Sustainability Management for the Olympic and Paralymic Games in London 2012

Berlemann, Birte

Publication date:
2007

Document Version
Publisher's PDF, also known as Version of record

Sustainability management for the Olympic and Paralympic Games in London 2012

Birte Berlemann

Lehrstuhl für Umweltmanagement
Universität Lüneburg
Scharnhorststr. 1
D-21335 Lüneburg

Fax: +49-4131-677-2186
csm@uni-lueneburg.de
www.uni-lueneburg.de/csm/

Juni 2007

Centre for Sustainability Management (CSM) e.V.

Chair of Corporate Environmental Management
University of Lueneburg
Scharnhorststr. 1
D-21335 Lueneburg

Centrum für Nachhaltigkeitsmanagement (CNM) e.V.

Lehrstuhl für Betriebswirtschaftslehre, insbes. Umweltmanagement
Universität Lüneburg
Scharnhorststr. 1
D-21335 Lüneburg

Tel. +49-4131-677-2181
Fax. +49-4131-677-2186
E-mail: csm@uni-lueneburg.de
www.uni-lueneburg.de/csm

#
ISBN 978-3-935630-62-7

Abstract

Olympic Games have significant impacts on the ecological and social environment, in which they are hosted. At the same time, they hold the potential to accelerate many people's learning about sustainable development by showcasing sustainable solutions. Therefore, organisers of Olympic and Paralympic Games have started addressing the negative impacts in a strategic way, and are working towards leaving a positive legacy in the host community.

The Olympic ideals, as presented in the Olympic Charter, clearly resonate with the concept of sustainable development. The International Olympic Committee (IOC) recognises this connection and encourages the promotion of sustainable development at Olympic Games.

This study examines the following question: *Which characteristics does a sustainability management system for Olympic and Paralympic Games need to have, in order to be successful?* Successful, in this context, means having the capacity to fully address the specific challenges that a sustainability management system for Olympic and Paralympic Games needs to face.

As a basis for answering the question, the functions of sustainability management systems are defined. They build the frame for deriving the specific challenges, together with a description of the characteristics of Olympic and Paralympic Games. Examples of how the challenges can be addressed are presented and discussed. These examples provide insights on possibilities for addressing the challenges, as well as revealing potential pitfalls. As a result, conclusions are drawn regarding the characteristics of sustainability management systems that have the capacity to address the

ACKNOWLEDGEMENTS

I would like to thank my interviewees for taking the time to meet, talk and in the process provide me with valuable information:

- Andrew Crump, policy advisor at the Government Olympic Executive
- Shaun McCarthy, chair of the Commission for a Sustainable London 2012

I would like to thank the following persons for valuable discussions during the course of this study:

- David Stubbs, head of environment and sustainability at the London Organising Committee for the Olympic Games (LOCOG)
- Tobias Viere, research assistant at the Centre for Sustainability Management (CSM) at the University of Lüneburg
- Viktoria Fromme, fellow environmental scientist

Last, but not least,

I would like to thank my friends and family for their patience and support.

CONTENTS

1 INTRODUCTION 1
1.1 Rationale for doing the study 2
1.2 Purpose of the study 4
1.3 Scope and limitations of the study 4
1.4 Research approach 5
1.4.1 Outline 5
1.4.2 Methods 7

2 BACKGROUND 9
2.1 Sustainability 9
2.2 Olympic Games and sustainability 12
2.2.1 Olympic Games' history 12
2.2.2 The Olympic Movement and sustainability 14
2.2.3 Opportunities for sustainable development related to Olympic Games 20

3 FRAME 22
3.1 General characteristics of Olympic Games 22
3.1.1 Organisational setting 23
3.1.2 Spatial dimension 25
3.1.3 Duration 25
3.1.4 Intended legacy 25
3.1.5 Strategy development 26
3.1.6 Funding 26
3.1.7 Conclusion 26
3.2 Managing sustainability 27
3.2.1 Defining the term 'sustainability management system' 27
3.2.2 Functions of sustainability management systems 28

4 FINDINGS 32
4.1 Challenges 32
4.1.1 Providing direction and structure 32
4.1.2 Ongoing interaction with stakeholders 33
4.1.3 Inducing organisational change 34

4.1.4 Integrating sustainability considerations and conventional management 35
4.1.5 Ensuring accessibility of required sustainability knowledge 36
4.1.6 Monitoring and evaluating progress 37
4.2 Addressing the challenges 38
4.2.1 Providing direction and structure 38
4.2.2 Ongoing interaction with stakeholders 44
4.2.3 Inducing organisational change 45
4.2.4 Integrating sustainability considerations and conventional management 48
4.2.5 Ensuring accessibility of required sustainability knowledge 50
4.2.6 Monitoring and evaluating progress 52

5 DISCUSSION AND CONCLUSIONS 54
5.1 Summary 54
5.2 Conclusions 56
5.3 Discussion 57
5.4 Opportunities for further research 58

BIBLIOGRAPHY 59

APPENDIX 1: CORE STAKEHOLDERS 71

APPENDIX 2: OLYMPIC AND PARALYMPIC GAMES PROGRAMME OBJECTIVES 75

LIST OF ABBREVIATIONS

BOA	British Olympic Association
DCMS	UK Government's Department for Culture, Media and Sport
DTI	UK Government's Department for Trade and Industry
GLA	Greater London Authority
IF	International Sports Federation
IOC	International Olympic Committee
LDA	London Development Agency
LOCOG	London Organising Committee for the Olympic Games
NGO	Non-Governmental Organisation
NOC	National Olympic Committee
OCOG	Organising Committee for the Olympic Games
ODA	Olympic Delivery Authority
OGI	Olympic Games Impact Assessment
UN	United Nations
UNCED	United Nations Conference on Environment and Development

1 INTRODUCTION

Evidence is growing that on a global scale, ecosystems are in decline, due to human interaction with them. These ecosystems provide life-supporting resources for society's continued existence, such as clean air, clean water, productive topsoil etc. The continuing damage of these ecosystems diminishes the options for human society's future (compare, for example, Intergovernmental Panel on Climate Change 2007). At the same time, the number of humans on the planet, as well as their individual demand for resources, is increasing. Additionally, inequalities in resource allocation give rise to social and political instabilities and to dangers for the members of society (compare, for example, UN Security Council 2007).

In the context of this background, organisations are being publicly judged on their contribution to the damages on ecological and social systems. For example, organisations in the textile industry have come under considerable public pressure after having been reported to use child labour (compare, for example, Boggan 2001).

Furthermore, organisations' continued existence depends on their capacity to cope with the results of past damages and on their ability to utilise alternative, non-damaging ways of interacting with their ecological and social environment. For example, companies in the energy sector face additional risks for their installations, particularly offshore platforms, to be damaged by extreme weather phenomena caused by global warming. At the same time, they need to find solutions that are independent from fossil fuels (which release CO_2 into the atmosphere in the process of creating electricity, thereby contributing to global warming) (compare, for example, Offshore 2005).

The impacts of large organisations on ecological and social systems gain particular attention from media and the public. This can be partly attributed to the scale of their impacts, but also to the public visibility of these organisations. Large events, like Olympic Games[1], may attract even more attention, because they are deliberately designed to do so.

Large events bring together many people in one place, which tends to result in negative impacts on the natural and social environment of the place, where the event occurs (Braun 2000, 196). In addition to the event itself, the amounts of resources used to prepare for and stage events can be immense. As a result, their impacts on social and ecological systems can be quite intense, given the temporal and spatial concentration of people and activities that is typical for events. Thus, events bring short-term impacts, but also leave the hosts with lasting long-term impacts relating to, for example, venues and infrastructure. Both short-term and long-term impacts are likely to become a principal subject of public interest. It is therefore essential to ensure that these events mitigate negative effects as far as possible. Additionally, they should take place in a natural and social environment that are the most

[1] In this report, the terms "Olympic Games", "Games" and "Olympics" are used synonymously. All of them are meant to include Paralympic Games.

resilient to the negative effects that cannot be avoided[2] (compare Schemel & Erbguth 2000, 31f).

The Olympic Games are one of the largest sports events on earth, requiring immense amounts of financial and human resources, as well as energy and materials. The following aspects help to illustrate the scale of and interest in Olympic Games:

- At the Olympic Games in Athens (2004), 3.9 billion people worldwide had access to TV coverage of the Olympic Games (IOC 2005a).
- The costs for upgrading and building infrastructure for the Olympics in Beijing (2008) are reported to be US$ 40bn (BBC 2005).

Recent scandals in the sporting world, such as corruption and doping, are directing media attention particularly towards negative impacts, issues and problems of large sports events. This means that if Olympic Games' hosts fall short on addressing these issues, a large proportion of the world's population will know and judge the host city and country accordingly. So failing to minimise the Olympic Games' negative impacts on ecological and social systems means to risk damaging the host city's and the Olympic Games' image, as well as missing the chance to showcase all the beneficial actions that can be done while preserving or even enhancing ecological and social systems.

