



## **Circular Economy Processes and Solutions at Sporting Events in Finland**

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## Abstract

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<p>This paper is a study on the current state of circular economy at elite sporting events in Finland. To narrow down the scope of the study a requirement of ticket purchase was implemented to qualify a specific event for the study. The study consists of three research questions: which circular solutions and processes can be identified at elite sporting events from a visitor's point of view, whether visitors attending sporting events see circular solutions and processes as valuable, and whether visitors are prepared to pay more for services if that would enable more sustainable events. Ultimately the study seeks to give tips on how to improve circularity at elite sporting events in Finland and act as a type of guide for organisers of sporting events.</p> <p>The study was conducted using two different data collection methods. The data was collected with a survey that targeted persons attending sporting events with varying frequencies. Potential respondents were reached out to online at messaging boards of prominent sports in the country, but also using my own personal social media accounts on Instagram and Facebook. The survey was successful and generated a total of 229 responses across different sports. Respondents were asked to specify what sport they most frequently watch in-person, and the most popular ones were association football, floorball, pesäpallo, and ice hockey.</p> <p>The second method of collecting data was mystery shopping, which was conducted in-person by myself. The mystery shopping was conducted by attending elite sporting events of all the four sports that people who took the survey were most likely to attend. In total ten events were attended: four football matches, two ice hockey matches, two floorball matches, one pesäpallo match, and as the tenth event a futsal match, even though the sport did not feature in the most popular ones among the survey takers. Mystery shopping results were collected in a sheet with eight different categories, based on whether the circular process exists, does not exist, or exists only partially.</p> <p>The results of both the survey and mystery shopping were somewhat negative from a circular economy perspective. It is clear that circular economy is still in its infancy at sporting events in Finland. Recycling is a rarity and solutions for reusable food and drinks containers are mostly non-existent. Fan merchandise also tends to be made from virgin resources, with very few options available made from recycled materials. The only circular processes that stand out as common in Finland are paperless ticket systems, paperless hand drying solutions in restrooms, and good public transport links to the venues.</p> <p>Finnish elite sporting event organisers ought to put more focus on circular processes, of which some are easy to implement. These include for example basic recycling and water stations. The scrapping of single-use plastics should also be encouraged. Attendees at sporting events in Finland do generally view circular processes favourably and would like to see an improvement. They are generally unhappy and disappointed with the current state of circular economy at events.</p>
<b>Keywords</b> Circular economy, sporting events, recycling, Finland

## Tiivistelmä

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<p>Tämä tutkimus käsittelee kiertotalouden nykytilaa Suomessa järjestettävissä huippu-urheilutapahtumissa. Tutkimuksen rajauksen selkeyttämiseksi tapahtuman sisäänpääsyn oli edellytettävä lipunostoa. Tutkimus sisältää kolme tutkimuskysymystä: mitkä kiertotalousratkaisut ja -prosessit voidaan tunnistaa huippu-urheilutapahtumissa kävijän näkökulmasta, kokevatko tapahtumissa kävijät kiertotalousratkaisut ja -prosessit arvokkaina, ja ovatko kävijät valmiita maksamaan enemmän palveluista, jos se mahdollistaisi kestävämmät tapahtumat. Tutkimuksen tavoitteena on myös antaa vinkkejä siitä, kuinka parantaa kiertotaloutta huippu-urheilutapahtumissa Suomessa, jolloin se voi toimia eräänlaisena oppaana tapahtumajärjestäjille.</p> <p>Tutkimus toteutettiin käyttämällä kahta eri tiedonkeruumentelmaa. Data kerättiin kyselyllä, jolla tavoiteltiin urheilutapahtumissa vierailevia henkilöitä, sekä aktiivi- että satunnaiskävijöitä. Mahdollisiin vastaajiin otin yhteyttä internetin urheiluaiheisilla keskustelupalstoilla sekä omien sosiaalisen median tilieni (Instagram ja Facebook) kautta. Kysely onnistui ja tuotti yhteensä 229 vastausta eri urheilulajien seuraajien parista. Vastaajia pyydettiin ilmoittamaan, mitä urheilulajia he katsovat useimmiten paikan päällä, ja suosituimpia lajeja olivat jalkapallo, salibandy, pesäpallo ja jääkiekko.</p> <p>Toinen tiedonkeruumenetelmä oli mystery shopping, jonka toteutin itse paikan päällä urheilutapahtumissa. Mystery shopping suoritettiin vierailemalla niiden neljän eri lajin huippu-urheilutapahtumissa, jotka olivat suosituimpia kyselyyn vastanneiden kesken. Yhteensä vierailin kymmenessä tapahtumassa: neljässä jalkapallo-ottelussa, kahdessa jääkiekko-ottelussa, kahdessa salibandyottelussa, yhdessä pesäpallo-ottelussa ja yhdessä futsalottelussa, vaikka laji ei kuulunutkaan kyselyn suosituimpiin. Mystery shopping -tulokset kerättiin taulukkoon, jossa oli kahdeksan eri kategorialla, ja ne merkittiin sen mukaan, toteutuvatko ne kiertotalousnäkökulmasta, ovatko toteutumatta vai toteutuvatko osittain.</p> <p>Sekä kyselyn että mystery shoppingin tulokset olivat kiertotalouden näkökulmasta jokseenkin negatiivisia. On selvää, että kiertotalous on vielä alkutekijöissään urheilutapahtumissa Suomessa. Kierrätys on harvinaista, ja ratkaisut uudelleenkäytettävien ruokailu- ja juoma-astioiden osalta ovat lähes olemattomia. Fanituotteet valmistetaan pääosin uusista raaka-aineista, ja vain harvat vaihtoehdot on tehty kierrätysmateriaaleista. Ainoat kiertotalousprosessit, jotka erottuvat yleisinä Suomessa, ovat paperittomat lipunmyyntijärjestelmät, paperittomat käsienkuivausratkaisut wc-tiloissa ja hyvät julkisten kulkuneuvojen yhteydet. Suomalaisen huippu-urheilutapahtumien järjestäjien tulisi kuitenkin kiinnittää enemmän huomiota kiertotalousprosesseihin, joista osa on helppo toteuttaa. Näihin kuuluvat esimerkiksi jonkinasteinen kierrätys ja vesipisteet. Kertakäyttömuovien poistamista tulisi myös edistää. Urheilutapahtumien kävijät Suomessa suhtautuvat yleensä myönteisesti kiertotalousprosesseihin ja haluavat nähdä parannusta. He ovat yleisesti ottaen tyytymättömiä ja pettyneitä tapahtumien nykyiseen kiertotaloustilanteeseen.</p>
<b>Asiasanat</b> Kiertotalous, urheilutapahtumat, kierrätys, Suomi

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## 1 Introduction

With the ever-increasing overconsumption in the world, circular economy is gaining traction as a response to the buy, use, and throw away economy, also known as the linear economy. The circular economy is a system designed to eliminate waste by keeping products and materials in continuous use. This is done through maintenance, reuse, refurbishment, remanufacture, recycling, and composting. The circular approach is designed to address climate change, biodiversity loss, waste, and pollution by separating economic growth from the consumption of finite resources. Hence the term circular as opposed to linear: resources move in a circle and have no end, being reused or repurposed at the end of the cycle to gain a new life, where they would simply be discarded of in the more traditional linear economy system.

Circular economy processes can be found in many parts of society nowadays. Bottles and cans that carry a deposit are reused or recycled when they have been used by the consumer. It is possible to rent a tuxedo instead of buying one, which allows several people to make use of the same item, resulting in less resources being wasted on products that might only be worn once or a couple of times. Information is available electronically and can easily be accessed with one's personal device, instead of having to produce information sheets in paper, that would simply be discarded of in the bin after one use. Reusable shopping bags are becoming commonplace, while many countries go as far as to ban single-use plastic shopping bags altogether. Even though single-use plastic bags are still allowed in Finland, the country is in other ways often seen as a frontrunner in circular economy. Public transportation is supported by the government and enables people to move easily around the bigger cities. Shared bicycles are easily accessible in the Helsinki region and thrift shops have become increasingly popular among people of all ages. Many individuals choose to change their eating habits to more sustainable ones, avoiding the excessive use of packaging or consuming products that are deemed unsustainable.

One area where many of these circular elements are still scarce is the events industry, in particular Finnish sporting events. This paper aims to study the current state of circular economy and circular processes at Finnish sporting events. The research aims to answer questions about how prominent circular processes are at sporting events, whether visitors at sporting events find circularity important, and whether people attending events would be prepared to pay more in order to make the events more sustainable. The paper also gives tips and concrete examples based on the research results on how organisers could increase circularity at their events.

## **2 Objectives**

The main objective of this study is to investigate from a visitor's perspective how well organisers of sporting events in Finland have implemented circular processes. It also aims to answer questions about how important circular processes are to attendees of sporting events in Finland, and what type of circular processes they value. Ultimately the study aims to provide tips and suggestions to organisers of elite sporting events in Finland on how to add and improve circular processes.

Finland is often touted as one of the vanguards of the circular economy (Sitra n.d.), which might be the case in many aspects of society. This study aims to investigate whether the same can be said for circularity and event greening at sporting events in Finland. The study also endeavours to find out if visitors at sporting events are prepared to pay more for the services they buy if that would enable more sustainable events.

The study is not commissioned by any person or organisation, but the results can nevertheless be used to get an overview of the state of circularity at sporting events in Finland. It can also be used as a guidebook for organisers who want to improve their events and make them greener.

### **2.1 Research Questions**

The research questions set to reach the objectives of this thesis are as follows:

RQ1: What circular solutions and processes can be identified at elite sporting events from a visitor's perspective?

RQ2: Are circular solutions and processes important to visitors attending sporting events?

RQ3: Are visitors prepared to pay more for services if that enables more sustainable events?

### **2.2 The Scope of the Study**

This thesis focuses on a very particular aspect of circular economy, i.e., that of circular processes and solutions within the events industry. More specifically, the thesis will look at what circular processes are available at sporting events in Finland and how they are presented to the visitors. The thesis will also investigate what value visitors place on the existence of circular processes and solutions, and whether their existence or the lack of circular solutions play a role in consumption decisions taken by visitors during events.

The research has been conducted using a mix of mystery shopping and a public survey as data collection methods. The survey targeted people attending sporting events across the country, while the mystery shopping mainly focused on the Helsinki region and nearby cities, such as Kotka. For benchmarking purposes, mystery shopping has also been conducted in the United Kingdom at a Premier League football match.

The focus is primarily on professional sporting events where applicable. However, since many high-level events in Finland might be comprised of both professional, semi-professional, and amateur athletes, the looser definition of elite sporting events is used. Examples of events that are not fully professional but can be counted as elite sporting events for the scope of this study are for example men's and women's team sport competitions of a national or very high regional level, e.g. lower tiers of men's football, national league of women's football, national leagues of men's and women's pesäpallo, second tier of men's ice hockey, national leagues of men's and women's floorball etc. For the sake of clarity, the qualifying requirement is that a ticket must be purchased for the event. This rules out for instance youth sporting events, where no ticket is required for admission to the event.

In order to narrow down the scope further, the focus is placed on processes for so called normal seats and people in the general attendance at events. This rules out different types of hospitality and VIP areas of the sporting venues, since the processes in those do not generally reflect the overall experience of a person visiting a sporting event. When attending an event with a hospitality package, one can be treated e.g. to multi-course dinners in upscale settings (Club Chelsea 2024; HIFK Hockey 2024), which are not reflective of the experience of someone in the general audience.

### 3 Circular Economy

Circular economy is a term that has made it into the mainstream and drawn a lot of attention in recent years. What started off as merely a weak signal has since evolved into a megatrend, with academic literature on the subject becoming increasingly common (Harmaala, Usva & Lassila 2022). It has become evident that economic growth in the world is running on finite resources, which combined with the never-ending population growth is having seriously detrimental effects on the planet we call home. Circular economy is a response to the linear economy, which sadly has become the norm since the beginning of the industrial revolution (The Ellen MacArthur Foundation n.d.).

The linear economy is a system in which products are acquired, used, and then disposed of without due consideration for recycling or reusability. Characterised by high-volume manufacturing, this model has been the prevailing economic paradigm for most of the 20<sup>th</sup> century, emphasising cost efficiency. Regrettably, this "take-make-use-dispose" approach contributes significantly to environmental degradation, resulting in pollution, climate disruption, and biodiversity depletion (Knight 2 August 2023).

This linear economic perspective, which prioritises low-cost production, has persisted as the dominant model throughout much of the 20th century. Its operational principle involves extracting raw materials at the lowest cost, transforming them into products with minimal labour, and selling at the highest price (Knight 2 August 2023).

However, the flaws inherently found in this linear model are becoming increasingly evident. The pace at which we extract virgin raw materials surpasses the natural replenishment rate, i.e., how fast our planet is able to reproduce the materials. Critical raw material shortages are already emerging, while simultaneously, the volume of waste continues to escalate. Projections indicate a staggering 70 % increase in global waste generation by the year 2050, highlighting the urgency of transitioning away from this unsustainable economic approach (Knight 2 August 2023).

Circular economy is a systemic approach that addresses worldwide issues such as climate change, biodiversity loss, waste, and pollution, which are often caused by the linear model of production and consumption. The circular economy framework relies on three design-driven principles: eradicating waste and pollution, maintaining the circulation of products and materials at their peak value, and revitalising the natural environment (The Ellen MacArthur Foundation n.d.). Circular economy can also be described as a restorative and regenerative industrial system, which replaces the concept of "end-of-life" with healthier habits, such as restoration. It does however not

merely include the restoration and re-use of physical objects, but also the use of energy from renewable sources and the elimination of toxic chemical usage in production. Circular economy promotes a superior design of products, which is seeking to essentially eliminate waste (Weenk & Henzen 2021, 13).

The European Parliament defines circular economy as a production and consumption model where existing materials and products are utilised to the maximum extent. This is done through borrowing, leasing, reusing, repairing, refurbishing, and recycling, which extends the life cycle of products. In practice, this means minimising the amount of waste. When a product reaches the end of its life cycle, its materials are – whenever possible – continually utilised, creating additional value through reutilisation (European Parliament 2023).

