Engineering Management

Field Project

Sustainable Event Management: Opportunities and Trends

By

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Executive Summary

Sustainable Event Management is the act of managing events with respect to reducing their negative impacts on the environment. This negative impact could be direct pollution to the site of the event or indirect pollution to the entire world. To be able to manage events sustainably and avoid event-related pollution, all stakeholders such as Events Organizations, clients, suppliers, venues, etc. must be convinced to adopt sustainable change. The stakeholders need to see a financial benefit to make the switch.

Sustainable Events' stakeholders can gain that benefit in two forms. First, sustainable events offer many opportunities for cutting costs by encouraging locally produced products and the conservation of utilities. Second, they provide the opportunity to improve an organization's reputation by supporting a good cause and publicizing this involvement with a large number of prospective clients, customers, and media. The opportunities for changing the event industry to a sustainable industry are summarized in five aspects: Energy, transportation, water, purchases, and waste.

Reducing the impact of energy use on the environment focuses on reducing and eliminating greenhouse gases. Selecting certified sustainable venues and using energy saving techniques and technologies could accomplish the reduction of greenhouse gases. Sustainable transportation practices have the same purpose of reducing greenhouse gases resulting from freights', participants', and guests' transportation.

Water is also a critical resource used during events that could negatively impact the environment through waste and pollution. Conserving water by using advanced techniques and

technologies and filtering and eliminating grey water contribute to minimizing the amount of polluted water.

The last two important aspects of sustainable events are purchases and waste. Minimizing the number of purchases needed for the event and maximizing the use of recycled and reusable materials are sustainable goals. Also, planning to eliminate wastes ahead of the executing of events and encouraging recycling and separating recyclable materials at events reduce the damage.

In this study, a survey was conducted to investigate current sustainable event practices and to determine the barriers that prevent event organizations from being sustainable. The study shows that most of the participants have few approaches to sustainability. The major barriers are the cost of sustainable practices and tools, the time required to maintain the sustainability of the organization, and the lack of competition between vendors that drive costs up.

Chapter 1 - Introduction

1.1 Understanding Events

People have tended to rely on organizing events as an essential tool to promote certain messages. The increase of people's leisure time and their social nature has encouraged organizations to use events to attract people. Governments, for example, have used events to develop their economic status through tourism. Also, corporations have used the event tool to attract customers and promote their products. The fact that people get enthusiastic about events has created the birth of the event industry.

To understand the essential meaning of events, the Accepted Practices Exchange (APEX) defines an event as, "An organized occasion such as a meeting, convention, exhibition, special

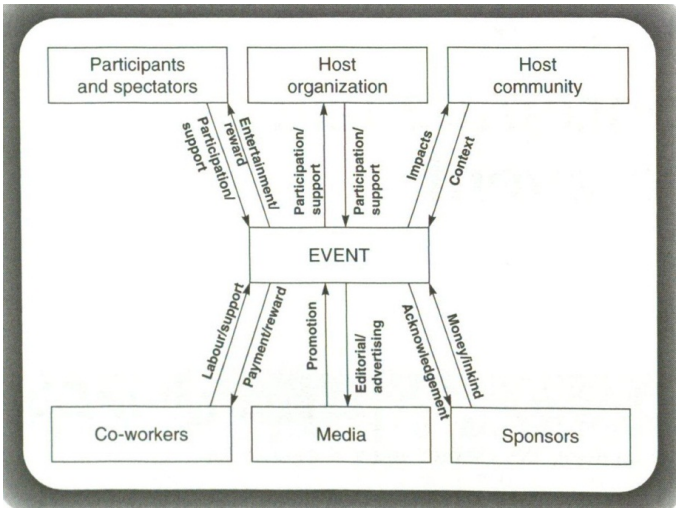
event, gala dinner, etc. An event is often composed of several different yet related functions" (Getz 2005, 16). The term "event" covers a wide range of sizes such as small local or community events, hallmark events, major events, and mega-events. Events also can be categorized based on content such as culture events, business events, and sport events. All these types of events have promoted the growth of the Event Management industry.

1.2 Event Management and Stakeholders

The wide growth of events has made the Event Management industry identifiable. Events are usually hosted by event organizations, special teams within organizations (especially in large organizations), or outside contracted companies (Bowdin et al. 2006, 2-23). The focus of this paper will be on contracted companies because they produce a large number of events, manage multiple events at a time, and make long-term relationships with their clients.

The increase of the level of professionalism of Event Management organizations has attracted many sectors to invest or participate in the industry. Event Management organizations not only have to satisfy audiences, but they have to satisfy the agenda of a large list of stakeholders. This list of stakeholders and their relation to events is described in Figure 1.2.

Figure 1.2: Stakeholders of the Event Management Industry



Source: Data From Bowdin et al. 2006, Figure 4.1

The host organization can be from the government sector, the corporate sector, or the community sector. The host community is mostly concerned with the cultures of the area in which events are executed. Sponsors are generally the provider of funds. The media is the promoter tool that the hosts use to attract clients and guest. Co-workers represent the event planners and all the workers involved in executing events. Finally, participants and spectators are the audience or the visitors to events (Bowdin et al. 2006, 97-106). However, the author of this paper divides the stakeholders of the Event Management industry into three categories: First are the Event Management companies, which include the executing companies, sponsors, media, and coworkers. Second are the clients, which include the individuals who are hosting the event. Third are the visitors, which include the event attendees.

1.3 Goals and Objectives

Many researchers have discussed the adverse effects of events on the environment. The awareness has risen greatly, especially in the past ten years as is discussed in the following chapter. Yet, many organizations have still not adopted sustainable alternatives. The primary objective of this paper is to determine the current practices of event organizations toward sustainability and barriers that prevent event organizations from being sustainable. This paper will also determine the reasons behind the slow adoption of sustainable practices by event management's key stakeholders, determine the environmental concerns related to sustainable practices, and find solutions to attract stakeholders to adopt the sustainable alternatives.

Chapter 2 – Literature Review

Although events are a very significant tool for many industries and can be utilized for several purposes, they can negatively affect the environment in many ways. Getting the stakeholders to

understand the adverse effects of events and the opportunities for using sustainable event practices can not only increase the value of events to clients, but also have a positive impact on the environment. This literature review will discuss the adverse effects of events and the opportunities for all stakeholders in implementing sustainable events. It will also discuss the barriers that prevent event management companies from switching their activities to sustainable activities.

2.1 The Adverse Effects of Events

Ms. Dale Hudson, the head of program management of America's Worldwide Exhibition for Interactive Travel, Meetings, and Events (IMEX), said, " My perception of events has always been that there is a huge amount of waste within this industry. However, I am realistic enough to realize that this industry is crucial for business and very important. We have all experienced conference calls with more than three people, and know the difficulties that arise from this type of meeting" (Goldblatt 2012, 24). These events can directly or indirectly pollute land, air, and water.

2.1.1 Direct Pollution

Direct pollution is the pollution that happens at the event site itself and adversely affects the surrounding environment. This contamination can cause land, air, water, and noise pollution. The first type of land pollution that has caused the United States $11.5 billion to clean every year is littering. The United States incurs about 51 billion pieces of litter every year that comes in many different forms such as bottles, napkins, paper and plastic plates, and cigarettes. Grass destruction is another form of land pollution affecting the surrounding areas of any outside event. This destruction mainly happens because of the direct contact of feet on grass. The final direct pollution that events cause is deforestation. Deforestation refers to the mass removal of trees or

forests on land that is to be used for event purposes. Also, stepping on tree roots by Event Organizers and attendees can endanger the health of trees.

Air pollution can also directly contaminate the sites of events. The main reason for direct air pollution is the carbon exhausted from parking, slow moving, and idling vehicles. This exhausted gas is not only harmful to the environment, it is also harmful to human health. Every year, Los Angeles, the largest market for the automobile, experiences 60 to 80 air-pollution warnings (stage 1) advising people to stay indoors. Portable gas-powered electrical generators and gas-powered barbecue grills are also two significant sources of air pollution because of their massive use at outdoor events.

Water events also cause water pollution, which is another form of direct pollution. These events attract visitors and enhance the tourism industry. However, weak regulations have made water events very harmful to the environment. Cruise ships are a location of many celebration and sport events. However, they dump about 143,000 gallons of sewage grey water and 25,000 gallons of sewage toilet water every day into North America's oceans. Disturbance to underwater life as a result of these events, such as damage to reef life or overfishing, is also common aspect of water pollution. In fact, the populations of tuna, swordfish, and marlin have been reduced by 90% because of overfishing activities (Goldblatt 2012, 29).

Noise is the final significant environmental pollution aspect. The World Health Organization claims that noise can actually affect the cardiovascular and metabolic systems and make people sick. It can also disturb the surrounding wildlife and affect animal communications.

2.1.2 Indirect Pollution

Indirect pollution is the negative impact to the world's environment at large. Even though land pollution is critical, air and water pollution have the greatest impact on the world's environment. Air pollution includes not only the pollution that happens on the event site, but all of the pollution resulting from transporting people from or to events. Also, the carbon generated from coal energy machines pollutes not only the site of events but also the entire atmosphere.

Many water-polluting activities do not happen directly in the water, but on land. The pollutants find their way to the water, causing water pollution. Air pollution, for example, starts on land, and pollutes while traveling through the air, or while touching anything including water. Also, any rain or snow runoff carries leftover litter from outdoor events into the water (Goldblatt 2012, 23-31).

2.2 Sustainable Events

2.2.1 Understanding Sustainable Events

Realizing the negative effects of events on the environment has encouraged many Event Organizers to consider adopting sustainable practices for their events. To develop an understanding of sustainable event management, it is important to understand what sustainable events are. Sustainable events can be defined as incorporating the consideration of the environment when planning and executing events to minimize their negative impact (Grace and Dodds 2008, 1-2).

2.2.2 Sustainable Event Management

The *Smart Events Handbook* defines green or sustainable events as "the process of incorporating socially and environmentally responsible decision making into the planning,

organization and implementation of, and participation in, an event" (City of Cape Town 2010). Event Organizations should include this process in their events' development process to ensure the sustainability of their events. The sustainable event management organizations should also include all key stakeholders in this process such as clients, suppliers, organizers, and venues.

When managing sustainable events, it is important to consider the following: Improving the efficiency of the resources; reducing the adverse effects on the environment; increasing the benefits to the economy, society, and environment; enhancing the local economy; raising awareness of sustainable issues; and improving sustainability within available resources (City of Cape Town 2010).

2.2.3 Sustainable Event Management and Stakeholders

It is important to engage key stakeholders in sustainable event management to guarantee the success of events. It is similar to the marketing process; it is essential to use the appropriate strategies with the appropriate stakeholders to persuade them to use sustainable alternatives. Sustainable alternatives are new to the market and adopting them requires stakeholders to change the way they do business. As resistance to change is an expected human behavior, the success of the engagement of all stakeholders to adopt the sustainable alternatives completely depends on how the promoters use strategies, data, and psychological persuasion to convince them (Jones 2010, 45-46).

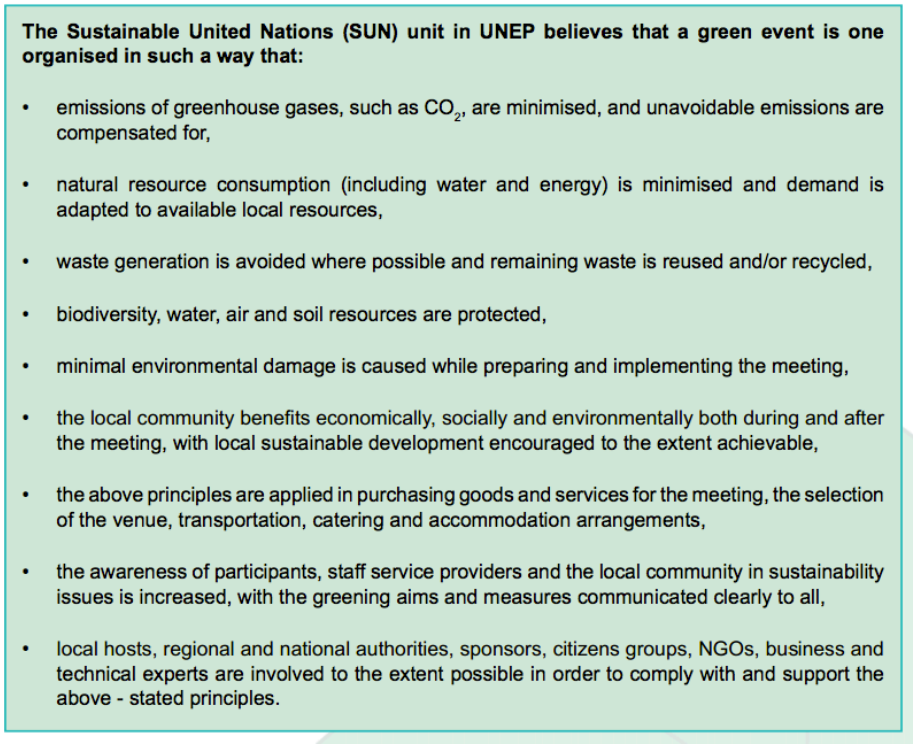
2.3 Benefits of Sustainable Events to Stakeholders

Events create great opportunities for event stakeholders to achieve their own agendas. More than 80 million people attend conferences or meetings each year around the world, and an even greater number attend trade shows and exhibitions, which makes this industry a very attractive

and beneficial industry. Sustainable events not only reduce the environmental impact, they also bring benefits to the stakeholders, especially event management organizations and their clients.

Sustainable events can reduce costs for event organizations and clients, especially in the long term. Reducing waste, conserving energy, purchasing local products are all areas that can be used to lower costs. Applying some sustainable practices can initially be expensive, but will save money in the long term. Sustainable events can also improve the reputation of Event Organizations and clients. For example, organizing green events implies the commitment of organizations to the United Nations' sustainable principles, Figure 2.3. This commitment to environmentally-friendly practices can be used as a communications or public relation strategy to attract participants.

Figure 2.3: United Nations's Sustainable Principles



Source: Sustainable United Nations 2009

Green events require innovative organizations to find alternative solutions. Being a sustainable organization will increase the innovation level of the organization and will raise the level of challenge. Executing sustainable events will also help companies and clients to add value for their participants by raising awareness of the importance of green products and activities. This can be very effective. For example, the media coverage for the World Summit on Sustainable Development helped the sustainable message to reach about 5 million people and gain about $600,000 in advertising.

Sustainable Event Organizers can also develop their local community by creating jobs, using local suppliers, and promoting green work practices. They can also promote decision-making by influencing surrounding organizations to apply sustainable practices in their own events. Applying sustainable principles not only benefits events themselves, it also influences organizations to be sustainable in their daily activities. All of the previously mentioned benefits could be significant in large and mega events because of the many opportunities to benefit the environment and traditional stakeholders (Sustainable United Nations 2009).

2.4 Plan Sustainable Events

Planning sustainable or green events can seem like an overwhelming task. However, it can be done in the following method:

Event Organizers should initially decide how sustainable they would like their events to be. It is important to plan ahead and identify the scope and the goals of "greening." Using some of the many available checklists can assist in determine the green scope of events. Developing a sophisticated sustainable plan for events and using them as communication tools throughout events will ensure goals are achieved. Event Organizers then need to get support for their

sustainable events. It is important to get the stakeholders on board and obtain their support for green events. It is also important for Event Organizers to educate their teams about sustainable events to motivate them to perform well.

After getting the stakeholders' support, it is important to identify the key players for the sustainable event such as suppliers, sub-contractors, venues, transportation methods, etc. These key players can help Event Organizers to select the best green choices and help them in sustainable decision-making. Then it is essential to create awareness among event participants and visitors. Providing guidelines to participants and visitors on how the event will be run sustainably and how can they contribute to its sustainability can smooth the implementation process. Promoting a sustainable lifestyle at events through information sessions and speeches would encourage people to act upon the message during and after events.

It is also important to measure the events' sustainable success by providing a post-report with data and lessons learned. This report will help Event Organizers to do benchmarking for future events. Executing events sustainably should not be the only goal of events; leaving a legacy should also be a target. Benefiting the environment and local communities could also be used as a goal for events, which in turn will contribute to the promotion of events (eThekwini Municipality 2011/2012).

2.5 Sustainable Events Management Practices

Event Managers, who make decisions on the products produced for events should realize that their choices to use non-renewable or toxic products are directly ruining and poisoning the quality of the earth in which they live. Appendix 1 provides a sustainable event checklist to help managers consider the sustainable products used at and produced for their events. To reduce the

impact of event practices and products on the surrounding environment and the environment at large, Event Managers should consider sustainable management in the following areas: Energy and emission production; transportation; water; purchase and resources; and waste (Jones 2010, 5-15).