With the Olympics being a periodically recurring event that takes place in a different location each time, they have the potential to leave a legacy of sustainable solutions in every new host community. These sustainable solutions can be derived from the interplay between the culture and knowledge in the host community on the one hand, and the accumulated knowledge of past events on the other. These legacies can provide a model of sustainability for residents, visitors, businesses, as well as other communities around the world. Thus, events can be considered to contribute to problems, as well as contributing to solving sustainability issues. A few examples of the potential negative effects include; an increase in waste and energy consumption, loss of biodiversity, and the displacement of local residents. The positive effects relate to, for example, cultural exchange, increased social and environmental awareness, improved infrastructure and townscape, as well as marketing opportunities for innovative concepts.

1.1 Rationale for doing the study

Olympic Games provide opportunities for tackling global issues on a local scale, for inventing and showcasing sustainable solutions and for learning to communicate beyond communities and beyond established paths. With 3.9 billion people having access to TV coverage of the Olympic Games[3], the Games present an opportunity to reach massive audiences.

[2] As it is unlikely that any environment is completely insensible to these negative impacts, the least sensible should be chosen, e.g. placing the venues on formerly industrially used land, rather than on the verge of a nature reserve.

[3] number calculated by the IOC for the Games in Athens 2004

Particularly the Lillehammer (1994) and Sydney (2000) Games proved the potential for raising awareness about sustainability issues and their potential solutions (compare, for example, UNEP 2001). In addition, the Games in Barcelona (1992) have shown that hosting the Games can spur the host city's people into action and facilitate innovation and change (Abad 1995, 16). This report serves to support the efforts of Olympic Games (particularly in London), to accelerate change towards sustainability and to showcase sustainable solutions. The sustainability management system of the Olympic Games' organising bodies is a crucial aspect for realising this potential. Consequently, this study will focus on the success of sustainability management systems in association with hosting the Olympic Games.

The study is primarily focused on the Olympic Games in London, and yet there are some general conclusions as well. The Olympic Games in London are particularly interesting and currently relevant for several reasons:

- The candidate file[4] set out the ambitious plan to work towards "One Planet Olympics"[5].
- The organisers of the Games in London have committed to sustainable development and are in the process of developing ways for adequately addressing sustainability[6].
- With the sustainability management system still being in a stage of refinement, a study of this kind appears to be timely.

The candidate file sets out the general aspirations for the London Games, including sustainability. The candidate file became part of the host city contract[7] in summer 2005, when London won the bid to host the Games. London's candidate file contains sustainability objectives, which are to be achieved through a sustainability management system. This report builds on the idea that sustainability management needs to be integrated into the core of the overall management (compare Schaltegger & Burritt 2005, 193f). Hence, the sustainability commitments in the candidate file can only be achieved with a system that effectively integrates sustainability considerations into all decision making related to the Olympic and Paralympic Games.

[4] Each city that bids to host Olympic Games has to submit a candidate file to the IOC. This file contains information about predetermined issues, such as finance, political support, environment and others.

[5] A concept , which was jointly developed by the NGOs BioRegional and WWF

[6] While some sources used in this report refer to 'sustainable development' as a process, others argue that there needs to be more of a focus on 'sustainability' as an envisioned future state. However, thinking of sustainability as a somewhat fixed state might be misleading, because even when humanity manages to exist in a sustainable manner, change and development will still take place. In this case, the distinction between the terms 'sustainable development' and 'sustainability' becomes blurred. Therefore, no distinction will be made between the two terms in this report; both are considered to be something to strive for.

[7] After one city has won the bid to host the Games, it enters a host city contract with the IOC. London's host city contract contains a clause that makes the promises in the candidate file become legally binding (IOC 2005d, 5).

1.2 Purpose of the study

The purpose of the study is to provide an understanding of the challenges for sustainability management systems for Olympic and Paralympic Games and to determine characteristics of successful sustainability management systems for Olympic and Paralympic Games.

The primary question of the study is:

Which characteristics does a sustainability management system for Olympic and Paralympic Games need to have, in order to be successful?

The secondary questions are:

- What are the particular links between the Olympics and sustainability?
- What are the functions of a sustainability management system?
- How can the characteristics of Olympic Games be described?
- Which particular challenges arise for a sustainability management system for Olympic Games?
- Are there any examples of organisations that have addressed these challenges?
- What general conclusions can be drawn regarding the characteristics of successful sustainability management systems for Olympic Games?

In this thesis, a sustainability management system for Olympic and Paralympic Games is considered successful, if it has the capacity to fully address the determined challenges.

1.3 Scope and limitations of the study

The unit of analysis is a sustainability management system for Olympic and Paralympic Games. Based on the hypothesis that a single, cohesive management system can only be established for organisations that have common objectives, this research study will focus on the official organising bodies. These can be assumed to have the common objectives of organising and staging Olympic Games and, in the realm of this study, working towards sustainable Games and a sustainable legacy.

Official organising bodies typically include:

- representatives of national government
- representatives of local governing bodies
- representatives of sports organisations
- one or more organisations, set up specifically to organise the Games
- IOC representatives (in the coordination commission)

Where applicable, the study will also include aspects of the influence of main stakeholders.

In this study, the term “organising bodies for the Games in London 2012”, refers to the following bodies[8]:

- the Olympic Board
- the Government Olympic Executive (as part of the Department for Culture, Media and Sport (DCMS))
- the Olympic Delivery Authority (ODA)
- the London Organising Committee for the Olympic Games (LOCOG)
- the IOC coordination commission

The following analysis focuses on the sustainability management system of the organising bodies as specified above. Excluded from the analysis are the management systems and effects of contractors and organisations linked to the delivery of the Games in other ways.

There are limits to the access of information about management practices at Olympic Games. Therefore, Games with more open information flows allowed for more in-depth study. Information from diverse Games does not necessarily have comparable quality, depending on the local approach to documentation and publication of information.

1.4 Research approach

1.4.1 Outline

Background

The study starts with an outline of the background needed for the understanding of the study. This includes an introduction to the concept of sustainability, as well as the linkages between the Olympic Movement and sustainability.

- *Providing background on sustainability*

  This section is based on a literature review. It briefly describes the history of the concept and provides the basis for an understanding of the concept of sustainability as used in this report.

- *Providing background on the links between Olympic Games and sustainability management*

  This section is mainly based on literature and documents related to the International Olympic Committee and the Olympic Movement, with an emphasis on the constitutional document of the Olympic Movement (the Olympic Charter). The section reasons for the Olympic Games’ unique potential to spark action and change towards sustainability.

[8] Additional stakeholders involved in organising and staging the Games are listed in appendix 1.

Frame

The next section provides an introduction to sustainability management systems and their functions. It also points out in what ways the project of staging Olympic Games has unique organisational characteristics. The combination of these aspects –functions of sustainability management systems and Olympic Games' unique organisational characteristics set the frame for further analysis.

- *Providing an overview of the functions of sustainability management systems*

  This section is based on literature related to management in general, as well as environmental and sustainability management in particular. It summarises the functions of sustainability management systems, as described in literature.

- *Describing special organisational characteristics of the Olympic Games*

  This section is based on the assumption that the specific organisational characteristics of Olympic Games have an influence on the challenges for their sustainability management. The section is structured according to the general characteristics of projects. It describes, in which way the planning and staging of Olympic Games relate to these characteristics.

Findings

A successful sustainability management system for Olympic and Paralympic Games is defined here as *delivering the best possible contribution to sustainability, based on having the capacity to address specific challenges related to Olympic and Paralympic Games.* Therefore, the next step of the study is to define what the specific challenges for Olympic and Paralympic Games' sustainability management systems are. These challenges are related to the specific characteristics of Olympic Games on the one hand, and to the functions of the sustainability management system on the other. In order to illustrate the conclusions from the analysis and inspire ideas for potential solutions, examples are presented and briefly discussed.

- *Identifying challenges for Olympic Games' sustainability management systems*

  Relating the functions of sustainability management systems to the organisational characteristics of Olympic Games, this section deduces the special challenges associated with sustainability management for Olympic Games.

- *Presenting examples of sustainability management systems*

  Examples were chosen for presenting a solution to addressing the challenge or opportunity at hand. The section is mainly based on documentation of Olympic Games, but also uses information provided by stakeholders. Regarding the London Games, two expert interviews have been conducted.

Discussion and Conclusions

General conclusions are derived, as far as possible, before the background of the frame and findings in this study.

- *Drawing conclusions regarding characteristics of successful sustainability management systems for Olympic Games*

  Based on the functions of sustainability management systems, the organisational characteristics of Olympic Games, the derived challenges and opportunities and the presented examples, general conclusions are derived regarding characteristics of successful sustainability management systems for Olympic Games.

- The discussion deals with the study from a meta-perspective. It is concerned with questions regarding the quality and transferability of the results.

1.4.2 Methods

This report follows a qualitative study design. The defining features of qualitative research are that it is oriented towards a subject within its usual environment and that it allows employing diverse methods (compare Mayring 2002). Qualitative research methods are particularly helpful when the phenomenon under study is not easily distinguishable from its context and the richness of the context means that the study will likely need to use multiple sources of evidence (Yin, 2003, 4). For the Olympic Games, the sustainability management system cannot be analysed without a view to its connections to various stakeholders, to the underlying value system, to the special qualities of the host and many other variables in the context. Therefore, a qualitative study design is considered appropriate.

Review

A review of documents and literature, including academic and popular articles, books, reports, policy documents and websites was conducted with the aim of embedding the study in the existing body of literature and to include lessons from previous research. Where current and very specific issues are analysed, this study utilizes internet resources. The sources were chosen according to their relation to sustainability in general, sustainability management systems in particular, as well as their relation to Olympic Games, with a special focus on the Games in London 2012.

