

Original Article

**Incorporating sustainability into mega-event management
as means of providing economic, social and environmental legacy: a comparative
analysis**

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Abstract:

The sport tournaments engage numerous people in organizing and participating in events. The championships relate not only to sportsmen and audience but also to local community, environment and other stakeholders. The main purpose of the article is to conduct comparative analysis, develop good practices and recommendations for mega-events' organizers from the perspective of maintaining sustainable development of the industry. Fortunately, more and more organizations and events planners consider this issue. However, this concept was not always followed in the past. As a result, there can be found some examples where organizing big profitable sports event had also very harmful consequences for environment, social community and infrastructure after the championships. The article contains brief literature review and examples of different approaches to sustainability in sports mega-events planning and organizing. In the conclusion there can be found recommendations for sport event organizers how to develop sustainability. The text includes also the limitations which the authors have met. The authors conclude that there can be noticed significant relationship between sustainable development and mega-event management and underline the benefits of implementing sustainability into sport event management. In the final part of the article the authors create the statement about the application possibilities of the prepared recommendations.

Key Words: sports mega-events, sustainable investments, sports event management, sustainability in sport events

Introduction

While sustainability can be incorporated on both individual and institutional level, recently it has become a strong trend in sports event industry (Córdova Paredes, Calabuig Moreno and Dos Santos, 2019). Throughout the past 25 years mega-event's organizers, recognizing the need for change, have been making steady and progressive steps towards incorporating sustainability into the whole organizational process. Big sport events are never without a major impact on local community and environment, that is why it is crucial to consider situation, as well as order and trace left behind (Białkowski, 2018). Thus, considering pre and post event situation should be one of the important elements considered by any event organizing team.

Mega-events are events organized on a global scale, with the TV and online viewing around the world, as well as hosting thousands of sports fans at the stadiums. Those events include Olympics, World Cup, World Series, F1 Grand Prix and many other. With the extremely high levels of media coverage and impact on local community (economic, tourism, infrastructure, environment, etc.) the significance of sports mega-events is very high (Byers, Slack and Parent, 2012). In case of mega-sport events, host regions were noticing increased international recognition creating plenty opportunities for the local businesses and people. There is usually huge amount of investments in infrastructure in the host cities and regions, which in most cases are still being used after the event is concluded (Gratton and Preuss, 2008). Sport and big sport events thanks to the scale and visibility can have a powerful social impact and provide a unique communication platform where wide range of people (spectators, suppliers, local communities, etc.) can be engaged.

Because of the scale of mega-events and huge amounts of different resources used, there are plenty environmental challenges that organizers should consider (Meza, Koc and Al-Ghamdi, 2019), at the same time using the opportunity to communicate those aspects to the global crowd. The bright side of large range, impact and high visibility of an event can offer great opportunities to spread the environmental message across the world. While the event itself has rather short lifespan¹ the legacy of sustainable practices can live on (Preuss, 2019). As Meza and others state that sustainability should be considered as one indispensable concept

¹ The longest mega-events like Olympics or World Cup last about a month.

foran organization. The main focus of this concept is on meeting needs of the present without compromising the ability of future generations to meet their needs. It is possible to point out three pillars of sustainability: economic focusing on profits, environmental looking after the planet and social taking care of the well-being of people (Purvis, Mao and Robinson, 2019).

What is most often discussed in the literature, is an economic impact of big sporting events. Only research from the field of sport governance emphasize the need to focus on other performance indicators that additionally relate to efficiency of employees, development of the sport discipline and social aspects of sport management (Perechuda and Gulak-Lipka, 2020). However, for the last decade sustainability aspects started to be an integral part of the event guideline or manual, especially with respect to the policy context within which they operate and how events contribute to sustainability. In business area big brands often make pledges to sustainability, but in most cases, it takes long time to achieve sustainability goals. Event management industry and organizations operating in it for years now have been integrating sustainable objectives into objectives of mega-events. As a result, partners, as well as participants started to settle the organizers on meeting sustainable goals (Holmes, Hughes, Mair and Carlsen, 2015).