2.5.1 Energy and Emission Production

Using traditional (non-renewable) methods to produce energy is the major source of emission problems. Coal, gas, and uranium are all sources of energy; however, they emit greenhouse gases that are harmful to the environment. Carbon dioxide (CO_2) emitted from coal and gas is the most common greenhouse gas that has a considerable impact on the environment. The rise in the amount of CO_2 increases the isolation level between the earth and the earth's atmosphere, which accelerates the global warming phenomenon. Minimizing the impact of the sources of energy used for indoor and outdoor events and finding the appropriate alternatives to the traditional methods for powering can increase the sustainable level of events. Appendix 2 provides an energy and emission checklist for Event Managers to help them consider sustainability in powering events.

2.5.1.1 Indoor Events

Indoor events usually use power provided by venues. However, that does not mean there are no opportunities to reduce the impact of energy-use on the environment. Choosing certified sustainable buildings, reducing power consumption, and using external renewable energy supplies can help to increase the sustainability of energy and emission production.

New buildings and construction are nowadays rated for sustainability. Choosing high rated sustainable buildings can reduce energy consumption and emissions. The sustainability rating

system depends on the following: the sustainable materials used in the buildings; the suitability of the buildings' design and operation with the surrounding climates; the water management methods used for recycling and reuse; the methods of minimizing waste; consideration of nature and sensitivity to biodiversity; and the consideration of indoor environment quality. Also, the energy efficiency of buildings plays a major role in a building's sustainability such as heating and cooling systems; lighting timers; energy saving lights; sleep mode equipment; and passive solar. If a building is not rated, Appendix 3 can be used as a guide to individually evaluate and rate buildings.

Reducing power consumption is another method of sustainable energy behavior and can be achieved through three steps. First, low energy equipment such as LEDs should be enforced and contracted for at events. Second, people should be encouraged to turn off any unused equipment during events. Third, venues should provide discounts for going below a certain amount of electricity usage, and also charge Event Organizers or clients extra if they go above the normal limit of energy consumption.

Using external renewable energy supplies can also contribute to energy reduction. Requesting clean electricity from electricity providers if possible can encourage the use of renewable energy. Actually, if an event company owns the venue, they can greatly participate in reducing emissions by completely switching to renewable clean electricity.

2.5.1.2 Outdoor Events

Mobile generators are the most popular power supply tools used for outdoor events. These generators mainly run on non-renewable fuel and mineral diesel. Using alternative sustainable fuels and zero emissions technologies will contribute to the efforts of creating a sustainable event.

The success of sustainably powering outdoor events requires keeping in mind emissions and fuel reductions when planning the distribution of power at events through reducing the demand for power, using sustainable biofuels, and using renewable energy.

Reducing the number of generators and using them efficiently is an essential strategy to reduce the demand on power. Generator contractors can initially contribute to the implementation of this strategy. The generator contractors are experts in this area and can help to provide events with the best power distribution that can minimize the number of generators used. Using efficient energy equipment is also a critical tool to reduce fuel energy consumption. The availability of this equipment has dramatically increased in the market with the rise in the awareness of sustainability. Daily auditing and monitoring of the power usage at events will provide Event Organizers with useful data that will help them regularly improve their energy efficiency.

Using sustainable biofuels that come from raw materials such as wheat, sugar, and oilseed to power outdoor events is another approach to reduce the impact on the environment. Biofuels have not been used widely because of the controversies brought about because of use of these raw materials for fuel and not food. Also, the increase in the demand on biofuels can raise the prices grains and crops. Currently, many organizations are doing research to develop the best practices and policies for using biofuels. Renewable energy is another sustainable solution to power events such as solar power, wind power, hydrogen fuel cells, and paddle power. These methods have a minimum amount of emissions and zero fossil fuels (Jones 2010, 78-103)

2.5.2 Transportation

Events require the transportation of people, goods, and equipment from their original locations to events' sites. Most of current transportation methods emit CO_2 and negatively impact the environment. Although the increase in the cost of fossil fuel and climate concerns have caused people to realize the impact of using traditional transportation methods, the convenience of using these methods usually outweigh the cost. Many innovative studies have been conducted to reduce the emissions of these fuels or find alternative methods to power vehicles. Appendix 4 provides a checklist for Event Organizers to sustainably manage transportation during their events.

2.5.2.1 Freight

Moving equipment and purchases is an essential aspect during events that can negatively impact the environment. Event companies and clients can reduce this impact by making the following sustainable choices: Choosing sustainable freight companies; reducing the transportation mileage; and encouraging contractors to use sustainable freight choices.

Many freight companies have been led by government pressure to perform research to make their freight process more sustainable. Using alternative fuels such as biodiesel or ethanol are current solutions that many freight companies apply. Selecting freight companies that use these alternative fuels can reduce the environmental impact of events. In addition, choosing nearby companies that use alternative fuels can significantly minimize this impact. Choosing local sources, contractors, and also making sure these sources originate in local areas will help to achieve the minimum impact goal. Eliminating unnecessary offsite transportation trips can also play an important role in reducing CO_2 emissions and attaining a sustainable solution. Appendix

4 provides a sustainable freight checklist that will help Event Organizers recognize the best freight practices.

2.5.2.2 Participant and Crew Transportation

Event Organizers have control over the transportation methods of participants and crew. Assigning a limited number of vehicles for participants and crew will encourage them to car pool or use public buses. Event Organizers can also choose the contractors for staff, volunteers, security, etc. that use sustainable transportation methods such as biofuel buses. It is also important to measure the performance of the transportation methodology such as determining the number of crew and participants; the origin of each participant; type of transportation; and car occupancy rate. Appendix 5 provides a crew transportation checklist to guide Event Organizers in how to reduce the impact of crew and participant transportation on the environment.

2.5.2.2 Visitor Transportation

The transport of visitors to and from events is essential to the success of events. A large crowd of people at an event implies a considerable number of vehicles emitting a great amount of CO_2, which pollutes the environment. Even though research is being developed to find sustainable transportation methods, it is important to focus currently on alternative transportation methods that can guarantee the success of events with the minimum impact on the environment. These alternatives should start with choosing an event venue that is easily accessed by public transportation. Event Organizers should also emphasize the use of mass transportation, encourage visitors to walk and cycle, and motivate visitors to increase the rate of car occupancy.

In order to influence visitors' choices in transportation, Event Organizers should understand that visitors usually prefer their private cars for the following reasons: Buses' and trains' schedules and routes are not flexible; it is difficult to coordinate public transportation for a big

group of people; purchasing of public transportation tickets sometimes requires pre-planning especially for long distances; and walking and cycling can be exhausting. However, public transportation can be very beneficial in the following sense: visitors can skip traffic jams at event entrances; they might also stop right by the door of events instead of walking a long distance from parking lots; public transportation can be a lot cheaper than driving; and public transportation is environmentally friendly.

Discouraging driving requires Event Organizers to provide a good plan for transportation. Increasing the parking fees at the event locations, limiting the number of parking spots, and making the parking spots pre-reserved can be solutions. However, doing that requires Event Organizers to provide convenient alternative plans such as providing event ticketing packages that include transportation tickets at a low price. Also Event Organizers need to determine the accommodations for their visitors and make sure that public transportation is available nearby that can take them from these locations to the events. This might require Event Organizers to discover possible additional routes and capacity of buses and trains by the public transportation providers to ensure time and route flexibility.

Car-pooling and car-lifting are also solutions, especially for multiday events where visitors can make friends and share rides, which can reduce the impact on the environment. According to statistics from the United Kingdom, the amount of CO_2 emissions per passenger mile for different transportation methods is as follows: 40 people per coach is 26.97g; 4 people per car is 86.00g; train travel is 96.30g; 3 people per car 114.7g; 2 people per car is 172.2g; and 1 person per car is 344.2g. These statistics show that car-pooling can significantly reduce the amount of CO_2 emissions and subsequently reduce the impact on the environment (Jones 2010, 139-161).

2.5.3 Water

Water is very a valuable and essential substance for all life around the world. It was estimated that 1.8 billion people would live in water scarce areas by 2025. Water scarcity is not the only problem with water; the greenhouse gases emitted from the process of pumping, delivering, and treating consumed water has been causing climate change. Understanding the four types of water will contribute to the process of conserving water, reduce the GHGs emitted, and will help to manage wastewater.

The first type is clear water, which is the water used for drinking only. This water is provided from standpipes or bulk tanks. The second type is blue water, which is the water used for human activities such as showering and washing. This water comes from dams, rivers, and other supplies. The third type is grey water, which is the used water from showers and human contact. This water does not have any organic contaminations. Thus, it is recycled for toilet flushing after filtration. The fourth type of water is brown or black water, which is flushed from toilets or washed food. This water is disposed into sewer systems. Appendix 6 provides a general checklist on how to manage water at events.

2.5.3.1 Water Conservation

Choosing venues for events that are designed for water sustainability is the best way to conserve water. However, if these venues do not exist, many devices and technologies are on the market that can be used to conserve water in a way that reduces water pressure and controls the amount of water dispensed from taps or hoses. Also using water-free toilets, urinals, and hand sanitizers can significantly reduce the amount of water used at events. There are also many other techniques that can be used to conserve water.

Using mops and buckets or low-pressure hoses to clean event sites is important to conserve water during the cleaning process. Preventing pouring tons of gallons of water to settle dust at outdoor events is also important. Instead, Event Organizers can mix non-hazardous organic dust settling agents with water and spray it, which demands a low volume of water. Event Organizers can also consider filtering event grey water and reusing it for dust settling purposes. Filtered grey water from event waste water can be used to water event gardens. To achieve overall conservation during events, event participants and visitors should be educated on the importance of water conservation and encouraged to follow the sustainable practices used at events. Appendix 7 provides a water conservation checklist for Event Organizers.

2.5.3.2 Managing Waste Water

It is always a good goal to have chemical-free waste water. Chemicals in grey water will remain in the land and soil and eventually will find their way to water bodies such as oceans or rivers. Animals that eat grass could also eat these chemicals. To reduce the amount of these chemicals, environmentally sound products should be used in soaps, shampoos, cleaning products, and in food cleaning. Event Organizers can provide these products or get brand companies to sponsor them. It is also important for multiday events to filter and reuse their grey water. Event Organizers can use natural methods to remove chemicals from water such as reed bed, or use chambers and filters (Jones 2010, 179-212).

2.5.4 Purchases and Resources

Events normally require numerous purchases and resources to be consumed. Choosing recyclable and re-usable products to be consumed at events can greatly reduce the impact on the environment. It is essential for Event Organizers to think sustainably about the following questions when they make their decisions on purchases: Where do these purchases come from?

Who makes them? What are they made of? How are they packaged? Can they be recycled? Appendix 8 provides a checklist for Event Organizers to sustainably purchase their event products. Selecting recyclable products is not the only solution to reduce the environmental impacts of events; buying less is an also important aspect. The number of handouts distributed at events, the number of surrounding stalls, and the multiple uses of event products are important considerations to reduce event purchases.

Event Companies are also encouraged to have and emphasize sustainable policies within their organizations. These policies should first highlight the level of commitment of the organizers and the stakeholders to use recyclable products. They should also stress the types of equipment and strategies that organizations would use to increase the efficiency of their sources of energy and water consumption. Organizations are also encouraged to include information about the types of cleaning products, recyclable and reusable products, and biodegradable products that they are willing to use, and the local suppliers that they are willing to deal with to reduce the negative impact on the environment.

The level of sustainability of selecting these products can be measured using one of several different methods. The first method is the product Life Cycle Assessment (LCA). This method is about studying the impact of the proposed products and materials before ordering them. The second method is Ecological Footprinting. This method suggests calculating the weight of CO_2 used from the proposed products and materials prior to selecting them in order to minimize the number of products that emit CO_2.

2.5.4.1 Sustainability in Purchasing

Being responsible in the purchasing of products for events is important in achieving sustainable events. Event Organizers should always consider reducing their environmental impact as a priority when selecting their products through minimizing waste and toxic products, conserving water and energy, and using renewable sources of energy and recyclable products. Eco-labeling, organic food, sustainable agriculture, and considering climate change are all significant practices to improving the overall sustainability of events.

Environmentally friendly products are nowadays eco-labeled to make their selection easier for consumers. The Global Ecolabeling Network (GEN) is an example of an international association which certifies products that satisfy certain qualifications in various product categories. Also organic food products are labeled to inform consumers. Organic food is considered sustainable because it is free of synthetic fertilizers, pesticides, steroids, and other chemicals that are harmful to the environment. These organic products are grown on sustainable land that prevents the excess use of water, which can be a huge waste in the agricultural business. It is also essential to consider all the processes of making products, from the raw materials to even the transportation of the end product. Event Organizers, who are committed to sustainability, should make sure that their purchased products have gone through a process that minimizes emissions.

2.5.4.2 Products

Some raw materials are widely used for events and deserve some close attention such as timber products and paper. Timber is used for the event buildings, construction, furniture, and decoration. This timber usually comes from forests and it is hard to determine whether it is sustainably or legally produced. Illegal logging is a lucrative business. The only way to

guarantee legal or sustainable timber or timber products is to buy certified products. The fact that 80% of the world's forests have been already damaged, especially in the past 30 years, should encourage everyone to think responsibly and sustainably about the use of timber.

Paper is another material that is extensively used at events. Using recycled paper can make a notable contribution to the saving of trees. Most paper can be recycled up to seven times until the paper material loses its quality. This recycled paper can be post-consumed paper, which is discarded after it is used, pre-consumed paper, which is paper that has been discarded before it has reached audiences such as misprinted papers, or mill broke paper, which is scraped during the manufacturing process. Also, choosing paper that is free of Elemental Chlorine (ECF), Totally Chlorine (TCF), and Processed Chlorine (PCF), which are sometimes used in the paper bleaching process, can help reduce the impact of paper on the environment (Jones 2010, 225-294).

2.5.5 Waste

Waste exists in the process of making any product. It is estimated that for every ton of products, 71 tons of waste result from the process. Event Organizers need to consider the following in order to manage their waste and produce sustainable events: The type of waste generated from the event, the waste treatment facilities in the region, the methods to manage waste and to achieve the goal of zero waste. Achieving zero waste could be possible in events if Event Organizers develop systems and techniques to deal with their waste. Appendix 9 provides Event Organizers with a checklist to manage waste.

Event Organizers are the most knowledgeable people about their events. Understanding the distribution of the event, the audience, and the food produced, can help Event Organizers to

manage the separation of waste to be recycled. Encouraging the audience to separate their recyclable products and also controlling what products are sold during events can contribute to the zero waste goal.

Preventing waste in the first place is a great step to achieving zero waste events. Printing less paper and using alternative paper-free methods in ticketing and registration can prevent waste. Renting products instead of purchasing them, minimizing the number of useless giveaways, and controlling the types of the products sold at event locations are all ideas to prevent waste at events. If food is served at events, it is suggested to use washable plates to reduce disposable products or the amount of waste. Also, providing stand up water pipes (tabs) and encouraging the use of refillable glass bottles are recommended methods to provide beverages at events.

Managing waste at events is also essential. Providing bins with good volumes (depending on the number of attendees), distributing them wisely, and labeling them appropriately in a way the visitors can quickly recognize them is very important to the success of waste management. Also, understanding that many of the visitors are smokers and providing the appropriate bins in the appropriate locations would encourage smokers to throw their cigarette butts in the bins. The fact that 4.3 trillion cigarette butts are littered every day, and it would take 12 years for a cigarette butt to break down plus the poisons it emits to the environment through its chemicals, make cigarettes an environmental hazard that should be intensively managed at events (Jones 2010, 299-357).

2.6 Measuring Green Events

Budgeting and measuring the impact of products used at events are major aspects in the success of sustainable events planning. Many innovative and comprehensive measurement tools

are used to plan and chart the progress of sustainable events. Two measurement tools will be discussed in this paper: Key Performance Indicators (KPIs) and Carbon Footprint.

2.6.1 Key Performance Indicators (KPIs)

KPI is the best method to set and track environmental strategic goals. To ensure the success of the KPI method, it should be SMART (specific, measurable, achievable, realistic, time bounded). KPI can be divided into three categories: Social KPIs, environmental KPIs, and financial KPIs. Social KPIs use qualitative research to collect the feedback and experiences of visitors and employees. This can be done through many methods such as surveys and interviews. Environmental KPIs usually use qualitative measures to record the environmental impact such as carbon footprint and waste. Event Organizers should establish for their organizations an environmental audit and collect environmental data to set a baseline for the KPI system. Once data is collected, it should be benchmarked with other green events to gain some beneficial competitive data that would help the organizations develop and grow. Financial KPIs depend on quantitative data derived from accounting figures to show the impact of green activities, such as the amount of money spent on reforestation.

2.6.2 Carbon Footprint

Carbon footprint in this case refers to any GHGs emitted as a result of any direct and indirect activities at events. It is called a carbon footprint because the most popular GHG emitted from events is carbon dioxide (CO_2). Many online carbon calculators exist nowadays to calculate carbon footprint for events such as Australian Center for Event Management, Doubletree Hotel, and MPI Sustainable Event Tool. These websites require certain event data and calculate the carbon footprint for the events. However, these tools do not give accurate results since they base

the results on average assumptions. The most accurate way to calculate carbon footprint is to calculate it manually.