Examples

The examples presented have the character of very brief case studies. They mainly refer to the Olympic Games in London, as these are well documented and have a focus on sustainability management. Additional examples are taken from the Games in Barcelona (1992) and Sydney (2000), as they provided further insights.

The examples provide three things:

- Firstly, they illustrate challenges
- Secondly, they provide valuable insights on how the challenges can be addressed and thereby serve as an inspiration
- Thirdly, they reveal potential pitfalls in addressing the challenges

Expert interviews

Expert interviews are particularly useful where there is a lack of literature. As management systems are rarely published in detail, the resulting gaps have been filled here with the help of expert knowledge. The term ‘expert’ is defined here as a person with privileged access to information (Meuser & Nagel 2002, 71) and with specific and relevant knowledge (Gläser & Laudel 2004, 41) regarding the area of analysis. The interviews have been conducted in a semi-structured approach. This means, asking questions from a previously prepared list, whereas neither the exact formulations nor the sequence of the questions have to follow the questionnaire (compare Gläser & Laudel 2004, 39). This procedure effectively combines the advantages of standardisation and openness in an interview: The questionnaire guideline ensures sticking to the subject (compare Meuser & Nagel 2000, 77), while the openness generally allows for more honest and considerate answers. Additionally, it leaves room for checking, whether both questions and answers have been understood properly (compare Mayring 2002, 68f).

One of the interviews has been conducted in a face-to-face meeting. It was recorded and transcribed. The transcription has been transferred to standard written English. The other interview was conducted via phone, for reasons of time and budget. It was recorded by taking notes. As the interviews’ sole purpose was to answer questions, which could not be answered by using written sources, the limited number of interviews and the difference in methodology are irrelevant in this context.

2 BACKGROUND

This section provides the background on which the following analysis is based. It contains introductions to sustainability and the linkages between sustainability and Olympic Games. The links between sustainability and the Olympics are rooted in the history of the modern Olympics and the related value system, which are briefly described. The relevance of the Olympic and Paralympic Games in the context of sustainable development is addressed by depicting the history of the Olympic Movement's commitment to sustainability, as well as the current opportunities that Olympic Games present with regards to sustainable development.

2.1 Sustainability

On a global scale, it is becoming more and more apparent that humanity is inducing considerable stress onto ecological systems and that these systems are reaching a point, where they are no longer able to cope with that stress. Humanity is experiencing increasing inequalities between and within nations, rising rates of poverty and hunger, diseases and illiteracy, as well as a progressing damage of ecosystems (BMU 1997, 9). Though this description may sound quite current, the issues are not new.

In 1972, the Club of Rome's published a report on the 'Limits to Growth' (Meadows et al. 1972). The report stresses the potential exhaustion of natural resources by the growing human population and industrial production, while at the same time pointing out the potential for creating a viable situation for the long term (compare Meadows et al. 1972, 17). Based on this report, questions regarding the continued availability of resources gained importance in the political and scientific arena (compare Kopfmüller et al. 2001, 21). The issue of resource scarcities was taken up in the 'World Conservation Strategy', published in 1980, which acknowledges that long-term economic development cannot be realised, if the functionality of ecological systems are compromised (compare Kopfmüller et al. 2001, 23). These reports, as well as a growing public awareness of ecological problems, led to ongoing discussions about ecological and developmental issues on an international scale. Eventually, the UN established the World Commission on Environment and Development, chaired by Gro Harlem Brundtland (compare Kopfmüller et al. 2001, 23). The task of this commission was to develop a programme of change and to suggest long-term strategies suitable to protect the environment and to ensure ongoing development (WCED 1987).

In 1987, this so-called 'Brundtland Commission' published its report 'Our Common Future', postulating that a sustainable development is a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987, 24). Thus, the aim of sustainable development can be understood as passing on the ecological systems and other resources to the next generations, in a condition that does not compromise their ability to satisfy their needs.

Consequently, in 1992, representatives of more than 170 nations agreed a programme for action to establish sustainable development, which is called the Agenda 21 (compare BMU 1997). This agenda is designed to ensure the satisfaction of human needs, now and in the future, in line with environmental constraints. Sustainable development therefore recognises human society's dependence on ecological systems and processes occurring within them (compare Dunphy et al. 2000, 22). Despite the fact that concerns about changes in ecological systems have triggered the development of Agenda 21, it clearly acknowledges that the key pressure points for change towards sustainability are within human systems (Roome 1998, 3).

The Agenda 21 sparked discussions around the globe, about what sustainable development means and how it could be achieved. As a result, many actions towards sustainable development have been initiated, and also, many diverse interpretations of what sustainable development means have been developed and discussed. To date, there are probably hundreds of definitions for sustainable development (compare, e.g. Steurer 2001, 537; Tremmel 2003, 99) Nevertheless, there are still problems that remain to be solved: Consumption habits, as well as the related plethora of products and services, are still significantly out of step with the natural resources and the options for waste disposal needed for their production and consumption (compare Sabapathy 2007, 5).[9]

The definition of sustainable development, which is used throughout this report, was chosen out of the many definitions for its significance for the Olympic Games in London 2012. This definition relates to a systemic perspective. Therefore, the following paragraphs provide a brief introduction to systemic thinking as related to sustainable development.

Taking a systemic perspective, the earth and everything on it, including the atmosphere, can be defined as a system. A system is made up of interdependent elements, which may be grouped into interdependent sub-systems. The biosphere can be understood as a sub-system of this 'whole earth' system (compare Robèrt et al. 2004, 18). Human society can be understood as a subsystem of the "surrounding carrying system" (Bringezu 2004, 408), the biosphere. Thus, human society depends on the biosphere and the processes occurring within it (Dunphy et al. 2000, 22). Additionally, human society depends on the material and energy flows among the elements within itself and between human society and other systems (biosphere, atmosphere, and the earth's crust) that together make up the 'whole earth' system. The sustained co-existence of these systems therefore depends on specific material and energetic requirements (compare Bringezu 2004, 408; Robèrt et al. 2004, 18)[10].

Recognising that energy and material exchanges within and among the named systems play a role for the continued existence of the 'whole earth' system, sustainability refers to "an ecologically viable social model" (Arias-Maldonado 2000, 44). This means that energy and

[9] This is particularly true for industrialised nations, but is also becoming more and more of an issue in rising economies, such as China and India.

[10] This concept was first introduced in literature as "industrial metabolism" (see Ayres 1989) and referred to industry's embeddedness into a surrounding system. Underlying this concept is the view that industry is part of an indivisible, open system in connection with other systems (Roome, 1998, 8).

material exchanges within and among these systems do not exceed the carrying capacity of either system, so that the functionality of the 'whole earth' system can be maintained.

To illustrate the concept: Material prerequisites for the integrity and, ultimately, the continuation of the whole system include the following:

The biosphere may not be subject to systematically increasing...

a. ...concentrations of substances extracted from the earth's crust (e.g. CO_2)
b. ...concentrations of substances produced by society (e.g. CFCs)
c. ...degradation by physical means (e.g. deforestation)

(compare Robèrt et al. 2004, xxiv)

The systemic perspective implies that sustainable development can only be defined for a complete system and not for its components. Thus, no single actor, organisation or nation can achieve sustainable development in isolation from others (Spencer-Cooke 1998, 104). However, persons or organisations can act as agents of within social systems (O'Connor et al., 1996, Roome, 1997) by taking actions that spark further action and change towards an ecologically viable social model (compare, for example, Chernushenko et al. 2001, 79). In this sense, sustainable development is a social process that resolves disagreements through the application of approaches that are informed by principles of inclusiveness, precaution and justice (compare Carley and Christie, 1992).

The concept of sustainability used in this report was published by the UK Government in its sustainability strategy "Securing the Future". As the focus of this report is on the Olympic and Paralympic Games in London 2012, where the UK government is a core stakeholder, this concept of sustainability is particularly relevant to the Olympic Games in London 2012. It defines sustainable development as follows:

- "*Living Within Environmental Limits: Respecting the limits of the planet's environment, resources and biodiversity – to improve our environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations [and]*
- *Ensuring a Strong, Healthy and Just Society*[11]*: Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity for all."*

(UK Government 2005, 16)[12]

[11] The term "society" used here can be assumed to refer to the UK's society and does therefore not allude to global inequalities.

[12] The strategy paper goes on to identify economy, governance and science as the aspects within the UK government's realm of influence, which it will utilize to achieve sustainability (UK Government 2005, 16). All three are core parts of the existing social model and therefore have an immense influence on processes within society, as well as on processes of interaction with ecological systems.