When discussing circular economy only a few years ago, it was often just seen as a futile attempt to save the world from over-consumption, while possibly taking a financial hit in the process. It is true that moving from a linear system to a circular one can come with an initial investment cost, but it does not mean that a circular system cannot be a feasible option also from a financial perspective, or even a superior model financially in the long run. Circular economy proponents assert its efficacy in optimising resource use, reducing waste, and fostering innovation within business models, which ultimately enhance competitiveness. Still, a significant portion of companies have yet to fully embrace the full potential of circular economy (Harmaala et al. 2022).

In 2015, the Ellen McArthur Foundation and McKinsey & Company identified a potential net economic benefit from circular economy in Europe, which would amount to €1.8 trillion by 2030. Even though the price of commodities and raw materials tends to fluctuate, one must look at the big picture and plan for the long run. The bottom line is that the earth's population is unlikely to decrease anytime soon, and while demand for resources continues to grow, the price for them will likely eventually rise. This will put companies who have prepared and already adopted a circular approach to doing business in a much better position than those who have not (Cumming 2019, 36).

### **3.1 Origins of Circular Economy**

Even though the problems with over-consumption and population growth have become part of the mainstream discussion relatively recently, they are far from new concepts. Already in the late 1700s, the issue was raised by the English economist Thomas Robert Malthus, who wrote about the problems arising from the number of people increasing before the means of subsistence were increased sufficiently. It was apparent to him already in the 1700s that consumption increasing to more than the land could tolerate would eventually lead to suffering, especially for the less well off

(Malthus 1798, 9). Interestingly, the exact same thoughts have been reiterated in the new millennium, with scholars supporting a new type of capitalism criticising the current economic paradigm for being too centred around capital and growth, also as indicators for economic health. The argument is that economic growth at such a rate combined with a growing population is unsustainable, which subsequently will lead to extreme inequality in society and serious depletion of the planet's resources (Weenk & Henzen 2021, 15–16).

In the 1960s, Kenneth Boulding described planet earth as a spaceship in his text "The Economics of the Coming Spaceship Earth". His text is often seen as something of a starting point for ideas around circular economy, where he directs his criticism at the consumption habits of society in the 1960s. Boulding writes, that for the most part of human civilisation's existence, people lived in a world with seemingly endless resources (Boulding 1966, 1).

There were always unknown frontiers to move to, in case resources ran dry at the current location, or in case of a deterioration of the social structures where people happened to live. One could always pack up and move to a virtually untouched place and start from scratch. The world was not viewed as a closed sphere, but rather as a never-ending place of endless opportunities and resources, which could easily be exploited for our personal gain (Boulding 1966, 1).

Already back in the 1960s, Boulding realised that the main engine behind developed economies' consumption of energy – fossil fuels – is a strictly limited resource. He never uses the term circular economy in his text, but he strongly alludes to what we today would describe as just that. Boulding uses the analogy of a "cowboy economy" when he refers to open economies, i.e., economies that seemingly run on endless resources. The cowboy, representing the vast, boundless prairies, is also linked with daring, opportunistic, idealised, and aggressive conduct, traits often found in open societies (Boulding 1966, 8).

In these economies consumption is a virtue and production a sign of success. These economies are not sustainable and live in something of a state of denial, being completely dependent on exhaustible resources. He even argues that gross national products should be divided into different parts, where one part represents growth stemming from the use of renewable resources, instead of having a system where success is measured merely in terms of production and consumption (Boulding 1966, 8). One could say that in Boulding's view the world is set up for cowboy economies.

Boulding's opposing model to that of the cowboy economy is the "spaceman economy". This is where one can see the clearest signs of thought patterns similar to that of modern-day circular

economy. In the spaceman economy the world has become a singular “spaceship”, and people on board are aware of the limitations of the natural resources. Here one must find one’s place in a world built around a cyclical ecological system.

Resources in the spaceman economy are not unlimited, and even though Boulding agrees that it cannot escape regular inputs of energy, emphasis is put on sustainability. Throughput is not the objective, but rather something that ought to be minimised instead of maximised. The economy's real success is not about production and consumption, but about the quality and complexity of the total capital stock, which includes human well-being. In a spaceman economy, the main focus is on maintaining the stock, and any technology that achieves this with reduced production and consumption is a clear advantage (Boulding 1966, 8).

The issue was also raised in the early 1970s in a report to The Club of Rome, “The Limits to Growth”, where the authors warned that the earth is indeed finite and cannot support never-ending growth. If the current world system’s goal is to produce more people with access to more of everything, it will eventually lead to earthly limitations being reached (Meadows, Meadows, Randers & Behrens 1972, 86–87).

One could say that Boulding and the authors behind “The Limits to Growth” were certainly ahead of their time. They voiced a lot of concerns that have grown increasingly acute over the years. Circular economy aims to tackle this negative development by building systems that can function within the “spaceship”, i.e., Boulding’s spaceman economy. A circular economy transforms products reaching the end of their useful life into valuable resources for others, effectively closing loops within industrial ecosystems and minimising waste. This shift in economic principles prioritises sufficiency over continuous production: items are reused whenever possible, and if not, they are recycled, repaired if damaged, and remanufactured if repair is not feasible (Stahel 2016, 435). The virtue is not throughput, but rather the preservation of the capital stock. Nowadays people are increasingly aware that our planet’s resources are finite. Value retention and the notion of loops are key concepts of circularity, which refer to the organising of return flows of products and materials (Weenk & Henzen 2021, 12).

As was covered in the introduction to this paper, the counterpart for a circular economy is often called the linear economy, which is essentially what Boulding meant when he talked about his cowboy economy. The linear economy is also the term I will be using in this thesis to describe the economic system where finite resources are extracted to create products that are typically not fully utilised and are eventually discarded as waste. This system revolves around resource extraction,

product creation, and waste disposal. It is sometimes also called the take-make-waste economy (The Ellen MacArthur Foundation n.d.).

## 4 Circular Economy at Events – Event Greening

When looking to reduce the environmental impact of an event, there are five crucial aspects to consider. These include the choice of venue, the selection and provision of food and food services, the transportation arrangements, the use and sourcing of materials, and the engagement and involvement of participants. Each element plays a significant role in making the event more environmentally sustainable. When implementing circular processes in the events industry, one is often referring to the concept of greening (Government of Newfoundland and Labrador n.d., 3).

The term "greening" has its origins in the study of how businesses can be more eco-friendly. It entails making changes to technology, structure, and management to be less of a burden to the environment, and began with heavily polluting industries like oil, chemicals, cars, and airlines (Mair & Laing 2012, 685).

Event greening is the process of arranging events with particular concern for their environmental impacts (Li & Liu 2020, 1933). It involves the integration of socially and environmentally responsible decision-making into the planning, organisation, and execution of events, regardless of the scale, as well as the incorporation of sustainable development principles and practices at all levels of the event organisation. The goal is to ensure the responsible hosting of an event, but also enabling visitors to make circular and sustainable choices when attending the event (Department of Forestry, Fisheries and the Environment – Republic of South Africa n.d., 57).

As we have established, the concept of event greening involves a multitude of different aspects. Different guides might offer slightly different instructions on how to create a green event, but the main categories are mostly the same. There is a lot of information available online on how to create more sustainable events, including checklists for the organiser to make sure that everything has been taken into account. For example, the University of Waterloo in Canada has created a green event checklist, which contains five different categories of elements related to organising a more sustainable event (University of Waterloo n.d.).

The first category is food-related and called "Provide local, healthy choices". The organiser is encouraged to favour locally sourced food items where applicable, always providing vegan and vegetarian options, favouring Fairtrade or in other ways certified tea and coffee, favouring eco-certified meat products if meat is served, and ordering appropriate amounts to avoid wasting food (University of Waterloo n.d.).

The second category is waste management-related and called “Strive for a zero-waste event”. This category includes always having a recycling option next to every garbage bin, collecting organic waste where appropriate, making waste signs to enable hassle-free recycling, avoiding single-use glassware, and encouraging attendees to bring their own reusable bottles or mugs (University of Waterloo n.d.).

The third category is printing-related and called “Trim down printing and supply impacts”. This category involves points such as making agendas and information available only digitally, only providing useful giveaways or souvenirs, and allowing attendees to check in electronically, if it is something that is applicable or necessary for the event (University of Waterloo n.d.).

“Provide green travel options” is the fourth category, which includes points such as planning the event in an area that is easily accessible by public transport, encouraging carpooling, giving attendees information in advance on how to arrive using public transport, walking or by riding one’s bike, and considering arranging the event online if attending in-person is not deemed necessary (University of Waterloo n.d.).

The fifth category is related to making people aware of the concept of green events, and it is called “Don’t forget to tell people about it”. In many cases people might not be well versed with the concept of event greening or green events, which is why it is important to inform attendees about it to increase awareness (University of Waterloo n.d.). Similar checklists have been implemented by numerous universities across the world with varying degrees of detail, e.g. at the University of New South Wales in Australia, where the checklist also incorporates five main categories: choosing a venue, planning and promotion, reducing waste, food and beverages, and recycling (University of South Wales n.d.).

#### **4.1 Circular Economy at Elite Sporting Events**

Event greening is emerging as a global trend, which has also entered the realm of elite professional sports in Europe. When discussing circular economy at events, a lot of emphasis is placed on the eradication of waste, while maximising waste-sorting, re-using, and recycling (Department of Forestry, Fisheries and the Environment – Republic of South Africa n.d., 58).

In Europe we have already seen some significant improvements with regards to waste management in recent years at major sporting events. In one of the premier football leagues in Europe – the German Bundesliga – one stadium has already earned a certification for being the first zero

waste stadium not only in the league, but the entire continent. This is the PreZero Arena in Sinsheim, which is home to TSG 1899 Hoffenheim (Hannover Messe 2023).

What does zero waste mean? The main idea is to eliminate waste entirely, but since it is a tall order at major events with many visitors, the focus is instead on turning waste into recyclable materials. For example, at the PreZero Arena, they use returnable beverage cups and grass paper from the stadium turf for printing autograph cards and matchday flyers (Bundesliga 2023).

The PreZero Arena is part of a larger initiative by the owners of the PreZero waste disposal and recycling company: the Schwarz Group. The group is the owner of major German budget-friendly supermarket chains Lidl and Kaufland, who themselves are big contributors to the excess plastic waste problem. The PreZero Foundation promotes an efficient cycle, positioning the group as an active solution provider with extended producer responsibility, aiming to shift packaging into a circular economy to reduce resource waste. The PreZero Arena is part of that bigger picture and vision for the group to reduce waste (Hannover Messe 2023).

In the United Kingdom, a similar endeavour has been at the forefront of environmental consciousness and event greening for the past decade. Forest Green Rovers Football Club is a small professional football club from Gloucestershire, which was taken over by the electricity entrepreneur Dale Vince in 2010. Following a strong environmentalist credence by the new owner, the club went fully vegan in 2015, becoming the first professional football club in the world to become certified vegan (Forest Green Rovers 2023).

Sustainability is at the core of Forest Green Rovers' operations. Recognised by FIFA in 2017 as the greenest football club globally, they consistently explore innovative ways to enhance environmental consciousness in football. Key pillars include energy, transport, food, and nature support. Solar panels at the entrance and on one of the main stands of the football ground cover around 20 % of the club's electricity needs. LED technology, powered by solar-charged batteries, is used for the scoreboard and around the pitch. Additional energy is sourced from 100 % renewable electricity sources and carbon-neutral gas (Forest Green Rovers 2023).

Circular economy is a way to achieve more sustainability, but circularity itself is not guaranteed to be sustainable. It must be done appropriately. In a sports setting it is common to find merchandise, which are bought by fans who support a particular team. Nowadays, in many cases these goods are made from recycled materials. In order for the process to be truly sustainable, the recycling process itself must be done in a sustainable manner. To evaluate how sustainable the recycling process is one can use the Triple Bottom Line method, which shows how well the company is

performing. It consists of three P's, i.e., people, planet, and profit (Kossila 2022, 46). In developed countries it is more likely that the circular processes are truly sustainable, but when it comes to the garments industry overseas, it is not always guaranteed.

From a match-going fan's point of view the most visible and straightforward act of circularity is undoubtedly waste management at the arena. Tapiolan Honka – an elite basketball club based in Espoo – is one of the pioneers in Finland when it comes to circular processes at their events, especially with regards to waste management. Tapiolan Honka has an extensive program of waste sorting and recycling at their training centre, which ranges from bottles to general plastics and cardboard to bio waste (Owen 26 March 2020).

## **4.2 Use of Plastics at Events**

Plastic pollution is considered one of the biggest environmental problems of our lifetime, and the production of plastics has increased exponentially from the mid-20<sup>th</sup> century to the current day. In 1950 it was estimated that the world produced 2 million tons of plastic per year, while the same number in 2015 was an astonishing 419 million (Robinson 3 January 2024). According to the government of the United Kingdom, it was estimated in 2018 that each game in the English Premier League of football could produce up to 750,000 plastic bottles and seven tonnes of waste (Metro 2018), while a significant majority of fans voiced their support for scrapping single-use plastics from stadiums already back in 2019 (Campelli 2019).

In Europe, plastic waste is mainly managed through incineration for energy. Even with increased recycling capabilities in recent years, recycling only ranks as the second most common option. Still, about 25 % of plastic waste ends up in landfills. Of all the plastic collected for recycling, half is exported outside the EU due to insufficient local capacity, technology, or funds (European Parliament 2024).

The EU seeks more recycling-based and eco-friendly waste management methods. Low recycling rates cause economic and environmental losses, with 95 % of plastic packaging value lost after its first use. In 2019, plastic production and incineration emitted over 850 million tonnes of greenhouse gases globally, potentially rising to 2.8 billion tonnes by 2050. Enhancing recycling would help lower the plastic industry's emissions (European Parliament 2024).

It is obvious that the use of single-use plastic must be greatly reduced. Events are often still heavily reliant on them, and manufacturers of plastics are rebranding their products in clever ways to stay relevant and attractive to consumers.

### 4.2.1 Bio Plastics

Single-use items made from biodegradable materials are becoming increasingly common, with so called “bio plastics” being some of the latest additions to be found at events and store shelves. The surge in the use of bio plastics is driven by the desire to make sustainable choices, which supposedly reduce the environmental impact of traditional plastic waste. Currently traditional plastic waste amounts to a truckload entering our oceans every minute (WWF 2022). It is however of utmost importance to be mindful that not all bio plastics are biodegradable, even if they are made from plant sources. Many plastics marked as bio-based are simply made from renewable resources, but act in the same way as traditional plastics made from fossil sources. Being bio-based does not equal being biodegradable or compostable (VTT 2020).

It can also be misleading to assume that all products labelled as "biodegradable" or "compostable" are inherently more sustainable. The imminent surge in biodegradable plastic production, expected to increase from 1.5 million metric tons to almost 5.3 million in the coming years, highlights the importance of understanding the actual environmental impact of these materials (WWF 2022). Defining what is considered biodegradable or bio plastic is often also challenging and not straightforward. With bio plastic one refers to plastics sourced from plant or animal sources, and they are also called semi synthetic plastics, because they have been processed by humans. In some cases, it is enough to call bio plastics bio plastics if they consist of merely 20 % of raw materials sourced from plant or animal sources. They may in fact also include raw materials from fossil sources (Kohvakka & Lehtinen 2019, 115).

The production process of bio plastics uses significant amounts of energy, e.g. with regards to the upkeep of the agricultural farmland where the raw material is grown, the harvesting of said raw material, the processing of the plastic, and the transportation of it. In addition, the modification of forests and grasslands to agricultural farmlands destroys carbon sinks and releases carbon dioxide in the atmosphere. Some also argue that the production of bioplastics takes away agricultural land from food production, which would be needed when the planet's population grows (Kohvakka & Lehtinen 2019, 116), though others are not alarmed by it and deem the land used in cultivating crops for bio plastics negligible (Peltola 2019).

Both biodegradable and compostable plastics are designed to break down or "biodegrade" faster than traditional plastics, which are essentially eternal. This happens when microorganisms digest the material. It is however important to be aware that there are key distinctions between these terms. Biodegradable plastic should break down entirely into natural substances within a

reasonable amount of time. Unfortunately, this does not always happen efficiently. Compostable plastic on the other hand, while also biodegradable, is designed and tested for processing in home or industrial composting facilities, where the breakdown process is sped up. The facilities create the conditions that are needed for the process to begin. It requires elements such as the right temperature and moisture levels, which will transform the plastic into usable soil (WWF 2022).

One must be mindful that some biodegradable plastics are also – at least partially – sourced from fossil sources, but their polymer chains are designed to break down faster than traditional plastic. They are constructed in a way that makes them break down only at certain temperatures, humidity, or acidity levels, which enables them to stay intact while in use (Kohvakka & Lehtinen 2019, 117).

It is not guaranteed that placing so called compostable plastic waste in a general waste bin, which might end up in a landfill, actually is subjected to the necessary conditions for it to biodegrade. Even in some facilities designed to handle biodegradable or compostable waste, the conditions are simply insufficient for the composting process to begin, in which cases pieces of the so called biodegradable plastic must be sorted out from the waste mechanically and subsequently burned (Kohvakka & Lehtinen 2019, 119). Also, even when the plastic is marketed as biodegradable or compostable, it does in fact act much like any other type of plastic when broken down. The result is essentially micro plastic particles, even when the material is deemed compostable. Plastics are chemically mostly made up of carbon and hydrogen, which makes for instance the polyethylene made from sugar cane chemically identical to plastic made from fossil sources (Kohvakka & Lehtinen 2019, 116). Even oil is the product of bio-based materials, which has become what we today know as a fossil fuel over millions of years under high pressure and intense heat (Kohvakka & Lehtinen 2019, 117).

Simply relying on biodegradable and compostable plastics is not enough to address the plastic pollution crisis. A comprehensive approach, which involves various strategies such as reducing the use of plastics, encouraging reuse, and moving towards a circular economy, is of utmost importance. Additionally, it cannot be assumed that these materials will not cause environmental harm if improperly discarded as general waste (WWF 2022).

For all types of plastic, including biodegradable and compostable variants, effective collection is necessary. When pairing the collection with appropriate recovery systems a positive outcome can be achieved. This makes sure that the material is properly managed, which prevents its entry into the natural environment (WWF 2022).

#### **4.2.2 Biodegradable Paper Packaging**

In Finland a much likelier source for bio-based single-use packaging is paper, which of course is often sourced from local forests in form of trees (Kohvakka & Lehtinen 2019, 125).

Even if the forest used for the sourcing of bio-based materials is cared for appropriately, it takes roughly 15 to 20 years for it to reach the same level of absorption of carbon as it held before it was cut down. It does not reach the pre-cutting levels of biodiversity in the lifespan of a human being, which can have a detrimental effect on the wellbeing of people who have enjoyed the forest for recreational purposes (Kohvakka & Lehtinen 2019, 125). In addition, the transport of materials related to the manufacturing of paper and cardboard results in emissions. The emissions are however significantly lower than before, having shrunk 64 % in Finland from 1990 to 2020, and could potentially be close to carbon neutral by the year 2035 (Ahtokivi 2020).

#### **4.2.3 Recycling of Bio Packaging**

Both bio plastics and paper packaging are in general also recyclable, which can make them suitable for the implementation of circular processes (Peltola 2019). The problem of recycling does however still remain, since the current recycling capacity is only capable of recycling a rather small amount of the collected waste.

Even biodegradable and compostable plastics can be recycled, but unfortunately this process is still in its infancy in Finland. The guidelines for waste disposal currently instruct people to dispose of compostable plastics in the compost, or biodegradable plastics to be disposed of in the mixed waste bin (VTT 2020).

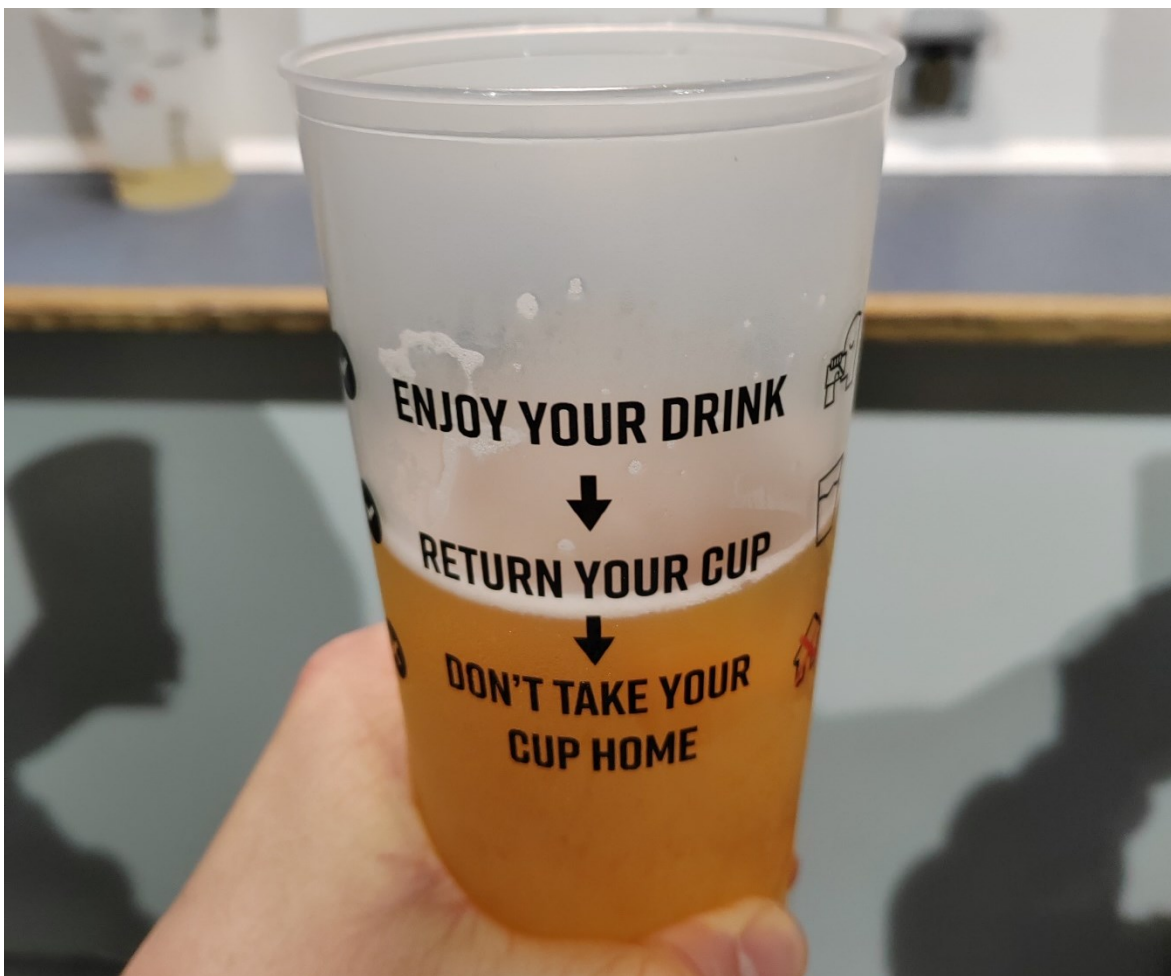
Reusing items and extending their lifespan rather than relying on disposables is the focus of a circular economy. When reuse is not possible, emphasis is put on recycling. This approach is extremely relevant for pure bio-based and partially compostable packaging plastics. A major challenge for new materials is however their initially low use volumes, making recycling economically unfeasible. As the use of different plastic types increases, especially in collection streams, they eventually become economically viable for separation and can then be processed into recycled plastics (Peltola 2019).

Sorting is to be recommended from the outset, even if the volumes are initially small. By broadening the collection of different types of plastic packaging to include compostable and biodegradable plastics, economically sustainable volumes can be achieved over time (Peltola 2019).

### 4.3 Reuse Wins

Amidst the growing concern over single-use plastic, venues and event companies are wisely seeking to reduce their plastic footprint. However, shifting from one single-use product to another often trades one set of environmental problems for another. As was discussed in the previous chapters, recycling is far from unproblematic. An idea that is beautiful in theory can in reality be a lot more problematic than initially thought.

As we can read in the report by Went & al., “Reuse wins at events: A life-cycle analysis of reusable and single-use cups”, the solution lies in embracing reusability. Companies innovate with new reuse services, especially in the events industry. Implementing systems for reusable cups can position the industry as a leader in the emerging reuse economy, pleasing both fans and employees, while making significant strides towards zero waste and a healthier planet (Wentz, Hawk, Meves, Paterson & Lundsgaard 2022, 8).



Picture 1. Reusable plastic cup at Stamford Bridge, London.

The report by Wentz & al. was written based on an American study concerning reusable vs. single-use cups at American sporting events, but the results carry value also from a European perspective. The study examined the energy consumption, carbon dioxide emissions, air acidification, water eutrophication, and landfill impact across the production, transportation, and usage stages of 16-ounce beverage cups. The cups analysed in the study were made from polyethylene terephthalate (PET), polylactic acid (PLA), aluminium (Al), as well as reusable variants constructed from polypropylene (PP) and stainless steel (SS) (Wentz, Hawk, Meves, Paterson & Lundsgaard 2022, 7).

In all usage scenarios, a polypropylene (PP) cup exhibits the lowest environmental impact compared to single-use cups when it can be used at least six times under optimal recycling conditions. Even reusable stainless steel (SS) cups have a lower environmental impact than single-use cups analysed in the study, as long as they can be used at least six times (Wentz, Hawk, Meves, Paterson & Lundsgaard 2022, 42).

The conclusion of the study is that venues and event companies need to move away from all single-use cups altogether, not just those made of plastic. Aluminium cups, despite being recyclable, are not a sustainable choice (PR Newswire 2021). Single-use stainless steel cups are however not commonplace at European events.

Events companies should establish reusable cup systems, partner up with existing systems, or engage external reuse companies to manage the service for them. By implementing reusable cup systems, venues can both save and earn money. This includes reducing expenses on disposable cup purchases, waste management, and cleanup. Moreover, it opens avenues for brand partnerships and loyalty, as well as opportunities for integrating technology, offering special deals, and gathering valuable customer data (PR Newswire 2021).

The same principles can of course also be applied to other types of holders and containers for food items at events, but cups and mugs are usually used as an example. It is significantly easier to serve food items without or with very little packaging, while beverages for obvious reasons require it; either the original packaging or a container that can be filled from the tap.

#### **4.4 Vegan Options**

Though not necessarily directly linked to circular economy according to all definitions, it is well-known that a plant-based diet produces significantly lower carbon dioxide emissions than a meat and dairy-based diet. It is estimated that replacing a conventional menu with plant-based options

can reduce the carbon footprint for a 500-attendee event by ten tonnes of greenhouse gas equivalents. It can also save five acres of habitat from animal agriculture, prevent 17 tonnes of manure pollution, and conserve approximately 380,000 litres of water from irrigation and food processing (Emery & Molidor 2019, 2).

In other words, vegan options play a significant role in events greening, which is partly why so much emphasis has been placed on it by the likes of Forest Green Rovers Football Club in the United Kingdom. It is in fact recommended, according to the Center for Biological Diversity's report, that event planners, caterers, and venues should serve a plant-based menu by default, which would significantly reduce the footprint of events (Emery & Molidor 2019, 2).

## 5 The Research Process

This chapter introduces the research process, which can be categorised as constructive research. The research process is based on the studied subject and the research questions, which have been highlighted earlier in the paper:

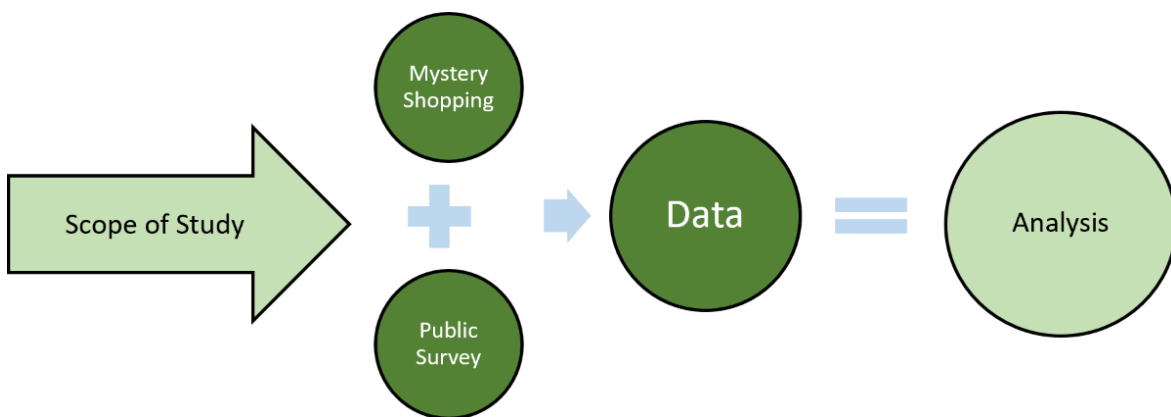
RQ1: What circular solutions and processes can be identified at elite sporting events from a visitor's perspective?

RQ2: Are circular solutions and processes important to visitors attending sporting events?

RQ3: Are visitors prepared to pay more for services if that enables more sustainable events?

### 5.1 Data Collection

The research was conducted using two main modes of data collection: mystery shopping and a public survey. The mystery shopping was conducted in person by myself, the author of this research paper.



Picture 2. Data collection structure

The two modes of data collection were conducted overlappingly, and partial analysis of the mystery shopping results were done between the mystery shopping sequences, in order to make the observations readable in a table format. All data collected through mystery shopping and the public survey was collected between the autumn of 2023 and the spring of 2024.

## 5.2 Mystery Shopping

Mystery shopping can be defined as a form of market research employing a secret shopper to assume the role of a genuine customer, assessing the customer experience in person, via telephone, or online (Kuhn 21 October 2021). In this research case the emphasis was placed on mystery shopping in person, since the research is focusing on how the existence of circular economy processes are perceived from a customer's perspective. This way every event organiser that was studied can get a better understanding of how their events are viewed through their customers' eyes. The mystery shopper conducted the research behaving like any other customer, as per the core principles of mystery shopping (BARE International Europe 25 February 2019, min. 00:00–01:00).

Some circular processes can potentially also be studied over the telephone, e.g. if one is buying tickets online and the vendor is familiar with processes at the event. With ticket sales mostly being centralised to large operators that sell tickets to a myriad of different venues, it is unlikely that the results from a mystery shopping phone call would be reliable enough. The existence of potential circular processes at a venue can often also not be completely verified over the phone without attending the event in person. Mystery shopping over the phone is much better suited for purely assessing quality of customer service (Medium 2023), which is not the aim of this study.

Some aspects of circularity can be studied also online, but they are very limited for this specific purpose, mainly to what information an organiser has put online about circular economy. Some research with regards to fan merchandise has however been conducted online, since some items were not be available for purchase at the events themselves, or the nature of some items at sale were not made clear at the event.

Mystery shopping can be used to analyse a wide variety of matters, but in this case the focus was solely on the topic of circular economy and circular processes at Finnish sporting events. Even though there was no commissioner for this research paper, there is value in staying on topic and not straying away from what one is aiming to study (BestMark n.d.).

The mystery shopping was conducted from October 2023 to May 2024. In accordance with the scope of the study, only events that required the purchase of a ticket were studied, and they all consisted of team sporting events. To gain a greater understanding of the state of circularity at sporting events, the mystery shopping visits were spread across different sports, which included visits to both first and second tier venues, but also teams operating lower down in the league systems. In addition to these club sides' events, mystery shopping was also conducted at the

country's biggest venue with a particularly large crowd for Finnish standards: an international football match at the Helsinki Olympic Stadium, as well as an international futsal match.

All the data from the mystery shopping sessions was collected in a spreadsheet including three basic information headings; venue, organiser, and sport, as well as eight categories related to the topic of circular economy; paperless ticket system, reusable cups, reusable food containers, recycling bins, reusable towels/hand dryers, waterless restroom solutions, and fan-merchandise made from non-virgin resources. Virgin resources refer to raw material that has not been subjected to use or processing before (Weenk & Henzen 2021, 12).

Supporting sustainable transport and enabling visitors to reach the event by public transport, by foot or by bike is an important part of circular economy and in organising sustainable events (Pajunen 31 October 2018). A decision was however made not to place much emphasis on the ease of reaching the event by public transport in this mystery shopping report, since all except one venue in the study were situated in the Helsinki metropolitan area. All venues included in the mystery shopping can easily be reached by public transport.

### **5.3 Mystery shopping events**

A total of ten events were attended for the purpose of mystery shopping. These included four football matches, two ice hockey matches, two floorball matches, one futsal match, and one pesäpallo match.

#### **5.3.1 Football: Finland – Kazakhstan**

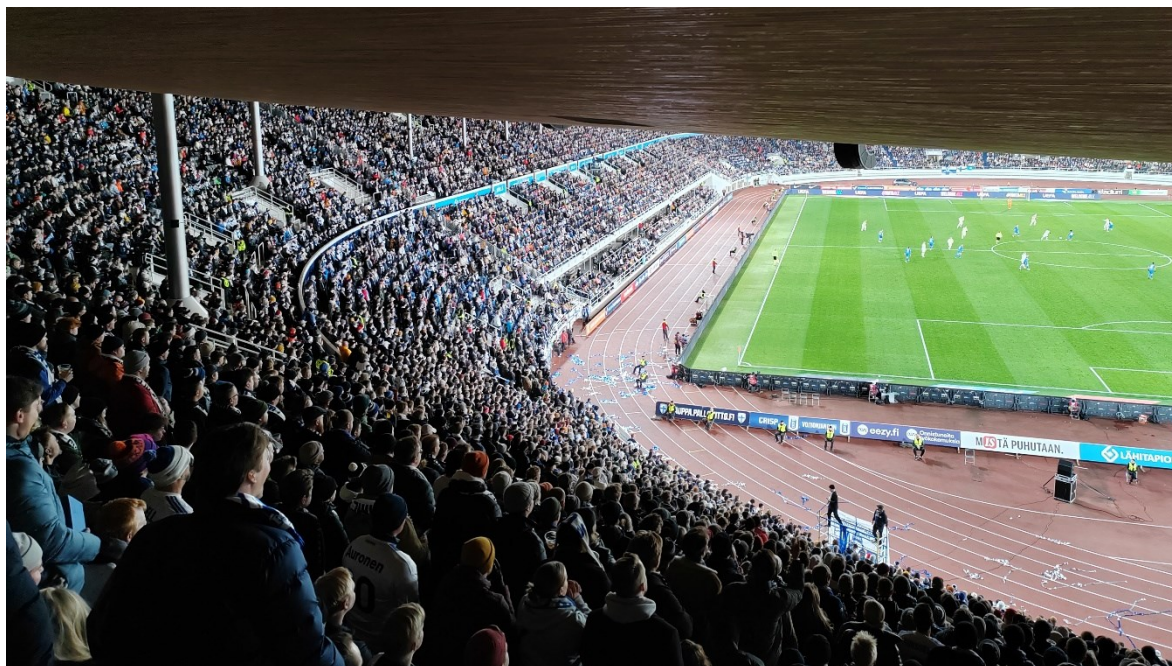
Organiser: The FA of Finland – Palloliitto

Date: 17 October 2023

Venue: Helsinki Olympic Stadium

Capacity: 36,000

The 36,000 capacity (Football Ground Map n.d.) Helsinki Olympic Stadium is the biggest events arena in Finland (Olympiastadion n.d.), so a mystery shopping session at the stadium was considered quite significant for the purpose of this study. For the European Championships qualifier against Kazakhstan a ticket was easily bought electronically, which is the norm nowadays. Simply scanning the QR code from one's phone was needed to enter.



Picture 3. Helsinki Olympic Stadium – Finland's largest events arena.

As per the scope of the study, only services available to the general public were reviewed during the mystery shopping. Reusable cups were not available at the stadium, and neither were reusable food containers/serving plates. Food was however served in paper containers or wrappings (Compass Group n.d.). No recycling bins could be found either, but at least one water station did exist, where spectators could fill up their empty bottles for free. Reusable hand towels were also available in the restrooms, but no waterless solutions, i.e. waterless urinals. In fact, the restroom capacity at the stadium was insufficient, which required the deployment of portable restrooms for a large event on this scale.

In the shops selling merchandise, it was not apparent that any item was made from non-virgin resources. After studying the online shop of the Finnish FA, it was however revealed, that the official Nike match kits are made from 100 % recycled polyester (Maajoukkueen Verkkokauppa 2024), and the same applied to the replica kits, according to the information in the online store.



Picture 4. Portable restrooms at Helsinki Olympic Stadium.

### 5.3.2 Football: KTP – IFK Mariehamn

Organiser: FC KTP

Date: 21 October 2023

Venue: Arto Tolsa Arena, Kotka

Capacity: 4,780

A mystery shopping session was conducted at the 4,780 capacity (Football Ground Map n.d.) Arto Tolsa Arena in Kotka for the first-tier football match between FC KTP and IFK Mariehamn. Arto Tolsa Arena is a traditional football stadium, which was at the time of the visit undergoing renovations. The mystery shopping was done from a visiting supporter's point of view, which means that the services provided were potentially different from those in the main stand, since visiting supporters were ushered into one of the corners of the stadium.

For FC KTP it was also possible to buy a ticket in advance electronically. Reusable cups or food containers were not available. However, due to the limited selection of food items in the small kiosk behind the away stand, reusable food containers/plates were not really applicable to begin with. There were recycling bins for cups available, so even though the cups themselves were not reusable, they were being systematically collected and recycled. The cups were also completely free

from plastic. No water stations were available and reusable hand towels and dryers were not applicable, because the only restrooms accessible to the visiting supporters were portable restrooms.

The event in Kotka was the only event during the mystery shopping study that was arranged outside of the Helsinki metropolitan area, where public transport in many cases is not as prevalent as in the capital. Being situated right in the centre of the city of Kotka, the stadium is however accessible also by public transport, since the terminus for most bus routes in central Kotka is a short walking distance from the stadium (Kotkan seudun bussiaikataulut 2023).

The same applies to visiting supporters arriving by intercity coaches or trains, which also terminated only a walking distance from the stadium.



Picture 5. Recycling station for cups at Arto Tolsa Areena.

No FC KTP fan merchandise was sold in proximity to the visiting supporters' section at Arto Tolsa Areena, but based on online mystery shopping on the FC KTP website, no mentions of products made from non-virgin resources exist (FC KTP n.d.).

### **5.3.3 Football: IF Gnistan – IFK Mariehamn**

Organiser: IF Gnistan

Date: 25 October 2023

Venue: Mustapekka Areena, Helsinki

Capacity: 2,200

The 2,200 capacity (Transfermarkt.com n.d.) Mustapekka Areena is a small venue in the Helsinki suburb of Oulunkylä. After gaining promotion to the first tier of Finnish football for the 2024 season, the stadium saw some changes, but at the time of visiting it had not yet been renovated. Again, buying an electronic ticket was possible, but other than that not much had been done for the sake of circularity. There were no reusable cups, no reusable food containers, no recycling bins, no water stations, and no waterless restroom solutions. The existence of reusable hand towels or hand dryers, as well as fan merchandise made from non-virgin resources, remained unclear.

### **5.3.4 Football: GrIFK – PEPO**

Organiser: GrIFK

Date: 13 April 2024

Venue: Kauniaisten keskuskenttä, Kauniainen

Capacity: 500 covered seats

GrIFK is a football club playing in the 4<sup>th</sup> tier of Finnish football as per the spring of 2024. GrIFK play at Kauniaisten keskuskenttä, which is a small stadium with 500 covered seats (Transfermarkt.com n.d.). The club is rather small and run mainly on an amateur basis, so an electronic ticket system was yet to be adopted in April 2024. There were also no reusable cups available and food items were served from single-use paper plates. Recycling bins did exist, but they were limited to cans and bottles. The recycling bins were also not available in the stands, which resulted in spectators leaving their empty bottles and cans in their seats or in close proximity to the general waste bins.

Reusable towels were available in the restrooms and waterless urinals had also been installed. No fan merchandise made from non-virgin resources appeared to be available.

### **5.3.5 Ice hockey: HIFK – Pelicans**

Organiser: HIFK

Date: 28 February 2024

Venue: Helsinki Ice Hall

Capacity: 8,200

As per the norm for first-tier ice hockey in the 8,200 capacity (IIHF 2022) Helsinki Ice Hall, electronic tickets were available to purchase. No reusable cups or food containers, no recycling bins, and no water stations to fill up water bottles were however provided. The restrooms were equipped with reusable towels/hand dryers, and in the men's restrooms waterless urinal solutions were installed. Nowhere on the fan merchandise was it mentioned that it was manufactured from non-virgin resources, so if there are products available that are made from recycled materials, it is not apparent to the customer shopping at the premises. The same seemed to apply to the online shop of HIFK (HIFK Shop 2024).

### **5.3.6 Ice hockey: Kiekko-Espoo – TUTO**

Organiser: Kiekko-Espoo

Date: 25 March 2024

Venue: Metro Areena, Espoo

Capacity: 6,982

Kiekko-Espoo was at the time of visiting a second tier ice hockey team, but getting ready to play in the first tier come the 2024–2025 season. The match was played in the 6,982 capacity Metro Areena (IIHF 2024). Again, as per expectations, the ticket was easy to buy electronically in advance. Kiekko-Espoo had two different types of sales points at Metro Areena, where smaller kiosks sold drinks and snack food items from single-use cups and on paper plates, while the restaurant in one of the ends of the arena served drinks in reusable glasses.

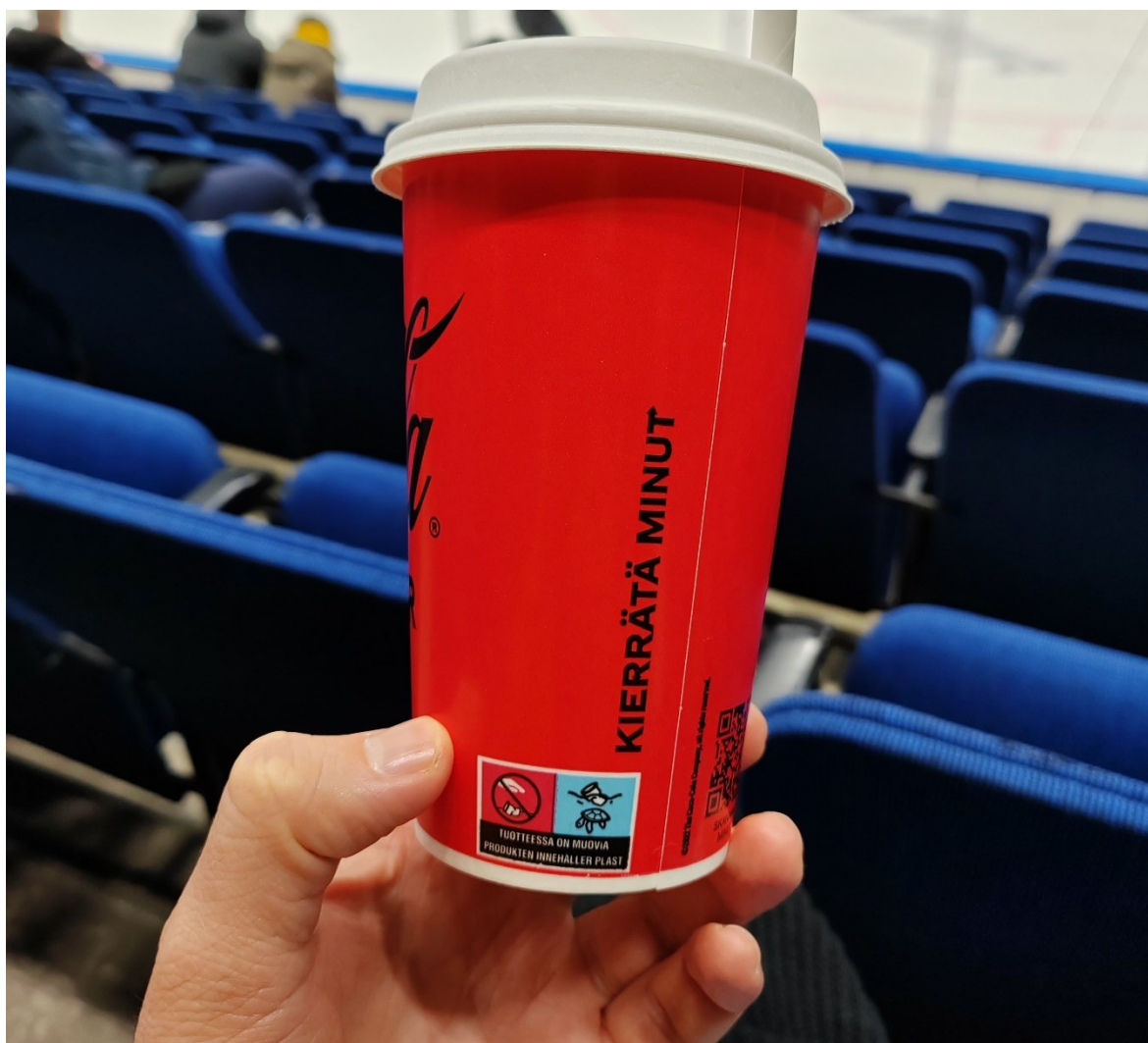
The restaurant was open to the general public and the price of a drink was the same as elsewhere in the arena, so one could say that they had partially implemented a system of reusable glasses. The same applied to meals enjoyed in the restaurant, which were served on real tableware, which was not the case in the kiosks.

The single-use cups for soda came with the text “recycle me” and carried paper lids, but there were no recycling bins available anywhere in the arena. If one bought an alcoholic beverage from any

other sales point than the restaurant, it was also served in a plastic cup, which could not be recycled due to the inexistence of recycling infrastructure.

There were also no water stations available to fill up one's own bottle, and the restrooms were not equipped with reusable hand towels or dryers. The restrooms were equipped with single-use paper towels, which were discarded in paper baskets. No waterless restroom solutions had either been installed at the time of the visit.

There were no mentions of products made from non-virgin resources in the arena's fan shops, and the same seemed to apply to the webshop of Kiekko-Espoo (Karren Sport 2024).



Picture 6. Recyclable cup at Kiekko-Espoo with a paper lid, but no recycling bins were available.

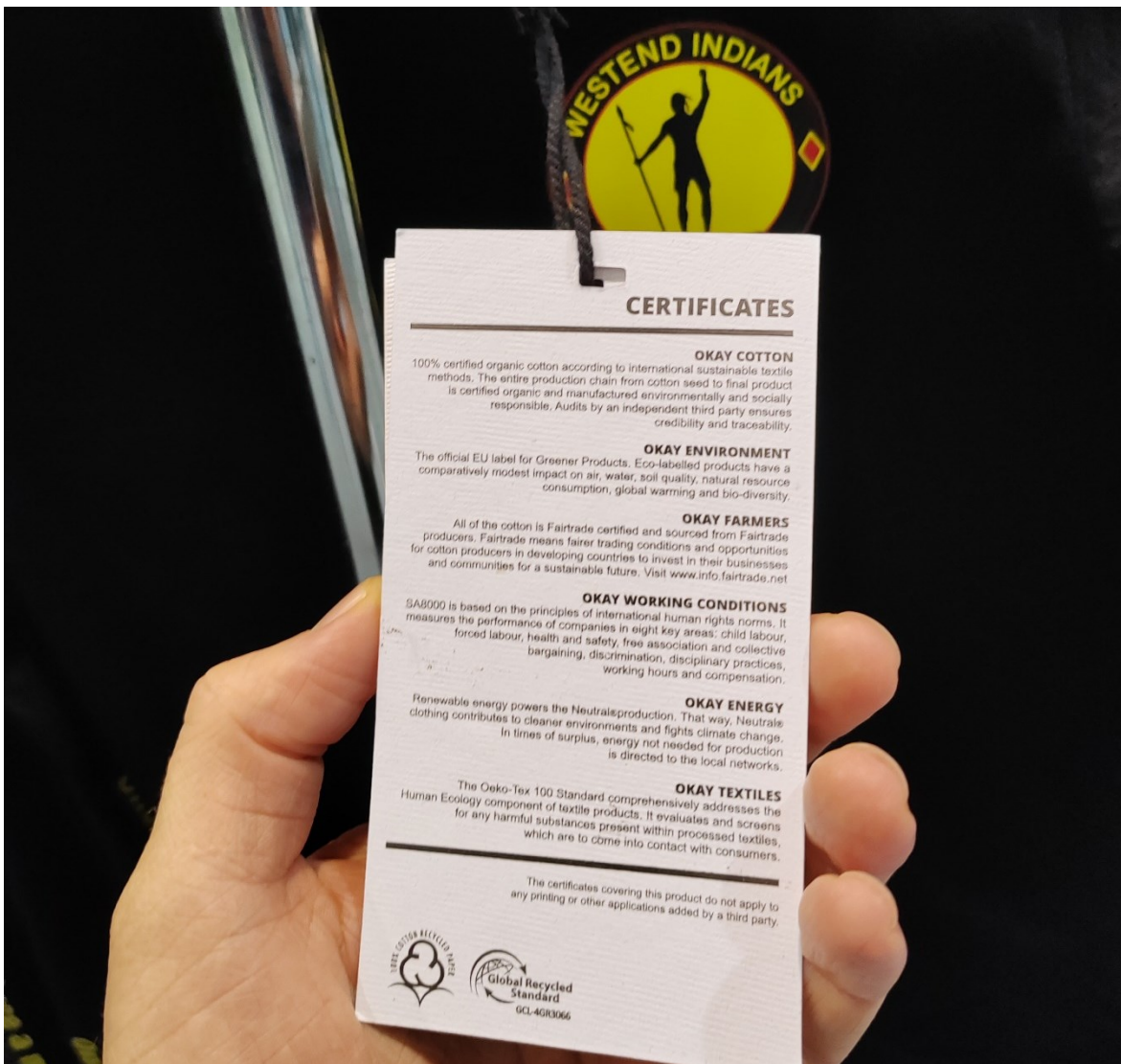
### 5.3.7 Floorball: Westend Indians – LASB

Organiser: Westend Indians

Date: 24 February 2024

Venue: Otahalli, Espoo

Capacity: 500



Picture 7. Fan merchandise sold at a Westend Indians' game.

Westend Indians is one of two top tier floorball teams in Espoo, and they play in the historic Otahalli gymnastics hall, which has a capacity of 500 spectators (Helsingin Sanomat 2023). Buying a ticket in advance electronically was possible. There was no system for reusable cups or food containers, but alcoholic drinks were served straight from the can, and there was a designated bin

available for cans to be recycled. Food was served from single use cardboard containers, which did not appear to contain plastic. For waste other than cans and bottles, there was however only general waste bins available, where all waste – be it paper, plastic, or organic – was mixed.

There were no water stations available to fill up one's bottle, but there were reusable hand towels/hand dryers in the restrooms. No waterless restroom solutions had however been installed in the building.

There also did not seem to be any merchandise made from non-virgin resources, but the merchandise that was on sale appeared to be certified with various organic cotton, eco, fair working conditions, and renewable energy labels.

### 5.3.8 Floorball: Esport Oilers – Classic

Organiser: Esport Oilers

Date: 14 April 2024

Venue: Tapiolan liikuntahalli, Espoo

Capacity: 1,098



Picture 8. Reusable plastic cups at an Esport Oilers' floorball match.

Tapiolan urheiluhalli is the home of Esport Oilers floorball club and has a total capacity of 1,098 spectators (Espoo n.d.). Much like Westend Indians, buying a ticket electronically in advance was

very easy, and it was enough to show the QR code from one's phone to enter. It was also the only venue in this mystery shopping research which had implemented an actual reusable cups system. The cups were made of plastic and used for alcoholic beverages. It appeared that non-alcoholic beverages were sold straight from the bottle. The cups were very similar to those that can be found in e.g. Germany and the United Kingdom at sporting events.

The somewhat confusing part was that there were no collection points to return the cups. It was also not made very clear to the customer that the cups are returnable. People ended up leaving the cups on a level surface behind the arena's stand, but a designated collection point and clear instructions would have made the process a lot smoother.

No food appeared to be sold from reusable food containers/plates, and there were no recycling bins available, merely general waste bins. There were also no clear bins for recyclable cans and bottles, even though customers were sold at least soft drinks straight from the bottle. Customers who specifically asked for recycling bins for bottles were informed that there are people going around the arena collecting empty bottles, but the risk remains, that many people simply throw them in the general waste bins instead, due to a lack of instructions and basic infrastructure for waste sorting.

There were also no water stations to fill up one's bottle. The restrooms were equipped with reusable hand towels, but there were no waterless restroom solutions installed. There also did not seem to be any fan merchandise made from non-virgin resources.

### **5.3.9 Futsal: Finland – Netherlands**

Organiser: The FA of Finland (Palloliitto)

Date: 17 April 2024

Venue: Energia Arena, Vantaa

Capacity: 2,500

The event was a qualifying match for the FIFA Futsal World Cup, which was played at the 2,500 capacity (EräViikingit n.d.) Energia Arena in Vantaa. The organiser of the event was Palloliitto, i.e. the football association of Finland.

Electronic tickets were available for the match, as was expected for a match of this stature. Reusable cups were not provided, and drinks were sold in single-use plastic cups, paper mugs or straight

from the bottle, in case of soft drinks. Food items were sold on paper plates, and no reusable food containers appeared to be available for the general public.



Picture 9. Plastic single-use cups at Energia Arena.



Picture 10. General mixed waste bin at Energia Arena. Waste sorting and recycling remains rare at Finnish sporting venues.

The arena was also not equipped with any type of recycling bins. All waste was disposed of in general waste bins, with no opportunity to sort different types of waste. There also did not appear to be any water stations for spectators to fill their own bottles.

In the restrooms reusable hand towels and hand dryers existed, which were for some reason accompanied by regular paper towels. No waterless restroom solutions were installed. Merchandise from non-virgin materials were however available, though they appeared to be limited to the official match kits of the national futsal team, similar to those of the national football team.

#### **5.3.10 Pesäpallo: Puna-Mustat – Jokioisten Koetus juniorit**

Organiser: Puna-Mustat

Date: 9 May 2024

Venue: Meilahden pesäpallostadion, Helsinki

Capacity: unknown

The event was the season opener for the third tier pesäpallo team Puna-Mustat from Helsinki, who play at the Meilahden pesäpallostadion. The stadium's capacity is unknown, but a few hundred people had made their way to the stadium to see the match.

There is no paperless ticket system available, which is unsurprising for an event at this level. Tickets were sold at the entrance and were payable by cash, card, or a mobile payment application. No physical tickets were however handed to spectators, but a printed match programme was, which seemed to act as a type of physical evidence of a purchased ticket.

A variety of snacks and drinks were sold at the event, but there were no reusable cups or food containers for purchased items. Coffee was served in single-use cups that were recyclable as cardboard. Soft drinks were served straight from the bottle or can, but there was no type of recycling available for the drink containers, only general waste bins.



Picture 11. Kiosk and general waste bin at Puna-Mustat pesäpallo match.

There did not appear to be any merchandise available from non-virgin resources, and the selection in general was quite modest, which was to be expected for an event at this level.

#### 5.4 Mystery Shopping Results Summary

Research question	Positive observations	Negative observations
RQ1. What circular solutions and processes can be identified at sporting events from a visitor's perspective?	<ul style="list-style-type: none"> <li>- Almost all higher tier and national team venues support e-tickets.</li> <li>- Reusable towels and hand dryers are found at most venues.</li> <li>- Waterless restroom solutions are found at some venues.</li> </ul>	<ul style="list-style-type: none"> <li>- Recycling is almost non-existent from a customer's point of view. Currently it is limited to only cans and bottles, and at many venues not even that.</li> <li>- Reusable cups are extremely rare.</li> <li>- Reusable food containers/plates are practically non-existent.</li> <li>- The use of recycled materials for fan merch is very rare.</li> </ul>

Table 1. Mystery shopping results summary table

### 5.4.1 Vegan Options at Finnish Sporting Events

As was established earlier in the introduction to events greening, vegan options at events are a big part of events greening and reduce the environmental footprint significantly. It is even recommended that the default menu served should be plant-based (Emery & Molidor 2019, 2). Unfortunately, this is not yet the case in Finland. The availability of vegan food was not chosen as one of the categories studied during mystery shopping, since it can be debated whether it truly is a part of circular economy. By some definitions it certainly is, since vegetarians and vegans can be seen as accelerating the circular economy by making sustainable choices, of which many are not only related to eating habits (Nessel April 2021).

Even though vegan options were not chosen as a category to be studied in-depth for the mystery shopping, general observations were made regarding the availability of vegan food items on the menu. Vegan options do exist, but they are very limited: in most cases limited to snacks and drinks. The most common food item sold at any sporting event in Finland is a grilled sausage, and these still come almost exclusively in the traditional pork meat format. In most cases no heated vegan food items are available, and sandwiches and sweet snacks tend to be non-vegan.

## 5.5 Public Survey

In addition to the mystery shopping, a public survey was conducted, with the purpose of getting a better understanding about the state of circularity at Finnish sporting events. A total of 229 people took the survey, which was distributed to the public via an open web link on Finnish sports messaging boards and through social media. The survey consisted of a total of 14 questions, of which twelve questions were traditional multiple-choice questions, one was a question about the respondents' opinion of the current state of circular economy at Finnish sporting events on a Likert scale (Britannica 2024), and one was a non-obligatory open question with a free text field.

By my own discretion as the author, the main emphasis was put on sports that I am familiar with, and two of them also happen to be among the most popular spectator sports in Finland; ice hockey and association football. Emphasis was also placed on two sports with stable followings, which are among the most popular sports based on registered players, i.e. floorball and pesäpallo (Superprof 2024). The latter is also known as Finnish baseball. Pesäpallo is an outdoor team sport originally derived from baseball, which is hugely popular in many parts of the country. It is also the national game of Finland (Pesäpalloliitto n.d.).

Before distributing the link to the survey publicly, the survey was administered to a few potential respondents for feedback, as is recommended when conducting a survey (Harvard University Program on Survey Research 2007).

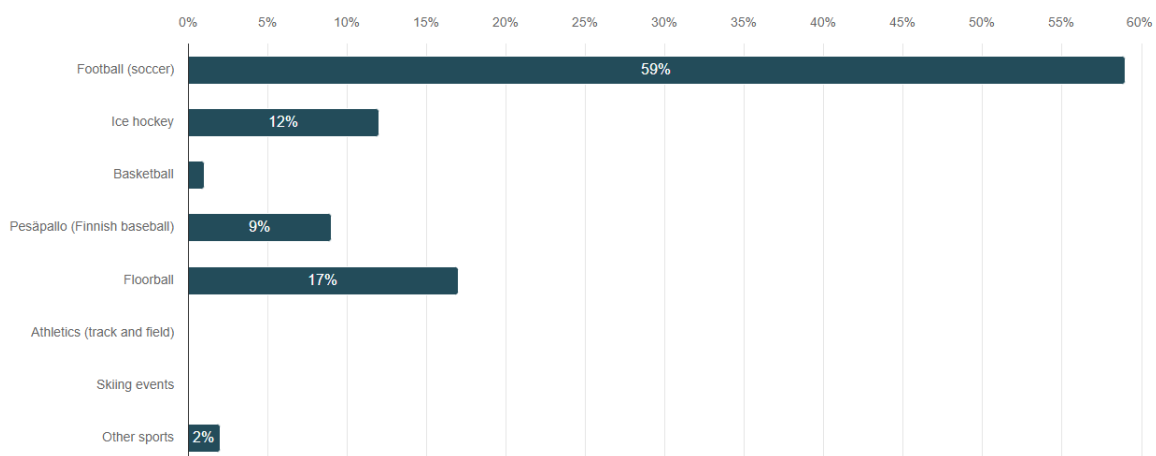
The survey was conducted in three languages, with the same content in Finnish, Swedish, and English. This was done to enable respondents to take the survey with ease in the language they are the most comfortable in. To test the translations, the survey was administered to test respondents in all three languages for an independent quality check of the translation (Dept 21 December 2022).

### 5.5.1 Survey Results

In accordance with the scope of the study, respondents were asked when taking the survey to only consider events that require the purchase of a ticket. In addition, services that are not available with a general admission ticket were to be ruled out from the responses. These included services that are only available to the press, VIP, or in similar areas of the venue, which are not open to the general public.

The respondents were also asked what sport's events they most frequently attend, and out of the 229 respondents a total of 135 (59 %) said they most frequently attend football (soccer) events. This was followed by 39 people (17 %) most frequently attending floorball, 27 people (12 %) most frequently attending ice hockey, and 21 people (9 %) most frequently attending pesäpallo events. The option "other sport" as well as basketball and skiing events gathered a few responses.

Which sport's events do you most frequently attend in person?  
Number of respondents: 229

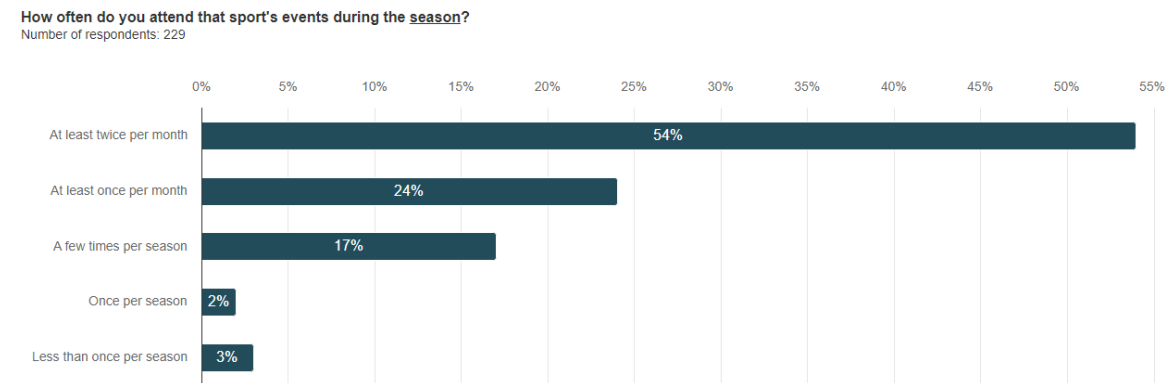


Picture 12. Survey results for question: Which sport's events do you most frequently attend in person?

The reason behind football's superiority in this case is up for debate, but a likely reason is that responses were gathered from the highly popular football message board FutisForum2, which does not require registration to access the discussions. The link was available for the public there under the sub-category "Jalkapallokulttuuri", or Football Culture in English (FutisForum2 2024).

Floorball fans were able to take the survey on the messaging board Pääkallo, where the link also was available to the public without the need for registration (Pääkallon keskustelu 2024). Pesäpallo fans were able to take the survey on the message board Supervuoro.com, also open to the public (Supervuoro.com 2024). The rest of the responses were gathered through social media.

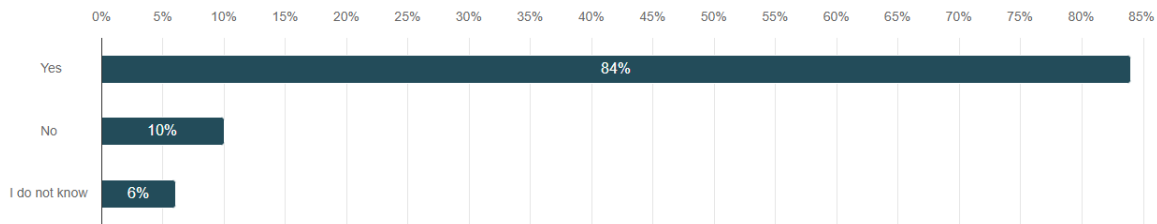
For a more in-depth analysis of the survey results within a particular sport, a minimum of 20 responses was chosen as the threshold to be included. This qualified football, ice hockey, pesäpallo, and floorball to be analysed more closely, which is reasonable, because two are predominantly outdoor sports, i.e. football and pesäpallo, and two are predominantly indoor sports, i.e. floorball and ice hockey. Responses gathered by other respondents mainly visiting other types of sports events are included in the total but will not be analysed on their own due to low response rates.



Picture 13. Survey results for question: How often do you attend that sport's events during the season?

Out of the 229 respondents a majority visited their most frequently attended sport's events at least twice per month during the season, and a significant minority visited the events at least once per month during the season. This was seen as a positive signal from the point of conducting the research, since the majority of the respondents were very familiar with the services provided at the events, given that they were regular visitors.

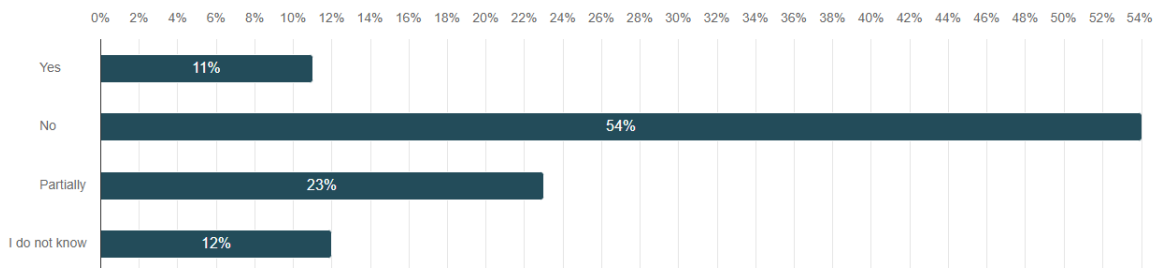
Can one buy a paperless ticket in advance for the events?  
Number of respondents: 229



Picture 14. Survey results for question: Can one buy a paperless ticket in advance for the events?

One way to implement parts of circular economy into sporting events is implementing a paperless ticketing system (Recycle for Greater Manchester 2019). 84 % of respondents said that they were able to buy a paperless ticket in advance, while 6 % were unsure and 10 % said it was not possible.

Are drinks served at the events from reusable glasses or mugs?  
Number of respondents: 229



Picture 15. Survey results for question: Are drinks served at the events from reusable glasses or mugs?

As has been established, reusability is the key to being the most sustainable, when it comes to glasses and mugs at events (Wentz, Hawk, Meves, Paterson & Lundsgaard 2022, 8).

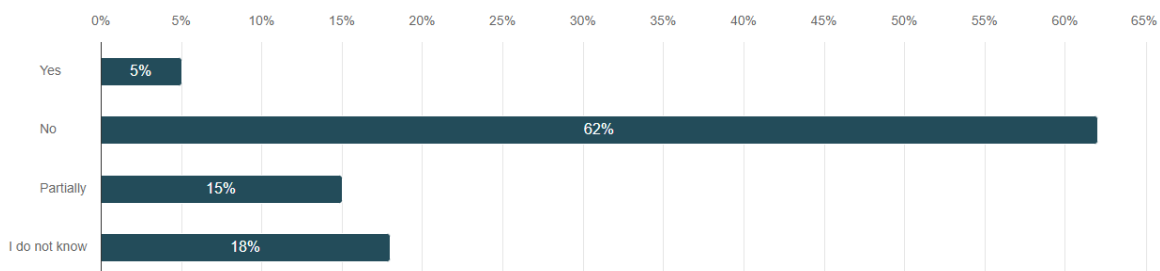
Out of all respondents, only 11 % claimed that drinks were served from reusable glasses or mugs, while the absolute majority of 54 % said no reusable glasses or mugs were available. 23 % said that drinks were partially served from reusable glassware, e.g. at a specific bar or restaurant at the venue, but not everywhere. 12 % did not know whether drinks were served from reusable glasses or mugs. In accordance with the scope of the study, only restaurants, bars, and kiosks open to the general public were taken into account, i.e. no VIP, media, lounge areas, or similar.

When only taking into account sports predominantly played indoors, in this case ice hockey and floorball, the figures were a bit more favourable regarding the existence of reusable glasses or

mugs. 20 % of 66 respondents mainly attending ice hockey and floorball events claimed that drinks were sold from reusable glasses. For outdoor sports, in this case football and pesäpallo, only 7 % of respondents said that drinks were served from reusable glasses.

Reusable cups at sporting events in Finland do exist, but they are still a rarity, especially at events held outdoors.

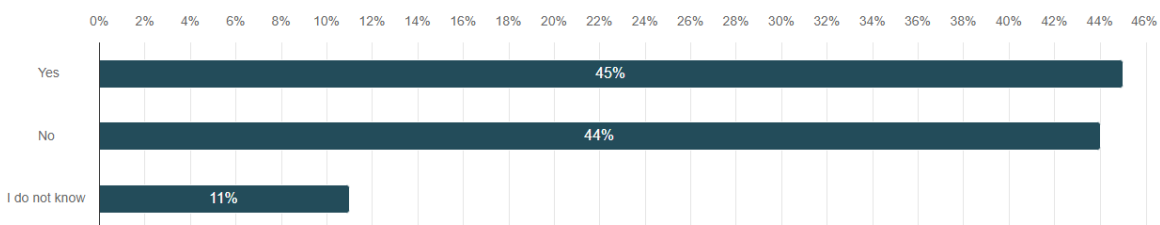
Is food served at the events from reusable plates/serving platters?  
Number of respondents: 229



Picture 16. Survey results for question: Is food served at the events from reusable plates/serving platters?

When it comes to reusable plates/serving platters or other containers for food to be served on, only 5 % of respondents said they are available at the sporting events they most frequently attend. 15 % said they are partially available, which could be e.g. at one specific selling point or restaurant at the venue, while 62 % said reusable plates/serving platters do not exist at all. 18 % did not know. The figures were very similar for both indoor and outdoor sports with negligible deviation.

Is any type of recycling of waste available at the events?  
Number of respondents: 229



Picture 17. Survey results for question: Is any type of recycling of waste available at the events?

The respondents were also asked about waste recycling at the sporting events, and whether any type of waste recycling whatsoever was available. Out of 229 total respondents, 45 % said that some form of recycling was available, while 44 % said that none was available and 11 % did not know.

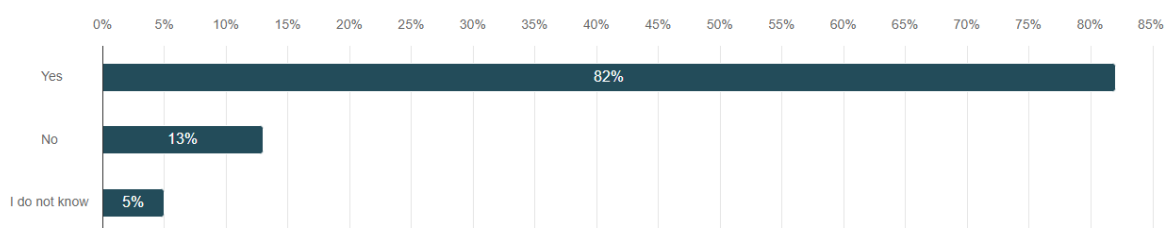
Interestingly, there did not seem to be a correlation between playing a sport indoors and more recycling opportunities. In fact, for ice hockey and floorball, only 42 % claimed recycling to be available, while 49 % said there was none. For outdoor sports football and pesäpallo the figures were more favourable, since 47 % of respondents said that some form of recycling was available, while 41 % said there was none. The rest did not know.



Picture 18. General waste bin at Esport Oilers – a common sight in Finnish sports.

Closely associated with circular economy is the movement of people with shared modes of transport, e.g. public transport. Research conducted in Europe has found that private car journeys typically have only 1.5 passengers on average. Encouraging people to choose shared modes of transportation such as buses can substantially decrease greenhouse gas emissions by reducing the number of cars on the road, thus minimising the use of material (TUMI 2023).

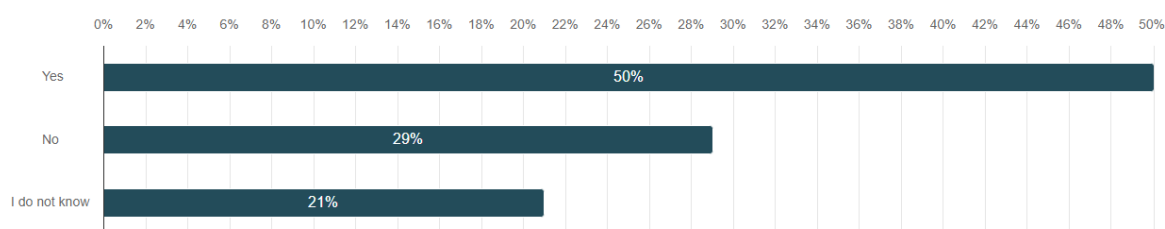
Is it easy to arrive at the events using public transport?  
Number of respondents: 229



Picture 19. Survey results for question: Is it easy to arrive at the events using public transport?

Especially the Helsinki metropolitan area has ranked among the very best in Europe when it comes to public transport (Daily Finland 2020), and that appeared to reflect on the results for ease of arriving at sporting events using public transport. 82 % of respondents said it was easy, while 13 % said it was not. Surprisingly, even when only considering respondents who most frequently attend pesäpallo events – which is a sport strongly associated with the countryside (Pesäpalloliitto n.d.) – 76 % of respondents claimed arriving at the events using public transport was easy.

Is the organiser encouraging attendees to arrive by public transport?  
Number of respondents: 229



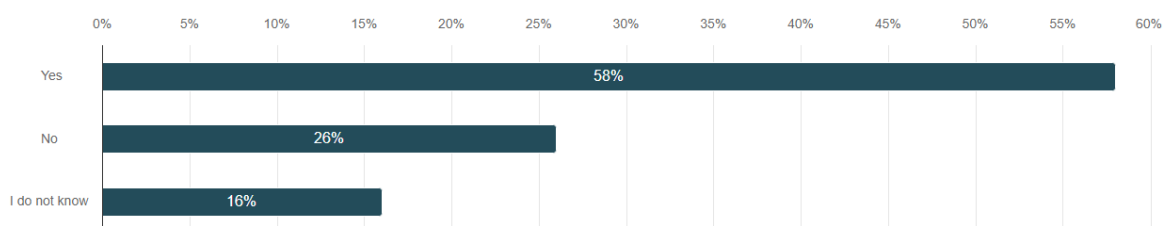
Picture 20. Survey results for question: Is the organiser encouraging attendees to arrive by public transport?

When respondents were asked about whether the organiser of the sporting events they most frequently visited encouraged arriving by public transport, 50 % said they did. 29 % did not believe the organiser encouraged arriving by public transport, while 21 % did not know whether arriving by public transport was being encouraged.

When only considering indoor sports, 37 % of respondents felt that the organiser was encouraging arriving by public transport. For sports predominantly played outside, the figures were significantly more favourable, with 58 % responding that the organiser did encourage arrivals by public transport.

Has attention been paid to circular economy aspects in the sanitation facilities of the events, for example with reusable hand towel rolls or hand dryers in the restrooms?

Number of respondents: 229



Picture 21. Survey results for question: Has attention been paid to circular economy aspects in the sanitation facilities of the events, for example with reusable hand towel rolls or hand dryers in the restrooms?

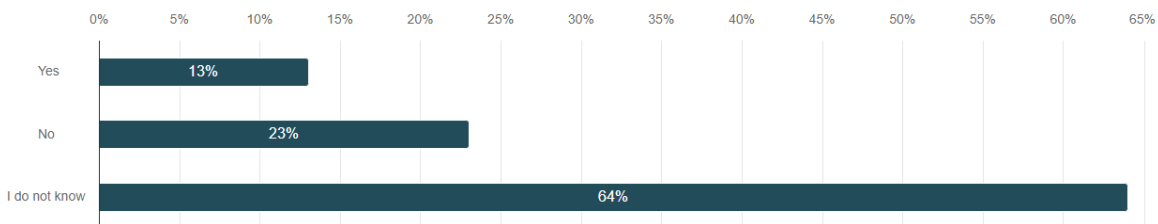
When it comes to circular solutions in the sanitation facilities at sporting venues, 58 % of respondents said that attention had been paid to it. This can be manifested e.g. by having reusable hand towel rolls or electric hand dryers in the restrooms.

Still, a full 26 % of respondents said that no such measures had been taken at the events they visit most often, while 16 % did not know if such measures had been taken.



Picture 22. Reusable hand towel roll at an Esport Oilers’ game. A common circular solution at Finnish sporting venues.

Can one buy fan merchandise at the events made at least partially from recycled materials?  
 Number of respondents: 229

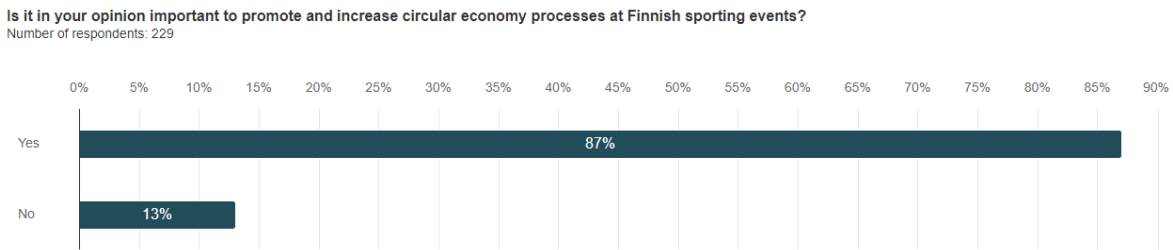


Picture 23. Survey results for question: Can one buy fan merchandise at the events made at least partially from recycled materials?

The fashion industry is thought to account for 10% of global carbon emissions, surpassing the combined emissions from international flights and maritime shipping. As per the European Environment Agency, textile purchases in the EU in 2020 resulted in approximately 270 kg of CO<sub>2</sub>

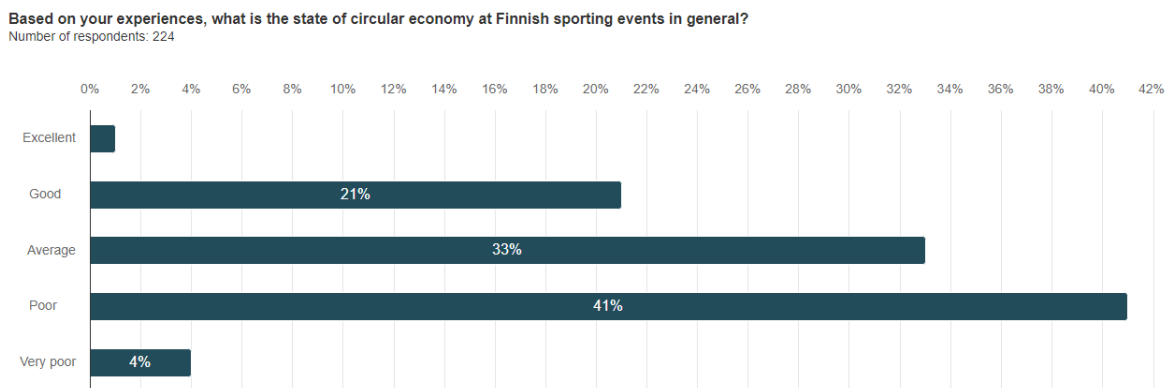
emissions per person, which equals total greenhouse gas emissions of 121 million tonnes (European Parliament 2024).

Measures are taken to cut down on these emissions by promoting more sustainable practices and encouraging manufacturing apparel from non-virgin resources. In the Finnish sporting landscape, it is unclear how much of the fan merchandise is produced – at least partially – from non-virgin resources, because 64 % of respondents said they did not know if such products were available. 23 % of respondents said that no merchandise made at least partially from recycled materials were available, and only 13 % said that one can buy merchandise made at least partially from recycled materials.



Picture 24. Survey results for question: Is it in your opinion important to promote and increase circular economy processes at Finnish sporting events?

The respondents feel overwhelmingly supportive of circular economy processes, and a total of 87 % consider it important to promote and increase circular economy processes at Finnish sporting events. Only 13 % of respondents do not believe it is important to promote and increase circular economy at sporting events.



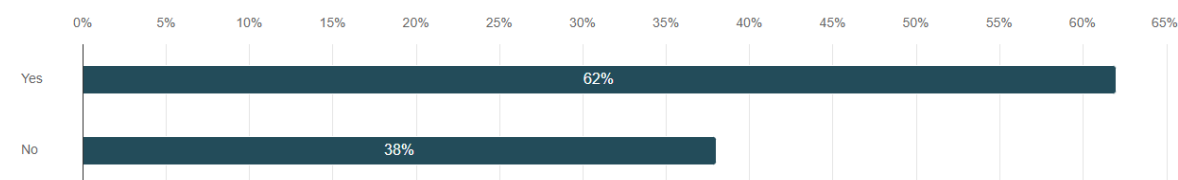
Picture 25. Survey results for question: Based on your experiences, what is the state of circular economy at Finnish sporting events in general?

When the respondents were asked to share their view on a Likert scale about the general state of circular economy at sporting events, the results were rather unimpressive. The 5-step scale reached from very poor to excellent, with only two respondents out of 229 saying they believed the current state of circular economy at Finnish sporting events was excellent. 21 % of respondents said the state was good, 33 % said it was average and a majority of 41 % viewed the state of circular economy at Finnish sporting events as poor. An additional 4 % said it was even worse by choosing very poor.

When predominantly outdoor sports were compared to predominantly indoor sports, some minor deviation from the total was noticeable. Out of respondents most frequently attending ice hockey or floorball events, 21 % said the state of circular economy at sporting events was good, 44 % said it was average, and 35 % said it was poor.

For football and pesäpallo 20 % said the state of circular economy at Finnish sporting events was good, 29 % said it was average, and 43 % said it was poor, with an additional 7 % claiming it was very poor. The most noticeable difference was seen in people choosing the option “average”, with a drop from 44 % (floorball and ice hockey) to 29 % (pesäpallo and football). However, neither category was particularly impressive overall.

Would you be prepared to pay more for services and products at events, if it would enable more sustainable practices?  
Number of respondents: 229



Picture 26. Survey results for question: Would you be prepared to pay more for services and products at events, if it would enable more sustainable practices?

When respondents were asked whether they would be prepared to pay more for services and products at events, if it would enable more sustainable practices, a majority of 62 % said they would be prepared to do that. 38 % said they would not be prepared to pay more. Some variation in the results was noticeable when comparing outdoor sports to indoor sports. For respondents most frequently attending ice hockey and floorball events, only 56 % said they would be prepared to pay more for more sustainable practices, compared with 65 % of respondents most frequently attending football and pesäpallo matches saying they would be prepared to pay more.

### 5.5.2 Free Text Question Results

In addition to the structured questions in the survey, a final free text option enabled respondents to share their thoughts freely about what circular processes they would like to see at sporting events in Finland. A total of 64 respondents chose to answer the question.

23 of these respondents raised the issue of waste sorting and recycling at sporting events. The answers ranged from implementing at least basic waste sorting, e.g. for plastic and cardboard, to making attendees more aware of the sorting possibilities. It appears that many venues are missing waste sorting altogether, while others have waste sorting on paper, but the execution is not up to standard. Some respondents raised the issue of unclear instructions on how to sort waste at the venue and urged organisers to make clear instructions for visitors on how to proceed. Some respondents mentioned, that in almost all venues only general waste bins existed, with the single exception being a separate bin for bottles and cans. In many venues even that is not available. Separate bins for paper match programmes was also raised as a wish, since paper is often discarded of in general waste bins at Finnish sporting events.

The issue of using too much single-use items and a lack of reusable food and drinks containers was also mentioned 23 times. Many respondents specifically mentioned that they want to see a reusable cups system like the system in place in Germany (Brown 15 February 2023). For drinks that do not need pouring into a cup to be enjoyed, simply providing the customer with the bottle or can instead of a single use cup was also mentioned.

Ten respondents raised the issue of public transport and want to see more collaboration between the organisers of events and the public transport service providers. Systems such as free travel on matchdays with a ticket for the event was raised, as well as a fan bus arranged by the event organisers in regions where public transport might be lacking. The fan bus could pick people up from a central location and provide a ride back after the event, making it easier for sports fans to attend events without having access to a private car, also in more remote areas. Better quality fan merchandise was also raised, preferably made from non-virgin materials. The whole concept of fan merchandise was however also questioned.

Paying attention to the food served at the venues was also mentioned, with some respondents calling for more plant-based options, while others simply want to see more focus on the sustainable procurement of food items on a more general level. Forest Green Rovers is mentioned as an example of a professional sports team which has done a lot for the cause of circular economy.

Finally, providing spectators with adequate information about the circular economy and processes that are being implemented was also wished for. According to some replies, the information is often lacking at sporting venues, even where some attention is given to the cause of circular economy. The role of the governing bodies of sports in Finland was also mentioned, saying that they could do more to promote and support circularity, as well as implement circular economy related requirements for obtaining a license to participate in competitions at a certain level. It was also suggested that the leagues and governing bodies could incentivise organisers to become more involved in circular economy by giving out prizes to the best ones, making it a competition.

## 6 Conclusion

Based on both the results of the survey and the mystery shopping it is quite apparent that Finnish sporting venues and event organisers have a long way to go when it comes to circular economy. There are certain circular practices that are commonplace at Finnish sporting venues, but in the larger picture not many concrete steps have been taken to ensure more sustainable events.

84 % of 229 survey respondents said that they were able to buy paperless tickets in advance for the sporting events they most frequently attend. This is also supported by the mystery shopping results, where 80 % of event organisers had an electronic ticketing system in place. Only two event organisers did not enable attendees to buy a ticket electronically, and these two events were the lowest ranking ones, if the level in the league pyramid is used as a measurement, which is commonplace in European sports (Council of Europe n.d.). One was a football match in the fourth tier between Grankulla IFK and PEPO at Kauniaisten keskuskenttä in Kauniainen, and the other one was a third tier pesäpallo match between Puna-Mustat and Jokioisten Koetus juniorit at Meilahden pesäpallostadion.

If we only consider events involving teams from the top two tiers or national teams in the mystery shopping study, all events enabled attendees to buy their tickets in advance electronically. In other words, this can be considered the norm for the highest levels of major sports in the country.

As has been covered in this paper, reuse is the best option for keeping down the environmental impact of an event. This is an area where organisers of sporting events in Finland have a lot of work to do. Only 11 % of survey respondents claimed that reusable cups and mugs are used at the events they attended most frequently, and the same figure for reusable plates or other types of food containers was only 5 %. 23 % said that drinks are partially served from reusable cups and mugs, while the same figure for partially serving food items from reusable plates or other food containers was only 15 %.

Recycling is also lacking in general. 44 % of survey respondents said that no recycling whatsoever was available at the events they most frequently attend, and when taking into consideration the free text replies and the mystery shopping, it became clear that the only type of recycling commonly provided is for cans and bottles.

82 % of respondents said it was easy to attend the events using public transport, which is a good figure, considering that the survey targeted respondents all across the country. For mystery shopping purposes public transport was not studied in-depth, since all the venues except one were

situated in the Helsinki metropolitan region, which is in general served by excellent public transport. The only venue outside the Helsinki metro region was situated in the centre of the city of Kotka, which is also easily accessible by public transport. All in all, it seems that a clear majority of top level sporting venues in the country are served by good public transport links. 50 % of respondents also said that the event organisers are encouraging attendees to arrive by public transport.

58 % of survey respondents said that reusable hand-drying concepts were available in the restrooms, while 26 % said there were no such possibilities. Based on the mystery shopping, a slightly higher percentage of venues did provide this at 70 %

Regarding the sale of merchandise made from non-virgin resources, it is clear that this is not yet a major phenomenon in Finland. Only 13 % of survey respondents claimed that such products were sold at the events they attend, while 64 % were unsure. 23 % said that no such products were sold. This correlates quite well with the mystery shopping results, where only two venues sold some items at events organised by the Finnish Football Association. The rest did not sell such items or made no effort to communicate from what type of materials the products were made.

On a positive note, 87 % of survey respondents said that they believed it was important to promote and increase circular economy at sporting events. On the flip side, only roughly 21 % of respondents said that they believed the state of circular processes at sporting events currently was good or very good, while 33 % said it was average and roughly 46 % thought it was poor or very poor. 62 % of respondents said that they were open to paying more for services at sporting events, if it would enable more sustainable events, while 38 % were not prepared to do so.

Some people also wished for more vegan or vegetarian options at events in the free text answers. Based on the mystery shopping, this is still a rarity, if we exclude food and drinks items that are simply vegan by nature, e.g. drinks, popcorn, and crisps. Hot food, sweets, and sweet pastries tend to be non-vegan at Finnish sporting events. Vegetarian options are however more commonplace, but often contain dairy or eggs.

## **7 How to Increase Circularity at Finnish Sporting Events**

### **7.1 A Short Guide**

Based on the research, while also being mindful of the limited resources on which many sports organisations in Finland operate, four easy-to-fix circular solutions were chosen as tips for increasing circularity at sporting events. In the most popular leagues and at fully professional events, even more can be demanded from the organisers. This short guide should be seen as a basic guide that is applicable on all levels of elite sports in Finland, bringing circular processes and solutions to an acceptable level. The mystery shopping, survey results, and free text answers provided by respondents have been used to pick the most pressing and easily tackled circularity and sustainability issues within the Finnish sporting event landscape from a visitor's perspective.

#### **7.1.1 Recycling and Waste Sorting**

The easiest thing to rectify regarding circularity at Finnish sporting events is recycling. As has been covered in this paper, 44 % of survey respondents said that no recycling or waste sorting options were available whatsoever. The easiest process to implement is the introduction of can and bottle recycling at every sporting venue, which should be considered the bare minimum. Since paper-based programmes are still commonplace throughout Finnish sporting venues, the possibility to recycle paper and cardboard could also easily be introduced. Organisers should also be encouraged to implement plastics recycling at events, since many food items are still sold in plastic wrappings or packaging, especially sweets and ice creams.

Bio waste is naturally a more difficult element to implement, and probably not feasible at all venues, unless the venue is equipped with bio waste containers that are emptied on a regular basis. For bigger venues that have those capabilities, also this could be a viable option.

Out of 63 free text answers to the survey, a total of 23 respondents mentioned that they wished for more possibilities to sort waste at events. Implementing such options and educating guests on how to use them with clear and easy-to-read signage is of great importance.

#### **7.1.2 Increased Reusability**

Reusability is the key to lowering the environmental impact of an event. It requires an initial investment, but at least for cups and mugs this should not be a too tall order for event organisers at the highest levels. The floorball club Esport Oilers in Espoo has introduced such a system for all alcoholic drinks, even though the league itself is only barely semi-professional. For professional sports,

like top tier ice hockey and football, a similar system should be encouraged, possibly even mandated by the governing bodies. Reusable cups are also a great opportunity for branding and product placement, making it an avenue for companies to market their products. It does not necessarily need to be a beverage provider sponsoring the reusable cups. This would allow organisers to increase their revenue by a completely new type of sponsorship agreement, while giving companies the possibility to get visibility while contributing to a good cause. Clear signage and an easy-to-navigate system for returning the cups after enjoying a beverage is also of great importance. At Esport Oilers this was somewhat lacking, since customers were not in any way instructed on how and where the cups should be returned.

For lower-level elite sports, where resources do not exist to implement such a system, serving drinks straight from the cans or bottles could be a viable option. The important thing is to scrap the use of single-use plastics, which are truly unnecessary. If they are used, a requirement for plastic recycling should be mandated by the governing bodies, instead of disposing of significant amounts of plastic waste in general waste bins, which is currently the norm at Finnish sporting venues.

For hot drinks, attendees could be encouraged to bring their own reusable cups to the events. Offering a discount on hot drinks like coffee and tea when enjoying a hot beverage from a personal reusable cup could incentivise attendees to make use of the opportunity.

Of the 64 respondents that provided free text answers to the survey, a total of 23 people mentioned getting rid of single use plastics. It is clear that this is an issue that many people see as problematic, and not enough is currently done to tackle it.

For restrooms, even though reusable hand towels and electric warm air hand dryers are common, more should be done to have such options implemented at all venues. There are still high-level venues that only use paper towels, e.g. the Metro Areena in Espoo, which is the home of Kiekko-Espoo and the Finnish national basketball team. There is no real excuse for this in this day and age, when reusable hand towels and dryers are found even low down in the league systems of sports like football and pesäpallo.

### **7.1.3 Water Stations**

It is of course a revenue stream for organisers to sell drinks, but I would nevertheless encourage the implementation of water stations at sporting venues, where attendees can fill up their personal bottles. Especially in the hot summer months this would be a great addition, which could be utilised as a marketing opportunity and great PR for the organisers. The water station could even be

branded, which would bring sponsorship revenue to make up for money lost due to lower sales volumes. Again, the water station does not necessarily have to be branded by a food or beverage company, but anyone who wants to raise awareness of their brand while supporting a good cause.

#### **7.1.4 Vegan Options**

Even though vegan food options are not by all definitions considered to increase circularity at events, studies show that they have a significantly lower negative impact on the environment than meat and dairy options. An increase of vegan food options at events should certainly be encouraged, especially with regards to hot food items. There are numerous possibilities that are easy and cheap to introduce, not least plant-based sausages, which would compliment the standard grill sausages found at virtually all Finnish sporting venues. Introducing such items would also generate good publicity, when marketed appropriately.

These four simple steps would go a long way in making Finnish sporting events more sustainable and circular, while still being economically viable also for organisations and clubs operating lower down in the food chain.

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## Appendices

### Appendix 1. Mystery Shopping Excel-sheet

Venue	Organiser	Sport	Paperless Ticket System
Helsinki Olympic Stadium	The FA of Finland (Palloliitto)	Football (soccer)	Yes
Arto Tolsa Areena (Kotka)	KTP	Football (soccer)	Yes
Mustapekka Areena (Helsinki)	IF Gnistan	Football (soccer)	Yes
Metro Areena (Espoo)	Kiekko-Espoo	Ice hockey	Yes
Otahalli (Espoo)	Westend Indians	Floorball	Yes
Helsinki Ice Hall	HIFK	Ice hockey	Yes
Kauniaisten keskuskenttä (Kauniainen)	GrIFK	Football (soccer)	No
Tapiolan urheiluhalli (Espoo)	Esport Oilers	Floorball	Yes
Energia Areena (Vantaa)	The FA of Finland (Palloliitto)	Futsal	Yes
Meilahden pesäpallostadion (Helsinki)	Puna-Mustat	Pesäpallo	No

Reusable Cups	Reusable Food Containers	Recycling Bins	Water Stations/Fountains
No	No, but they appeared to be made from paper + wooden cutlery.	No	Yes
No	Not applicable in the away stand	Yes, for cups	No
No	No	No	No
Partially (reusable glasses in the restaurant)	Partially (reusable tableware in the restaurant)	No	No
No, but alcoholic drinks were served from the can.	No	For cans and bottles	No
No	No	No	No
No	No	For cans and bottles	No
Yes	No	No	No
No	No	No	No
No	No	No	No

Reusable Towels/Hand Dryers	Waterless Restroom Solutions
Yes	Portable restrooms, no waterless solutions in actual restrooms (=no waterless urinals)
No	Portable restrooms
Unsure	No
No	No
Yes	No
Yes	Yes
Yes	Yes
Yes	No
Yes	No
Yes	No

Fan Merchandise from Non-Virgin Resources	Comments
Yes (jerseys from 100 % recycled polyester)	The stadium has insufficient restrooms and several portable restrooms are used to make up for it.
Unsure	No WCs in the away stand, only portable restrooms. Cup recycling provided, and the cups are made entirely without plastic.
No	
Unsure	Recyclable cups for soda, but no recycling stations. Only mixed waste bins.
No	
Unsure	
No	
Unsure	No place to return reusable cups and no sign not to take them home.
Yes (jerseys from 100 % recycled polyester)	
No	

## Appendix 2. Survey Form

### The Manifestation of Circular Economy at Sporting Events in Finland

Dear respondent,

I am a student in a Master of Hospitality Management programme at Haaga-Helia University of Applied Sciences in Helsinki, Finland. Responding to the survey is voluntary and anonymous.

The purpose of the research is to explore the manifestation of circular economy (see definition below) from a visitor's perspective at [sporting events in Finland](#), as well as to understand what circular processes you as a visitor would like to see implemented.

In this context, sporting events refer to events that require the purchase of a ticket. For example, free admission sports events for youths and children are excluded from the study. The study also excludes services that are not included with a regular ticket for attendees at the event. Excluded services may include VIP services, sky box services, press box services etc.

Please note that only experiences from [Finnish sporting events](#) are included in the study. Completing the survey takes around 3 minutes.

Thank you for taking part in the study!

Kim Nordman  
Student at Haaga-Helia

#### *The Definition of Circular Economy*

*Circular economy refers to a production and consumption model in which existing materials and products are utilised to the maximum extent through borrowing, renting, reusing, repairing, refurbishing, and recycling. This extends the life cycle of products (European Parliament 2023).*

1. I agree that the information I provide may be used as research data for the master's thesis.

Yes

2. Which sport's events do you most frequently attend in person?

Football (soccer)

Ice hockey

Basketball

- 
- Pesäpallo (Finnish baseball)
  - Floorball
  - Athletics (track and field)
  - Skiing events
  - Other sports

**3. How often do you attend that sport's events during the season?**

- At least twice per month
- At least once per month
- A few times per season
- Once per season
- Less than once per season

The following questions concern the sporting events you most frequently attend. These may include, for example, matches of a specific club or national team. Answer the questions from the spectator's perspective, based on your own experiences.

**4. Can one buy a paperless ticket in advance for the events?**

- Yes
- No
- I do not know

**5. Are drinks served at the events from reusable glasses or mugs?**

- Yes
- No
- Partially
- I do not know

**6. Is food served at the events from reusable plates/serving platters?**

- Yes
- No

- Partially
- I do not know

7. Is any type of recycling of waste available at the events?

- Yes
- No
- I do not know

8. Is it easy to arrive at the events using public transport?

- Yes
- No
- I do not know

9. Is the organiser encouraging attendees to arrive by public transport?

- Yes
- No
- I do not know

10. Has attention been paid to circular economy aspects in the sanitation facilities of the events, for example with reusable hand towel rolls or hand dryers in the restrooms?

- Yes
- No
- I do not know

11. Can one buy fan merchandise at the events made at least partially from recycled materials?

- Yes
- No
- I do not know

The following questions focus on circular economy practices at Finnish sporting events in general.

12. Is it in your opinion important to promote and increase circular economy processes at Finnish sporting events?

- Yes  
 No

13. Based on your experiences, what is the state of circular economy at Finnish sporting events in general?

- Excellent  
 Good  
 Average  
 Poor  
 Very poor

14. Would you be prepared to pay more for services and products at events, if it would enable more sustainable practices?

- Yes  
 No

15. What circular processes would you like to see at sporting events in Finland?

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