The best way to collect the data is to start with the gas and electric bill. Event Organizers should start by determining the gas and electricity usage for the specific days and locations of their events. Gas is measured in British Thermal Units (BTU) or Therms (100,000 BTU). To calculate an event's carbon footprint due to gas consumption, Therms should be multiplied by 13.4 to provide the amount of carbon emitted in pounds. Power of electricity is measured by kilowatt-hour. To calculate the event's carbon footprint due to electricity consumption, kilowatt-hour should be multiplied by 1.3 to provide the amount of carbon emitted in pounds.

Calculating carbon miles is also an important measure to determine an event's carbon footprint. Carbon miles can be challenging because Event Organizers need initially to determine the type of transportation that their visitors and participants used (including the type and the model of the vehicles) and how many vehicles were used or public transportation trips taken. The other challenge is determining the number of miles these vehicles traveled for the events. Many websites have developed easy programs to calculate carbon miles such as Choose Climate, Transport Direct, and The Carbon Neutral Company. The carbon miles can also be estimated by doing the following hand calculation: Multiply the distance traveled by train by 0.287, bus by 0.198, large car by 0.882, small car by 0.22, urban rail system by 0.154, and boat by 1.04. These calculations provide the amount of carbon footprint in pounds per person.

It is also critical to calculate the carbon footprint from event products. Even though it is very hard to accurately calculate the carbon footprint of consumed products, it is recommended to use the following method to estimate the results. If events do not recycle anything and do not use any

sustainable methods, the carbon footprint (in kilograms) can be calculated by multiplying the number of attendees by the number of days by 18.1. If most of the event activities are sustainable and most of food and product suppliers are local, the carbon footprint (in kilograms) can be calculated by multiplying the number of attendees by the number of days by 12.1. Finally, if events are very highly sustainable and all suppliers are local, the carbon footprint (in kilograms) can be calculated by multiplying the number of attendees by the number of days by 3.62. As mentioned before, this method is not very accurate, but it can give good estimates about the grand total carbon footprint (Goldblatt 2012, 59-78).

2.7 Marketing for Sustainable Events

Advertising is the most popular method of marketing regardless of the advertising methods used. The most common methods used are newspapers, websites, commercials on television or radio, and mailed or phoned advertisements. However, green Event Organizers can pursue different methods that can match their sustainable plans. New technologies and sustainable ideas have been developed that offer very effective sustainable marketing strategies.

2.7.1 Online Media and Social Networks

The Internet has given humanity a great tool for communication. Google is the best example of a leading website in the Internet revolution by developing their map and navigation applications. Facebook has also been a prime social media website that has attracted millions of people for the purpose of communication and sharing. The increase in the use of social media websites has made social media websites a very effective method for advertising. Social media allows the participation of a large variety of people, who might not be familiar with the event. The following table summarizes how some of these websites can be used as a sustainable advertising tool.

Social Network	Description	Sustainable Ideas
Facebook	People connect with others through sending messages, sharing pictures and videos, and communicating in groups	Create a Facebook group for events, invite people, and share ideas and updates with them
Twitter	The website allows people to post 140 characters to update their friends	Assign a person of the sustainable team to update the followers about the sustainable event
YouTube	Members can upload personal videos and share them with others	CEOs of event organizations can record a short video about sustainability and share it with the event attendees
MySpace	Similar to Facebook but known more for promoting brands and artists	Form an account for events and share video and audio files about the events

Source: Data From Goldblatt 2012, Figure 11.6

2.7.2 Green Spectacles

The traditional public spectacle methods such as fireworks, ribbon-cutting celebrations, and parades of elephants are old methods of event promotion. New sustainable technologies can create innovative spectacles and excite the visitors. The 2010 Coachella Valley Music and Art Festival created a huge origami crane structure that emerged above the visitors creating shade during the daytime. At night, low-energy lighting, which was powered by solar panels that saved

energy in batteries during the daytime, lighted the crane with different colors that wowed the visitors and provided power to the event (Goldblatt 2012, 240-245).

Although events create an industry that assists in the promotion of many other industries and purposes, they have a negative impact on the environment. This impact becomes critical with the increase of the size of events. The literature review shows opportunities for Event Organizations to reduce the negative environmental impact of the industry. Some of these opportunities require investments and others require a change in event managerial behaviors. However, the growth of the Sustainable Event Management is still slow. The author of this paper created the following study to investigate the sustainability of events and determine the barriers that slow the growth of events' sustainability.

Chapter 3 – Procedures and Methodology

A survey was conducted through the online surveying website, SurveyMonkey, and distributed to event management organizations. The author of this paper chose the surveying methodology to collect as many responses as possible from organizations in the event management industry. The survey questions were formed from the ideas in the book *Sustainable Event Management: A Practical Guide* and were specifically formed from this paper's Appendices 1 to 9.

Most of the survey invitations were sent by the website's emailing service, which in turn allowed the participants to identify which organizations they were representing. Some of the survey invitations were sent by the researcher's personal email, and in this case, it was difficult to identify the organizations that the participants represented. Fifteen organizations were identified and seven organizations were not identified. Thirteen organizations (59.1%) completed

the entire survey, while nine organizations completed only part of the survey. The surveys that have some uncompleted sections will still be considered in this study because the completed sections provide useful data.

The survey was divided into six sections: Energy, water, transportation, purchases, waste, and barriers (See Appendix 10). The first five sections investigated the current practices that the organizations perform toward sustainability. The last section identified the barriers that prevent event management organizations from taking sustainable approaches in their activities. The total number of questions included in this survey was 33. The questions were unevenly divided between the sections depending on the number of needed questions to cover each section.

Chapter 4 – Results

The results of each section are discussed separately. Appendix 10 shows the statistics and graphs for each of the survey questions. The number of participants who answered a question out of the total number of participants will be reported in parentheses after the percentage of a given response to a question.

4.1 Energy

The energy survey questions aimed to scrutinize how event organizations deal with the following four aspects: Selecting venues, using energy efficient and zero emission technologies, distributing generators appropriately at outdoor events, and reducing energy waste during events.

The results of the survey show that 50% (11/22) of the participants select certified energy efficient venues if their clients request them, while 31.8% (7/22) of the organizations do not

select certified energy efficient venues. Some of the participants claimed that the selection of the venues in most cases depends solely on the clients.

The survey also shows that most of the event organizations do not implement energy efficient technologies for their events. Only 27.3% (6/22) of the participants provide techniques such as low energy appliances, passive solar, insulation, or lighting timers. Also, only 4.5% (1/22) offer their clients zero emission services such as solar, wind, hydrogen fuel, and battery packs to reduce emissions at events. One of the participants said that they are not aware of many of these techniques. Another wondered how practical these technologies are in the event planning industry.

Event organizations were also asked if they reduce the demand on the generators during outdoor events by optimizing their distribution at event locations. The survey shows that 54.5% (12/22) of the organizations optimize while 45.5% (10/22) do not. However, the result from this question does not provide good statistical data because most of the participants in this survey do not organize outdoor events.

The last part of the energy section was aimed at determining the organizations' in-event practices to reduce energy waste. The study shows that 81.8% (18/22) of the participants do not conduct switch-off campaigns at their events. A switch-off campaign is an in-event campaign that encourages Event Organizers and guests to switch-off unused appliances or lighting. The study also shows that 95.5% (21/22) of the organizations do not hire a third-party auditor to monitor and minimize the energy used at events.

4.2 Water

The water survey questions tested event organizations' approach to reduce water consumption in the following three aspects: Using water conservation techniques, treating and reusing grey water, and practicing water conservation activities during events.

The survey results indicate that the majority of the event organizations do not use water conservation techniques and technologies. Only 12.5% (2/16) of the organizations use water saving devices on taps, hoses, showers, drinking water standpipes, and auto shut taps. An additional 31.3% (5/16) said that they are able to provide these techniques if the client requests it.

Waterless Urinals and Toilets is another technology that the majority of event organizations do not provide to their clients. Only 6.3% (1/16) of the participants provide this service. There are also 31.3% (5/16) of the participants that provide water bottle refill stations at their events. One organization mentioned that venues such as hotels tend to provide this service more than the event organizations do.

The participants were also questioned about the way they deal with grey water. They were initially asked to determine whether they provide chemical-free-cleaning products for events, which cause the water to be grey. The percentage of the participants who provide these products is 31.3% (5/16). There is also only 12.5% (2/16) of the organizations that treat the grey water if the client requests it and 6.3% (1/16) of the organizations that provide treated grey water for non-contact uses during events. Some of the event organizations do not know what grey water is.

The survey also shows that the majority of the organizations, 93.8% (15/16), do not conduct water saving campaigns at events to encourage everyone involved with the event to conserve water. One of the event organizations said that venues such as hotels usually encourage the

guests to conserve water but don't force them. Another event organization mentioned that event organizations are usually conscious to conserve water, and most of the water consumption is in washing dishes.

4.3 Transportation

The survey questions in the transportation section attempted to identify the organizations' approaches to reduce the number of cars at events. The purpose of reducing the number of cars is to reduce the amount of greenhouse gases emitted because of these events.

The survey shows that 40% (6/15) of organizations locate their events nearby public transportation services or provide their own shuttles to the guests. Also, an additional 33.3% (5/15) of the participants provide this service if their clients ask for it. Only 6.7% (1/15) of the participants use the technique of increasing the price of the event parking or providing limited parking spots to the visitors to encourage the use of public transportation.

4.4 Purchases

The purpose of the purchases section was to determine the event management organizations normal practices when purchasing materials. The event organizations were questioned about the following four areas: Having sustainable purchasing policies, using sustainable techniques to reduce printing, hiring instead of buying, and eliminating plastic bags.

The result of the sustainable purchasing policy section shows that 53.3% (8/15) of the participants have a policy for recycled content, 53.3% (8/15) have a policy for reused materials, 46.7% (7/15) have a policy for locally produced products, 33.3% (5/15) have a policy for certified organic products, 26.7% (4/15) have a policy for chemical free products, and 20.0% (3/15) have a policy for sustainably grown products. One of the participants mentioned that

although they don't have policies for sustainable purchasing, they still consider some of the previously mentioned activities such as purchasing local food.

Most organizations also seem to not produce their printed materials sustainably. The study shows that 66.7% (10/15) of the participants do not print sustainably. The study also shows that the development of technology such as tablets and emailing services is encouraging event organizations to use and purchase fewer printing materials. The percentage of the participating organizations that use electronic products and services as an alternative to purchasing printing materials is 73.3% (11/15).

The study also shows that the percentage of hiring or renting materials instead of purchasing them is 46.7 (7/15). The survey also shows that the percentage of eliminating or reducing the purchase plastic bags is 33.3% (5/15).

4.5 Waste

The waste section of the survey investigated the event organizations' regular practices when dealing with waste before, during, and after events. The survey was focused on understanding waste before events, separating waste during events, and recycling and measuring waste after events.

The study shows that 60% (9/15) of the event organizations identify ahead of time what kind of waste could be produced during events and come up with alternatives to prevent this waste from being generated. As a part of the preparation before the event, the study shows that 60% (9/15) of these organizations place appropriate recycling containers for papers, bottles, timber, metal, and plastic.

The study shows that during events, 66.7% (10/5) of the participants get the guests involved in separating waste. The survey results also show that 93.3% (14/15) of the participants pack up, store, and reuse everything possible after events. Also 0% (0/15) of these companies measure the waste generated after events and try to learn from their experiences.

Some of the event organizers' comments show that the major waste at events is paper. The event organizers think that the massive number of flyers and printed manuals that end up in many cases in trash create a great deal of waste. They also think that the poor planning of events increases the amount of waste.

4.6 Barriers

The purpose of this section was to discover the barriers that could hinder event organizations from selecting sustainable products and services. It was designed to uncover why event organizations think implementing sustainable events is important. This section also aimed to reveal the opportunity for event organizations to invest in sustainable activities. In addition, this section set out to determine why customers would select sustainable services from the event organizations' point of view. Finally, it was designed to present the wastes that event organizations think are the major wastes at events.

Event Organizers think that cost, time, and vendors are the major barriers that prevent event organizations from executing green events. The lack of competition among vendors drives the cost up and quality down of sustainable products. It also takes a great amount of time to manage waste and to coordinate green events. Some participants suggest that event organizations could consider providing sustainable products if there is a way to drive costs down and reduce the labor needed for the process. This could happen, for example, if the conservation of water could be

noticeable, financially worthy, and more products could be produced locally. Also, if customers were more aware of the importance of the green products and services, their demand would increase and vendors would produce more green products and services at lower cost.

Another factor that prevents event organizations from changing their activities is the lack of their knowledge about this new market. They also believe that sustainable venues are big part of the change and they don't exist on the large scale. However, some Event Organizers believe that executing sustainable events is important in the event industry because it cuts down waste. They also think that Event Organizers reach many people and could spread the word about the importance of green products and services.

Event Organizers also would consider making an initial investment to purchase sustainable assets that could save them money in the future if these assists are convincing and pay off. Small organizations find this investment is still hard because they don't have enough capital. One of the event organization participants believes that switching to sustainable events not only requires initial cost, it is a continuous investment to manage events' sustainability.

Customers' awareness and selection of sustainable green products and services is also a major reason that prevents the sustainable events industry from growing. Event Organizers think that customers do not value green services because they don't find them worthwhile. They find them expensive and not widely available from event organizations. Clients will be convinced to switch their selections to sustainable products and services if the cost goes down. One participant thinks that the only way to drive costs down is a law that forces or encourages event organizations to provide sustainable alternatives. Customers would also be convinced to switch their selections if they benefit from the publicity that they get from being sustainable.

Chapter 5: Summary and Conclusion

The event industry is used widely by different types of organizations and for several purposes. The traditional ways of managing events consider the majority of stakeholders, but in many cases they disregard the negative impact on the environment. This negative impact could be direct to the sites of the events such as pollution to the surrounding land, water, air, and wildlife. The negative impact could also be indirect such as greenhouse gas pollution resulting from the transportation of guests from or to event or the water pollution that travels from the event location to rivers or oceans.

Sustainable Event Management aims to reduce the damage of events on the environment. It offers many opportunities that could not only save the environment, but also benefit the industry's stakeholders. These opportunities attempt to cut costs by encouraging certain activities such as using locally produced products and conserving water and electricity. They also aim to benefit the Sustainable Event Organizations by developing their reputations as events reach a large number people and the media. These opportunities cover the major five areas of sustainable event practices, which are energy, transportation, water, purchases, and waste.

The opportunities for reducing the greenhouse gases emitted because of events could be summarized by the following: Selecting certified sustainable buildings, reducing power consumption, and using external renewable energy supplies at indoor events. Also, reducing the number of generators used at events and using sustainable biofuels for outdoor events are also encouraged to minimize the events' carbon footprint.

There are also opportunities to reduce the greenhouse gases by sustainably managing the transportation of freights, participants, and guests. Freights could be managed sustainably by

encouraging the election of sustainable freight companies, reducing products' transportation mileage, and convincing contractors to select sustainable freight methods. The transportation of participants and guests could be sustainable by locating events nearby public transportation means, limiting the number of parking spots at event locations, and encouraging car-pooling among both participants and guests.

Conserving consumed water during events is another method to manage events sustainably. Selecting certified sustainable venues and using water control devices and technologies to control the amount of water dispensed from taps are the most popular methods to conserve water. Also, filtering events' grey water and reusing it for non-contact purposes is another method to reduce the amount of water used at events. It is also important to minimize the toxicity of grey water by using chemical free cleaning products.

Sustainable Event Management also emphasizes sustainable purchasing behaviors such as choosing recyclable and reusable products and reducing the number of purchases for events such as reducing the number of papers and flyers. It also encourages Event Organizations to make sustainable polices for their organizations and be committed to them.

Managing wastes generated at event locations is also critical to reduce the negative effects of events on the environment. It is essential to preventing wastes from happening at events through methods such as printing fewer papers and renting products instead of purchasing them. Also, providing recycle bins for all types of event materials and encouraging everyone to separate wastes contribute to the sustainability of events.

The results of the conducted survey show that the majority of event organizations are not convinced to switch their activities to sustainable activities. The majority of the survey

participants think that cost, time, and vendors are the major reasons that currently prevent them from switching to sustainable practices. The lack of competition between the vendors due to low demand by the clients increases the price of sustainable products. Also, while the survey participants consider the initial investment important, they also believe that maintaining the sustainability of the organization is expensive and time consuming. They also think that venues and clients are also part of the problem because clients in many cases select the venues and the sustainable venues are not widely available.

Chapter 6: Suggestions for Additional Work

The slow growth of the Sustainable Event industry implies the need for deep analytical studies and research to understand the reasons behind it. Event stakeholders need to see the financial benefits of managing sustainable events before they will accept sustainable alternatives.

