The Main Factors of Environmental Impact of the Olympic Games

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Abstract. This paper analyzes the main environmental factors in the current period, focusing on some main man-made environmental impacts during major sports events. For these problems, we will use the method of ecological footprint to explore specific directions and causes. How consumers can properly use land resources to achieve environmentally friendly guidelines is a goal to be explored. At the same time, this paper will pay more attention to whether the environment people live in the society will have a certain impact on nature, mainly focusing on some studies in the living area. However, ecological footprint is not the only comprehensive measurement method, there are some limitations. This article will not focus on any one Olympic Games, but will analyze and discuss different Olympic Games in different periods for the same problem. The main analysis of the article will have a lot to do with the football field, and some references will be made here because our focus is not just on the Olympic Games.

Keywords: Olympic, ecological footprint, environment

1. Introduction

The environmental impact of the Olympic Games has long been a concern for the general public. As one of the largest and most acclaimed sporting events in the history of sports, the Olympics are a catalyst for national pride. The host country spends billions of dollars to build the Olympic Village, stadiums, and showcase them to the world. While the host city receives some positive economic and tourism impacts, the environmental impacts are far more severe and even cause much irreversible damage, with many members of the public never realizing that climate change, water pollution and deforestation are just a few of the disasters caused by the Olympics. According to Qrius News, for example, at the 2000 Sydney Olympics, the waste generated was landfilled on site with no waste sorting or disposal. For the 2004 games in Athens, they used the Schinias wetlands for races such as rowing and canoeing, one of the few remaining natural wetlands in the region. The 2016 Rio Olympics generated 17, The 2016 Rio Olympics generated more than 17,000 tons of waste and used 29,5000 gigawatts of electricity, mostly from non-renewable sources, and more than 29,000 liters of fuel. In addition to this, the Rio Olympics emitted more than 3.6 million tons of carbon into the air. Air pollution, industrial pollution and shortages of water facilities have had a long-term negative impact on the host city and its people. Since 2000, even though almost every host country has taken steps to host a sustainable Olympic Games, they have not actually delivered and have instead harmed the environment more than ever before. According to other sources, more than 25% of the world's human diseases can be attributed to a number of modifiable environmental conditions such as employment, transportation, housing, and food resources [1]. This means that changing the environment requires not only protecting nature, but also the social environment around us.Even though the International Olympic Committee (IOC), which oversees the organization of the Games, has placed a high priority on environmental sustainability for more than two decades, recent Olympic Games have failed to meet their sustainability goals or have caused outright environmental harm. According to Geeraert and Gauthier researc:“ By applying a new (principal-agent) perspective and conceptualizing the environmental harm caused by the Olympic Games as an agency cost, this article demonstrates that the mechanisms the IOC deploys to control Games organizers are ineffective because they fail to alter the incentives of Games organizers towards compliance with environmental sustainability objectives and that recently proposed changes through the IOC’s Agenda 2020 reforms

fail to address this issue. So, sustainability has always been very vague and empty in the Olympic ideology. What we need to do is to realize our problems while turning our ideas into reality. [1-3]

2. Data and Method

The data in this paper are mainly derived from people's commuting habits and focus on the daily resource consumption trajectory during sporting events. The main focus is on the environmental impact of the 2004 World Cup, but this also applies to cases such as the Olympic Games. The main measurement method is the ecological footprint. The ecological footprint is an additive model.

The basic approach is to add biologically productive land uses such as grasslands, farmlands, woodlands (which produce timber but are also important conduits for carbon pools). Golden fields and oceans. Obviously, this process relies on one's estimate of the use of the environment and can effectively synthesize bioproducts from highly variable land and sea areas. Here, different qualities of area are normalized by the multiplication of land area by equivalence factors associated with the biological productivity of different lands. For example, these numbers can highlight that relative land fertility is 1.444 times the world average, which gives the highest productivity for a hectare of high-quality farmland. highly hectares above the world average. Equivalent areas are expressed in standard area units. This method allows us to estimate, for example, the amount of propagated land needed to meet the needs of the reference area. This study helps to better understand the consumption habits of visitors to major sporting events and to measure their overall ecological impact. The ecological footprint calculated based on the component approach requires an analysis of the physical consumption of the public, including: travel to and from the event, food and beverages consumed at the event, infrastructure at the event, and waste generated during the event. However, if visitors are only at home and engage in normal consumption activities, it is necessary to consider the opposite resource use scenario [5]. The ecological footprint, first introduced in the early 1990s, is a composite indicator of the overall ecological impact of resource consumption, similar to the GDP representation of the financial economy [2].The purpose of the "ecological footprint" is to describe the use of the Earth's available resources. The footprint approach provides a rough estimate of global biological carrying capacity supply and demand. A footprint is like a scale for measuring a person's weight. You will know how much you weigh below your ideal weight, but the measurement will not tell you how to lose weight.

3. Conclusion

The ecological footprint of waste is not included in the "standard" footprint calculation, but is counted as incidental, since household consumption can only be counted once, either as an "input" when the product is purchased, as a "consumption" when it is disposed of, or as an "output". Consumption" or "output". Since the footprint method used here takes into account the environmental impact of consumables, double counting occurs when these consumables have a waste impact. The study found that the total average footprint of activity participants was larger than the footprint of participants who stayed at home during their daily activities. The primary explanation for the high marginal footprint is that fans have very different consumption behaviors when attending events, resulting in a larger footprint. In this case, the largest factor affecting the environmental footprint is spending related to the way visitors travel. Event-related travel accounts for 54% of the total footprint, with car travel accounting for two-thirds. In the food and beverage consumption category, subsequent trips create 1,413 hectares of land. The size of this footprint coincides with the type of food and beverages consumed and the amount of energy and resources generated. The infrastructure area of the venue (Millennium Stadium) is relatively small (approximately 0.10 gha/event) and is represented by the total number of events held at the venue over the projected 100-year life cycle. The amount of waste generated by events and their subsequent disposal resulted in a total of 146 gha, or 0.002 gha/participant. 80% and 11% of food waste was food and beverage packaging. Although the study

considered four footprint components in its calculations (travel, food and beverage consumption, event infrastructure and waste), the total footprint impact of the average event participant was approximately nine times the average "planetary rate" per person per day (i.e., 0.0049 gha). This technique is able to show the association between different types of factual consumption [8-10].