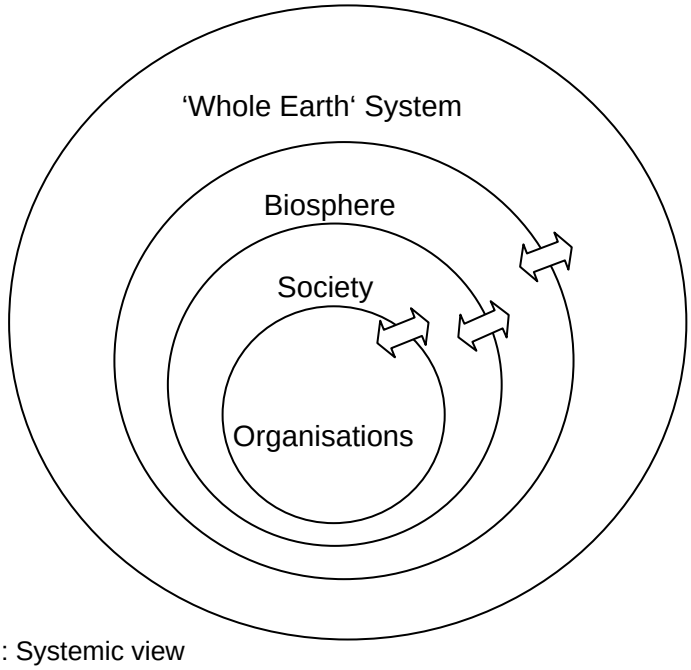

Figure 1: Systemic view

2.2 Olympic Games and sustainability

This thesis rests on the assumption that Olympic Games –as a phenomenon within society– have positive and negative impacts on sustainability. This means, they are part of a problem, but they can also contribute to solving the problem and achieving a healthy, safe and just society living within environmental boundaries. Actually, Olympic Games provide a unique basis for a contribution of this kind, as detailed below.

2.2.1 Olympic Games' history

The history of the Olympic Games has a significant influence on the current functionality and the future development of the Games. It therefore also influences the potential for the Games' contribution to achieving society-wide sustainability. This section provides a brief overview of that history.

The Olympic Games of modern times have their origins at the end of the 19th century in France[13]. At the time, Pierre de Coubertin attempted to contribute to stabilizing modern democracy, in his country, by reforming the educational system (MacAloon 1981, 97). He had been greatly impressed by British schools, which placed a clear emphasis on self-governance and sports as means for educating pupils for their life as citizens of a democratic country. Coubertin thus claimed the role of sports for education to be "at once physical, moral and social" and demanded more importance for sports in the French educational system

[13] The official decision to re-establish Olympic Games was taken in Paris in 1894.

(compare Coubertin 1887, 642). His vision was that reinitiating Olympic Games would make sports more popular in France. He hoped for the international competition to serve as an incentive for the French to become more active in sports. Re-establishing Olympic Games therefore did not “arise as much from pride over French sporting achievements, as from annoyance about the lack thereof” (Wesseling 2002, 31). So for Coubertin, the Olympic Games were far less about professional sports than they were about wide-spread attendance in sporting activities and about promoting sports as a tool for education. He assumed sports to be an aspect of individual and social life and therefore expected the values and ideas represented in sports to be transferred to other aspects of life.

This view is reflected in the original tenets of Olympism[14]:

- Unity of body and soul
- Self-completion through sports performance
- Amateurism
- Connection of sports to ethical rules, fairness, justice
- Idea of peace in sports (Grupe 1997, 226)

A related image of sports and their meaning for life can be found in the appeal by Henri Didon, a teacher and friend of Coubertin. The appeal is targeted at athletes and recommends to “(…) strive always to go one step further than you were aiming for: citius, altius, fortius”.[15] This idea of exceeding one’s own limits rather than succeeding over the competitors is still part of the Olympic creed, which reads: “The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph but the struggle. The essential thing is not to have conquered but to have fought well" [16] (COC 2007). Based on these ideas, competitions should be understood as an incentive for self-completion, rather than for proving superiority.

Given this quite idealistic background, Olympic Games gained their very special reputation as a unique event and as a celebration of humanity. This reputation started to be used commercially in a larger scale under the reign of IOC president Juan Antonio Samaranch (1980-2001). Earlier Games, particularly Montreal (1976) had left the host cities with large debts[17]. Finding hosts became increasingly difficult, because the advantages from staging the Games did not seem to match the attached costs. As a result, the 1984 Games were awarded to Los Angeles uncontested. It was the first Games to be completely privately funded and to create a surplus. The Los Angeles Games started an era of large-scale corporate involvement in the Olympic Games. In the following years, the IOC (under J.A. Samaranch) dropped the tenet of amateurism to increase public attention (Frohmader 2004,

[14] as identified by Otto Grupe, based on the work of Pierre de Coubertin and Carl Diem

[15] Appeal cited according to a panel in the permanent exhibition of the Olympic Museum, seen in Lausanne on March 12, 2005

[16] The creed is attributed to Pierre de Coubertin, cited here according to the Canadian Olympic Committee (COC)

[17] The final debt payment is reported to be made in 2006, thirty years after the Games took place in Montreal (compare, for example, CBC news 2006).

15) and media coverage was amplified by the spreading of new technologies, which made the Olympics even more interesting to private sponsors. This development made the Games more interesting for host cities as well, because the Olympics became an opportunity to present the host to the world –at potentially no cost.

In turn, Olympic Games have evolved from a regional interest to an international cultural performance (Kim 1987, 191). They have "blossomed beyond the sports dimension into a competition site showcasing the national strength of participating countries and serving as an opportunity for political, diplomatic, economic, social and cultural exchanges and an exhibition centre for all kinds of products" (Kim et al. 1989, 1).

Olympism is now utilised as part of a marketing strategy to promote the Games on the basis of their unique heritage and values. This promotion is partly directed at potential sponsors, because it is the positive image of the Olympics that corporate sponsors are capitalizing on to strengthen their own brands. Based on a survey conducted in several countries, an Olympic Image was developed to invoke concepts that people most commonly associated with the Olympics. These were identified as the "core values that the Olympic Games immediately communicate to the people of the world" (IOC 2002, 29), allowing Olympism to take on the characteristics "similar to a commercial brand" (IOC 2002, 29), rather than the characteristics of a historically grown basis.[18] That historically grown basis, though, has strong links to the concept of sustainability.

2.2.2 The Olympic Movement and sustainability

The Olympic Movement[19] and Olympic Games are based on values and concepts that overlap with the concept of sustainability. The hypothesis underlying the following argumentations is that if the concept of sustainability overlaps with Olympic values, synergic effects can be expected in promoting both. Also in this section, there is a brief outline with some examples of the Olympic Movement's commitment to sustainability. The International Olympic Committee is of special interest since, as the Olympic Movement's supreme authority, it sets the frame for the Olympic Movement's actions.

Olympic values

The Olympic Charter, which is the constitutional document of the Olympic Movement, sets out the main goal of the Olympic Movement as follows: "The goal of the Olympic Movement is to contribute to building a peaceful and better world by educating youth through sport practised in accordance with Olympism and its values." It also contains explanations about

[18] This is a critical development, because the process of deriving the Olympic Image may appear like choosing the values represented by the Games according to the criteria 'ease of communication' and 'commercial value', which could undermine their credibility.

[19] The Olympic Movement encompasses all organisations, athletes and other persons who agree to be guided by the Olympic Charter. The three main constituents of the Olympic Movement are the International Olympic Committee (IOC), the International Sports Federations (IFs) and the National Olympic Commitees (NOCs). It also includes the Organising Committees of the Olympic Games (OCOGs) (compare IOC 2004, 10).

Olympism, which comprises the central ideas and philosophy of the Olympic Movement. Four of Olympism's fundamental principles are outlined below[20]:

1. "Olympism is a philosophy of life, exalting and combining in a balanced whole the qualities of body, will and mind. Blending sport with culture and education, Olympism seeks to create a way of life based on the joy of effort, the educational value of good example and respect for universal fundamental ethical principles.
2. The goal of Olympism is to place sport at the service of the harmonious development of man, with a view to promoting a peaceful society concerned with the preservation of human dignity.
3. The practice of sport is a human right. Every individual must have the possibility of practising sport, without discrimination of any kind and in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity and fair play. (…)
4. Any form of discrimination with regard to a country or a person on grounds of race, religion, politics, gender or otherwise is incompatible with belonging to the Olympic Movement"

   (IOC 2004a, 9, *numbering differs from original source*).

Fundamentally, these selected principles of Olympism relate to the social features of sustainability. A spirit of friendship, solidarity and fair play, as well as abolishing discrimination are parts of Olympism and resonate clearly with the sustainability features of social cohesion, inclusion, and equal opportunity for all. Respect for ethical principles, peacefulness and the preservation of human dignity can also be interpreted as being part of the value base for a strong, healthy and just society that meets the diverse needs of all people in existing and future communities.

The principles of Olympism also lay out how the Olympic Movement sees itself contributing to building a society that endorses the mentioned values and concepts: blending sport with culture and education, cherishing effort and good examples, placing sport at the service of harmonious development of man, promoting peace, mutual understanding, friendship, solidarity and fair play and refraining from any kind of discrimination.

Though the Olympic Movement has only committed to sustainability, *as such,* in recent years, its value base can easily be related to sustainability concepts, particularly social sustainability. Even though the principles of Olympism do not contain statements about ecological features of sustainability, ecological implications could be derived from them. For example: The aim of a peaceful society is unlikely to be achieved under conditions of resource scarcities, particularly if these are accompanied by inequalities in resource allocation. Additionally, migration induced by local ecological degradation or environmental risks may pose threats to peace[21]. As such, striving for ecologically sustainable development

[20] The other principles relate to organisational matters of the Olympic Movement, which were not considered essential in this context.