Many sport events can provide economic benefits on the level that far exceeds the costs. Preparation to the big sporting event usually require host cities to make substantial investments to either build or improve sport, as well as hospitality infrastructure. Some of the investments may overlap with a city's planned natural growth, however, costs involved with those investments may be substantially higher for taxpayers. Given the fact that usually cities applying to host mega-event already have significant infrastructure that enables the event to happen. It is reasonable that host cities would not engage in many new and major projects. Although, it requires careful planning, which will help to avoid investing in infrastructure projects that would not provide much value or that will not be available for local communities and also will not provide economic long-term returns to taxpayers (Watkins and Anderson, 2009).

In the past 30 years, main investments in the Olympic host cities besides building or renovating sport facilities focused on projects in areas of: transit, roadways, neighborhoods, parks, waterfronts and airports. Great investments in building ring roads helped to reduce traffic congestions and thus making city far friendlier for living and travelling (e.g. Barcelona 1992). Olympic Games hosting thousands of athletes and other staff members always create Olympic Village to accommodate everybody in the most convenient area, which in case of Atlanta Olympics, was converted into student housing at Georgia State University. Appointed host cities usually aim to improve their transportation, provide investment in disadvantaged neighborhoods, and to beautify their city (Viehoff and Poynte, 2015). Revitalizing disadvantaged neighborhoods (Atlanta 1996), postindustrial areas (London 2012), creation of Olympic Parks (Atlanta and London) give significant impact and shape modern image of the city. Among many positive outcomes, Olympics help most host cities grow in terms of international investments and popularity as a tourist destination (Watkins and Anderson, 2009).

Although some Olympic venues are constructed in neglected districts they add new character to them. Yet the biggest controversy, in terms of sport infrastructure investments is where they are not consistent with city long-term growth plan. That means city authorities should avoid specialized infrastructure investments and expensive permanent facilities unless Post-Olympics use by local communities can be ensured (Kindel, Watkins and Hasdal, 2009). In Atlanta, Olympic Stadium has been adapted as a new ballpark for the Atlanta Braves (Major Baseball League team). In London Olympic Stadium serves one of the Premier League teams and as a multifunctional venue hosts many cultural (concerts) and other sport events (World Championships in Athletics). On the other hand the National Stadium in Beijing (Bird's Nest), although it is a really impressive feat of architecture, it is an example of how some sporting venues are underutilized once the Olympics have ended (Müller, 2015).

First signs of visible attempts to overcome some significant environmental challenges were made in Beijing, for 2008 Olympic Games. The aim of the city and region was to find ways and apply projects to improve air and water quality, waste disposal and to develop clean energy. Actions included significant expansion in the public transportation in form of doubling the size of the metro-subway system, along with connecting city to Beijing capital airport and converting city buses to a cleaner and more efficient use of energy (Kindel, et. al., 2009).

Sustainability is very broad concept and its assumptions can find a place in many different fields. This concept has been also included in managing sports events on the national and international level. Non-governmental organizations have to consider this issue from many different perspectives such as infrastructure, financial, environmental, local communities and volunteers' perspectives (Córdova Paredes, et. al., 2019). However, such standards and way of thinking was not broadly known and practiced from the beginning of events' organizing. Developing of technologies and finding new innovations were always on the top of the list of the goals to achieve by sport events managers. These goals are related to the issues of building impressive sport infrastructure and stadiums, to broadcast the championships in the highest quality, to adopt the infrastructure for achieving new records by sportsmen (Baumann and Matheson, 2013). At the same time other significant issues like usefulness of the sports facility after the event were moved on the background. The other important factors contain resources used in preparing the event or the social condition in the area of games centers (Córdova Paredes, et. al., 2019).

Materials and Methods

The article is a result of literature review about sustainable development in sport event management. The main goal of the paper is to develop good practices and recommendations for events' organizers. With the list of these recommendations authors would like to emphasize the importance of implementation of sustainable practices into event management industry.

Modern Olympic movement is noticing an increased importance of legacy that each event organized every four years in different city and different part of the world is able to create. What is noticeable is an evolution of legacy concept that allows many positive trends to emerge (Leopkey and Patent, 2012). By Olympic legacy it is understood that there are positive outcomes that are left behind in host cities after the event is concluded. Main legacy themes focus on environmental, information and educational issues, but most post event conclusions show that it is irrefutable that there needs to be a closer link to city and regional planning initiatives and legacy sustainability (Brzustewicz, 2013).

Thanks to analyzing Athens and London Olympic Games it is possible to present the evolution of the attitude to the issue of sustainability in sports and mega-event management. The way of thinking about sustainability in mega-event management between these two events evolved significantly. That was an impulse for the authors to present and describe them in the article. At the same time, authors wanted to underline the positive and negative consequences basing on Athens and London Olympic Games. The analysis based on the available scientific literature (Scopus) which describe the issue of sustainability, mega-event management as well as the popular articles (Newspapers) which present facts and numbers about the Olympic Games. Thanks to the internet review in May and June 2020, it was possible to collect necessary data, then comparing them and presenting in the form of tables.

As a model approach to the organization of the games, London 2012 Games have been chosen. This event was not only a successful event in terms of sustainable approach to the event, participants, local community and environment, but there is also a big number of scientific and industry publications with useful data available. On the opposite end, case of Athens 2004 has been presented as an example of mega-event, where there has been a great focus on preparing and delivering high quality event, but brutally failed to overthink the long-term outcomes of investments in sport infrastructure and omitted the aspect of sustainability for local community. The substantial drawback of this example is that there is not so many publications and research as compared to London 2012.

In the modern history of the Olympic Games, there are many other examples of successful and failed events. The choice of events for this article shows a big shift in the mindset of the mega-event organizers of Athens being organized few years before the creation of sustainability standards for event industry, development of sustainability strategy by the Modern Olympic Movement and its implementation in the following events. Meaningful aspects of other Games from the point of view of the subject of this study have been cited as examples, but not developed into separate case studies as this would substantially, but unnecessarily extend the paper.

Results

The following part of the article describes two different Olympics (Athens 2004 and London 2012) where attitude to the issue of sustainable development was implemented in completely different ways. In the result of analysis of both cases the authors tried to underline the most important activities which need to be obtained and avoided in the process of organizing sport events.

Athens Olympics 2004

The Olympic Games in Athens, like other Olympics before, were considered as a catalyst for improvements in infrastructure and development of city services. From the perspective of the authorities the event should have impact on attractiveness, transportation efficiency and livability of the Athens' citizens. Finally, the Olympics were described as an opportunity for upgrading landscape, parks and underground parking that would be a solution for the problem of parking space in the city (Impacts of Hosting OG).

As one of the foundations of the sustainability it is necessary to mention here about the final costs of the event. The total sum of the Athens Games exceeded the forecast number two times more. The initial number was calculated at the amount of €4.5 billion euro where the exact number was €8.954 billion (Olympic Cities, 2012). It is necessary to mention here about additional €1.08 billion euro which were spent on security due to terrorism after September 11th accident. This situation was one of the determinants which decided that Athens Olympics are concerned as one of the less successful Olympic Games (IOC Sustainability Strategy, 2017).

Thanks to the opportunity for organizing the event, Athens improved International Airport and built the new light rail system. From the perspective of citizens this situation is positive. However, the financial aspects of those activities were definitely ignored. The old system and current solutions needed improvements, however, it could be made with much less expenditures. From the perspective of sustainable development, it is necessary to minimize cost, while in case of Olympic 2004 this aspect was not covered at all. The significant impact on this situation had building expensive permanent stadiums which increased the final cost of investment (Athens 2004 Olympics, 2012).