One energy research area would be conducting a cost and energy analysis to investigate the feasibility of using alternative sustainable sources of energy at events. Another area of research is the study of cost versus benefits of the energy control devices at the events. The last recommended energy research area would be the study of the relationship between the governmental energy subsidization and the slow growth of the events industry.

Research also needs to be conducted regarding the use of water at events. The first recommended research area would be the financial benefits of using water control devices and technologies at events. The second recommendation would be the financial analysis versus the effectiveness of filtering and reusing grey water at events. The last recommended water research area is the negative influence of the governmental water subsidization on the sustainability of events.

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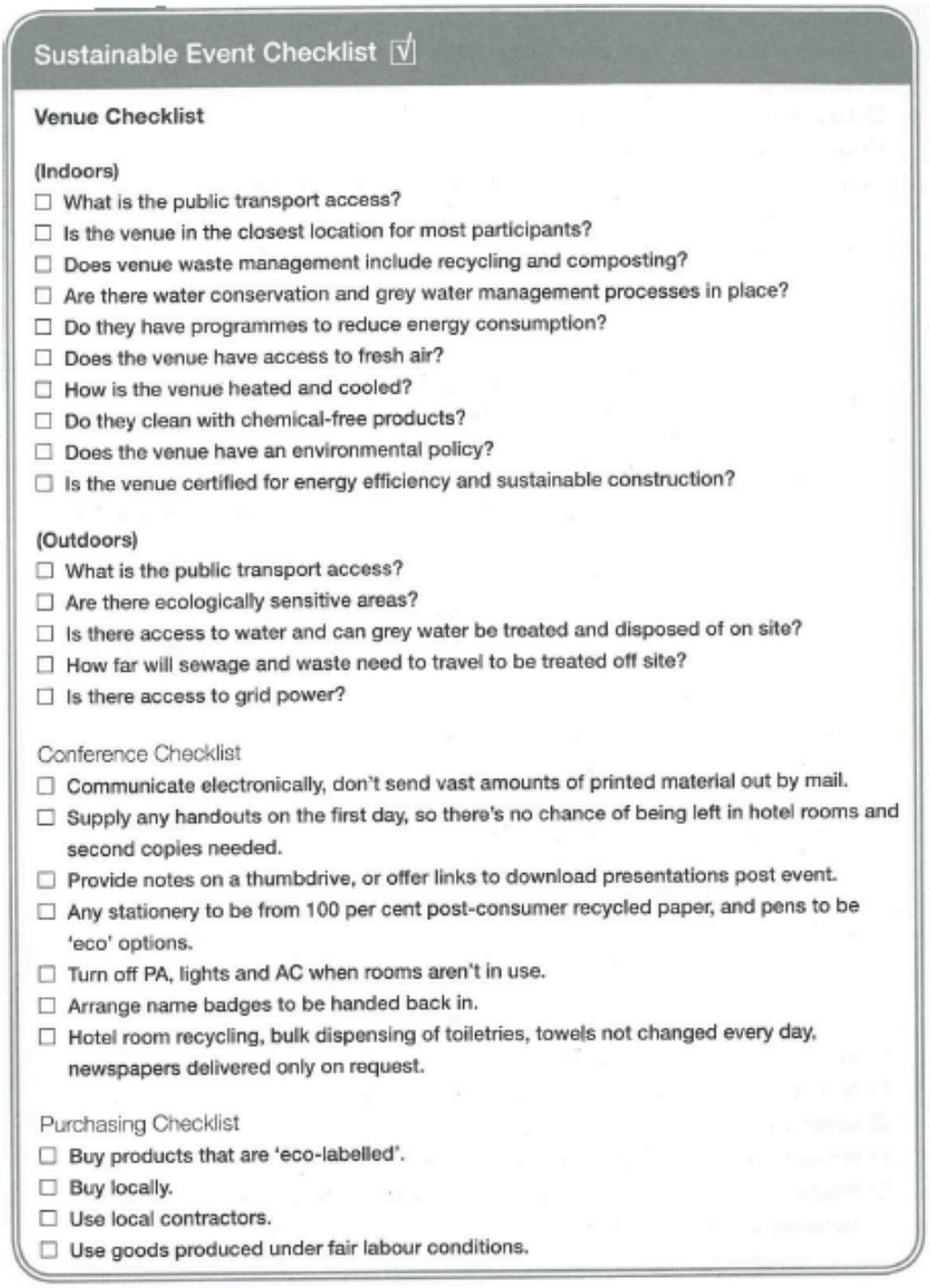
Appendices:

Appendix 1: Sustainable Events Checklist



Sustainable Event Checklist ☑

Venue Checklist

(Indoors)

- ☐ What is the public transport access?
- ☐ Is the venue in the closest location for most participants?
- ☐ Does venue waste management include recycling and composting?
- ☐ Are there water conservation and grey water management processes in place?
- ☐ Do they have programmes to reduce energy consumption?
- ☐ Does the venue have access to fresh air?
- ☐ How is the venue heated and cooled?
- ☐ Do they clean with chemical-free products?
- ☐ Does the venue have an environmental policy?
- ☐ Is the venue certified for energy efficiency and sustainable construction?

(Outdoors)

- ☐ What is the public transport access?
- ☐ Are there ecologically sensitive areas?
- ☐ Is there access to water and can grey water be treated and disposed of on site?
- ☐ How far will sewage and waste need to travel to be treated off site?
- ☐ Is there access to grid power?

Conference Checklist

- ☐ Communicate electronically, don't send vast amounts of printed material out by mail.
- ☐ Supply any handouts on the first day, so there's no chance of being left in hotel rooms and second copies needed.
- ☐ Provide notes on a thumbdrive, or offer links to download presentations post event.
- ☐ Any stationery to be from 100 per cent post-consumer recycled paper, and pens to be 'eco' options.
- ☐ Turn off PA, lights and AC when rooms aren't in use.
- ☐ Arrange name badges to be handed back in.
- ☐ Hotel room recycling, bulk dispensing of toiletries, towels not changed every day, newspapers delivered only on request.

Purchasing Checklist

- ☐ Buy products that are 'eco-labelled'.
- ☐ Buy locally.
- ☐ Use local contractors.
- ☐ Use goods produced under fair labour conditions.

Source: Data From Jones 2010, Box 1.3

Sound/lights/production Checklist

- ☐ Power your gear on clean green energy (either mains, or by sustainable biofuels, or zero emissions technologies).
- ☐ Use energy saving equipment.
- ☐ Convert lighting to LEDs.
- ☐ If using a lot of low wattage gear, ensure mobile power generators have power factor correction to be able to take advantage of efficiencies.
- ☐ Have a switch-off campaign – turn off everything that's not being used, especially the lights in the daytime.

Sets/staging/décor Checklist

- ☐ Hire, don't buy.
- ☐ Use certified sustainably grown timber (FSC).
- ☐ Construct sets with found, re-used or repurposed materials.
- ☐ Use non toxic paints and varnishes with zero VOC emissions.
- ☐ Use organic cotton and fabric produced under fair labour conditions for curtains, sets and décor.
- ☐ Pack up, store and re-use gear.
- ☐ Mark stage flooring, sets and other construction so that easy reassembly is possible.
- ☐ Donate unused materials, or items salvaged from the de-rig for re-use or repurposing.

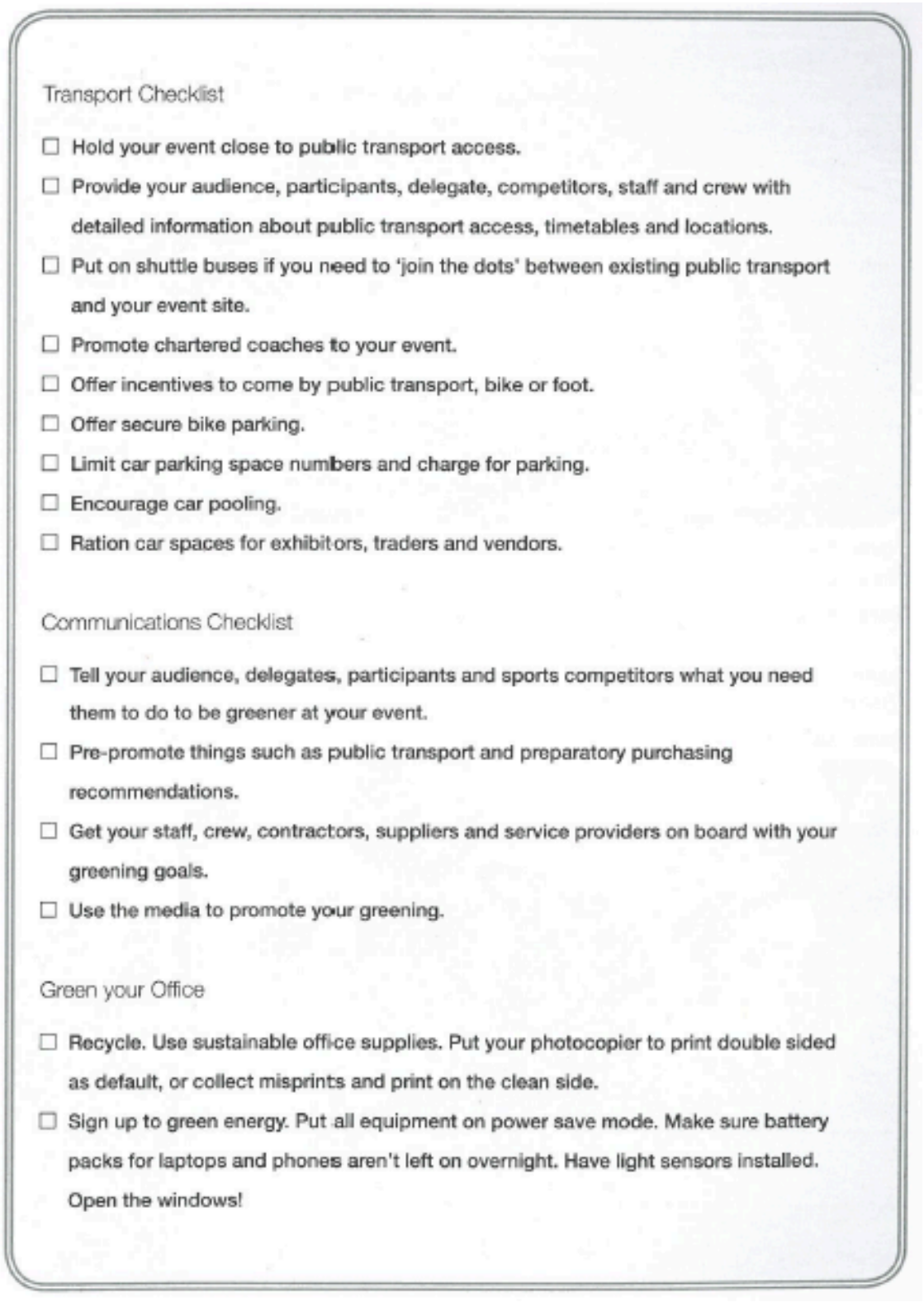
Trader/vendor/exhibitor Checklist

- ☐ Produce signs which can be re-used at future shows.
- ☐ Use only energy saving lights.
- ☐ Produce all printed material sustainably.
- ☐ No plastic bags, hand out re-usable bags.
- ☐ No over-packaged single samples.
- ☐ Ethical and environmentally sound product sourcing.
- ☐ Hired materials.
- ☐ Ensure re-use or repurposing is planned for any bespoke construction, set and décor.

Catering Checklist

- ☐ Provide bulk water dispensing and washable cups.
- ☐ No single-serve satchets or individually wrapped meals.
- ☐ Organic, fair trade and locally sourced ingredients.
- ☐ In season food, to avoid unnecessary food miles.
- ☐ Programme for unused food from buffets, such as to a food bank or hostel, or send for composting or to a worm farm.

Source: Data From Jones 2010, Box 1.3



Transport Checklist

- ☐ Hold your event close to public transport access.
- ☐ Provide your audience, participants, delegate, competitors, staff and crew with detailed information about public transport access, timetables and locations.
- ☐ Put on shuttle buses if you need to 'join the dots' between existing public transport and your event site.
- ☐ Promote chartered coaches to your event.
- ☐ Offer incentives to come by public transport, bike or foot.
- ☐ Offer secure bike parking.
- ☐ Limit car parking space numbers and charge for parking.
- ☐ Encourage car pooling.
- ☐ Ration car spaces for exhibitors, traders and vendors.

Communications Checklist

- ☐ Tell your audience, delegates, participants and sports competitors what you need them to do to be greener at your event.
- ☐ Pre-promote things such as public transport and preparatory purchasing recommendations.
- ☐ Get your staff, crew, contractors, suppliers and service providers on board with your greening goals.
- ☐ Use the media to promote your greening.

Green your Office

- ☐ Recycle. Use sustainable office supplies. Put your photocopier to print double sided as default, or collect misprints and print on the clean side.
- ☐ Sign up to green energy. Put all equipment on power save mode. Make sure battery packs for laptops and phones aren't left on overnight. Have light sensors installed. Open the windows!

Source: Data From Jones 2010, Box 1.3

Appendix 2: Energy and Emission Checklist

Energy and Emissions Checklist ☑

Below is an overall summary of ways to reduce energy use and emissions at your event.

Lead by example

- ☐ Use your event as a showcase for sustainable energy production and energy efficiency.

Choose a sustainable building for indoor events

- ☐ What is the venue's energy rating?
- ☐ Choose an energy efficient building as your event venue.
- ☐ Do they have techniques such as insulation, passive solar, energy saving bulbs, low energy appliances, lighting timers, sleep mode, etc?
- ☐ Make sure your venue is signed up to green energy if on the grid.
- ☐ Do they have off grid microgeneration including combined heat and power?

Plan power consumption efficiencies at outdoor events

- ☐ Reduce demand for generators through planning for placement, distribution, usage patterns.
- ☐ Use sustainable biofuels.
- ☐ Install permanent distribution.
- ☐ Use alternative energy and zero emissions technology such as solar, wind, hydrogen fuel cell, battery packs and pedal power.

Reduce demand for power through technology and usage

- ☐ Conduct a switch-off campaign.
- ☐ Put quotas on users or financial incentives or penalties for power use.
- ☐ Encourage low wattage equipment and use low wattage lighting including compact fluorescent lamps (CFLs) and light emitting diodes (LEDs) in their lighting displays.
- ☐ Put your show on an energy diet.

Audit and usage patterns

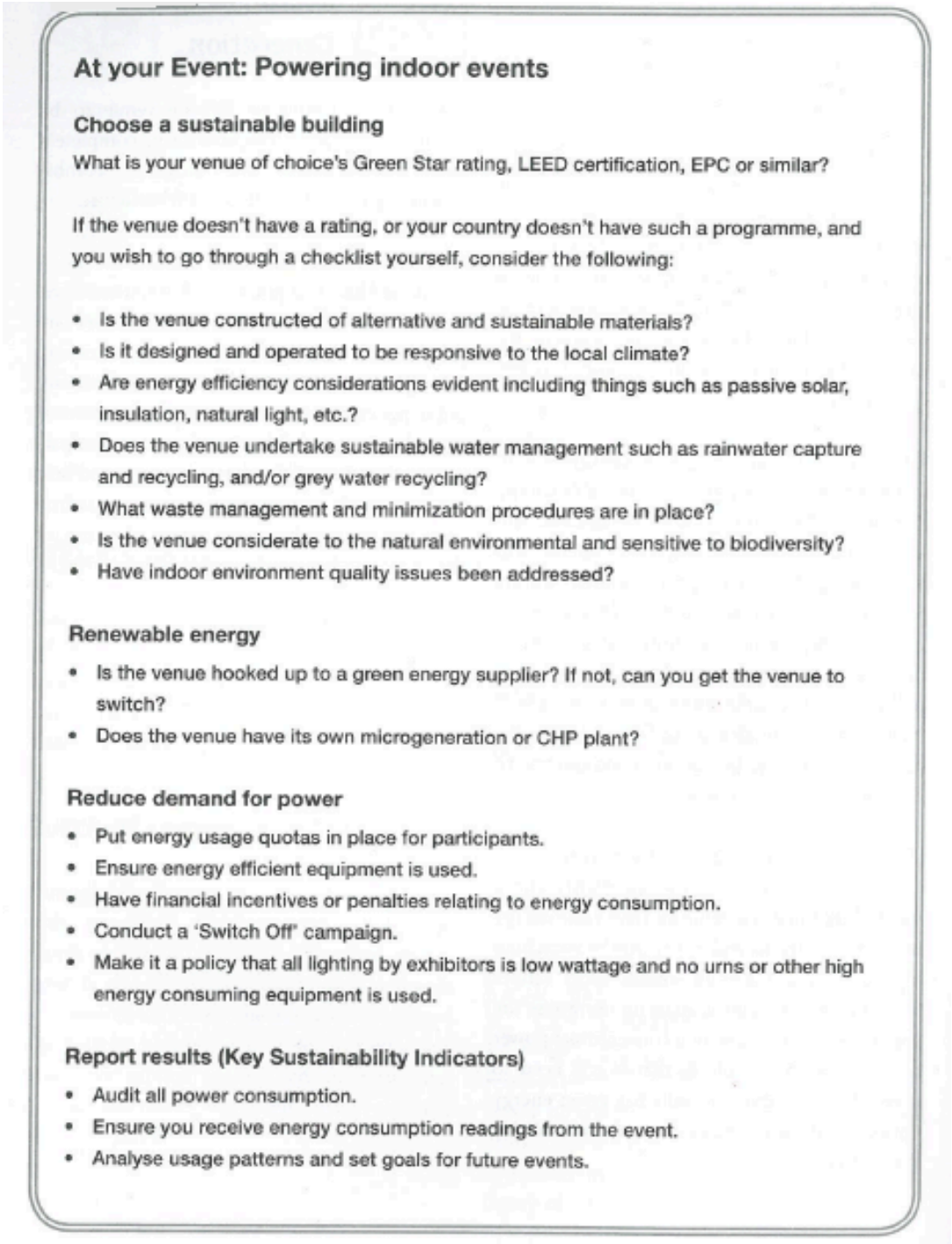
- ☐ Audit power usage during the show to assess consumption patterns for future planning.
- ☐ Audit third party users to make sure they are using what they said they would.