[21] On April 17, 2007, the UN Security Council discussed climate change and its effects on humanity, thereby acknowledging it as a potential threat for peace (UN Security Council 2007)

would be a logical consequence from the vision of a peaceful society. Nevertheless, environmental concerns did not become part of the Olympic Charter as a consequence of a broadened understanding of Olympism, but rather from external pressure onto parts of the Olympic Movement[22].

The IOC created its own Agenda 21 document, which was endorsed by the whole Olympic Movement. In this document, the IOC points out that the "socio-economic aspect of Agenda 21 embodies the purpose of Olympism as described in the fundamental principles of the Olympic Charter, which is to 'place sport everywhere at the service of the harmonious development of man, with a view to encouraging the establishment of a peaceful society concerned with the preservation of human dignity'" (IOC 1999, 24). Additionally, in his foreword to the Olympic Movement's Agenda 21, then IOC President Samaranch states: "The promotion of sustainable development became one of the fundamental objectives of the Olympic Movement. This is in totally conformity with the goal of Olympism, which is to place everywhere sport at the harmonious development of man." And further, ". . . the Olympic Movement has the ability to play an active part in the taking of measures favouring sustainable development" (IOC 1999, 7).

This acknowledges the overlap between the concepts of Olympism and sustainability and the potential for synergies in the promotion of both concepts collectively.

Olympic commitment to sustainability

Since problems with air quality became apparent at the Games in Mexico City (1968), environmental issues have been part of the agenda at the Games' host cities. Nevertheless, actions remained superficial for several Olympiads[23]. The first Games to address environmental issues in a more comprehensive manner were the Lillehammer Winter Games (1994)[24]. Since 1994, subsequent to those Games and the environmental action undertaken, the IOC considers environment, along with sport and culture, to be the Olympic Movement's third pillar. It included statements relating to environmental considerations in the Olympic Charter in 1996. The Olympic Movement as a whole began to actively lessen its negative environmental impacts around the same time, due to the changes in the Charter, as well as in reaction to external pressures.[25]

On the social side, cities hosting the Olympic Games gradually came to realise that the revenue and marketing power of Olympic Games did not outweigh the negative social impacts (Deccio & Balaglu 2002). To address this failure, the role of the Games slowly shifted from promoting tourism –and thereby boosting economy– to stimulating urban

[22] Particularly induced by NGOs and interest groups at Olympic Games

[23] For example, trees from all around the world were planted in Munich (1972). The Los Angeles (1984) and Seoul (1988) organizing committees are reported to have discussed environmental issues, but no actions were taken.

[24] Followed by Atlanta (1998) and Nagano (1998) (compare Stubbs 2001, 4)

[25] Some organisations, like the International Skiing Federation (FIS), received considerable external pressure from NGOs, interest groups and, in some cases, government, and had started acting on environmental issues earlier.

renewal and re-imaging (Smith 2001, Whitelegg 2000). The IOC claims that Olympic Games may not be utilised for any purpose other than the interests of the Olympic Movement (IOC 2005b, 11). Nevertheless, it can be argued that urban renewal and re-imaging of host cities are part of the Olympic Movement's interests. If urban renewal and re-imaging are embedded in the promotion of Olympism and support reaching the Olympic Movement's goal, which is to "contribute to building a peaceful and better world" (IOC 2004a, 10), then such goals and activities can be considered in line with IOC requirements. To make the point even clearer: If urban renewal and re-imaging lead to more ecologically and socially sustainable cities, then there is no conflict for the host cities to utilise Olympic Games for non-Olympic interests.

To date, there are several IOC documents dealing with sustainability. These are[26]:

- the Olympic Charter (IOC 2004a)
- the Manual on Sport and the Environment (IOC 2005c)
- the Olympic Movement's Agenda 21(IOC 1999)
- the Torino Commitments (IOC 2003)
- the IOC Sustainability Guide (IOC 2007a)

The Charter determines the goal of the Olympic Movement as follows:

> "The goal of the Olympic Movement is to contribute to building a peaceful and better world by educating youth through sport practised in accordance with Olympism and its values." (IOC 2004a, 10)

Additionally,

> "the goal of Olympism is to place sport at the service of the harmonious development of man, with a view to promoting a peaceful society concerned with the preservation of human dignity." (IOC 2004a, 9)

Even though these statements do not explicitly refer to sustainable development, the values and goals related to Olympism describe aspects of sustainability, as expressed above.

The following statements explain aspects of the IOC's role, and they also relate to sustainability and the Olympic Games. The IOC's role includes:

[26] For reasons of completeness, the Olympic Games Study Commission's report to the 115th IOC session should be mentioned. It does not explicitly deal with sustainability, but can affect Olympic Games' sustainability, as it assesses the financial viability of Olympic Games and in turn proposes a template for compact Games (compare Olympic Games Study Commission 2003).

- "to encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly;
- to promote a positive legacy from the Olympic Games to the host cities and host countries;
- to encourage and support initiatives blending sport with culture and education;" (IOC 2004a, 12)

Though the inclusion of sustainability into the Charter and the creation of sustainability-related documents is a very positive sign, the real test is in how these documentations of goodwill manifest in actions. An important aspect to note is the phrasing of the commitments to sustainability, as included in the Olympic Movement's Agenda 21 and in the Manual on Sport and the Environment. They allow considerable leeway in their application. For example, the Olympic Agenda 21's objective is to "*encourage* members of the Movement to play an active part in the sustainable development of our planet" (IOC 1999, 21, emphasis added) and shall "invite all the members of the Olympic Movement (…) to comply with [its] recommendations (…) to the best of their ability and with due respect for their cultures, traditions and beliefs" (J. A. Samaranch in his foreword to the Olympic Movement's Agenda 21; IOC 1999, 8). Hence, these documents contain a set of suggestions, but no binding statements and are therefore not considered to be part of the IOC's strategic frame for the Olympic Movement in this report. The same applies to the other two mentioned documents, the Torino Commitments and the IOC Sustainability Guide.

The IOC also expresses its commitment to sustainability being addressed at the Olympic Games. The IOC requires cities bidding to host Olympic Games to make statements concerning environmental and social considerations in their candidate file. The bidding city has to lay out how it plans to deal with sustainability issues related to the Olympic Games (Balderstone 2001, 3). In recent years, sustainability issues seem to play an increasingly important role in bidding cities' attempts to win the right to host the Games – as judged from the extent to which sustainability is dealt with in candidate files. Both Vancouver and London (2010 and 2012) had placed a strong emphasis on sustainability in their candidate files, ultimately leading to successful bids.

When a city wins the right to host the Games, its candidate file becomes the basis for further planning. In London, the candidate file became part of the host city contract between the city and the IOC and thus, the promises made in that candidate file became legally binding[27]. While this is positive in the way that it forces representatives of the host city to consider sustainability issues, the downsides are that often the people producing the candidate file are different from the ones organising the Games. Furthermore, the host city contract can hardly

[27] This was also the case in Sydney (2000) (compare Stubbs 2001, 5). No evidence could be obtained as to whether a similar clause was part of earlier host city contracts as well.

be enforced[28]. As a result, the candidate file can have visionary character in terms of sustainability, but the reality may turn out to look quite different.

During the next stages of organising for Olympic Games, the IOC sends a coordination commission, which shall "oversee and assist the Organising Committee (OCOG) in the planning, construction, and implementation of the Olympic Games" (IOC 2007b). Despite the IOC's role to "encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly" (IOC 2004a, 12), this coordination commission does not necessarily comprise sustainability experts[29], who could offer support and ensure that the host city's sustainability promises are kept.

It can be concluded that despite the acknowledged overlap between Olympism and sustainability and the explicit inclusion of sustainability in official documents of the Olympic Movement, the application of sustainability considerations is not enforced in practice. The IOC encourages efforts towards sustainability, but does not seem to implement its stated commitment rigorously in the Olympic Movement.

Therefore, despite the Olympic Movement's documented commitment to Olympism and sustainability, the major responsibility to demonstrate concern for sustainability and promoting it at Olympic Games rests with the organising bodies and mainly depends on their own will and ability to do so. They determine the extent to which they commit to sustainability. The reasons for establishing a sustainability management system for Olympic Games can range from aiming at complying with legal standards, to avoiding risks (like liabilities from environmental degradation and loss of reputation associated with any kind of scandal), to making the strive towards a sustainable community part of the core reason for hosting the Games and thereby raising the bar for sustainability efforts at future Games (see section 2.2.3).

On a more positive note, it has to be said that in trying to avoid scandals, retain the Olympic Games' positive image (for continued sponsorship support) and outclass previous Games, sustainability considerations play a considerable role for organising bodies, based on public awareness and interest in sustainability issues. For example, Vancouver's bid committee indicated the following reasons for embracing sustainability:

- Global reality necessitates it
- The Olympic Movement is committed to it
- Local communities are increasingly incorporating it

[28] If a host city does not comply with the host city contract, i.e. by not realising the sustainability promises made in the candidate file, the IOC can withdraw the right to host the Games (IOC 2005b, 32). Nevertheless, the IOC has never used this right, because its mission includes ensuring the regular celebration of the Games (IOC 2004a, 11). It is almost impossible to find an alternative host at short notice. Withdrawing the Games would also mean useless investments and a loss of reputation for the city withdrawn from, as well as a loss of reputation for the IOC.