Improper facility designing and impractical planning of the stadium cause long-term negative consequences. The building is currently unused it means there are no sport or cultural events. As a result, the

authorities consider reorganizing the stadium to a shopping mall and entertainment center. Building the Olympic facility were not coherent with the strategic plans of the cities where the tournament was played. Considering those aspects in the initial steps of designing the game arenas would probably cause bigger benefits after the games and would be recognized more as a success. Once again it is possible to say that the organizers completely omit the sustainable aspects of the sport event organizing. The negative consequences can be seen till now. The final argument why Olympic Games 2004 can be assessed as an unsuccessful project is an opinion in mass media that the high costs had a direct impact on the Greek government-debt crisis in 2010. The cost of maintaining the facilities after Olympic Games was such high that in a consequence it caused financial crisis (Athens Olympics, 2012).

In the contrary to the case it is valuable to compare it with the Olympic Games 2012 which took place in London. There the issue of sustainable development was prior on the list of goals to achieve. The exemplary mega-event sustainability management is described in following part of the article.

London Olympics 2012

The Olympics attract fans in millions both in the venues and in front of the TV. Nevertheless, with such an interest and popularity of Olympics it has become a key aspect for the Olympic Movement to implement and obey the sustainability aims. The London 2012 Organizing Committee pride themselves that soon after winning the bid to host the Olympics, they were able to successfully embed the sustainability principles and objectives into all areas of the planning process (London 2012's Sustainability, 2013).

The most visible achievement during the preparation for London 2012 was the creation of the Olympic Park, located in the eastern London area. Once industrial and contaminated land has been transformed into modern urban destination, simultaneously becoming an exciting and sustainable place to live, work, study, play and visit. This area home for London Olympic Stadium, the London Aquatics Centre, the Copper Box Arena and Lee Valley VeloPark, but also an innovative business districts, quality neighborhoods, excellent schools and universities. Many Olympic venues build for the purpose of London 2012 should be given sustainability credentials. One of the examples includes Olympic Stadium, where for the construction of the top ring surplus gas pipes were used (London 2012's Sustainability, 2013).

Many Olympic venues build for the purpose of London 2012 should be given sustainability credentials. One of the examples includes Olympic Stadium, where for the construction of the top ring surplus gas pipes were used. It was one of the signs implementing zero waste concept into realization of London 2012 project. The term zero waste was introduced in 1973 by Paul Palmer, as a response to processes in the chemical industry and possibilities to recover certain resources. The definition adopted by Zero Waste Alliance assumes "conservation of all resources by means of responsible production, consumption, reuse, and recovery of all products, packaging, and materials, without burning them, and without discharges to land, water, or air that threaten the environment or human health". This idea could be applied in every industry, on the institutional, organizational as well as individual level (Mascone, 2014; Dahlen and Lagerkvist, 2008). Zero Waste concept guided many decisions during the planning phase, as well as during the event. The Olympic Velodrome was built with 100% sustainably-sourced timber and Copper Box Arena, during the Olympics home for handball, modern pentathlon, fencing and goalball was covered with recycled copper and helped reduce water use by 40% by recycling rainwater. Currently this arena is open to the public and considered one of the most flexible indoor sport venues. It offers seating for up to 7,500 spectators and can host a wide range of different sports and activities including basketball, wheelchair basketball, handball, volleyball, netball, fencing, badminton, gymnastics and much more. Copper Box is a home to many local clubs and additionally being a floor for everything from heavyweight boxing matches to pop concerts (London 2012's Sustainability, 2013).

With the global issue of climate warming and excess of greenhouse gasses emitted by world population in mind, London 2012 was also the first Olympic Games to measure its carbon footprint over the entire project term and was the first Games to commit to – and achieve – a 'zero waste' to landfill target through the strategic Zero Waste Games Vision. Due to applied sustainable practices Olympic organizers were able to save the equivalent of 400,000 tons of carbon dioxide. While any activity is creating wastes, 100% of Games operations waste was disposed in the landfill, where 62% of that waste was either reused, recycled or composted. Table 1 shows at glance amounts of different resources that were necessary to carry out the Olympics, however the London 2012 organizers reported that 99% of the waste from installing and decommissioning the Games venues was reused or recycled (London 2012's Sustainability, 2013).

The entire Olympic Park is being supplied with energy from the dedicated Energy Center, which was built with sustainability in mind. The concept is based on creation energy through employing innovative biomass boilers that burn wood chips and other sustainable fuels to supply heating and cooling to buildings throughout the Olympic Park. The constructs served its purpose during the Games and now continues to serve London community (Olympic Park Energy Centre).

With many examples of sustainable solutions in mind, London 2012 was direct impulse and inspiration to further development of a sustainability management system standard for events, which was introduced in 2007 as BS 8901. First updates were provided in 2009, but in the end standard BS 8901 became superseded by its international standard equivalent, ISO 20121, which has rapidly become the international standard of choice for the global event sector in how events are delivered, marking another significant legacy of the Games.

London 2012 is considered as a very successful mega-event on many fronts, but especially in terms of sustainability commitments. The greatest achievement can be measured in a legacy of environmental projects that provide practical information, help and advice local communities about sustainable living. All of the projects encouraged people to adopt more sustainable lifestyles, from growing food in urban environment to reducing energy, to becoming more active by walking and cycling more. One of the accomplishments was a 6th International Sports Event Management award in the Environmental and Sustainability category, as well as acknowledgement by Lord de Mauley, the UK's Resource Management Minister (Poynte, Viehoff and Li, 2016).

Discussion

As The Olympics' legacy largely arises from infrastructure investment it is impossible to ignore it in the comparative analysis of two very extreme cases of Games presented above.

Table 2. Comparison Olympics 2020 and 2004

London 2012	Athens 2004
Investment expenditures that have been consumed by the Olympic Games	
Approximately 12.7 billion EUR	Approximately 11 billion EUR, including 3 billion of cost related to the construction of sporting facilities
Generated revenue	
13.4 billion EUR	20 billion EUR
Use of sport facilities after the completion of the event	
<ul style="list-style-type: none"> Olympic Stadium – currently, home stadium of West Ham United Football Club; hosts international and British Athletics events; 12 concerts (between 2016 and 2020); numerous rugby events a year; Copper Box – since opening to the public more than 1 million visitors, home for London Lions basketball team, venue for high profile international and national sporting events, tournaments, shows, exhibits, concerts and conferences. Olympic Village: new residential area in East London London Aquatic Center: offers affordable swimming (3 pools) and fitness facilities to all ages and abilities. Run by charitable social enterprise, <i>Better</i>, which sets their priorities to work for the benefit of everyone: the public, local communities, the environment, our staff and our partners. 	<ul style="list-style-type: none"> Olympic Stadium – after 2004 there were only few concerts organized; Most of the facilities are unused or rarely used, in many cases the buildings are devastated and neglected (The Taekwondo Olympic Stadium at Faliro Olympic Complex; The Olympic Aquatic Centre or Training Pool for Athletes at the Olympic Village) The facility maintenance after the game was assumed to even 84 million EUR per year The newspaper <i>Eleftherotypia</i> summarized: “The Olympic Games were excellent but the price is too high”² The lack of development plan that corresponds to economy and sport needs of local society After the attempts for rearrange the facilities for cultural and sport events this ambitious plans was a failure Olympic Village: “A total of 2,292 houses were given to beneficiaries of the Workers’ Housing Organization, on a lottery” – 2 years after the games
Olympic employment legacy	
<ul style="list-style-type: none"> 46,000 employees worked during the Olympic, of which 10% was previously unemployed 2012 Employment Legacy Project in place 	<i>no data found</i> ³ suggestion: new investments can be helpful in creating workplaces
Environmental responsibility	
<ul style="list-style-type: none"> Queen Elizabeth Olympic Park -previously industrial land in East London, has been replaced with landscaped greenery Creation of the Olympic Park was preceded with cleaning the contaminated soil Park's water resources have been revitalized and available to paddlers and boat tours. Large Loughborough University Campus, located in QEOP is in three-quarters a green area 	“Olympic Properties SA resulted from the fact that the Post-Olympic sports facilities were leased to businessmen to convert them into shopping centers and recreation places for their profit, while no particular provision for the protection of the environment was made” Additional funds (200,000 EUR) for cleaning rubbish dump after the games

Source: own work base on: Kasimati, E. (2015). Post-Olympic Use of the Olympic Venues: The Case of Greece. *Athens Journal of Sports*, 2(3), 167-184; Kissoudi, P. (2008). The Athens Olympics: Optimistic Legacies–Post-Olympic Assets and the Struggle for Their Realization. *The International Journal of the History of Sport*, 25(14), 1972-1990; Olympics 2004 Venues; Tsang A. (2018). *In London, Olympic Park’s Legacy Is Sustainability*, The New York Times, <https://www.nytimes.com/2018/10/09/business/london-olympic-park.html> [accessed on 12.07.2020]; <https://www.londonaquaticscentre.org/about> [accessed on 20.07.2020]; https://copperboxarena.org.uk/our_story [accessed on 20.07.2020].

As shown in the table Olympic games can provide a great profit, however not necessarily to the host city. Majority of financial revenue goes to International Olympic Committee. Olympic cities can benefit in the long

²“The Cost of the Games”, *Eleftherotypia*, 30 Aug. 2004.

³ If the facilities are unused it might be considered that they also do not generate additional workplaces.

term if money invested in sport, transportation or recreational infrastructure will be well spent and will provide long term value for its inhabitants. When looking at the Greek Olympics it seems that there had been inadequate attention paid to planning for the Post-Games period. Main focus went towards winning the bid, building the infrastructure and delivering successful games, but post-games period was neglected. In case of Athens the expectations and plans (not necessarily converged to development plan of the city) exceed the reality and possibilities that Greek government was able to undertake. The Post-Olympics was a reason of political dispute in Greece and the Olympic facilities were used for business-political game. This, in consequence was a harmful for the Greek taxpayers and environment (Kissoudi, 2008).

However, still it is possible to find the Olympic venue which are being unused and destroying after Olympic Games 2004. The only positive is there are some buildings which were reorganized after the event. Athens, its facilities and infrastructure built for the purpose of Olympic games could be definitely promoted better and used after the event. Political disputes and business games, however, do not support this idea.

On the other hand, there are London Games, that are considered as model Olympics. City, especially the eastern part gained a new look, vitality and prospects. This post-industrial area contaminated in places had gained green recreation areas and infrastructure that serves London's citizens and tourists. Olympic Village is now part of Loughborough University, Copper Box Arena hosts sport and cultural events. New venues being available for London's community also opened new job opportunities. This was part of program that local government has put in place, called 2012 Employment Legacy Project.

It is never the situation that things full will go accordingly to plan. But in case of Olympic Games lack of plan for the immediate post-games period can result in missed opportunities for the host city. There are many examples of Games that the biggest challenge relates to sport venues created for games. In Greece, reports show that the government-controlled organization responsible for making use of each of the Olympic venues after the games was extremely slow and inefficient in the utilization of its assets (Kasimati, 2015). All facilities that did not achieve any meaningful post-games use, became a great burden to the Greek taxpayers. Moreover, it is often cited that it was also partly a reason for current Greek economic crisis.

According to the examples presented in the paper the mega-event is always a huge opportunity for the city which organizes such event. However, it should be also analyzed from the perspective of responsible for environment and local community. Although, aftermaths of organizing such event cannot be harmful and it is not acceptable to provide long-term negative consequences after finishing a project.

The issue described in the article gives a chance to collect the good practices and create a list of recommendations which should be followed by everyone who plans to organize sport event. Those recommendations probably have the applications in every sport event, regardless the scope and the large of the championships. It is presented in a form of Decalogue.