Reduce other greenhouse gas emissions

- ☐ Reduce VOCs from printing, paints, cleaning and solvents by using low or zero VOC alternatives.
- ☐ Don't send biodegradable waste to landfill or incineration. Compost it!

Source: Data From Jones 2010, Box 3.1

Appendix 3: Evaluate Venues



At your Event: Powering indoor events

Choose a sustainable building

What is your venue of choice's Green Star rating, LEED certification, EPC or similar?

If the venue doesn't have a rating, or your country doesn't have such a programme, and you wish to go through a checklist yourself, consider the following:

- Is the venue constructed of alternative and sustainable materials?
- Is it designed and operated to be responsive to the local climate?
- Are energy efficiency considerations evident including things such as passive solar, insulation, natural light, etc.?
- Does the venue undertake sustainable water management such as rainwater capture and recycling, and/or grey water recycling?
- What waste management and minimization procedures are in place?
- Is the venue considerate to the natural environmental and sensitive to biodiversity?
- Have indoor environment quality issues been addressed?

Renewable energy

- Is the venue hooked up to a green energy supplier? If not, can you get the venue to switch?
- Does the venue have its own microgeneration or CHP plant?

Reduce demand for power

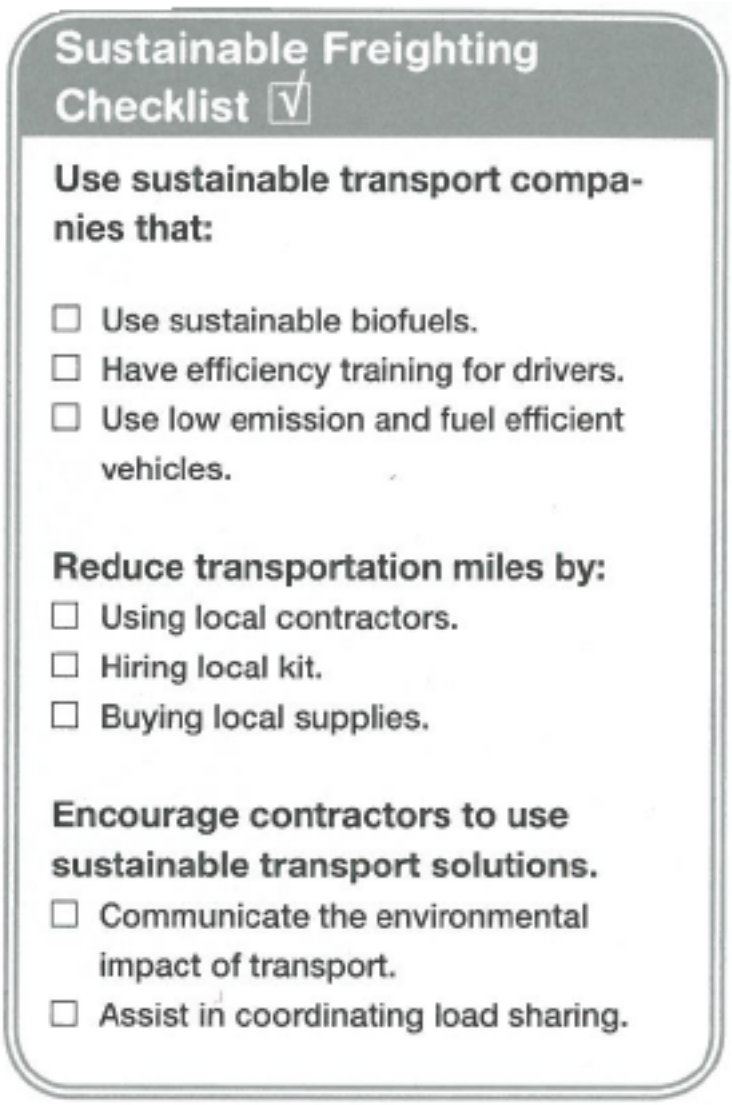
- Put energy usage quotas in place for participants.
- Ensure energy efficient equipment is used.
- Have financial incentives or penalties relating to energy consumption.
- Conduct a 'Switch Off' campaign.
- Make it a policy that all lighting by exhibitors is low wattage and no urns or other high energy consuming equipment is used.

Report results (Key Sustainability Indicators)

- Audit all power consumption.
- Ensure you receive energy consumption readings from the event.
- Analyse usage patterns and set goals for future events.

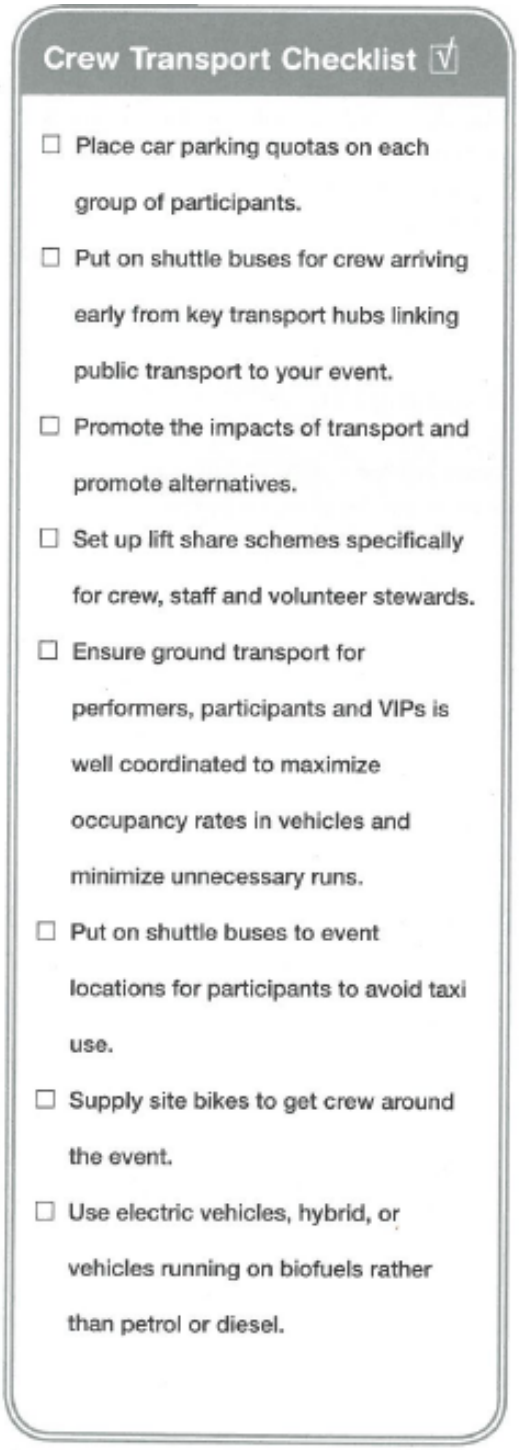
Source: Data From Jones 2010, Box 3.2

Appendix 4: Sustainable Freight Checklist



Source: Data From Jones 2010, Box 4.3

Appendix 5: Crew Transportation Checklist



Crew Transport Checklist ☑

- ☐ Place car parking quotas on each group of participants.
- ☐ Put on shuttle buses for crew arriving early from key transport hubs linking public transport to your event.
- ☐ Promote the impacts of transport and promote alternatives.
- ☐ Set up lift share schemes specifically for crew, staff and volunteer stewards.
- ☐ Ensure ground transport for performers, participants and VIPs is well coordinated to maximize occupancy rates in vehicles and minimize unnecessary runs.
- ☐ Put on shuttle buses to event locations for participants to avoid taxi use.
- ☐ Supply site bikes to get crew around the event.
- ☐ Use electric vehicles, hybrid, or vehicles running on biofuels rather than petrol or diesel.

Source: Data From Jones 2010, Box 4.4

Appendix 6: Water Management Checklist

Water Management Checklist √

Water conservation

- ☐ Reduce water use through water saving devices on taps, hoses, showers and drinking water standpipes.
- ☐ Reduce water use through 'water wise' grounds preparation and gardening.
- ☐ Use dust suppressant additives to reduce water volume used to dampen dust.
- ☐ Capture water and store in rainwater tanks.
- ☐ Use waterless urinals and toilets.

Waste water management

- ☐ Capture and treat grey water.
- ☐ Use soakaways, a reed bed or mechanical filtering.
- ☐ Re-use grey water for non-contact uses.

Emissions to water

- ☐ Use chemical-free cleaning products.
- ☐ Use biological toilet treatment products rather than chemical.
- ☐ Use non-toxic paints so wash-up water is not full of toxic pigments.

Land protection

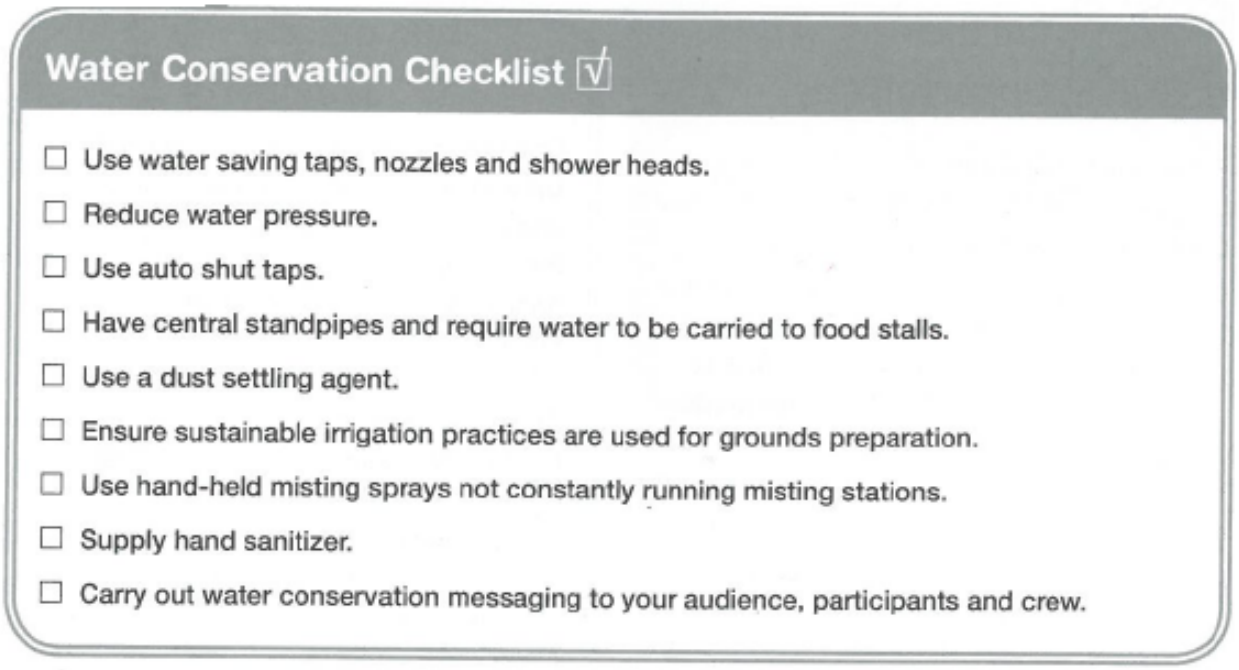
- ☐ If disposing of grey water through run-off or soakaways, ensure it's chemical free and 100m from a waterway.
- ☐ Protect the riparian zone, the region between land and a waterway, from any activity or impact.
- ☐ Prevent excessive urination direct to the land or waterways.

Audience messaging

- ☐ Conduct a water conservation campaign at your event to encourage water savings by your audience.
- ☐ Conduct a waterways protection campaign at an outdoor event to protect the riparian zone from urination and emissions to waterways.
- ☐ Include free water bottle refill stations.

Source: Data From Jones 2010, Box 5.1

Appendix 7: Water Conservation Checklist

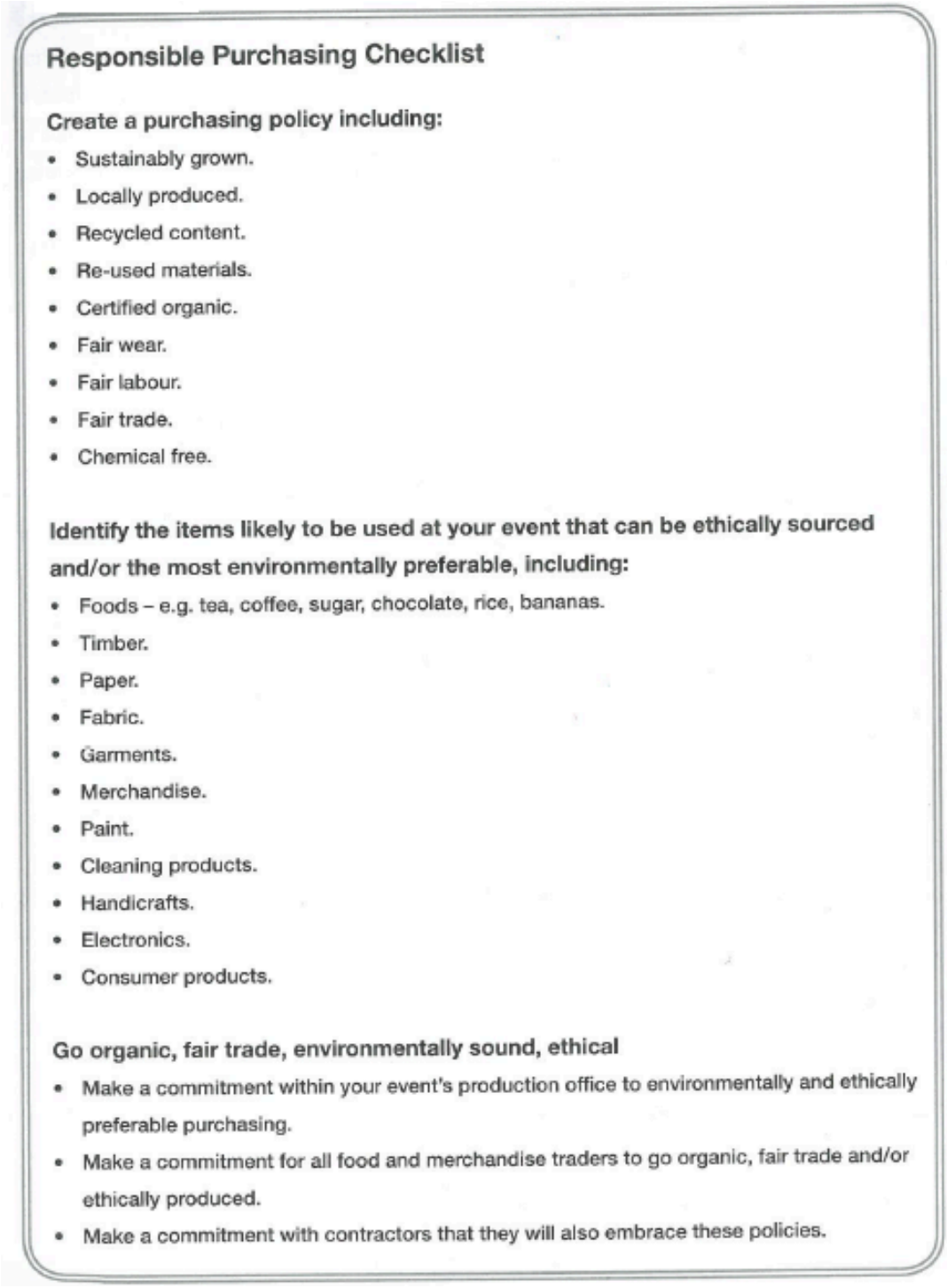


Water Conservation Checklist √

- ☐ Use water saving taps, nozzles and shower heads.
- ☐ Reduce water pressure.
- ☐ Use auto shut taps.
- ☐ Have central standpipes and require water to be carried to food stalls.
- ☐ Use a dust settling agent.
- ☐ Ensure sustainable irrigation practices are used for grounds preparation.
- ☐ Use hand-held misting sprays not constantly running misting stations.
- ☐ Supply hand sanitizer.
- ☐ Carry out water conservation messaging to your audience, participants and crew.

Source: Data From Jones 2010, Box 5.4

Appendix 8: Responsible Purchasing Checklist



Responsible Purchasing Checklist

Create a purchasing policy including:

- Sustainably grown.
- Locally produced.
- Recycled content.
- Re-used materials.
- Certified organic.
- Fair wear.
- Fair labour.
- Fair trade.
- Chemical free.

Identify the items likely to be used at your event that can be ethically sourced and/or the most environmentally preferable, including:

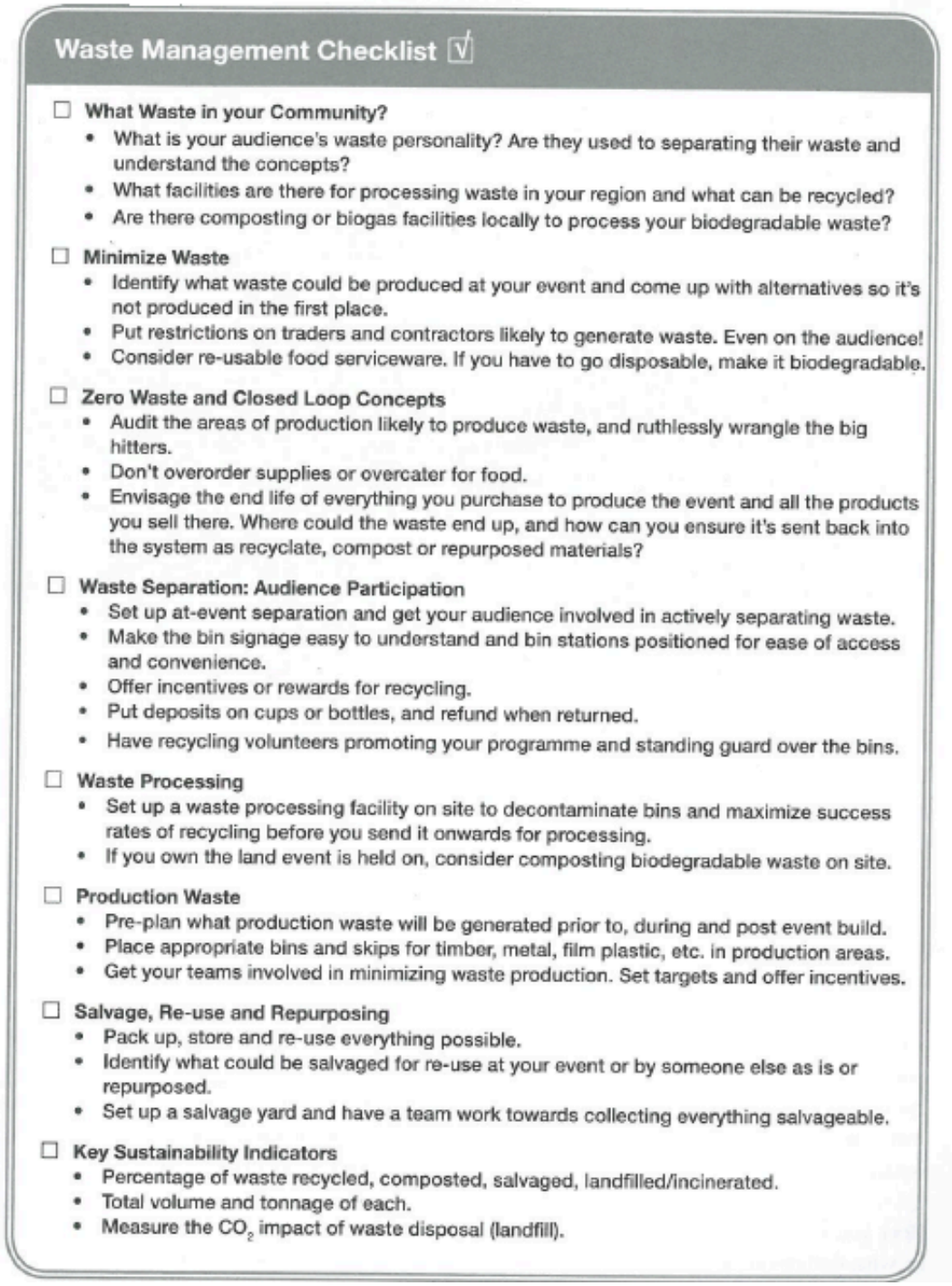
- Foods – e.g. tea, coffee, sugar, chocolate, rice, bananas.
- Timber.
- Paper.
- Fabric.
- Garments.
- Merchandise.
- Paint.
- Cleaning products.
- Handicrafts.
- Electronics.
- Consumer products.

Go organic, fair trade, environmentally sound, ethical

- Make a commitment within your event's production office to environmentally and ethically preferable purchasing.
- Make a commitment for all food and merchandise traders to go organic, fair trade and/or ethically produced.
- Make a commitment with contractors that they will also embrace these policies.

Source: Data From Jones 2010, Box 6.1

Appendix 9: Waste Management Checklist



Waste Management Checklist ☑

☐ **What Waste in your Community?**
- What is your audience's waste personality? Are they used to separating their waste and understand the concepts?
- What facilities are there for processing waste in your region and what can be recycled?
- Are there composting or biogas facilities locally to process your biodegradable waste?

☐ **Minimize Waste**
- Identify what waste could be produced at your event and come up with alternatives so it's not produced in the first place.
- Put restrictions on traders and contractors likely to generate waste. Even on the audience!
- Consider re-usable food serviceware. If you have to go disposable, make it biodegradable.

☐ **Zero Waste and Closed Loop Concepts**
- Audit the areas of production likely to produce waste, and ruthlessly wrangle the big hitters.
- Don't overorder supplies or overcater for food.
- Envisage the end life of everything you purchase to produce the event and all the products you sell there. Where could the waste end up, and how can you ensure it's sent back into the system as recyclate, compost or repurposed materials?

☐ **Waste Separation: Audience Participation**
- Set up at-event separation and get your audience involved in actively separating waste.
- Make the bin signage easy to understand and bin stations positioned for ease of access and convenience.
- Offer incentives or rewards for recycling.
- Put deposits on cups or bottles, and refund when returned.
- Have recycling volunteers promoting your programme and standing guard over the bins.

☐ **Waste Processing**
- Set up a waste processing facility on site to decontaminate bins and maximize success rates of recycling before you send it onwards for processing.
- If you own the land event is held on, consider composting biodegradable waste on site.

☐ **Production Waste**
- Pre-plan what production waste will be generated prior to, during and post event build.
- Place appropriate bins and skips for timber, metal, film plastic, etc. in production areas.
- Get your teams involved in minimizing waste production. Set targets and offer incentives.

☐ **Salvage, Re-use and Repurposing**
- Pack up, store and re-use everything possible.
- Identify what could be salvaged for re-use at your event or by someone else as is or repurposed.
- Set up a salvage yard and have a team work towards collecting everything salvageable.

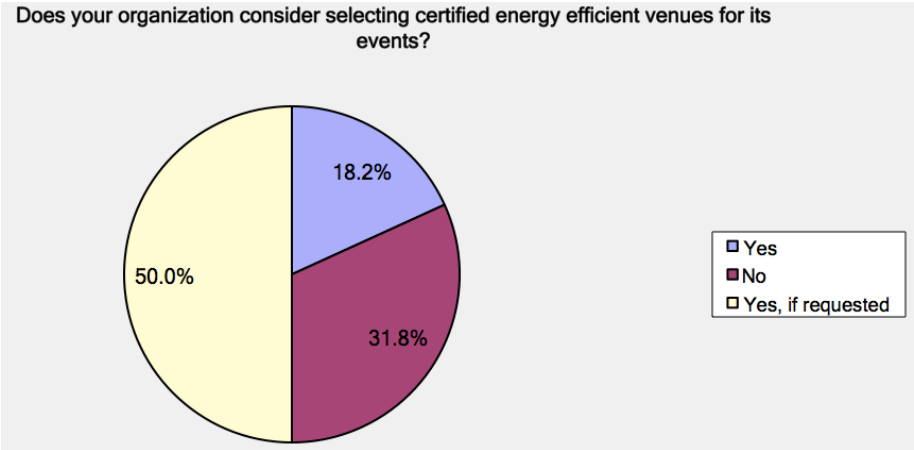
☐ **Key Sustainability Indicators**
- Percentage of waste recycled, composted, salvaged, landfilled/incinerated.
- Total volume and tonnage of each.
- Measure the CO_2 impact of waste disposal (landfill).

Source: Data From Jones 2010, Box 7.1

Appendix 10: Survey Questions

Energy

1. Does your organization consider selecting certified energy efficient venues for its events?



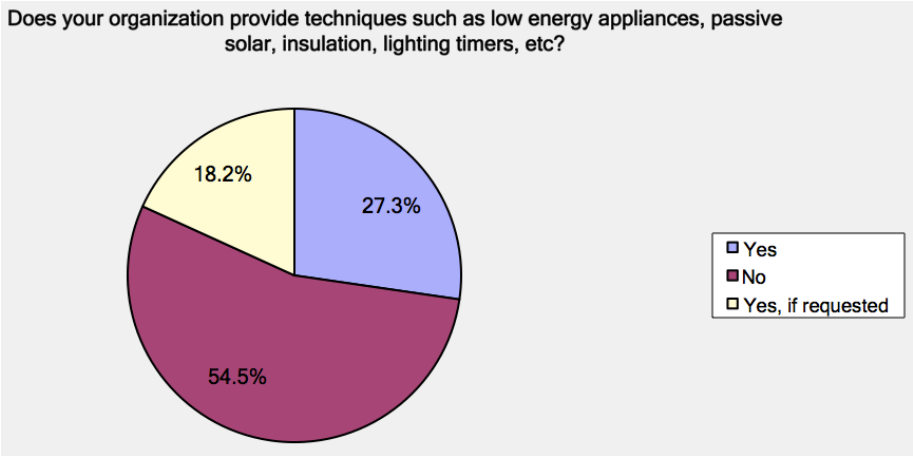
Comments:

- We usually work with on-campus venues in the union, so it really depends of the sustainability efforts of the university.
- We typically do not choose the event space ... Normally, our client has selected the venue and then begins looking for a caterer.
- Part of our mission is to drive traffic into the union, so that is where we host many of our events.

2. Does your organization provide techniques such as low energy appliances, passive solar, insulation, lighting timers, etc?

Comments:

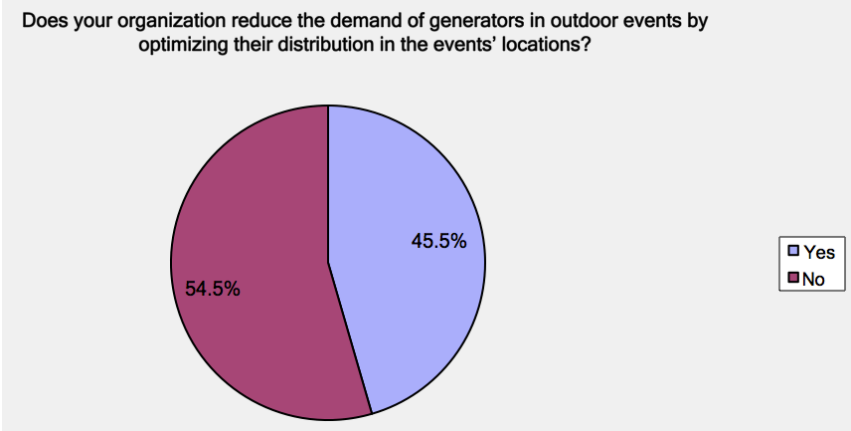
- Yes to low energy appliances. I would love to know more about the other techniques listed ...
- N/A to our business



3. Does your organization reduce the demand of generators in outdoor events by optimizing their distribution in the events' locations?

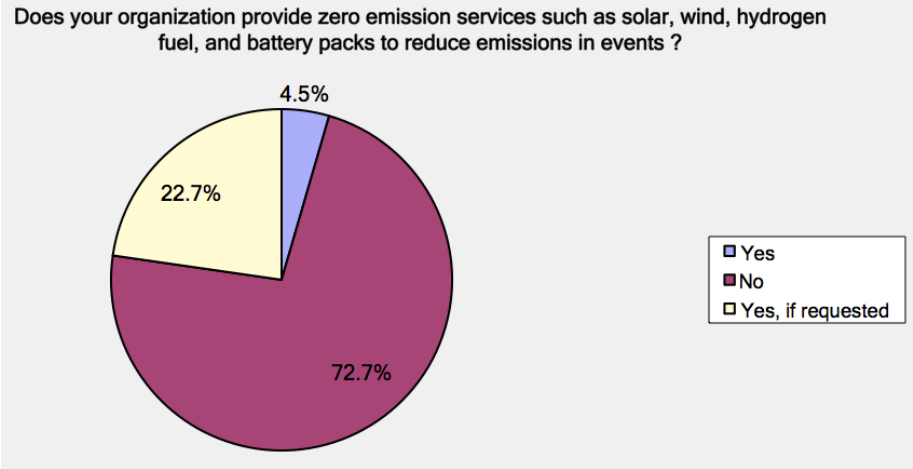
Comments:

- We do not require power at on site events - we use coolers/ice and well-insulated hot boxes as well as grills ...
- N/A to our business
- We don't have outdoor events



4. Does your organization provide zero emission services such as solar, wind, hydrogen fuel, and battery packs to reduce emissions in events?

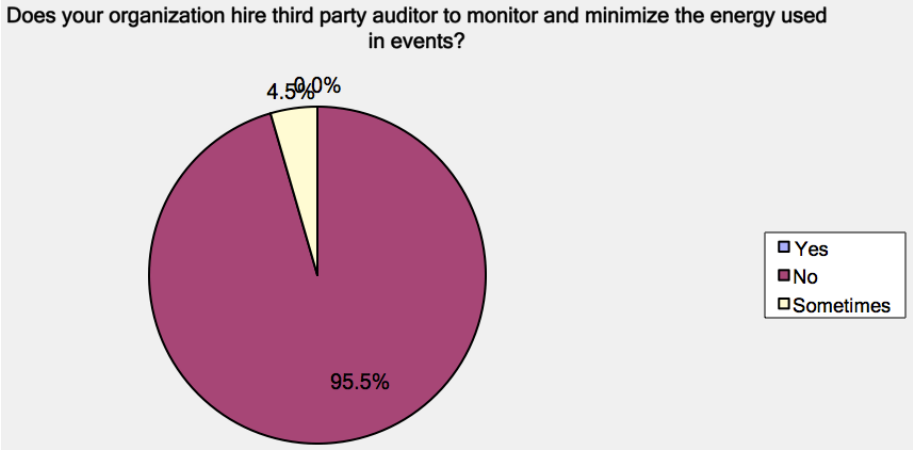
    - I do not know what we would use these things for ...
    - N/A to our business



5. Does your organization hire third party auditor to monitor and minimize the energy used in events?

Comments:

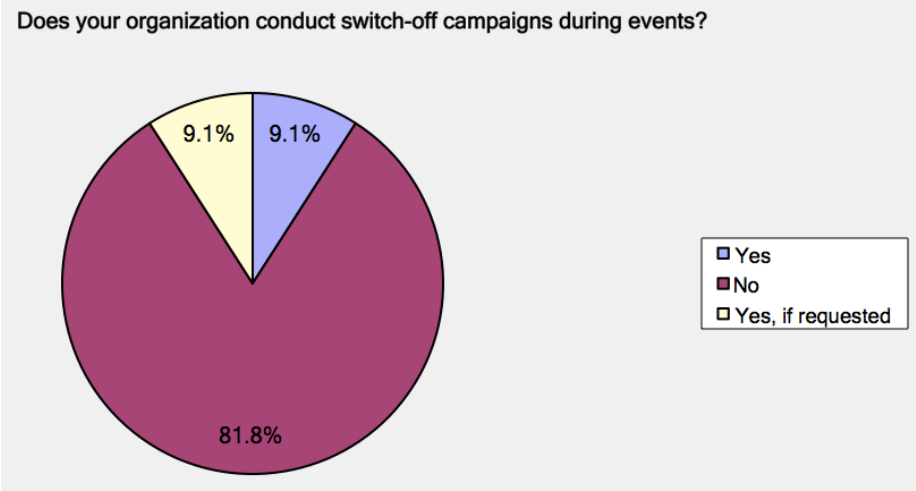
No Comments



6. Does your organization conduct switch-off campaigns during events?

Comments:

No Comments

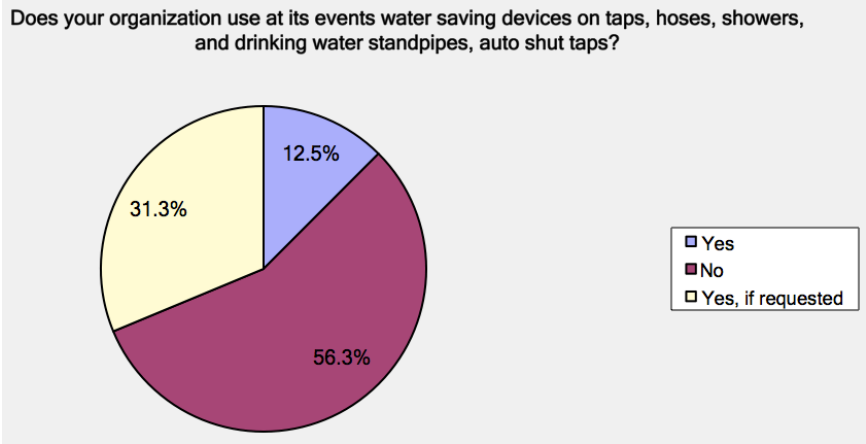


Water

7. Does your organization use at its events water saving devices on taps, hoses, showers, and drinking water standpipes, auto shut taps?