[29] See members of the coordination commissions and their professional backgrounds at http://www.olympic.org/uk/organisation/commissions/ogcc/index_uk.asp

- Citizens expect it

(Vancouver 2010 Bid Corporation 2003, 1)

2.2.3 Opportunities for sustainable development related to Olympic Games

This report is based on the conviction that Olympic Games present several unique opportunities to contribute to a sustainable society. The term 'opportunity' is defined here as "a favourable time, occasion or set of circumstances" (Crowther 1995, 778) for taking actions towards sustainability. These opportunities are rooted in the connection between Olympism and sustainability, as well as in the Olympic Games' character of a recurring mega-event that takes place in a different location each time.

The Olympic Games' unique history and their conceptual connection to sustainable development leads to synergies in promoting both Olympism and sustainability, as pointed out above. The IOC acknowledges this connection and encourages efforts to include sustainability consideration in the planning and staging of Olympic Games. As a result, striving towards sustainable Games is an idea that will hardly be challenged. Olympic Games present an immense opportunity to excel in terms of sustainable development, due to this absence of resistance.

The Olympic Games of modern times are a recurring event, which has been taking place for more than 100 years now[30]. This means that even though the Games are staged in different host cities, there is a potential to learn from previous Games and improve against the baseline established by their successes. Though there has been some critique regarding the resulting gigantism, as hosts tried to outclass previous Games in scale and visual impact (compare Olympic Games Study Commission 2003), positive effects can also be recorded. Firstly, the lasting impression of the environmental achievements of particularly Lillehammer (1994) and Sydney (2000), as well as recurring references to urban renewal in Barcelona (1992) and the increasing use of the Olympic as a trigger for urban improvements (compare Essex and Chalkley, 1998) indicate the importance of this baseline for a movement towards sustainable Games. Secondly, Olympic Games have proven to stimulate innovations[31] (compare Kim 1987), because organising and staging them poses new problems to the hosts, who create new solutions based on local culture and expertise, as well as utilising experiences from earlier Games (compare Abad 1995, 17). This presents an opportunity for the people working on organising and staging the Games to learn about sustainability and sustainable applications. The development of sustainable innovations also creates the option to pass them, and experiences regarding their use, from one host on to the next, where an adapted and improved version could be implemented. Considering the fact that host cities tend to be major focal points of tourists and media, these sustainable solutions are likely to gain attention and be spread further.

[30] With exceptions during war times

[31] Examples of innovations related to Olympic Games include: the sports page in newspapers (Stockholm 1912), slow-motion filming (Berlin 1936), advanced computers (Munich and Sapporo1972) and advanced communication devices (particularly Sapporo 1972)

To date, rising awareness of global and local sustainability issues has led the governing bodies of many metropolises to implement programmes aimed at moving their city towards being sustainable. Staging Olympic Games can stimulate urban renewal (compare Synadinos 2001) and help accelerate existing efforts (compare NAO 2007, 21). Therefore, Olympic Games can on the one hand help to "do in five or six years what had not been done in fifty" (Abad 1995, 11), making use of existing ideas, networks and strategies. On the other hand, the new problems related to the Games help to create new networks, ideas and strategies that can be utilized to solve future issues.

What makes the special flair of the Games is probably the excitement related to them after all, they are meant to "celebrate humanity" (compare IOC 2004b). In turn, many people wish to contribute and be part of the event, which becomes apparent, for example, in the huge numbers of volunteers: over 45,000 in Athens (IOC 2007c), 46,967 in Sydney (IOC 2007d), and expected 100,000 in Beijing (BOCOG 2007). Additionally, NGOs, interest groups and local residents can easily be motivated to become involved with planning and staging the event. Engaging with these numbers of people presents unique opportunities for spreading sustainability knowledge and awareness in the host city and beyond (compare Chernushenko et al. 2001, 79)

It can be concluded that Olympic Games present a number of opportunities to contribute to creating a sustainable society. It needs to be said, though, that these do not necessarily manifest in the anticipated results. Opportunities need to be utilised, which requires the determination and capacity to do so.

3 FRAME

This section sets out the frame for the findings by firstly describing Olympic Games' particular characteristics. These characteristics are determined by examining whether organising and staging the Games can be interpreted in terms of a project. This approach is based on the assumption that a project would present different challenges and opportunities for a sustainability management system than, for example, an industrial manufacturing process. Secondly, the functions of sustainability management systems are pointed out.

3.1 General characteristics of Olympic Games

First of all, the most striking aspect of staging Olympic Games is that it is a huge and complex undertaking. There are up to 10,500 Athletes competing in up to 301 events (Olympic Programme Commission 2002, 3), with about double as many media representatives and several thousands of volunteers and spectators attending[32]. Hosting an event like this requires an immense infrastructure in terms of transport, accommodation, competition venues, catering, utilities, energy and waste, as well as requiring detailed planning and organisation. It therefore requires a management system that is able to handle this massive task of coordinating all the different kinds of operations.

The second striking aspect is that the Games are held regularly, but each time in a different location. After being awarded to a host city, there are seven years of preparation time and four weeks of events[33]. After that, the host is left with the legacies. Consequently, the following section builds on the hypothesis that *Olympic Games have the characteristics of a project and this has an impact on the challenges and opportunities for their sustainability management system*. Thus, the following section analyses the Olympic Games according to generic characteristics of projects.

[32] For the Games in London 2012, up to 70,000 volunteers will be sought, 23,000 competitors and officials are expected to come and a total of 9.6 million tickets will be available for Olympic and Paralympic Games. (NAO 2007, 24)

[33] Two weeks of Olympic competitions, two weeks of Paralympic competitions, with a two week break in between

According to Bell & Morse (1999, 71), projects have the following characteristics:

1. Projects are linked to a single or a set of institutions.
2. Projects have a clear spatial dimension.
3. Projects have a clear life span.
4. The aim of a project is to introduce an improvement that is intended to last.
5. The goals of a project are clearly defined at the outset.
6. Funding for projects is provided for a finite period of time.

3.1.1 Organisational setting

Olympic Games are linked to a set of institutions. These can have different legal statuses, different corporate cultures and different interests in the Games. Generally, Olympic Games are owned by the IOC (IOC 2004a, 17) and are organised by a set of institutions that include representatives of national government, local government, the National Olympic Committee (NOC), and an Organising Committee for the Olympic Games (OCOG). Additionally, there are contractors fulfilling operative tasks like building the venues.

The IOC awards the right to host Olympic Games to a city (IOC 2004a, 69) and enters a host-city contract with it. The Games themselves and all rights and data relating to the Games remain property of the IOC (IOC 2004a, 17). Therefore, the IOC can prescribe rules according to which the Games must be held. Generally, the IOC refrains from prescribing Olympic Games in too much detail, in order to maintain the individuality of each host and each Games. Nevertheless, the Olympic Charter sets out a frame for the Games, which is then filled individually by the hosts. This frame includes aspects of sustainability (as pointed out in section 2.2):

- They shall be held according to the IOC's encouragement and support for a responsible concern for environmental issues and for promoting sustainable development in sport.
- They shall leave a positive legacy to the host cities and host countries.
- They shall follow the IOC's encouragement and support for initiatives blending sport with culture and education.

  (compare IOC 2004a, 12)

The IOC's interest in the Games as documented in the Charter is to contribute to achieving the Olympic Movement's aims, that means:

- The Olympic Games shall "contribute to building a peaceful and better world by educating youth through sport practised in accordance with Olympism and its values." (IOC 2004a, 10)
- They are meant to place "sport at the service of the harmonious development of man, with a view to promoting a peaceful society concerned with the preservation of human dignity." (IOC 2004a, 9)

The IOC also requires the hosts to comply with technical standards[34] set by the International Sports Federations (IF) for their respective sports (IOC 2004a, 71). Additionally, the Games help fund the Olympic Movement as a whole by attracting sponsorship and generating broadcasting revenues, which are distributed to the Movement (IOC 2007e). It can therefore be assumed that the IOC's interests in the Games include their attractiveness to sponsors and spectators.

National government is usually involved in the planning for the Games, as it has an interest in promoting the country on a global scale[35]. Government may also have an interest in the sustainability of its nation, that is, a healthy, safe and just society living within environmental boundaries (UK Government 2005, 16) and therefore support efforts to create sustainable Olympics, e.g. for their value as a good example. It can be assumed that a range of governmental departments would hope for the Games to help achieve their existing aims. Therefore, each government department may vote for its own objectives to be emphasised in the planning for the Olympics.

The host city's governing bodies are usually very much involved in planning and staging the Olympics, because the host receives the most direct impacts. These bodies can be assumed to be primarily concerned with benefits for the host city. These are, for example, improved infrastructure, skills, economic gains, as well as regeneration of natural and built environment (compare Mayor of London 2007a).

For the National Olympic Committee (NOC), promoting sports and sports participation is the potentially most important issue, as well as contributing to the goals of the Olympic Movement by presenting an exceptional sporting festival to the world.

One or more organizations are established for the sole purpose of fulfilling tasks related to planning and coordination for the Games. This is the organizing committee as required by the IOC (IOC 2007f) and other organizations as deemed necessary.

---

[34] These relate to the size and shape of sporting venues, for example.

[35] Examples of promotional effects of sports events include:

Japan used the Olympic Games in 1964 to present itself as a powerful, non-threatening, artistically refined and up-to-date nation, overcoming the effects of World War II. (Kim 1987, 201)

A Polish study on the effects of sports on international relations concluded that "sports have become one of the primary elements on whose basis the Republic of Poland signs international agreements with its neighbours." (Moska 2003, 343)

The organizations referred to above are mainly involved in planning and coordination activities for the Games. Operative tasks are carried out by contractors (with sub-contractors), suppliers and sponsors[36] .

Operating in a network of organisations poses great challenges for a sustainability management system, because it needs to be integrated across organisational boundaries, in diverse corporate cultures and into several policies.

3.1.2 Spatial dimension

The Games have a clear spatial dimension: one city. The Olympic Charter does not allow for several cities to host the Games collectively[37] (IOC 2004a, 73). Nevertheless, there are effects on the wider surroundings of the host city, which range from diverted funding and workforce to enhanced global interest in the country, to improved access to innovations, to used-up landfill capacities and to others. These effects are mainly rooted in the host city's existing interconnectedness with its surroundings, rather than being deliberately created for Olympic Games. Thus, they have to be considered in managing sustainability for the Olympics, but in many cases they can only be influenced to a limited extend by the Games' organisers. The influences on areas other than the host city are not considered in this study.

3.1.3 Duration

The Games have a clear life span. Each host city has seven years from being awarded the right to host the Games until the actual staging. The dates for the opening and closing ceremonies are defined shortly after the bid has been won. They function as unmovable deadline for the preparations (IOC 2004a, 69). From the opening ceremony onwards, there are about two weeks of Olympic competitions, two weeks break and two weeks of Paralympic competitions. This is usually a very tight schedule for host cities, particularly with regards to the construction of venues and improvements to transport infrastructure. It basically does not leave room for any mistakes or problems.

3.1.4 Intended legacy

The Games' aim is to introduce an improvement that is intended to last. Though the Olympic Games duration is for four weeks only, the main arguments for hosting them often refer to the lasting legacy. For example, recent Olympic planning includes regeneration projects for deteriorated nature (i.e. Sydney 2000 – Homebush Bay) or deprived neighbourhoods (i.e. London 2012 – Lee Valley).

---

[36] The participants of the IOC Top sponsorship programme have exclusive rights for providing in-kind sponsoring, as well as services for and at the Games (IOC 2007g)

[37] With exceptions if this proves to be completely impossible (IOC 2004a, 73).

3.1.5 Strategy development

The goals regarding Olympic Games are clearly defined at the outset. The aim of Games planning is obviously to stage the Games, but can also include legacy aims. As a part of the bidding process, the IOC requires host cities to specify how they are planning to realise everything necessary for hosting the Games, including specific environmental and social considerations.

To address sustainability in a strategic and integrated way the IOC has started to include sustainability into the overall strategy by integrating sustainability explicitly into the Charter (see section 2.2) while other aspects of sustainability are mentioned in the Charter implicitly through Olympism (see section 2.2.2 for the connection between Olympism and sustainability). The host city contract between the IOC and London reinforces the statements made in the Charter (compare IOC 2005b). Additional IOC documents about aspects of sustainability are not considered to be part of the strategic frame here, because compliance is not mandatory. These documents merely "invite to comply with the recommendations" (IOC 1999, 8) for the provision of sustainability. Thus, responsibility to include sustainability in the strategy rests with the people involved in the bidding process, as well as in the early stages of the planning.

3.1.6 Funding

Funding is provided for a finite period of time. Olympic Games mainly rely on sponsorship and most times on government funding as well. As a result, fixed budgets are provided during a specific period of time. The public will be especially interested in knowing how exactly this budget is used, because it is partly tax money that is either acquired by raised taxes or diverted away from other government functions[38]. The funding coming from public sources is usually fixed from the outset, while additional funds from private sources can be acquired along the way. As the IOC requires the host country's government to underwrite the cost for the Games (IOC 2005, 12), the government has to pay for cost overruns. Nevertheless, it is difficult to increase the budget significantly during planning phases for the Olympics[39]. Therefore, transparency is particularly important; especially the lasting social and ecological advantages for the host city need to be communicated.

3.1.7 Conclusion

It can be concluded that Olympic Games have the characteristics of a project. This is assumed to have implications on the challenges and opportunities for the sustainability management system, mainly because most processes are not repetitive – they rather cumulate in the event itself and cease shortly after.

---

[38] The only Olympic Games that almost entirely relied on private funding was Los Angeles (1984) (Miller 1992).

[39] Organisers for the Olympic Games in Vancouver (2010) have to deal with this issue, because they did not advance in land acquisition for the Games fast enough. In 2006, property prices greatly increased, and the organisers had to buy land for much higher prices than anticipated. (Simon, B. 2006)

3.2 Managing sustainability

Fully addressing global sustainable development can be characterised as a socially and factually complex[40] undertaking, which cannot be accomplished by individual actors (compare Heinrichs 2005, 711). Nevertheless, individual actors and organisations can address their own impacts on sustainability issues (Sabapathy 2007, 9). As they are embedded in social and ecological systems (see section 2.1), addressing their own impacts necessitates communication and coordination with other actors and organisations, with whom they are materially or immaterially interrelated, i.e. their stakeholders[41]. On the one hand, stakeholders' claims need to be satisfied; otherwise they might withdraw their support and compromise the continuance of the organisation's operations (compare Schaltegger et al. 2003, 36f). On the other hand, stakeholders can provide valuable knowledge and support for addressing sustainability issues.

3.2.1 Defining the term 'sustainability management system'

First of all, using the term 'management' assumes that there is someone who manages, as well as something to be managed (compare Schaltegger et al. 2003, 11). Management can then be defined as "the process of dealing with or controlling people or things" (Crowther 1995, 680). In this sense, the term 'sustainability management' is misleading, because an individual organisation or management system cannot manage all aspects of global sustainability, it manages the organisation's impacts on sustainability (compare Sabapathy 2007, 9).

In the following sections, sustainability management will be understood as management that deals with the organisation's long, medium and short-term impacts on sustainability. This includes all management actions that aim at contributing[42] to achieving a strong, healthy and just society living within environmental limits[43]. All other aspects of management are summarised as 'conventional' management.

A sustainability management system is a tool to identify and address an organisation's impacts on sustainability (compare European Commission 2007). It comprises the group of actors, the organisational structures (compare Schaltegger et al. 2002, 1) and the framework of processes and procedures (European Commission 2007) that deal with sustainability impacts and the integration of sustainability considerations into conventional management (compare Schaltegger et al. 2002, 1).

[40] Its social complexity stems from our sophisticated and diverse society with its multiple needs, perspectives and issues. The factual complexity is rooted in the enormous number of interrelated problems that are associated with the concept of sustainable development.

[41] Stakeholders are all individuals or groups that have material or immaterial stakes in the organisation (Freeman 1984, 25).

[42] Contributing in this context means maximising positive impacts as well as minimising negative impacts.

[43] According to the UK government's definition of sustainable development (see UK Government 2005, 16).

A sustainability management system institutionalises sustainability management, to ensure that sustainability considerations become an integral part of conventional management (compare Schaltegger et al. 2003, 32) and that sustainability impacts are addressed in a systematic and strategic way.

3.2.2 Functions of sustainability management systems

Sustainability impacts relate to all organisational processes, whether they are production processes or support processes (such as financing, accounting or controlling). Thus, sustainability management‘s functions cannot necessarily be related to prevailing classifications of organisational functions. Though this section is structured according to seemingly distinct sustainability management functions, it has to be noted that the functions are interrelated.

Providing direction and structure

To handle an issue as complex as sustainability, direction and adequate structure are needed. Giving direction means pointing out what success means for the organisation in terms of sustainability. With that vision of success, internal and external stakeholders can set priorities for action and work towards the same aims (compare Collins & Porras 1994), which allows addressing sustainability in a systematic way. In most cases, the direction is recorded in the shape of a vision or mission statement. Based on the vision of success, sustainability management systems can allow for planning ahead and avoid sustainability-related incidents and accidents, as well as including the option to react quickly to potential issues (European Commission 2007).

Additionally, pointing out a clear direction early in a process reduces the risk of delays and increased costs at a later stage (NAO 2007, 8). Nevertheless, there are usually changes along the way, because some new conditions emerge and some intended outcomes are not realised (compare Johnson et al. 2005, 565f).

The sustainability management provides the structure for action towards the given direction (compare European Commission 2007). ‘Structure’ comprises the structural design (i.e. roles, responsibilities and lines of reporting), processes for continuous improvement and relationships (i.e. formal and informal connections between people both inside and outside the organisation) (compare Johnson et al. 2005, 396). Consistently taking decisions that lead to actions towards the same direction makes an organisation predictable to a certain degree, thereby increasing stakeholders’ confidence.

Ongoing interaction with stakeholders

Though interaction with stakeholders is by no means an organisational function that is exclusively fulfilled by the sustainability management system, it is a particularly important function with regards to sustainability. Stakeholders are increasingly aware of sustainability issues and an organisation will only be able to continue its operations as long as its

stakeholders consider them legitimate and prolong the organisation's 'license to operate' (compare, for example, Severin 2005, 67).