The Decalogue of recommendations and hints relates to the issues as follows:

1. Adopt the facility for new events after the championships. Use it for a local team to play its games or organize other cultural events
2. Avoid building new stadiums if it's not necessary. Sometimes it is better to renovate current facilities than building new ones
3. During the construction process of a stadium and its infrastructure try to apply eco-friendly technologies and solutions to minimize environmental footprint
4. Consider using eco materials. Eco-friendly resources used in production help to optimize lifecycle process and increase the value of products
5. Use renewable resources in production sport equipment and kits
6. Minimize the amount of wastes. Implement zero-waste practices and recycle if it is possible
7. Consider city development plan while planning the infrastructure and transport connections related to an event. Use green solutions in this area
8. Develop the ecological aspects in movement of people and goods associated with the event activities
9. Keep in mind preservation of local environment with respect to natural resources, especially water and energy for heating and cooling facilities
10. Do not be focused on generating profit only. It can be more valuable to build strong relationships with employees, volunteers and gain local communities' loyalty

Keeping those few hints in mind can have strategic importance from the perspective of making successful sport mega-event. It is important for the future organizers to follow them if we want to achieve significant progress in managing sport events and have less harmful influence on environment and whole planet.

Conclusion

The examples presented in the article show that the link between sustainability and mega-events management can be noticed. The list of benefits related to including the sustainable issues in the event management process is impressive including economic, environmental and social elements. The highest sustainable awareness is the warranty of developing ecological and social standards of the regions where such events are planned. Long-term orientation and broad horizons help to avoid the situation when the infrastructure build in the purpose of singular event is unused after the closing ceremony. Adjusting the sport infrastructure to

multi-tasking conditions gives opportunity to use the infrastructure not only for the sport-event organizing but also helps to use it for generating additional social and economic revenue.

Therefore, the issue has a significant impact on local community and environment. Currently these two issues cannot be ignored from the perspective of efficient business conducting. Mega-events thanks to their global scale can have broad consequences on the mentioned issues, which can be observed not only in the local but national or even international scale. Organizing such events is also an opportunity for developing living standards for local community because usually it is connected with developing the transport and tourism infrastructure. Although, planning such event is very ambitious project, it is possible to achieve the benefits which exceed the cost needed to invest. Including the sustainability issues helps to get a success and to satisfy the stakeholders and to meet their expectations without harming the environment.

It is necessary to point out the limitations related to the issue. In the group of the most significant and relevant limitations in the research process the authors of the paper underline lack of specified information and data about the Olympic Games in Athens 2004 comparing to London 2012 – including articles describing the issue. Moreover, there are some filmed documentaries that describe the Post-Olympics 2004 consequences and present the facilities after the event – at the same time, the scientific literature is quite poor. This situation has a direct influence on the quality of the data and the whole analysis.

The article gives opportunity for other researchers to continuous describing the evolution of sustainability issue in the cases of mega-sport event management. The paper relates also to the motives and reasons of implementing sustainability to sport and event-management. Comparing two different approaches to the sustainability issue gives the clear description how the importance of sustainability had been growing during last decades. The article fills up the lack of such comparison in the literature and shows the long-term consequences of introducing and ignoring the issue in mega-event management. The paper presents also the guideline and the track for the future trends in the industry what be very valuable from the perspective of improving mega-event management standards.

During the last decades of Olympics, it was possible to observe good and bad examples of approaching to the issue of sustainable development in sport. Thanks to that it could be achieved the list of recommendations and to underline the issues which have to be considered during planning a big tournament. As it was mentioned the listed guideline can be also applicable not only in the case of sport mega-events but most likely can be very useful in case of any small tournament. This statement, however, should be examined firstly, whether it is relevant. Finally, the authors had decided to put it here to provoke other researchers to focus on this topic by giving the opportunity for exploring new areas of the issue.

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