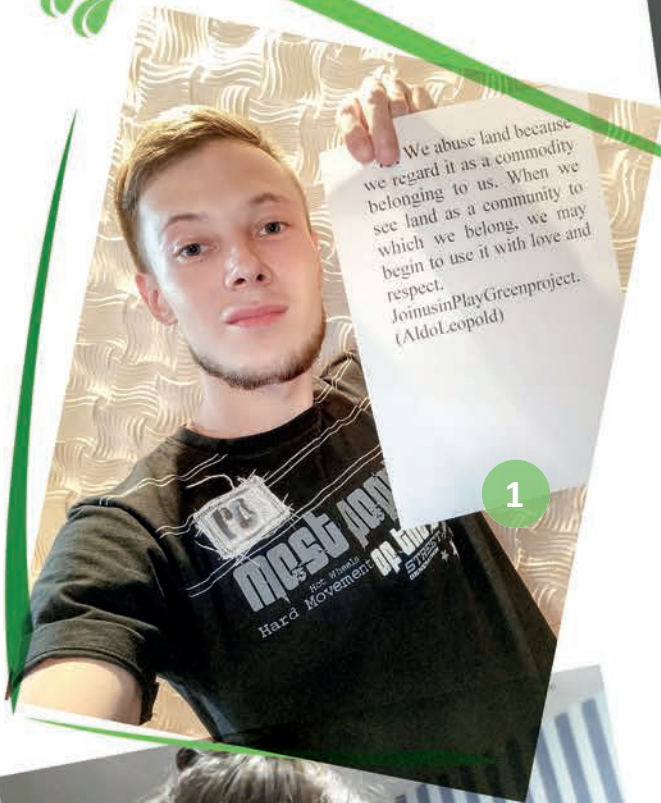
4) Experience with volunteers and sport events

- Do you think environmental protection can be a driver to engage young people to playing or volunteering in sports?
- If so how? If not why not?
- Have you ever engaged volunteers into doing (volunteering/participating) sports using environmental protection as a driver? If so, what was your experience?
- Have you used other common social issues as a driver to engage volunteers into helping or participating in sports?

5) Other

- Is there anything else you would like to say?
- Would you like to be informed about the results of our research?
- Would you like the organisation you belong to, to be part of the network of the network of organisations interested in environment and sports?





1 We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

2 The strength of the team is each individual member. The strength of each member is the team. Join our PlayGreen Team, together we can make sport more sustainable.

3 Unity is strength... when there is teamwork and collaboration, wonderful things can be achieved. Become a member of the GReen Team and make our environment sustainable.

4 Teamwork is the ability to work together towards a common vision. The ability to direct individual accomplishments toward organisational objectives. It is the fuel that allows common people to attain uncommon results. Join our PlayGreen Team, together we can make sport more sustainable.



PlayGreen

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ENVIRONMENTAL VOLUNTEERING IN SPORTS AS A TOOL TO TACKLE CLIMATE CHANGE

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Coordinated by:

