Haaga-Helia
University of Applied Sciences

The environmental impacts of the biggest music festivals in Europe

Saana Luoma

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Author(s)
Saana Luoma

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As environmental issues arise concern more and more every day, the music festival business has also started to take environment as one of the aspects to acknowledge when organizing a music festival.

The purpose of this research is to study, which actions the festivals have taken to make them environmentally sustainable. It will also study, which aspects the festival organizers consider to be the most important things to concentrate on making the event greener. The aim of the study is to raise awareness of the environmental issues in music festival management.

For the author, the process and knowledge will be preparation for future career in events. The research questions of this study are which actions do the festival organizers make in order to make the festival environmentally sustainable and which effects do these actions have.

This thesis studies the impacts a music festival can have on the environment. Theoretical framework of this research paper displays theory about the environmental impacts of events. The empirical part concentrates on studying the environmental impacts of four big music festivals in Europe, which are Flow Festival in Finland, Primavera Sound Festival in Spain, Roskilde Festival in Denmark and Glastonbury Festival in United Kingdom. The study concentrates on finding out which operations do the festivals take in order to make them more environmentally sustainable. The material for the study was collected from the festivals' web pages and the reports they presented on them. The material was collected from the web pages during the spring 2018.

The research method in this research is qualitative content analysis to analyze the methods the four music festivals use to make their festivals environmentally sustainable. The results of the thesis show that there were specific environmental issues that most of the festivals concentrated in. These were energy, waste, food, procurement and raising awareness about the environmental issues.

The results of this study can be used in planning events, especially outdoor events to see which aspects to take into consideration and which methods there is to be used in making the event environmentally sustainable.

Further research topics could include how the legislation of different countries within EU reflect on the actions the music festival organizers take towards environmental sustainability. It would also be interesting to research how the environmental initiatives reflect on the economic aspect of the festival.

Keywords
Festivals, Sustainability, Environment, Festival management

Table of contents

1 Introduction

Sustainability issues arise attention every day due to natural catastrophes, fear of the end of nature resources and the greenhouse emissions. People are starting to pay better attention on keeping the planet liveable for future generations. We have all the tools to live more sustainable. It is just a matter of knowledge and effort to use all the tools that are provided to us to live more sustainable. Events can produce a huge amount of harm to the environment, which can be avoided by drawing attention to sustainability issues. They can also create positive impacts on the environment for example by raising awareness about the environmental sustainability issues.

I have started to pay attention to sustainability issues since young age. My family has taught me to recycle already at my childhood home and my sisters have made me interested in buying clothes from flea markets and vintage stores when the piece of clothing has a longer life cycle and the environmental and social impacts diminish. The piece of clothing also feels more special when it has a story behind it. In other aspects of life, I also try to live in a way that would burden the environment as little as possible. I love to go to festivals and I would like to be organizing them in the future. Therefore, I want to study the environmental impacts of events and music festivals in particular. In this research paper, I will study the environmental impacts of events in general and in the empirical part, I will concentrate more in depth on the environmental impacts of four popular music festivals in Europe. The material for the study is collected from the festivals' webpages and from the reports they present on their webpages.

The purpose of this research is to study, which actions the festivals have taken to make them environmentally sustainable. It will also study, which aspects the festival organizers consider to be the most important things to concentrate on making the event greener. The aim of the study is to raise awareness of the environmental issues in music festival management.
For the author, the process and knowledge will be preparation for future career as an event manager.

The research questions are

1. Which actions do the festival organizers make in order to make the festival environmentally sustainable?
2. Which effects do these actions have?

The festivals that the thesis will concentrate on are Flow Festival in Finland, Glastonbury in United Kingdom, Roskilde in Denmark and Primavera Sound Festival in Spain. These festivals are studied in the thesis because they are the among the biggest festivals in Europe by attendance and some of them are among the biggest festivals in the world. They are also held in different countries, which gives an interesting insight on the difference in the practises used in organizing the festival.

First, the theoretical framework of the study will concentrate on the environmental issues in event management. Then the environmental impacts of the four music festivals are studied to find out which actions they take in order to minimize the negative and maximize the positive environmental impacts. Finally, the results of the study are presented and discussed.

The results of this study can be used in planning events, especially outdoor events to see which aspects to take into consideration and which methods there is to be used in making the event environmentally sustainable.

2 Environmental impacts in event management

Gatherings, celebrations and games have had a vital role throughout the human history. Event business has experienced a fast rise in popularity for the past few decades. As well as having an impact on the economy of the hosting city/community or country, events also have a positive or negative impact on the natural environment and culture. Due to the growth of number and size in event industry, the effects have become more visible and the importance of sustainability awareness has increased. (Cavagnaro, Postma & Neese, 2012, 199.)

Music festivals attract tens of thousands of people from all around the world to enjoy music, summer and the atmosphere. Many people go for an annual pilgrimage on their favourite music festivals from which the largest ones situate in Europe (CNBC, 2017)

The event industry is fast becoming one of the most important sectors of world economy, which can have both positive and negative impacts on the environment. Events have both direct and indirect impacts on the environment. The impacts will affect both natural and man-made environment. (Raj & Musgrave, 2009) The industry has just quite recently started to take into consideration the sustainability aspect and respond on the sustainability issues related to event management. One of the reasons to the slow reaction to sustainability issues might be the unique and fleeting nature of event in contradiction with sustainability, an activity that should go on indefinitely. However, the emphasis on an event is on the effects of a certain activity, not on the duration of it. “Sustainable events can be defined as: events that impact positively on people, planet and profit and thus contribute to fulfil the economic, socio-cultural and environmental needs of the involved stakeholders, including the hosting community.” (Cavagnaro, et al., 2012, 201.) The markets show that even on challenging economic times the ethical and sustainable consumption has a prolonging trend. (Cavagnaro, et al., 2012, 201-202.)

It was found that event attendees are aware of the social and environmental impacts events have. They are the most conscious about the problems related to waste, water, and food consumption as well as transportation. Most of the people want to know about the environmental impacts the event has. They are also interested on what has been done to make the negative impacts smaller. Since the events attendees want to receive information about the environmental impacts, it is important to hand over this information to them. This is the first step to get the audience to reinforce the sustainability of events. Sharing information with the event attendees about the achieved impacts reductions made the attendees more willing to take part in the sustainability efforts than when sharing information about how large or minimal impacts the event has. In conclusion, the event attendee can be led by the example of the event organizer. (Dunlap cited in Cavagnaro, et al., 2012, 207.)

Jones (2014, 60.) introduces a list of environmental matters to take into consideration when planning an event:

- “impacts on natural environment
- protection of biodiversity
- local environment protected or restored
- solid, gaseous and liquid wastes as a result of procurement choices
- toxicity, chemical use and irritation
- proliferation of genetically modified organisms
- natural resource depletion, use of non-renewable resources and result of sourcing choices
- animal welfare and unsustainable harvesting practises as a result of sourcing practises
- impacts on water scarcity and fair distribution of access to water”
  (Jones, 2014, 60.)

2.1 Negative impacts

Events have both positive and negative impacts. Negative impacts can be divided into five main groups; air pollution, water pollution, litter and waste, vegetation trampling, congestion and crowding. In any event the biggest impact is caused by the attendees travel to the event. The goal is to find management practises that diminish the negative impacts and increase the positive impacts on nature. (Holmes, Hughes, Mair & Carlsen, 2015, 82-85.)

2.1.1 Air pollution

Air pollution can be divided into an immediate impact on the air quality and the longer-term impact on climate and health. Air pollution related to events usually comes from the fuel expended to get to the event and energy consumption to run the event. The issue occurs both on site as well as off site by the transport of suppliers, equipment and people to and from the event from other local sites or from different parts of the world. The event may also use generators or mains power, which also may increase the emissions. (Holmes, et al., 2015, 85.)

The main gas emissions caused by energy consumption are nitrogen oxides (NOx), carbon monoxide (CO) and carbon dioxide (CO2), sulphur oxides (SOx), methane (CH4) and airborne smoke particles (particulates). Air pollution consist of both immediate effect on the air quality as well as long- term effects on climate patterns. In addition to the air pollution caused by transport and energy generation, activities, like fireworks for example at the events cause temporary and local impacts on air quality. (Holmes, et al., 2015, 85.)

2.1.2 Water consumption and pollution

The event may pollute water bodies, groundwater and waterways as the runoff or waste water enter the same systems. It can have impact on either local or on more broader area. Spills that include oil,

fuel, detergents, solvents or other liquid pollutants are most dangerous liquids from an event. They can enter water bodies, flow into waterways or groundwater. These spills can harm the aquatic ecosystems. The event may also have a wider impact as the waste water and sewage caused by the events participants enters mainstream treatment processes and is released into waterways and the ocean. (Holmes, et al., 2015, 86.)

The venue has a big impact on the water pollution. If an event is held on a stadium, it has working toilets and sewage systems, which will take away the wastewater. On the contrary, if the event is, for example, a music event held in an outside venue it may not have the sewage system that will take out the wastewater. The toilets at an outdoor venue may be unsanitary or overcrowded. Because of this, many people may take the choice to urinate on the ground. This may result in excess of nutrients on the groundwater and waterways, which may lead to eutrophication. Eutrophication is a state with a large amount of nutrients that lead to growth of algae and certain types of bacteria. The degreasing of light and oxygen levels caused by the growth, by-products and death of excess algae can lead to the death of aquatic plants and animals. Certain types of bacteria can product toxins such as botulinum as a by-product. This causes disease caused botulism that kills animals that ingest the polluted water. It may also lead to health implications to human using the water. Therefore, it is important to supply enough toilets and keep them in good condition throughout the whole event. (Holmes, et al., 2015, 86.)

2.1.3 Litter and waste

Litter and waste is a big problem especially in outdoor events with food sellers that use disposable items and pre-packaged food. Litter causes a significant influence on environment, especially in natural area venues. The public notices and reacts negatively most on the appearance of litter than to any other form of degradation. At an event where the litter is lying about has a significant chance to affect the audience experience and satisfaction negatively. In addition to aesthetic dissatisfaction, litter may also have ecological impacts. The toxins from example cigarette butts and plastic containers can enter the waterways, the litter may also be eaten by animals or injure or entangle animals. (Holmes, et al., 2015, 86-87.)

Non-biodegradable substances such as plastic causes significant long-term issues if they are not effectively cleaned-up. The long-term macro impacts include mainly the disposal in landfill sites and other means of disposal. Waste that is buried in landfills can lead toxins into the ground as well as produce emissions such as methane when organic materials decompose. (Holmes, et al., 2015, 86-87.) Instead of trying to hide the responsibilities of the event attendees, the event organizers should include the attendees in the process of making the event sustainable. Furthermore, this kind of action increases the satisfaction with the event among the event attendees. (Cavagnaro, et al., 2012,

208.)The use of recyclable packaging and encouraging the audience to collect litter for instance by having cash or discount for returned cans and bottles, can reduce these impacts. (Holmes, et al., 2015, 86-87.)

2.1.4 Vegetation trampling

Vegetation trampling has a local micro scale impact on the geographical area but the effects may sustain for some time after the event. When an outdoor event is attended by a large number of people and vehicles it may have impacts such as trampling, leading to erosion, soil compaction and vegetation loss. This is most likely to happen in areas where there is not hardened surfaces for pedestrians and traffic. Riverbanks and coastal dune areas are most vulnerable for the affects. Trampling has multiple consequences depending on the environmental setting. Usually trampling causes vegetation loss as conscious foot or vehicle traffic stamps plants. (Holmes, et al., 2015, 87.)

Soil composition is also one result of trampling. Soil composition reduces the amount of air and water penetration, which results in killing existing plants and obstructing the new seeds to grow successfully. This leads to soil exposure or bare areas on the ground. Without the plants covering the ground, erosion is more likely to happen. Soil and nutrients diminish in result of erosion, which prevents the growth of new plants, highlighting the damage of initial trampling. The best practise to manage trampling is by preventing it by providing hardened surfaces such as boardwalks or limit the access of attendees to harden areas or clearly define pathways for attendees to follow certain areas and routes. (Holmes, et al., 2015, 87.)

2.1.5 Congestion and crowding

The idea of events is to attract attendees, which results in having many people on a venue and /or the surrounding environment. When many people try to reach the venue by existing transport network it can cause congestion. If the amount of attendees trying to reach the venue in a given time of period is larger than the capacity that the venue is able to cater, congestion occurs and the vehicle or attendee flow will be disturbed. It is important to estimate the right capacity and take into consideration the crowd and traffic flow to reduce congestion. (Holmes, et al., 2015, 87-88.)

An event may also have positive impact by bringing more people and energy to an area where the events is hold. Although congestion is reflected by the capacity of the venue and the number of visitors and the degree to which the flow of crowd is constrained, the final decision on how much the venue can endure people must take into consideration the perceptions of people attending the events as well as those who are affected by the event. (Holmes, et al., 2015, 87-88.)

2.2 Positive impacts

Negative environmental impacts are the ones that has caught the attention of media and in public's eyes. This is because the negative impacts are much easier to measure and notice visibly than the positive impacts. For instance, the traffic disruption and the waste are more easily measurable than the increased knowledge of the attendees (Matthews, 2016, 237.) There is also some events that are held to improve the environment. These events may range from an event to clean-up a specific area to a conference concentrating on environmental issues. (Case, 2013, 53.)

2.2.1 Urban renewal

Events are increasingly taking part in urban regeneration. They have become a way to sell products including the hosting town itself. (Smith, 2012, 1.) According to Roberts & Sykes (2000,17.) urban regeneration is "comprehensive and integrated vision and action which leads to the resolution urban problems and which seeks to bring about a lasting improvement in the economic, social and environmental conditions of an area that has been subject to change". Term regeneration suggests that the area, for example town, is more than restored to what it used to be. It implies that the area is recovered to have the position it once had. In terms of context, for something to be regenerated it must have experienced degeneration at some point. This differs term regeneration from action that is purely development. Event- led regeneration include development of new facilities or renewal of existing ones. In this case, the regeneration is driven by the event. In event- themed regeneration the goals and objectives already exist in a broader context even without the event and the event is used to lever wider effect. It includes changes in the built environment, but the changes are not necessary to stage the event. (Smith, 2012, 9-12.)

One way of regeneration in events is the policies related to events. For example, if the government makes new safety regulations about stadiums, the stadiums has to be renovated to meet the new standards. The old premises might sometimes be sold and converted into housing or retail sites as the new premises are built to a more convenient area. The government may also use events to regime new policies. The stricter policies may come into effect during the duration of the event but once the event is finished the new policies are not removed. (Smith, 2012, 13-15.)

2.2.2 Nature conservation and rehabilitation

Nature conservation stands for actions to maintain the local plant and animal species and/ or necessary ecological mechanisms in specific area. The rehabilitation refers to the renewal of an ecologically distressed area. Some events have a rehabilitating effect such as clean-up days to collect litter and remove weeds from natural areas or events where the activities are focused on re-planting or native

vegetation. These events are planned to have a direct, local impact. Nature conservation and rehabilitation linked to events may also happen through the creation of natural or semi-natural areas such as parks or by the removal of contaminated soil. Some events are also planned to increase the environmental awareness. (Holmes et al., 2015, 89.)

3 Corporate Social Responsibility

Corporate Social Responsibility (CSR) is an optional dedication from a company to build its operation towards sustainable development with benefits for society, environment and the economy. (Cavagnaro, et al., 2012, 201) Corporate social responsibility stands for taking social, economic and environmental issues into decision-making, the goal is also to either meet or exceed legal or ethical standards. In CSR, it is important to manage environmental impact, limit excessive spending and make sure that the business is made in an ethical and fair way. As the industry has started to demonstrate return of investments and analyse the economic impact, the event industry has started to become greener. Concentrating on social corporate responsibility will help the event industry from reactive role, responding to legislation and regulation to achieve proactive role in which the actions of the industry will mould its own future. (Henderson & McIlwraith, 2013, 4-7.)

3.1 The demand for CSR

The demand for corporate social responsibility and ethics in the events and meeting industry arise from a global trend. In 2011 Occupy Wall Street movement demonstrated in New York against social and economic inequality, immense unemployment and the greed in economic affairs which specifically affected to the global economic crisis in 2008. This movement spread across the globe and they highlighted the problem that 1 percent of the people have the economic control of the world. Furthermore, the sustainability issues people consider should to be taken into consideration when planning events and meetings differ between countries. For example in dry areas such as desert areas, the water consumption may be considered the most important factor as to some areas, for example, most of Europe, limited landfill may draw the attention to waste management issues. (Henderson & McIlwraith, 2013, 7-9.)

3.2 Defining sustainability in event and meeting industry

Henderson and McIlwraith (2013, 9-10.) use four frameworks to define the sustainability in event and meeting industry. The Triple Bottom Line by John Elkington, the Natural Step by Dr. Karl-Henrik Robert, the Ecological Footprint by Mathis Wackernagel and William Rees and Sustainability Hierarchy by Julian Marshall and Michael Toffel.

3.2.1 The Triple Bottom line

The Triple Bottom line stands for people, planet, and profit. According to Elkington (cited in Henderson & McIlwraith, 2013, 9-10.), a sustainable solution can be generated only when all these three aspects of business are covered. In events and meetings industry, this framework has a direct relevancy. People are involved as attendees and other stakeholders in the community, planet is involved

by the environmental impacts the events and meetings have and they create economic impact, profit, for the organizer, community they are held in as well as the extended supply chain. (Henderson & McIlwraith, 2013, 10.)

3.2.2 The Natural Step

The Natural Step is a non-profit organization founded in Sweden in 1989. It provides a framework where environmental sustainability is integrated into business processes. There are four processes in the core of the framework. Firstly, people need to realize that the current business processes are not sustainable and there is a need for more sustainable business processes. Second phase is to understand the principles of sustainability. The principles of sustainability are that in sustainable society nature is not subject to systemically increasing concentrations of substances from the earth's crust, such as fossil CO2, neither those produced by the society, such as antibiotics. It is also not subject to systematically increasing degradation of physical means, such as deforestation. Furthermore, the society does not have obstacles to competence, influence, health, impartiality, meaning and health of the people. After understanding the principles comes planning and creating sustainable solutions. The final phase is to put the ideas in action and plan a program that will lead to more sustainable activities. (The Natural Step, 2016) According to Henderson & McIlwraith (2013) the framework of Natural Step has an obvious link to meetings and events industry. The whole industry uses manufactured materials and energy taken from the earth's crust.

The Ecological Footprint was conceived in 1990 by Mathis Wackernagel and William Rees at the University of British Columbia. The Ecological Footprint launched the broader Footprint movement, including the Carbon Footprint. The framework is now widely used by scientists, businesses, governments and individuals to monitor ecological resource consumption and to create more sustainable practices. The Ecological Footprint measures how much people use natural recourses compared to how much natural resources we have. The base of the model is to measure the amount of water and land to live by a certain lifestyle. (Global Footprint Network, 2017)

3.2.3 The Ecological Footprint

The Ecological Footprint can be used to measure from a single person's impact on the natural resources to countries to improve their sustainability and well-being. The Global Footprint Network point out the day of the year in which the natural resources human consume have reaches the point the earth can regenerate each year. The day is called the Overshoot day and from the year 2000 to 2017, it has moved from the last day of September to the second day of August. This shows an alarming trend that the earth is running out of natural resources. (Global Footprint Network, 2017)

3.2.4 The Sustainability Hierarchy

Marshall and Toffel (2005) introduce another framework, Sustainability Hierarchy. In this model, they identify four levels:

1. “Actions that endanger human survival if continued at the current or forecasted rate
2. Actions that reduce life expectancy significantly or basic human health
3. Actions that violate human rights or may cause extinction of species
4. Actions that reduce quality of life or are in contradiction with other values and beliefs” (Toffel, 2005)

The framework scales the level of urgency in which the levels 1 and 2 are considered more urgent than the levels 3-4. The levels 1-2 stand for the survival and the basic health of human, the level 3 the extinction of species and human rights, and level 4 refers to values which are not covered in other levels of the hierarchy, such as harnessing ecosystems for recreational use. The urgency and importance depends on the level being studied. It also has other factors such as how likely a certain action is to lead on a consequence, how big impact these consequences will have and how much time there would be between the action and the consequence. In real world actions usually have characteristics from many levels. (Marshall & Towell, 2005, 673-676.) In a meeting or event, it would be most likely that it would have impacts from the levels three and four. However, they might also have impacts from the levels one and two as for example, the transportation of attendees produce carbon emissions which might have a long term impact on climate change and air pollution which may endanger the human survival. (Henderson & McIlwraith, 2013, 12.)

In conclusion, social corporate responsibility varies between different organizations but the main principles are the same. Its goal is to act in a way that minimises the negative environmental and social impacts and increases the positive impacts. (Henderson & McIlwraith, 2013, 12.)

4 Method

4.1 Purpose, aim, problem and data collection

The research concentrates on finding out in which issues the festival organizers have paid attention in environmental sustainability. The issues the paper studies are energy, waste, procurement, food, water usage and sewage waste as negative impacts and raising awareness as a positive impact. The study concentrates on these issues as the literature from environmental impacts studied in this paper raise these issues as the most important ones to take into consideration when planning an event and because all of the festivals had paid attention to these matters when planning the festival.

The purpose of this research is to study, which actions the festivals have taken to make them environmentally sustainable. It will also study, which aspects the festival organizers consider to be the most important things to concentrate on making the event greener. The aim of the study is to raise awareness of the environmental issues in music festival management.

In qualitative research, the aim is not to reach statistical analysis but to describe a phenomena. The object of the research is expected to have information or experience about the studied issue. The most common methods to collect data in qualitative research are questionnaire, observation and the data collected from different kind of documents. These methods can be used either separately or with different combinations depending on the research problem and research resources. (Tuomi & Sarajärvi, 2018, 83-98.) The method of this research was collecting data from the festival organizers websites. The festivals that were chosen for the sampling all provided information about their environmental sustainability on their website and they were all held in different countries within Europe.

4.2 Research method

The research method used in this research is content analysis. The content analysis method allows you to analyze documents systematically and objectively. In this context, the document has to be understood in a very dense sense for example, books, articles, diaries, letters, interviews, talk, conversation, dialogue, reports, and almost any literal material can be a document. (Tuomi & Sarajärvi, 2018)

Theoretical content analysis is proceeding under the terms of the material. Content analysis is original to communication research. It aims to analyze data with a defined context from in view that culture or group of people attributes to them. The most common sources of data for content analysis are texts, verbal discourse, written documents and visual representations. In content analysis, the researches try to find valid knowledge or practical support for critique and action. (Krippendorff, 2013, 1-3.)

Drisko & Maschi (2015) argue, “virtually all qualitative research addresses the content of text, whether the “texts” are books, images, physical artefacts, audio files, video files or other media. Qualitative research method may describe the content found in texts, or they may summarize the key themes found in texts, or examine the process or form of the delivery of content, or seek to develop a conceptualization of the content.”

According to Krippendorff (2013, 1-3.) content analysis has three characteristics. First characteristic is that the content analysis is an empirically grounded method, it is exploratory in process and its intents are predictive or inferential. Secondly, the content analysis “transcends traditional notions of symbols, contents and intents. “ (Krippendorff, 2013, 1-3.) This can be seen on how the communication has changed by the development of media technologies and how they have shaped our attention to communication and the role of culture when deciding what is significant to be analysed. Thirdly, contemporary content analysis has had to develop a methodology on its own. Methodology that allows researchers to plan, execute, reproduce, communicate reproduce and evaluate the analyses despite the particular results. (Krippendorff, 2013, 1-3.)

In this research, the content analysis is used to summarize the actions that the four festivals take to make their music festivals more environmentally sustainable. The data is collected from the official websites of the four festivals. They offer data that the organizers want to offer to public and that is accessible to everyone.

4.3 Reliability and validity

“Reliability is the ability of an instrument to measure the attributes of a variable or construct consistently” (LoBiondo-Wood & Haber, 2014, 290). For content analysis to be reliable, the data must have been protected from all intentional or accidental possible pollutants, distortions and biases and the data must mean the same thing for anyone who uses it. The research is conducted reliable when it answers to the same phenomena in the same way no matter of the circumstances of its implementation. The research must be able to be duplicated with the same results. (Krippendorff, 2013) To decide if the study is reliable the researcher has to collect the same information from the same participants in similar circumstances. If the results had great comparability, it can be said that the research instrument is reliable. Thus, if the results are not comparable, the research instrument is not reliable. In qualitative research the aim is not usually repeatability. As an example, if the same questionnaire is repeated in a period of time, it is hard to get the same answers as there are multiple factors that can make the respondents respond differently. However, the researcher may take multiple re-tests before reaching any conclusion to make the test reliable. (ReadingCraze, 2017) Validity in qualitative research means ”appropriateness” of the tools, processes and data. Whether the research question is

valid for the desired outcome, the choice of methodology, the sampling and data analysis is appropriate, and finally the results and conclusions are valid for the sample and context. (Leung, 2015)

According to Leung (2015) the validity in qualitative research leans on the right tools, process and data. “Whether the research question is valid for the desired outcome, the choice of methodology is appropriate for answering the research question, the design is valid for the methodology, the sampling and data analysis is appropriate, and finally the results and conclusions are valid for the sample and context.” (Leung, 2015)

“Validity is the extent to which an instrument measures the attributes of a concept accurately” (Lo-Biondo-Wood & Haber, 2014 ,292). Validity can be divided in two parts, internal and external validity. The internal validity concentrates on questions like how well the research has concentrated on the problem statement of the study, is the data relevant and accurate, how well the answer responses to the research question. On comparison, the external validity concentrates on questions like can the findings in the research be generalized and which limitations or qualifications are in order to make about the results. It also emphasizes what further research can be done to protect the validity of the study, how does previous research help interpret the findings of the new study and do they offer suggestions about the applicability of the study. (Mayo, 2014)

5 Results

The following chapter will present each of the four festivals and display individually on which environmental matters they have paid attention when organizing the festival. It will also present, which actions they have taken in order to make their festival more environmentally sustainable. Finally, the chapter will show a summary of the four festivals environmental initiatives. Image 1. shows the locations of the music festivals on map.

Image 1. Locations of the festivals studied in the research.

5.1 Flow Festival

Flow festival is a music festival in Helsinki, which brings music acts from old legends to up and coming artist to Suvilahti's disused power station. The venue is a walking distance from the city centre of Helsinki and amazing light design and decorations bring this architectural site into life every summer. Additional to music, Flow festival concentrates on bringing top arts and cuisine experiences to the hands of festivalgoers. The festival includes 10 to 12 different venues. The venues consist of large outdoor and stage stages as well as intimate indoor and outdoor areas. The capacity of the different venues varies from the Main Stage's capacity of 25 000 people to the smaller stages capacity of couple of hundred people. (Flow Festival, 2018)

Image 2. Flow Festival. (Flow Festival, 2018)

5.1.1 Sustainability and Flow Festival

Flow Festival pays attention to the environmental consequences when planning the event.
Flow festival is among the first festivals to compensate its carbon footprint. Flow festival is entirely a carbon neutral festival and it has been compensating its carbon footprint since 2009. The emissions are compensated through different projects. In 2017 the carbon emissions were compensated for the Kariba REDD community development project, which is a project to protect Zimbabwe's forests. As more than a third of Zimbabwe's forests are gone, the project focuses on reducing deforestation and forest degradation. One of the activities to help the forests is conservation farming which is proposed by local communities and supported by carbon finance. (Flow Festival, 2018)

5.1.2 Energy

Flow festival uses biodiesel to generate power for the festival. Therefore, they are able to reduce greenhouse gas emissions by 90% compared to traditional diesel fuel. The renewable biodiesel is made from renewable and sustainable materials such as inedible waste from food production. As procured electricity Flow Festival uses carbon neutral EKOenergia which produces energy by wind turbines. (Flow Festival, 2018)

5.1.3 Food and Procurement

Flow Festival uses disused water pipes from HSY (Helsinki Region Environmental Services Authority) for planters and seating areas in Helsinki Green Park Area. As substrate, they use garden soil by Metsäpirtti. The primary ingredient of the garden soil is sludge derived as a by-product from industrial water treatment. The organic matter of the sludge, as well as the phosphorus and nitrogen it contains,

are reused as plant nutrients. The carbon-neutral biogas generated in the manufacturing process is also used by HSY in the electricity and heat generation for purification plants and in the production of traffic fuel. (Flow Festival, 2018)

5.2 Roskilde

Roskilde is the largest North European music festival. Roskilde was first held in 1971. Roskilde is run by a non-profit organisation, which employs 50 people full-time and thousands of volunteers. The organisation behind Roskilde music festival is Roskilde Festival Charity Society. The goal of the society is to “support initiatives benefiting children and young people and to support humanitarian and cultural work.” (Roskilde Festival, 2018) The society is independent from party policies and it has no geographical boundaries. (Roskilde Festival, 2018) All profit from the music festival is donated to national and international humanitarian charity and cultural purposes. (Ministry of Foreign Affairs of Denmark, 2018)

Roskilde is an eight-day celebration of music and culture. Every year, about 150 bands play on eight stages for four days between Thursday and Sunday. The camping site opens already on Saturday, four days before the main festival begins. Roskilde offers four days of build-up to the festival with acts from upcoming artists and different kind of activities and events and four days of the main festival. (Ministry of Foreign Affairs of Denmark, 2018)

Image 3. Roskilde Festival. (Roskilde Festival, 2018)

5.2.1 Sustainability and Roskilde Festival

Roskilde Festival takes environmental and social responsibility into consideration on every part of the festival. They have created a sustainability strategy, which is available to every visitor of their website. The aim of the organization behind the festival is to make a difference and a positive mark on the surrounding world. For the sustainable choices to be applicable, they need to be practically possible, socially acceptable as well as financially prioritized. (Roskilde Festival Gruppen, 2016) "We will create Roskilde Festival Gruppens activities without negative environmental impact. We, our festivalgoers and our partners will intrinsically make environmentally sound choices to reduce both environmental input and output."(Roskilde Festival Gruppen, 2016) They introduce an Utopia where they bring up three points to achieve their Utopia: fossil-free energy supply, all waste is resources and input without negative output. (Roskilde Festival Gruppen, 2016)

5.2.2 Waste

Roskilde has set a goal to increase sorted waste by 10 % every year from 2016 to 2019. Roskilde festival has noticed that the amount of total waste is depended on unmanageable factors such as weather, so instead of setting goals for the total waste they have set the goal for sorted waste. (Roskilde Festival, 2018)

The figure 1. shows that in year 2017 the amount of sorted waste at Roskilde Festival was 405 tons compared to the amount of the previous year's 399 tons. The increase of sorted waste did not meet the 10 percent goal they had set. However, the reduction in total waste meant, that the amount of sorted waste increased from 16 % to 18 % in year 2017.The goal for year 2018 festival is to exceed 436 tons of sorted waste. That is why the festival encourages people to sort their waste and to bring their own stuff back home. (Roskilde Festival, 2018)

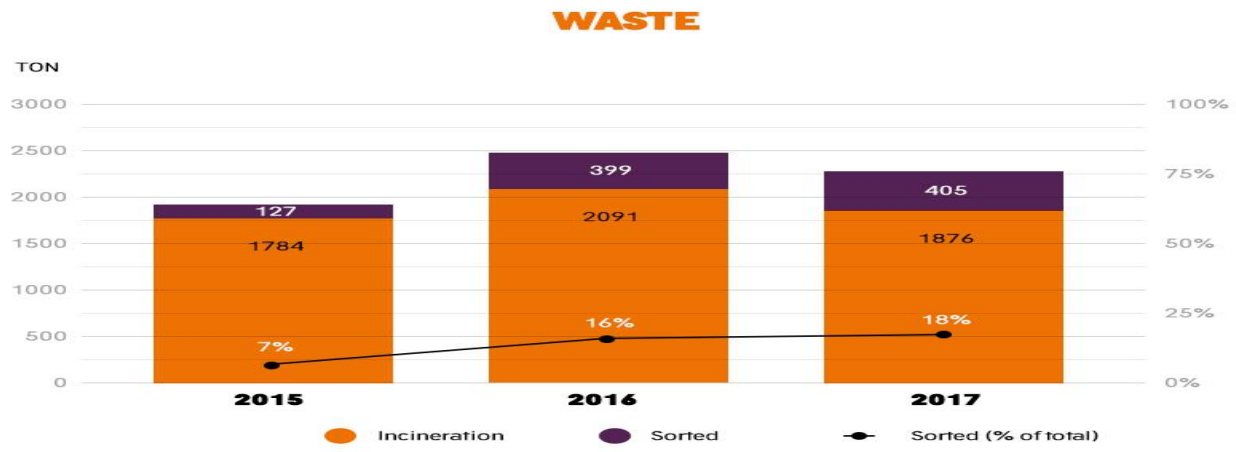

Figure 1. The total waste, sorted waste and incinerated waste annually 2015-2017. (Roskilde Festival, 2018)

The idea behind the waste plan is that all waste that cannot be reduced should be sorted and reused. The waste plan can be divided into three fractions. First one of the fractions is recycling. At Roskilde festival you can recycle for example glass, metal, cardboard, food leftovers and batteries. The second fraction is landfill. The items are separated for landfill. The largest part of landfill waste at the festival is air mattresses. Landfill is better option for them than incineration cause they contain PVC which emits chlorite gasses if burned. However, Roskilde Festival points out that the most environmentally friendly choice is to take the air mattresses to home with you and reuse them. The third fraction is incineration. This contains all the waste that is left and can be burned. However, unfortunately this fraction includes many tons of reusable and recyclable resources. (Roskilde Festival, 2018)

5.2.3 Energy

Roskilde Festival has set three goals for festival energy:
"-We will reduce our direct greenhouse gas emission by 3 % annually from 2016-2019
-We will measure and compensate for our greenhouse gas emissions 2016-2019
-We will ensure a new production of renewable energy corresponding to our energy consumption in 2016-2019" (Roskilde Festival, 2018)

The figure 2. shows that in 2015 Roskilde Festival emitted 411 tons of CO2-eq greenhouse gases. In year 2016, the greenhouse gas emissions reduced to 366 tons of CO2-equivalent. Thus, Roskilde Festival reduced their carbon footprint by 11 % from 2015 to 2016. (Roskilde Festival, 2018)

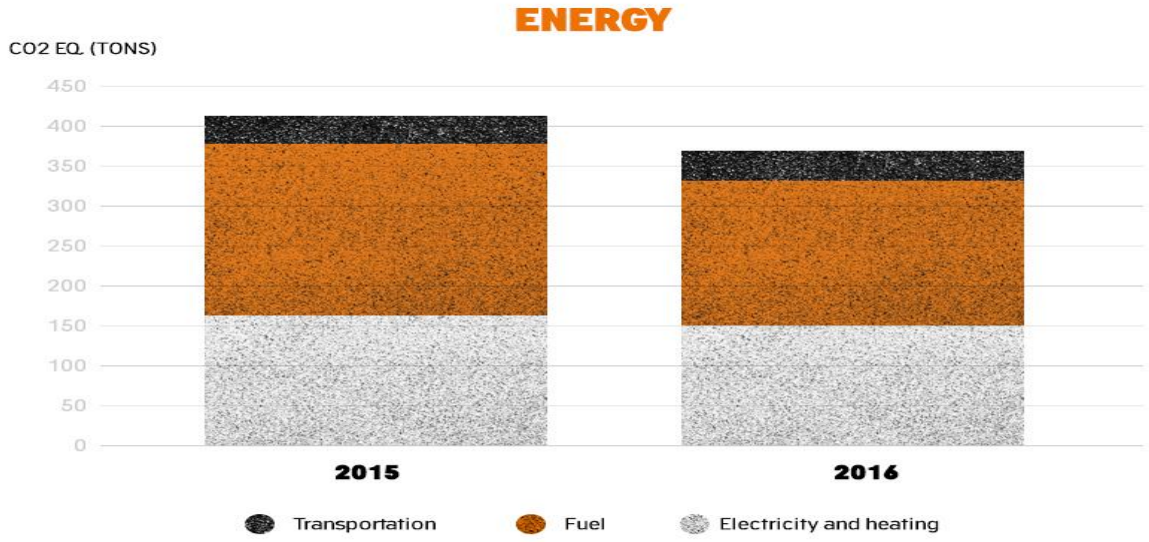

Figure 2. CO2-eq greenhouse gas emissions in 2015 and 2016. (Roskilde Festival, 2018)

The reduction in greenhouse gas emissions is mainly thanks to the reduction of diesel consumption from generators. This is thank to new hybrid power source and by the fact that larger generators were replaced with series of smaller generators that enabled more efficient fuel use. Compared to previous years the total use of diesel fuel has dropped 19 % which alone reduced the festival's carbon footprint by 6 percent. In 2016 Roskilde Festival also acquired certificates amounting to 400 tons of CO2-eq to compensate the greenhouse gas emissions. The same year 122 m2 of solar panels were installed at the festival area to provide energy of about 2400 kWh. The Roskilde Festival continues to work on reaching the goal of creating renewable energy to cover the total energy consumption during the festival. (Roskilde Festival, 2018)

Roskilde Festival has two sources of electric power. The main electricity source is local power grind. However, this is not enough to provide power to the whole festival, also generators and solar panels are used to produce power on site. The purchased electricity can be eco-labelled unlike the electricity produced on site. Since the local energy mix is not 100 % sustainable, the festival buys Guarantees of Origin to compensate the total usage of electricity at the festival. One Guarantee of Origin equals one KWh of electricity generated from renewable energy. (Roskilde Festival, 2018) Guarantees of Origin is a certification system for electricity consumers to support the production of renewable energy in Europe by providing additional financial help for energy companies to produce renewable energy. (Landsvirkjun, 2018)

5.2.4 Water Usage

Roskilde festivalgoers use only 20 % of water during the eight festival days compared to Copenhagen inhabitants. Roskilde Festival has set a goal to reduce water consumption by 2 % by year 2016 and 3 % every year after that until the year 2019. Roskilde Festival has found that the amount of water usage fluctuates greatly between festival years. Thus, the water usage of each festival year is compared to the average water consumption of three years prior. The figure 3. shows the amount of water usage between years 2013 to 2017. In 2017, the water usage reduced 6.7 % compared to the average usage of the three previous years. The figure also shows that in 2016 the water usage was lower than the average water usage in years 2013-2015. (Roskilde Festival, 2018)

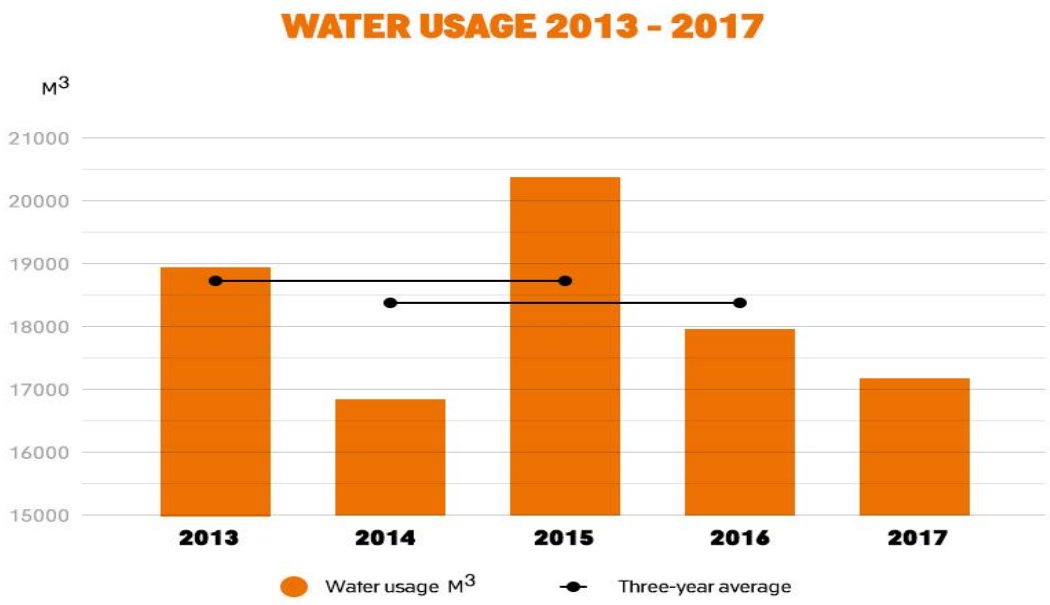

Figure 3. Water usage at Roskilde Festival 2013-2017. (Roskilde Festival, 2018)

Roskilde Festival does cooperation with DTU students to study how intelligent water meters can be used to reduce water usage. Although the festival is trying to get festivalgoers to use less water by rising awareness of water usage with placards for example, (see image 4), the festival attendees still need to rehydrate, eat and shower. This is why the festival is looking to upgrade sanitary equipment to reduce water usage. (Roskilde Festival, 2018)

Image 4. A sign at the festival to reduce the amount of water festivalgoers' use at the shower. (Ringtved, 2018)

5.2.5 Food and procurement

Roskilde Festival pursue to serve the most sustainable food as possible at the festival. Since 2014, Roskilde Festival has focused on bringing food stalls with organic food to the festival. In 2014, the goal was to have 30 % of the food served organic and by 2017, the goal had raised up to 90 %. The goal of 2017 was reached by half of the food stalls achieving an organic percentage of 90 % or higher. In addition, almost one out of five served 100 % organic food. Roskilde Festival has created an organic label in cooperation with the Danish veterinary and Food Administration. During the festival the amount of organic food of each of the stalls is monitored and every stall that reach more than 90 % were able to use the Roskilde Festival 90% organic label (see image 5.) (Roskilde Festival, 2018)

Image 5. Roskilde Festival organic label. (Roskilde Festival, 2018)

The festival procurement can be divided into approximately 66 product groups. Whenever it is possible, Roskilde Festival tries to buy and rent eco-labelled products. In 2017, the goal was to buy eco-labelled products in 10 product groups. However, they exceeded this goal by buying or renting eco-labelled products in 11 product groups. Table 1 shows, which eco-labels were used in the 11 products groups of year 2017.

Figure 4. Eco-labels used in 11 product groups on 2017. (Roskilde Festival, 2018)

5.2.6 Rising awareness

As the festival carries out several environmental initiatives every year, so has the awareness about the efforts increased. The chart 4 shows, that the average awareness of the environmental initiatives from year 2015 to year 2017 has increased from 38 % to 57 %. The initiatives that have raised the most awareness are waste recycling, bottle refund options, free tap water stations and organic food stalls.

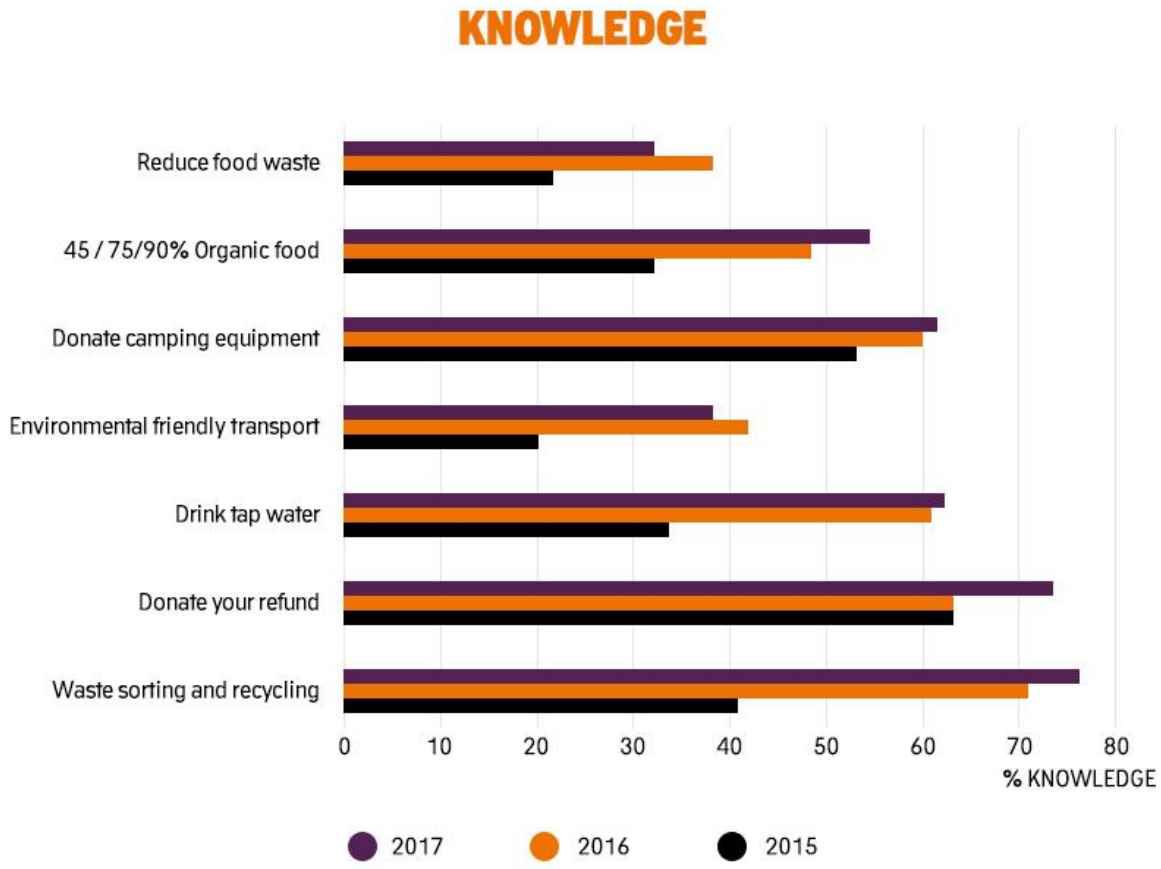

Figure 5. Awareness about the environmental initiatives of Roskilde Festival. (Roskilde Festival, 2018)

To raise the environmental awareness within the volunteer the Roskilde Festival gives internal “Sustainability Award” every year to reward the best environmental initiative. In 2017, the award was given to ReAct parades and ReActors for their work of collecting and sorting waste from the festival camp site and encouraging festival goers to do so themselves as well. (Roskilde Festival, 2018)

Roskilde Festival offers a “Volunteers' Guide Book” with five tips to make the festival greener:

1. “Bring your camping equipment home
2. Sort your waste and use the recycling stations
3. Leave your car at home, bring your bike or use the festival shuttle buses
4. Try out the vegetarian food options and drink tap water
5. Do your best to minimize material waste and reuse building materials”

(Roskilde Festival, 2018)

5.3 Primavera Sound Festival

Primavera Sound festival is a festival which artistic line is influenced of rock, pop and the most underground dance music. A Barcelona- based music company, Primavera Sound, runs Primavera Sound Festival. First Primavera Sound Festival took place in 2001 in Barcelona where it has been taking place ever since, being acknowledged as an urban festival not to be missed. Kendrick Lamar, Bon Iver, Patti Smith and Frans Ferninard are some of the world known artists that have performed at the festival. In addition to the main Barcelona event, the company has also introduced Primavera Pro, which is an international meeting for the music professionals. It has been going on since 2010 and the events includes activities such as conferences, talks, showcases and workshops. Primavera Sound has also launched a Portuguese counterpart festival, NOS Primavera Sound Festival. It has been taking place in the city of Oporto since 2012. They are also behind Primavera Club, an indoor festival that takes places in vary of venues during every autumn. (Primavera Sound, 2018)

Image 6. Primavera Sound Festival. (Elfyn, 2010)

5.3.1 Sustainability and Primavera Sound Festival

Primavera Sound is determined to evaluate its environmental impact and take actions to reduce and offset it. Primavera Sound has a campaign to follow throughout the year to reach its goals regarding sustainability. (Primavera Sound, 2018)

Primavera Sound sets key principles for the sustainability, which include:
1. “Broadly speaking, development cannot exceed the limits of what can be provided by natural resources.
2. There is obvious interchange between the economy, society, health and the environment.
3. It is essential to share resources and opportunities in a fair and just manner across the whole of society.” (Primavera Sound, 2018)

5.3.2 Waste

Waste management is one of the key points in Primavera Sound festivals environmental campaign. It takes great actions to ensure selective collection and that the recycling is done efficiently. In 2016, 81 % of the waste collected from the festival site was used to manufacture new products on recycling plants. This included 21.5 tons of light packaging, 3.4 tons of paper and cardboard, 1.8 tons of organic material and 6 tons of glass. (Primavera Sound, 2018)

5.3.3 Energy

The organisation has been taken the CO2 emissions into consideration since 2011. Primavera Sound compensates 100 % of the carbon footprint, which in year 2015 was 180 tons. The organisation has set up an initiative with Ay-Yildiz project in Turkey to install five new wind turbines in order to generate renewable energy as well as to contribute to the improvement of national economy. Primavera Sound also uses LED lighting on all of its stages. (Primavera Sound, 2018)

5.3.4 Procurement

The organisation uses recyclable paper to print all its printed materials including hand programmes and the festival’s official book. The paper used is chlorine free and printed using inks without heavy metal or hazardous chemical substances. In addition, the official festival bag is made of 100 % organic cotton and it is printed with water-based inks. Glasses at the festival are made from disposable polypropylene, which makes them recyclable and there is over 190 recycling points to leave them to. (Primavera Sound, 2018)

5.3.5 Water usage

Primavera Sound Festival uses innovative process that uses only little water to clean the portable toilets.

5.3.6 Raising awareness

Primavera Sound gives all the staff at the bars and food stalls support and information on sorting waste and waste recycling. Primavera Sound also collaborates with Greenpeace which takes part on the festival to carry out actions to raise social awareness for its causes such as “Save the Arctic”. (Primavera Sound, 2018)

Primavera sound encourages people to use public transport or cycle at the venue. It has agreements with the city’s public transport companies for the use of shuttles and it provides a protected parking area for bikes. Over 80 % of the people arriving at the venue uses one of this methods to get to the venue. During the festival, electronic vehicles to reduce the CO2 emissions carry out all the transport for employees. (Primavera Sound, 2018)

5.4 Glastonbury festival

Glastonbury festival is the biggest greenfield music and performing arts festival in the world. It is situated at Worthy Farm, Pilton, Somerset, in United Kingdom. Its first edition was in 1970, the day after Jimi Hendrix died. The first festival had 1500 attendees and the price was 1 pound including free milk from the farm. (Glastonbury festival, 2018) Since then, the festival has grown into international extravaganza with 135 00 tickets being sold out in 50 minutes for the 2017 festival.
(Glastonbury Festival, 2018)

Image 7. Tents at the Glastonbury Festival. (Glastonbury Festival, 2018)

5.4.1 Sustainability and Glastonbury

The festival is committed on minimizing any negative impact and maximize the positive environmental impacts it has. The festival also helps to maintain the rich and diverse environment through alternative land usage. When using the land for the festival purposes once a year in the middle of the growing season prevents the use of environmentally damaging practices of conventional farming. Glastonbury has many policies to make the festival green. (Glastonbury Festival, 2018)

5.4.2 Waste

Glastonbury festival is committed to minimize the amount of waste and to manage the waste management on site efficiently. They encourage attendees to think zero waste and not to bring anything with them that they cannot take back home with them or that will end up in landfill. The festival controls on what the staff, contractors, sponsors and traders bring at the site and they highlight their responsibility of not bringing items that will end up in landfill. Cans, paper, wood and organic waste can be separated and recycled at the festival by having 15 000 bins around the festival area that site wet or dry recyclable materials as well as non- recyclable rubbish. In 2014, half of the waste from the festival was recycled. It consisted of 114 tons of composted organic waste, 400 tons of chipped wood, 23 tons of glass, 85 tons of cans and plastic bottles, 41 tons of cardboard, 162 tons of scrap metal, 11.2 tons of clothing, tents, sleeping bags, 0.264 tons of batteries, 3 tons of dense plastic. 0.25 tons plastic sheets. There is 1300 volunteers working at the festival for the recycling purposes. (Glastonbury Festival, 2018)

5.4.3 Energy

The festival has areas where solar power and green technology is used for the power. These are a part of the area where all the cafes, stalls stages and even the showers are powered only by sun or wind energy. The festival also uses hybrid generators that can integrate solar, wind, diesel set gen, mains grid and battery storage. These generators are enabled to deliver greater peak loads passing through power directly from the diesel generator. On top of cattle shed accomodating 350 worthy farm cows sits 1500 square meters of solar panels. It is the largest privately owned solar PV array in United Kingdom. The panels generate around 250 kW of power on a clear sunny day. It is equivalent of how much 40 households use electricity annually. All the power that is not used at the farm is exported to National Grid. (Glastonbury Festival, 2018)

5.4.4 Water usage

Glastonbury festival has built two reservoirs, which will reduce the water delivery. In 2009, they built a reservoir that holds 1 million liters of water and in year 2018, they are building another one. All of the water will come from these reservoirs so there will be no need to bring it buy truck from other sources. (Glastonbury Festival, 2018)

5.4.5 Food and procurement

The festival has an onsite wholefood market, which reduce the food delivery. All tea, coffee, hot chocolate and sugar sold on site is Fairtrade and the festival encourages stallholders to widen their stock of Fairtrade products every year. The festival does not allow the usage of plastic cutlery at the stalls. All the cutlery must be FSC-assured wood. Cups and plates must be made from compostable cardboard or porcelain. As Glastonbury festival wants to reduce the plastic waste at the festival, they encourage people to bring their own reusable water bottle or buy a stainless steel water bottle from one of the WaterAid or 2Raw kiosks on-site. All the wood that is used at the festival is locally sourced and whenever possible FSC-assured to ensure it is from sustainable sources. In addition, all the wooden structures are chipped and used at the farm after the festival. (Glastonbury Festival, 2018)

The festival programmes come with a 100 % organic unbleached cotton bag which is printed with vegetable colours. The official t-shirt is also printed with water-based inks and dyed with vegetable colours. (Glastonbury Festival, 2018)

5.4.6 Sewage waste

In order to reduce the CO2 emissions, the festival has worked together with Wessex Water and invested on local sewage plants, which enable the sewage waste to be processed within 8-mile radius of the site, as previously it had to be processed 40 miles from the festival site. (Glastonbury Festival, 2018)

The festival uses compost loos and they have the most of compost loos in the world. A total of 1200 compost loos produce compost that will be brought back to the site in a year and it is used within the permaculture field and different areas of the site. (Glastonbury Festival, 2018)

5.4.7 Raising awareness

Glastonbury festival rises awareness of people not to urinate in the river or ground as already a bucket of urine can pollute the entire river. They aware people about the matter on their website and with placates onsite. The festival is the biggest singular donor for Greenpeace. It also offers and excellent site to promote Greenpeace’s environmental campaign and recruit new members. Festivalgoer

can also apply to become a Worthy Warrior at the festival and go for an extra mile to make the festival greener. You will get a wristband that lets people know that you are a Worthy Warrior.
Glastonbury festival also offers Village Green camping site where volunteers are available any time to tell you about recycling or donating possibilities. Glastonbury Festival does a lot of co-operation with organisations and organisations such as Greenpeace, Oxfam and WaterAid collaborate with the festival. Every year the festival also donates over 1 million pounds to charities and local good causes. (Glastonbury Festival, 2018)

5.5 Analysis of the results

The analysis presents the actions that the festival organizers have done to make their festival environmentally sustainable. The environmental search criteria is coded into seven parts: energy, waste, food, procurement, water usage, sewage waste and raising awareness because they stood out from the data and they were also noticed in the theoretical part. The table 1. shows on which matters each of the festivals had had taken actions on.

Table 1. Analysis on which environmental issues each of the festival organizers considered in their festival production.

	Flow Festival	Roskilde Festival	Primavera Sound Festival	Glastonbury festival
Energy	X	X	X	X
Waste		X	X	X
Procurement	X	X	X	X
Food		X		
Water Usage		X	X	X
Sewage waste				X
Raising awareness		X	X	X

5.5.1 Energy

All of the four festivals took energy consumption into consideration. Flow Festival uses biodiesel for power generations and buys carbon neutral wind electricity from Ekoenergia. Flow festival is entirely a carbon neutral festival and the emissions are compensated trough different projects. Roskilde Festival reduces diesel consumption of power generators with hybrid power source and larger generators, which enable more efficient fuel use. They also use solar panels and eco-labelled electricity. In addition, they buy certificates to compensate the greenhouse emissions and Guarantees of Origin to compensate the total use of energy. Primavera Sound festival also compensates 100 % of its carbon footprint. It has set an initiative in Turkey to install five new wind turbines. Primavera Sound festival also uses LED lighting on all of its stages. Glastonbury festival uses only solar power and green technology on some of its areas. They use hybrid generators that can integrate solar, wind, diesel set generators, mains grid and battery storage. They have also installed solar panels on-site.

5.5.2 Waste

The festivals that mention concentrating in waste management are Roskilde Festival, Primavera Sound Festival and Glastonbury festival. Roskilde Festival concentrates on recycling, separating items for landfill and incinerating the rest of the waste that can be burned. Primavera Sound Festival concentrates on selective collections and recycling whereas Glastonbury Festival encourages people to think zero waste, controls what staff, contractors, sponsors and traders bring at the site. They also do waste separation and recycling.

5.5.3 Procurement

All of the festivals paid attention to environmental friendly procurement. Flow Festival used disused water pipes for planters and sitting areas. They also used substrate in the park soil which main ingredient is by-product from industrial water treatment. Roskilde Festival pursues to buy and rent eco-labelled products whenever possible. Primavera Sound Festival prints all of its materials on recyclable, chlorine free paper and uses ink without heavy metal or hazardous chemical substances. The festival bag is also 100 % organic cotton and printed with water-based inks. They also use recyclable classes and they set up recycle points for them. Glastonbury festival uses 100 % unbleached cotton for their festival bags and they are printed with vegetable colours. Also, the official t-shirt is printed with water-based inks and dyed with vegetable colours.

5.5.4 Food

Only Roskilde Festival takes environmentally friendly food into consideration on their festival. They focus on bringing food stalls with organic food to the festival and they have also designed a organic label in cooperation with the Danish Veterinary and Food Administration.

5.5.5 Water usage

Roskilde Festival, Primavera Sound Festival and Glastonbury festival pays attention to water usage. Roskilde Festival cooperates with DNU students in order to study how intelligent water meters can be used to reduce water usage. In addition, they try to get festival goers use less water by placards etc.. Primavera Sound festival saves water by using a process that uses only little water when cleaning the portable toilets. Glastonbury Festival has built two reservoirs on-site, which cater for all water usage during the festival.

5.5.6 Sewage waste

Glastonbury Festival is the only festival of the four festivals to consider environmental sewage waste procession. They have invested in local sewage plants, which enable the sewage waste to be processed within 8-mile radius from the festival site. It has also 1200 compost toilets that produce compost, which is finally used within the permaculture field and different areas of the festival site.

5.5.7 Raising awareness

Roskilde Festival, Primavera Sound Festival and Glastonbury Festival had taken raising awareness of the environmental issues as part of their festival. Roskilde Festival awards the best environmental initiative among volunteers every year. They also emphasize the environmentally friendly way to take part in the festival in their Guidebook for volunteers. Primavera Sound Festival give support and information for their staff about sporting waste and recycling. They also do collaboration with Greenpeace, which take part in the festival. In addition, Primavera Sound Festival encourages people to use public transport or cycle at the site. Glastonbury Festival rises awareness by the volunteers they have in site telling about sustainability. They also aware people not to urinate in the rover or ground by placards and on their website. Glastonbury is also the biggest singular donor for Greenpeace. Greenpeace also works on-site with Oxfam and WaterAid. Glastonbury Festival also donates 1 million pounds every year to charities and local good causes.

As summary of the results, the study shows that there is certain areas where almost all of the four festivals concentrated. These areas were energy, waste, food and procurement and raising awareness. It was noticeable, that the festivals, which concentrated on most of the areas of the environmental issues, provided more information about it on their website. Roskilde Festival and Glastonbury Festival offered wide range of information about their actions towards greener festival as Flow Festival in contradiction, offered very constrained information about their environmental initiatives on their website. The festivals that offer much information on their website raise awareness more than those who offer it little, as any member of public can go to their website and learn about the environmental matters. At

least one of the festivals studied in the research considered all the issues that the literature about environmental issues on event management highlighted. The actions the festival organizers have made towards environmental sustainability have had a real effect. These can be seen in the statistics the festival organizers provide about the effects of their actions towards environmental sustainability.

Discussion

It was interesting to find out which actions the four festivals took in order to make their festivals more environmentally friendly. The research sampling was chosen by concentrating on the festivals that were among the biggest ones in Europe and who provided information about their environmental sustainability on their website. These festivals were chosen for this research as they are all form different countries within Europe and they consider environmental sustainability in their festival production. The content analysis as a research method enabled analysing and making conclusions based on the collected data.

There was not many books or reliable electronic sources that concentrated on the environmental sustainability in event or music festival management. However, most of the literature about the environmental issues in event management was recent. This shows that the environmental issues in event management is an actual matter.

The results of the study rely entirely on the information the festival organizers offer on their website. The festival organizers may not give all the information they have about their environmental initiatives on their websites, thus usually the environmental initiatives are highly brought up on organizations' public image. The reliability of the research is dependent on the information about the environmental issues the festival organizers give on their website and if the researcher has noticed and understood all relevant information. However, the amount of information the festival organizers give on their website emphasizes the topic of raising awareness as the more the festival organizers give information to public on their website the more they are able to raise awareness within the people who visit their website.

The research questions in this study were valid as the researcher studied the literature of the environmental issues on event management and decided the research questions based on that literature. The content analysis as a research method enabled the researcher to analyse the methods the festival organizers used to make their festival environmentally sustainable. The results can be considered reliable as they include all information that the festivals organizers offered on their website. The content analysis is done without bias and all the matters the festival organizers mention on their websites have been taken as a part of the research. It would be beneficial for reliability to have two separate researchers finding answers to the same questions. Thus, the results of the study are easily revised as the data is collected from websites that is reachable to everyone.

Further research topics could include how the legislation of different countries within EU reflect on the actions the music festival organizers take towards environmental sustainability. It would also be interesting to research how the environmental initiatives reflect on the economic aspect of the festival.

The thesis process had both inspiring and frustrating parts. The topic of the thesis was very interesting but the limited data of the environmental sustainability of the music festivals made it frustrating at times. The process has taught a lot about environmental issues on event management and about different procedures to make music festivals environmentally sustainable. It was nice to notice that the actions the festival organizers had made towards environmental sustainability had had statistically proven results. The thesis process has given tools for the researcher to organize environmentally friendly music festivals and events.

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