3.1. Resource and land use estimation

It is widely believed that the ecological footprint approach contains fewer elements than the layman's transparent parent approach. However, such analyses provide an opportunity to highlight the negative externalities of event sponsorship - cities tend to get the best results, and resources can be targeted to reduce impacts. Importantly, these analyses provide more than a local perspective on the impact of events; event-related consumption can lead to more global consequences. The Government approach another common problem with footprints is that they are not just a local view of the impact of events, especially when one is trying to gain policy foresight from technology.

There is a strong assumption here that an even distribution of global resource consumption is a desired outcome. Of course, an "equal" distribution may not be "fair" for some, and it may take more planets to maintain comparable consumption depending on local environmental conditions. direction. Assess the environmental impact in these cases [4-7].

The focus on local conditions is complementary (for example, see Gössling et al., 2002), but the use of footprint analysis provides insight into global issues of environmental sustainability. The problem is that the ecological footprint is less taken into account and has only a local impact. Some limitations of this approach in general and in particular in the context described above should be considered. In our study of the Olympic Games for major sporting events, sustainability became the most important outcome of ecological footprint research. As such, the environmental impact of major sporting events becomes increasingly important; The leadership of the Olympics can have a global impact. However, if there is no plan to translate commitment into organizational actions and no system for evaluating the effectiveness of those actions, the role of commitment will be limited. There is a loophole in this regard. Organizers are taking steps to introduce more eco-friendly practices, such as encouraging visitors to use public transport to get to the site and use building materials and methods buildings are "green", but there is currently no way to gauge their overall effectiveness in reducing environmental impact. It will be some time before there is a complete and coherent "toolbox" for the environmental impact of major events. Meanwhile, environmental footprints provide information about consumer behavior and are used to inform operational decisions and manage the environmental impact of specific events. Environmental footprint analysis requires a wealth of information on consumption and expenditure related to environmental events and inputs and outputs. An important question in this paper is whether these techniques can be applied to study the environmental impact of major events, including the Olympic Games. Such techniques are beginning to be used to study the impact of event consumption and related leisure and tourism activities. The paper also highlights the data need of both approaches, especially for gathering information about event-related consumption by visitors and others (see also Go¨ssling et al., 2002). , to discuss this topic). This review highlights the methodological limitations of these approaches and the assumptions required for the feasibility of these techniques. For example, the Ecological Footprint does not account for all human impacts on the environment, nor does it consider whether underlying consumption patterns affect the bioavailability of the Earth itself. As a measure of capacity, it also does not take into account that many communities exceed their capacity without negative impacts and that local populations can exceed their capacity by depleting their natural capital. In addition, this method incorporates topographic shapes to determine footprint and therefore assumes the possibility of alternative factors. This is clearly not the case. Furthermore, any measurement of carrying capacity should be done with caution, as returns from land resources can be affected by productivity growth (for example, see Van Kooten & Builte, 2000). Measuring ecological footprints uses well-established coefficients and algorithms to link economic activities and environmental outcomes: however, there is no guarantee that such activities are associated with significant events; this is a feature of existing general economic

models, which can lead to errors. This is important, as the limitations and assumptions of these methods can limit the types of decisions they actually improve. Examining events over time using these techniques can give organizers first insights into which types of consumption cause greater environmental impacts. A close comparison of events may raise further issues. Factors such as global biocapacity may change as several major events replace each other. A more likely development is the creation of models that link environmental effects to event characteristics. Both techniques could provide useful information in this regard, and thus, contribute to strategic decisions about the performance characteristics of future events. However, this study has shown that existing data on the activities of visitors and event organizers can be combined with proven and widely accepted techniques to generate estimates of the specific environmental impacts of events and indicate which events are most problematic for specific behaviors or industries. Clearly, the development of more sophisticated models based on the above concepts of the relationship between the economy and the environment would allow for a better understanding of the types and ways in which the authors surmise will affect the environment. However, even a more sophisticated approach cannot overcome all the limitations inherent to these methods: the potential contextual dependence of historicity. Each significant event for society is unique and autonomous; that is, assessment techniques and policy tools must be adapted to each new situation.[5]

3.2. This issue relates to different venues for the Summer Olympics

Winter Olympics and venues for major competitions, as well as different local environmental pressures and economic structures. These local issues, including their impact on biodiversity, will continue to be addressed through the procedural and case-by-case approach set out in the current Olympic bidding documents. As has been highlighted, it is difficult to conduct a rigorous comparative analysis based on the use of basic techniques. One of the techniques presented here by the authors could be comparing the spatial and temporal impacts of an event, as well as comparing sporting activities with other elements of public policy aimed at achieving social or economic goals, such as 'global hectares', carbon pollution or other indicators. Furthermore, only quantitative analysis can adequately describe the damage caused by event-related activities or developments and thus contribute to the implementation of policy measures to minimize negative impacts. Therefore, part of the impact assessment that becomes a detection tool is the need for surveyors to measure the environment. For major event organizers and the public sector, more qualitative and process-related assessment measures should also be included.

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