Comments:

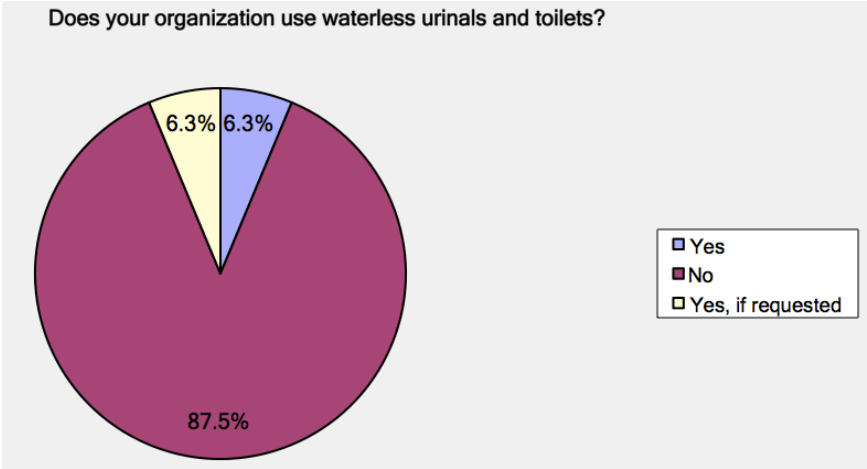
No Comments



8. Does your organization use waterless urinals and toilets?

Comments:

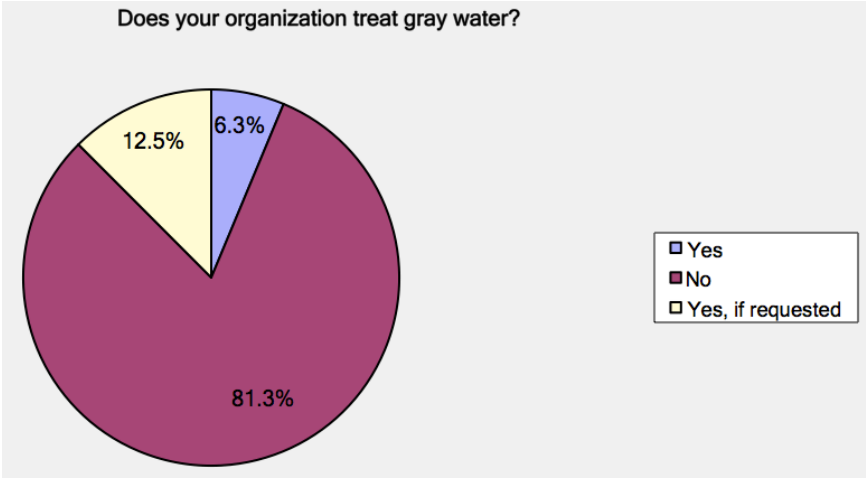
No Comments



9. Does your organization treat gray water?

Comments:

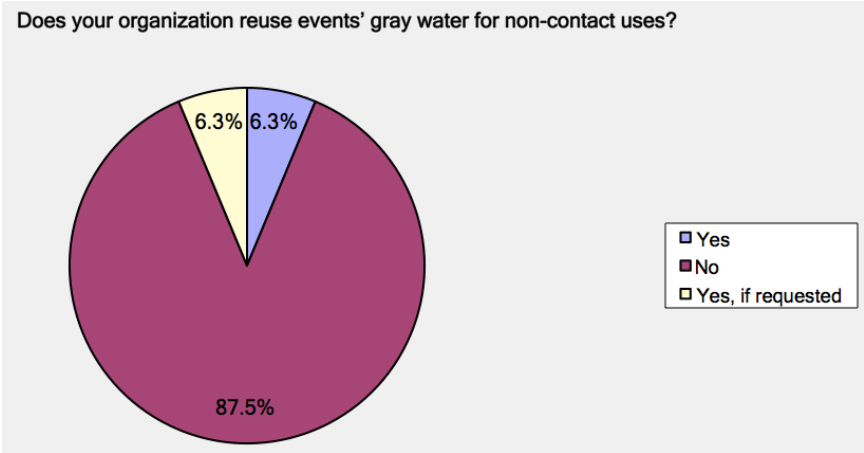
- I am not familiar with gray water.
- N/A to our business



10. Does your organization reuse events' grey water for non-contact uses?

Comments:

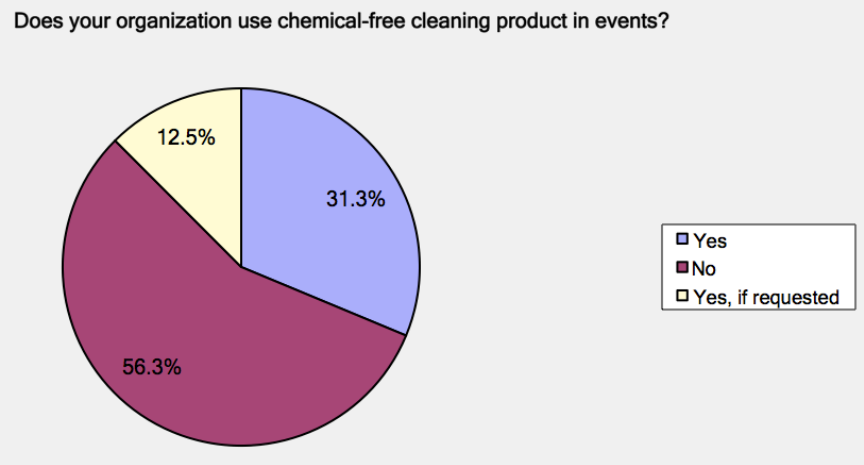
N/A to our business



11. Does your organization use chemical-free cleaning product in events?

Comments:

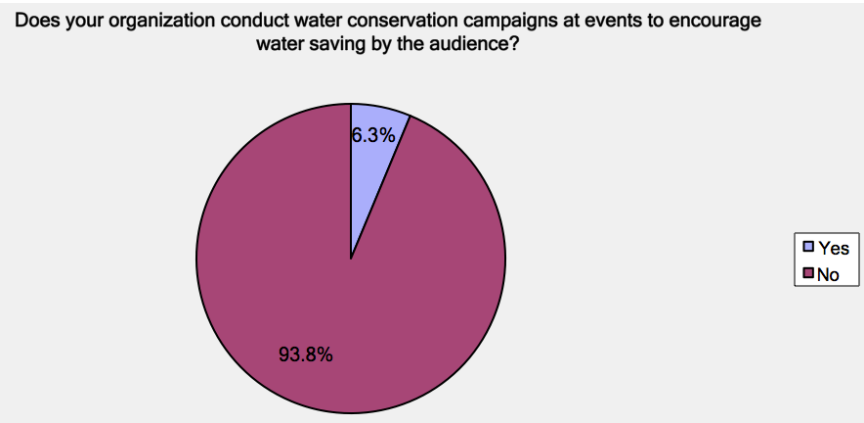
No Comments



12. Does your organization conduct water conservation campaigns at events to encourage water saving by the audience?

Comments:

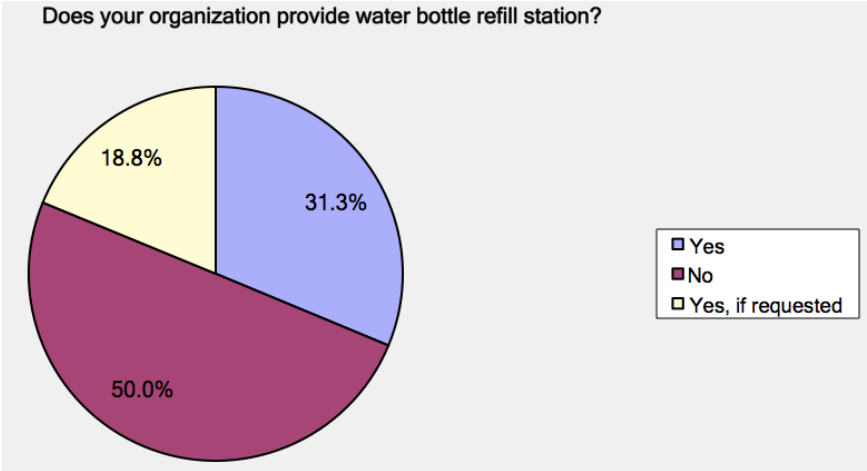
- But often done by the hotels in their guestrooms, but guest is not obligated
- We do not use much water at events ... The majority of our water usage is for washing dishes, which we are conscious to conserve, but must use the water it takes to thoroughly wash everything due to state and city codes ...



13. Does your organization provide water bottle refill station?

Comments:

Hotel often offers water tanks inside meeting rooms

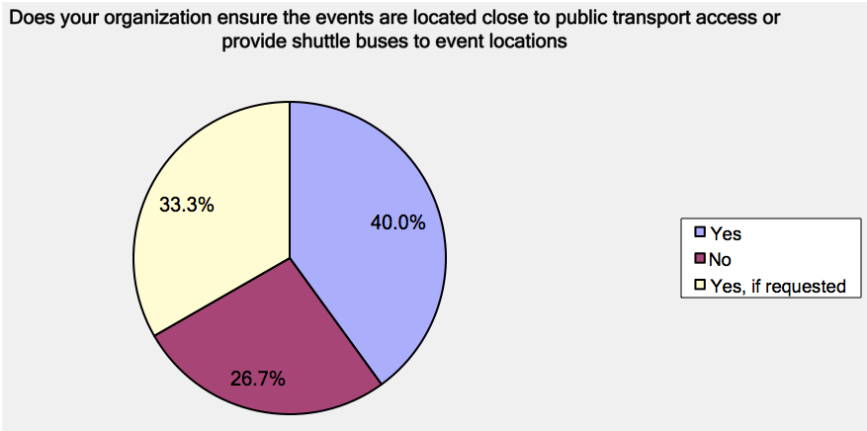


Transportation

14. Does your organization ensure the events are located close to public transport access or provide shuttle buses to event locations?

Comments:

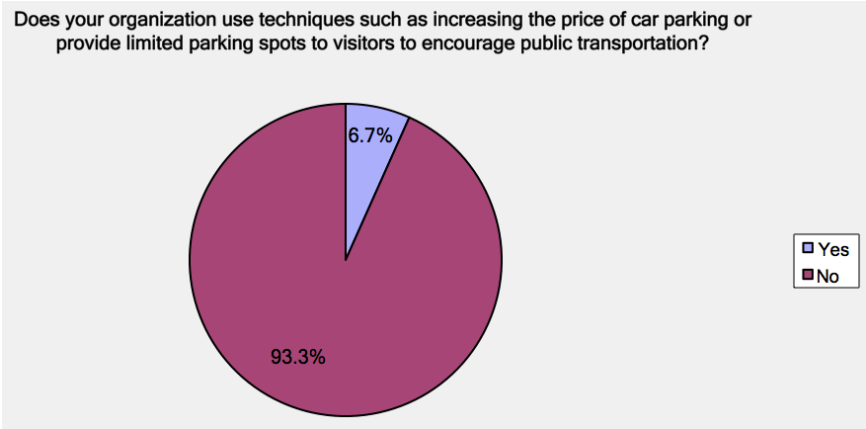
No Comments



15. Does your organization use techniques such as increasing the price of car parking or provide limited parking spots to visitors to encourage public transportation?

Comments:

No Comments

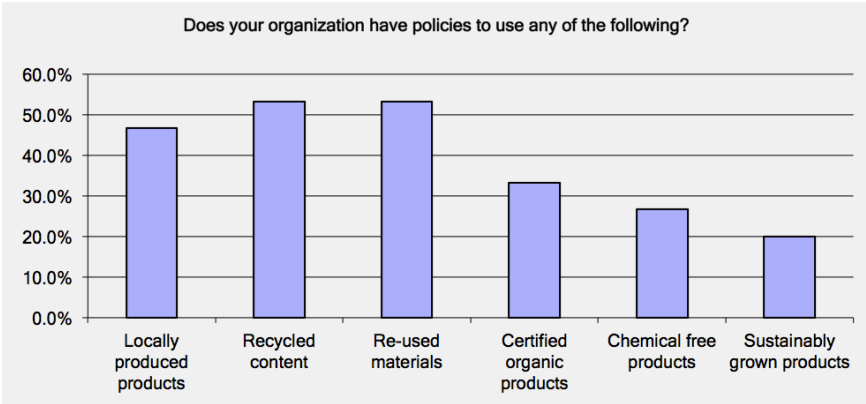


Purchases

16. Does your organization have policies to use any of the following?

Comments:

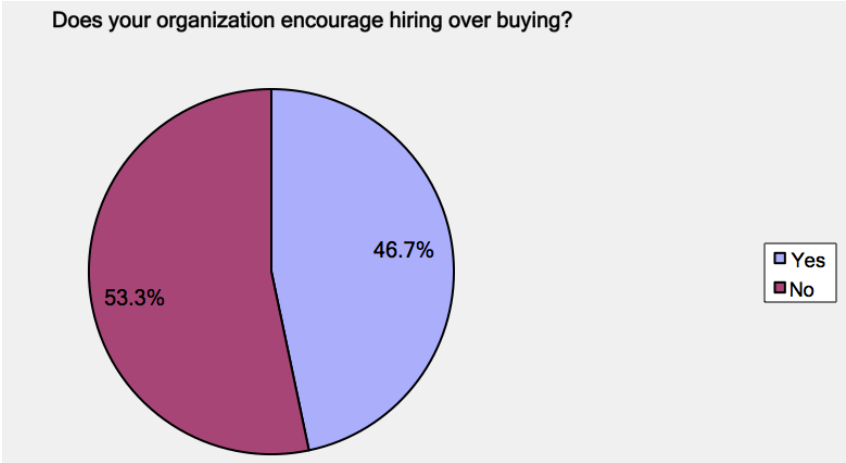
- No policy in place but take into consideration of local food specialties in the area
- No - we have no official policy on any of these but the question won't allow me to continue the survey unless I select something...
- No



17. Does your organization encourage hiring over buying?

Comments:

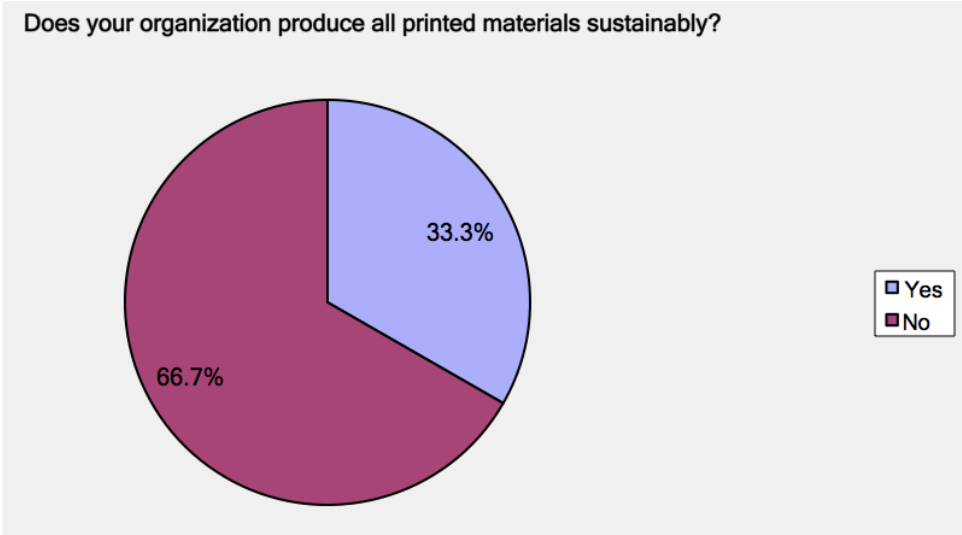
No Comments



18. Does your organization produce all printed materials sustainably?

Comments:

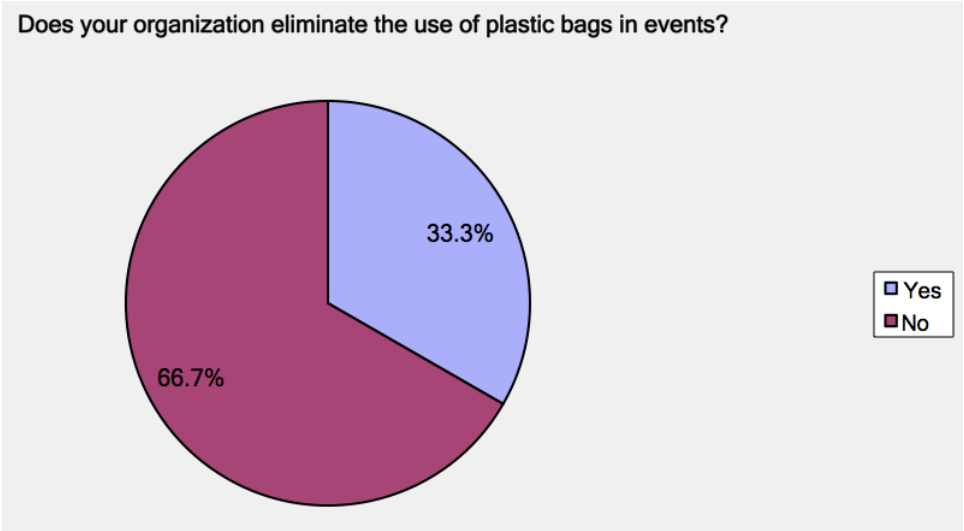
No Comments



19. Does your organization eliminate the use of plastic bags in events?

Comments:

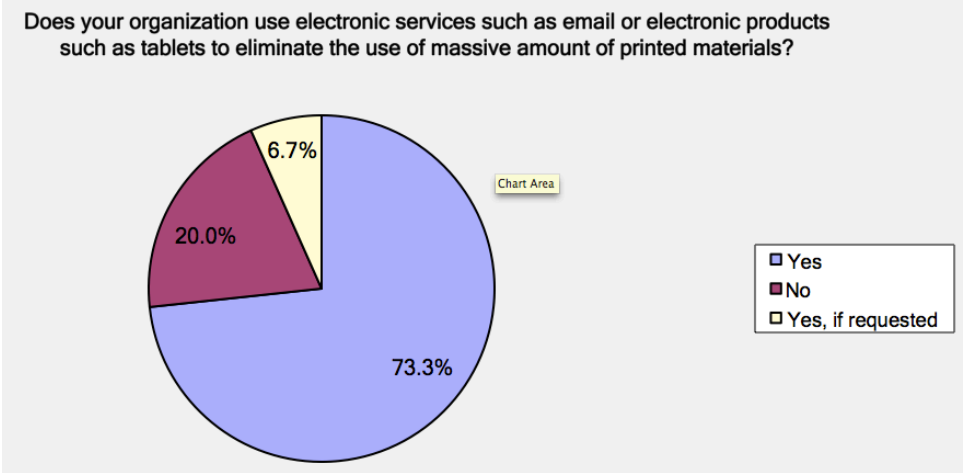
- But none of my groups would use plastic bags
- Reduce. Can't eliminate.



20. Does your organization use electronic services such as email or electronic products such as tablets to eliminate the use of massive amount of printed materials?

Comments:

No Comments

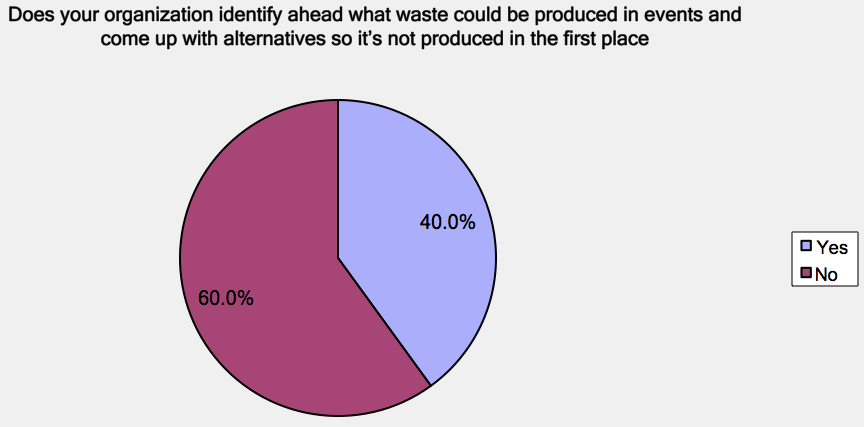


Waste

21. Does your organization identify ahead of time what waste could be produced in events and come up with alternatives so it's not produced in the first place?

Comments:

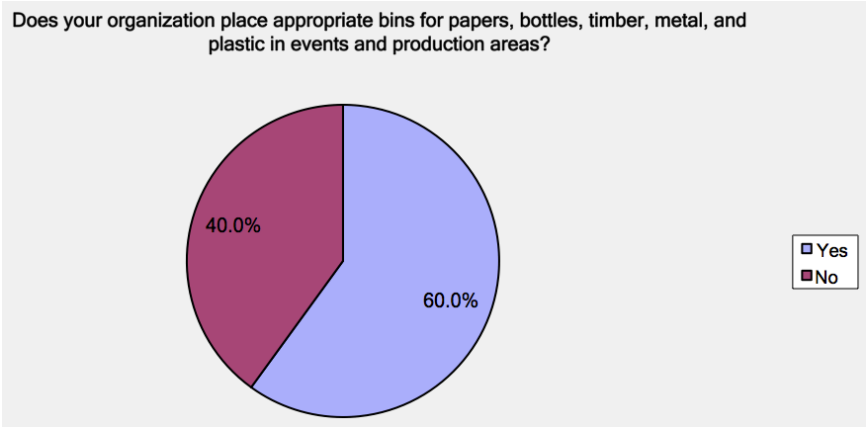
No Comments



22. Does your organization place appropriate bins for papers, bottles, timber, metal, and plastic in events and production areas?

Comments:

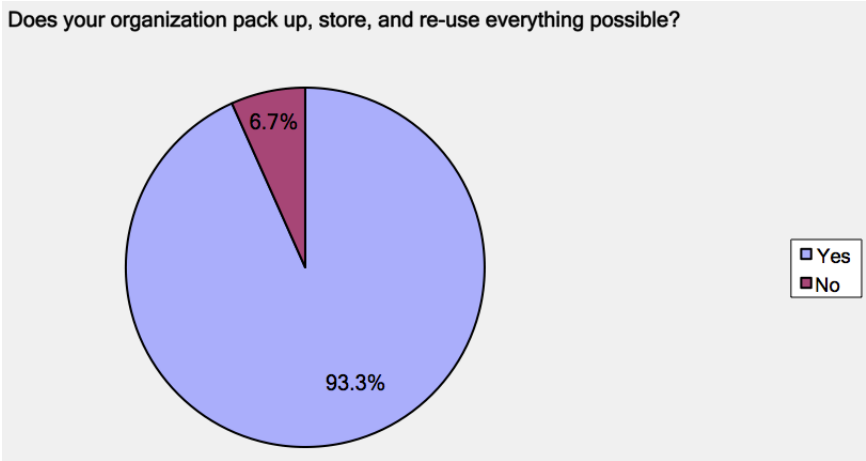
- The organization no, the hotel often does
- Not at every event but we do try to especially at our main annual conference.



23. Does your organization pack up, store, and re-use everything possible?

Comments:

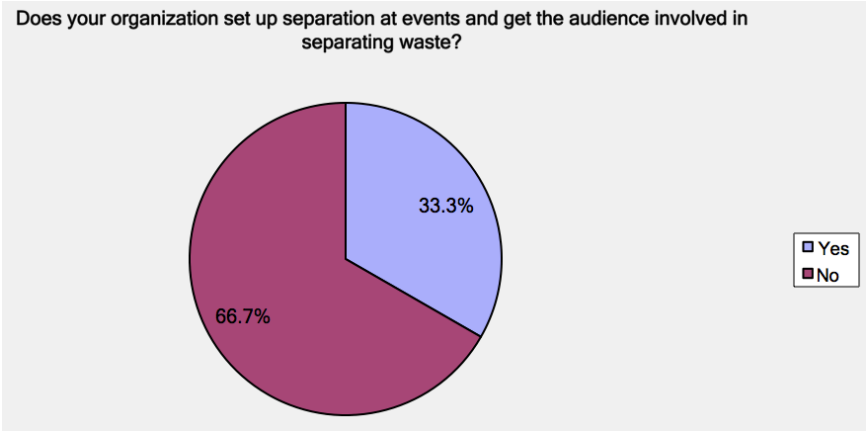
- Not everything...but we are mindful of opportunities when we can re-use something (if it is effective for us to do so).



24. Does your organization set up separation at events and get the audience involved in separating waste?

Comments:

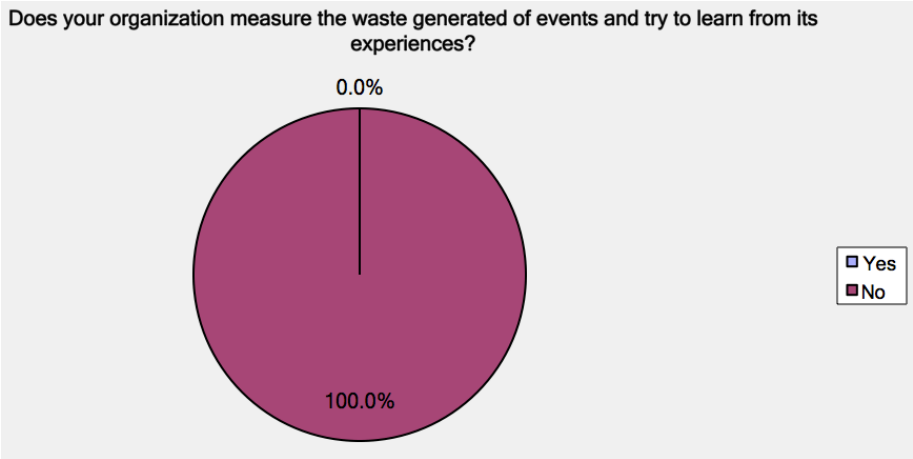
No Comments



25. Does your organization measure the waste generated from events and try to learn from the experiences?

Comments:

No Comments



Barriers

26. What are the main reasons that prevent your organization from executing green events?

Comments:

- Client unwillingness to spend more

- Not part of the organization's mission statement
- The amount of time it takes due to the large amount of waste created at events. We need efficient systems because timing is everything in our business …
- Lack of control outside our venue.
- Limited vendors
- Cost
- The expense
- Cost. Being "Green" 100% can be costly. Not every venue offers those services and some venues will "charge" to bring those options in.
- Lack of knowledge
- Demand
- It has never really been something that has been pushed on us. It is honestly an issue we don't even think of.
- Time to coordinate and cost
- Money

27. The events industry is a major source of impacting the environment negatively, why or why not do you think executing green events is important in this industry?

Comments:

- Sustainable events are seen as niche and not norm because the industry perception is that it's simply more expensive and labor intensive to execute green events.
- Too much to go into
- It is very important to reduce the amount of waste produced at events and we do everything we can to reduce, reuse and recycle, including offering all Eco-friendly disposable products and placing recycling bins all around the venue.
- I do not like forced answers.
- Important to reduce waste
- To cut down on waste
- Because of the short length of events, and their mobility; it would be good to have a plan in place
- Cost is probably the biggest factor...especially today's market. To recycle every possible thing takes labor and requires a lot of "planning" which relates to TIME and staff resources to make happen. With most companies requiring less staff (do more with less)...trying to be green 100% is almost impossible with that expectation from management.
- It's important to involve everyone from home, to office to events
- Important
- We reach a lot of people and could spread the word.

- I believe that whenever all other variables are constant, the green route should be chosen. However, we have limited funds and often the most eco-friendly route is cost-prohibitive. Many of our events are housed in older facilities. If we had newer facilities, that would help immensely.
- It is important, but we have limited funds.

28. Why do you think the green event industry has not grown widely? What are the major drawbacks that prevent event management companies and customers from choosing green solutions?

Comments:

- See 27.
- Hotel facilities buy into it enough by becoming "green".
- Money. It's more expensive ...
- Time, effort and expense.
- Events are heavily based on the vendors. If there is not much competition and changes among vendors to go green it is hard to transform the entire industry.
- Cost and time and effort plus many hotels and venues don't practice recycling etc
- Labor/a d expense
- Time, staff resources & overall cost.
- Needs to be provided by event venue
- Expensive
- There are a lot of people involved in putting on any one of our events. If we don't have a person in charge of sustainability, it doesn't get done. Everybody has so much else to be thinking about.
- Cost is the main factor. The other issue being that it requires that much more planning which is so finite on our end.
- Cost.

29. What is the ideal case that would convince your company to switch to green practices?

Comments:

- Green practices that are cost effective and labor saving, such as water conservation and using locally produced products and local vendors.
- Not the primary mission, but this needs to be asked to the company, not the

meeting planner

- We are largely green ... We do many things to be conscious of our impact on the environment. Learning more would help us do more ...
- I do not like forced answers.
- Increase in vendors offering these services (more competition would lead to better quality)
- If the client wanted it and was willing to invest in it
- Benefit of education and illustration of result
- For venues to offer this service for free to the vendor.
- Not involved at this level
- Not sure
- Give examples of simple changes we could make.
- If the contractors we used had strategies in place, that would be very attractive. The other being that costs were similar.
- Give it to us for free.

30. If switching your organization to green practices would require initial investment to buy some assets that will save you money and cost in the long run, why and why not would you invest in green alternatives?

Comments:

- The decision to use green alternatives should not be based on cost, but usually is.
- Same
- I'd love a few examples - thank you!
- We do when there's a payoff.
- I would save up the money to switch to green solutions (healthier and more affordable)
- We would
- There is more investment in time & staff resources on the back-end as well. It's not just an initial investment. There is a continual investment....not everyone gets that. That is why the cost is too great especially for smaller event companies. Cost is too high for the minimum output you see after all the time & cost you put in to be 100% green! It's not lean/efficient to be 100% green. The world just isn't quite there yet....
- Yes, our corporate office is in California. They do a lot to pick green solutions. I'm not involved in all of those decisions because I'm in Kansas City. For example we have low maintenance planting, more efficient bulbs. etc.
- Not enough capital

- The issue needs to feel like a worthwhile investment.
- Why: If there is truly cost savings down the road, it would be a great way to promote ourselves, having another way in which we help the community

  Why not: The amount of recouped savings are too small
- We don't have the funds at this time to ensure green practices. We built the building to be green but the other resources are dependent on organizations that rent from us.

31. From your organization's experience, why or why not would customers choose the green solutions?

Comments:

- See 27.
- Same
- In our case, the Eco-friendly products are complimentary, so the only reason people don't choose them is if they prefer a different style ...
- Most are not looking at it for events.
- Increased cost - smaller customers tend to have a more restricted budget. They may only put on one small event a year causing them to not be as green-focused
- Depends on how much publicity they would get from it
- Expense and labor
- Once again, Cost, Time & Staff resources.
- Cost
- Expense
- They choose what is there.
- Why: feeling of "helping"
  Why not: cost
- Money.

32. Can you talk in more detail about the negative practices in events that impact the environment and their sustainable alternatives in the market?

Comments:

- Not really more than I've already stated above.
- No, sorry
- I do not like forced answers.
- Primarily just poor planning. People tend not to think about the waste aspect of an event so they resort to last minute attempts to accommodate the issue which tend to be wasteful in and of themselves.
- All the food waste, the giveaways that get thrown away and all the paper that is wasted
- No...no experience
- Manual printing & onsite paper handouts are usually just thrown out after the event. Going paperless is better (especially when most people now have ipads, iphones & other devices for viewing electronic content).
- Food waste, paper waste, travel waste
- No
- We have a lot of paper waste with flyers.

- NA

- Mainly all the paperwork, which we try to limit as much as possible.

33. Do you think clients will be convinced and attracted to purchase green products**?**

Comments:

- I don't think it will become commonplace until laws are put into place, either rewarding green practices with tax incentives, or penalizing poor practices, like not recycling, with fines.
- I am sure they could be
- I do.
- I do not like forced answers.
- If more vendors utilize more green products and services causing them to decrease in cost then more customers will purchase them.
- depends ...
- Possibly
- Most likely no.
- We did water bottles for classes to reduce waste using the "approved" plastic.
- Yes
- Yes
- If the saving are clear and the cost difference is explained, yes.
- Not sure