In order to satisfy their stakeholder's claims, organisations need to find ways to communicate with them, and to involve them in taking decisions. Communication is crucial to be informed about the values and preferences of one's stakeholders, thereby understanding what exactly their claims are, and being able to anticipate their reaction to potential problems.[44] Involving stakeholders in decision-making leads to better decisions (Schmidheiny 1992, 86) and is necessary to obtain agreements that are lasting and socially accepted (compare Heinrichs 2005, 710). Additionally, it creates a sense of ownership for the stakeholders and thereby encourages their ongoing support for actions towards sustainability (compare Chernushenko et al. 2001, 47-53).

Incorporating stakeholder's ideas, preferences and opinions in decision-making tends to occur in relation to specific issues, rather than in relation to single stakeholders. For example, an issue like building a new facility requires communicating with diverse stakeholders. If stakeholders are involved in decision-making regarding an issue like this, the aspired outcome of such an involvement process is a solution, which satisfies all stakeholders. In this case, sustainability management is not only responsible for communication with stakeholders, but also for facilitating the communication among stakeholders. Facilitation is needed, because "what people understand by sustainable development is referenced to the relationships of which they are a part and through which they learn and are socialised" (Clarke 1998, 166), which is different for different stakeholders.

At the same time, sustainability management can include influencing the stakeholders towards improving their own sustainability-related practices (compare Chernushenko et al. 2001, 78ff). In particular, sponsorship, procurement and contracting offer the potential to influence stakeholders towards incorporating sustainability considerations into their own operations.

Inducing organisational change

Obviously, the function of a sustainability management system is not to actually change the organisation by itself. Its task is to question the status quo in a way that encourages and inspires change. Organisational change is needed in relation to sustainable development for two reasons, as pointed out below.

Firstly, most organisations need to change in order to deliver their greatest possible contribution to achieving a strong, healthy and just society living within environmental limits. Therefore, sustainability management systems have to be able to harness an organisation's ability to learn, respond, adapt, and reinvent itself (compare Spencer-Cooke 1998, 103).

[44] Being able to anticipate stakeholder behaviour may require an early warning system, screening diverse information for trends in public perception regarding sustainability issues. Such a system helps to avoid crisis situations, which may destroy the credibility that an organisation has built over the years (compare Severin 2005, 70).

Secondly, as the term sustainable *development* suggests, the aim of sustainability management systems is not for the organisation to reach a certain, sustainable state, but rather to find a sustainable way of developing further. Thus, the organisation and its sustainability management system need to be flexible and able to cope with constantly changing variables in a dynamic environment (Spencer-Cooke 1998, 103).

Integrating sustainability considerations and conventional management

The integration has two facets: Firstly, integrating sustainability considerations into conventional management and secondly, integrating economic considerations into sustainability management.

Sustainability is a topic with many diverse issues related to it. Therefore, it cannot be managed by a single department; it rather needs to be integrated in the conventional strategy and management of the organisation (compare Schaltegger et al. 2003, 31-32). Integrating sustainability considerations into conventional management allows for utilising synergies. These may occur, for example, related to stakeholder communication: Including sustainability in the general stakeholder communication strategy is less of an effort than having separate lines of sustainability communication and other stakeholder communication. Sustainability management's task is then to ensure that this integration actually takes place.

On the other hand, sustainability management is subject to restrictions, just as much as conventional management. These include, for example, restrictions of time and budget. Therefore, methods from conventional management can be utilised in sustainability management, to ensure that sustainability aspects are managed systematically and economically (compare Schaltegger et al. 2002, 1) within given restrictions. Utilising methods and ideas from conventional management is crucial to ensure the long-term viability of the organisation and sustainability management within it (Robèrt et al. 2004, xxix).

Ensuring accessibility of required sustainability knowledge

Incorporating sustainability considerations into all decision making means to allocate responsibility for sustainable development to all levels and all functional areas. For the staff to be able to take on this responsibility, the necessary knowledge about sustainability needs to be easily available (compare Chernushenko et al. 2001, 49). Sustainability management provides access to expert knowledge where necessary, as well as creating the possibilities for staff to learn about sustainability as required.

Monitoring and evaluating progress

To assess an organisation's progress towards delivering its greatest possible contribution to sustainable development, a systematic, documented, periodic and objective monitoring and evaluation is needed (Schmidheiny 1992, 94). Monitoring and evaluation allow

acknowledging achievements and spotting aspects that need further attention, thereby revealing the room for improvement (compare Chernushenko et al. 2001, 57).

4 FINDINGS

In the context of this study, a successful sustainability management system is defined as a sustainability management system that enables coping with specific challenges in trying to achieve sustainable Games and a sustainable legacy. Therefore, this chapter derives the specific challenges for sustainability management for Olympic Games and briefly presents examples of how these challenges can be addressed.

4.1 Challenges

The term ‘challenge’ can generally be defined as a difficult or extraordinary task that is appealing to take on (compare Crowther 1995, 174). In this study, the challenges are determined within the frame that has been set out above: the functions of sustainability management systems on the one hand and the unique organisational characteristics of Olympic Games on the other.

4.1.1 Providing direction and structure

Providing direction, structure and consistency in terms of sustainability requires the integration of sustainability considerations on a strategic level (compare Cernushenko et al. 2001, 51). On the highest level, this means integrating sustainability into the core purpose and core values of an organisation. The core purpose of an organisation communicates the timeless and enduring benefits of the operation. It highlights the importance of the organisation and justifies the existence of the organisation in society. Core values describe what the organisation represents today and what its members would like it to represent in the future. They describe the uniqueness of the organisation’s personality (compare Collins & Porras 1994). Both core purpose and core values are often written down in the shape of a vision or mission statement. They basically represent a definition of success for the organisation. In turn, this high-level description of success for an organisation has to be broken down into strategies and action plans, which also include sustainability considerations. These provide structure and consistency for the daily operations.

In addition to embedding sustainability into the strategic thinking as described above, it should also be built into the structural design of the organisation. In particular, the structure needs to allow for interdisciplinary solutions, which are typically needed in the realm of sustainability, due to the complexity and interrelatedness of sustainability issues. Additionally, it needs to be abundantly clear that everyone in the organisation is responsible for sustainability within their field of expertise. At the same time, sustainability managers should be strategically placed to lobby others for sustainability. Without someone having the responsibility to lobby other managers, there is a danger that sustainability interests will not be integrated into business thinking (compare Schaltegger et al. 2003, 32).

For Olympic Games, this presents several challenges:

- As the Games are organised by a set of organisations, the core purpose or vision of the operation has to be compelling for all of them. A clear vision of what “sustainable Games” and “sustainable legacy” mean, is crucial to providing a direction, in which the organising bodies can be heading consistently. The challenge is to create a vision that motivates all the members of the organising bodies for working towards sustainable Games and a sustainable legacy.
- At the same time, the vision has to seem achievable within the given timeframe and proposed budget, which points at the challenge to present strategies for achieving the vision very early in the process.[45]
- In the case of the Olympics, the core values describe the personality of a project rather than the personality of a single organisation. The core values need to be particularly clear and need to resonate with the members of the organising bodies, in order to provide a sound basis for collectively striving towards sustainable Games and a sustainable legacy.
- In the structural design, the authority to lobby for sustainable solutions has to be allocated strategically. The challenge for Olympic Games is to do this within a set of partly pre-existing organisations.
- Despite the complexity of planning and staging Olympic Games, the organisational structure has to guarantee quick and consistent decision making, to ensure delivery on time. Nevertheless, sustainable solutions can only be developed in a co-operative manner, including stakeholders from different organising bodies and beyond[46]. The challenge is to establish co-operative decision making processes that do not compromise timely decision making or consistency.

4.1.2 Ongoing interaction with stakeholders

Many sustainability issues are too complex and intractable to be solved by a single entity. To deal with these issues, collaboration with government, businesses, non governmental organisations (NGOs), interest groups and civil society is necessary (compare Sabapathy 2007, 15). For Olympic Games, interaction with stakeholders is particularly important, because they heavily depend on their stakeholders. This dependency is rooted in the fact that a lot of the resources that are used cannot be obtained from normal competitive markets. For example: voluntary workers, the sports venues, the different types of contributions from sponsors and the need for the host city’s citizens’ confidence and support (Abad 1995, 16) show this dependence on external agents and the need for their predisposition to collaborate in the project (compare Botella 1995, 9).

[45] Which is typical for projects, as pointed out above.

[46] For example, questions regarding a sustainable stadium have to be discussed with at least the people planning it, building it, using it in Games mode and using it in legacy.

The resulting challenges for Olympic organising bodies include the following:

- Given the complexity of planning and staging the event and the resulting complexity of the organisational network engaged in the project, it is difficult for stakeholders to understand how they can get involved and who they should engage with. Participative processes require 'forums of exchange that are organised for the purpose of facilitating communication between government, citizens, stakeholders and interest groups, and business regarding a specific decision or problem' (Renn et al. 1995, 2). Therefore, the challenge is to organise stakeholder interaction in a way that is focused on certain issues rather than certain organising bodies.
- While stakeholder participation in decision making is crucial for creating sustainable Games and a sustainable legacy, limitations of time and budget build a very tight frame for these processes. The challenge therefore is to create processes of participation, which neither compromise on time or cost nor on the quality of the obtained solutions.

4.1.3 Inducing organisational change

As pointed out above, organisational change with regards to sustainability has two facets: Firstly, inducing change towards sustainable operations and secondly, adapting to changing variables in a dynamic environment.

The aspect of inducing change towards sustainable operations hints at processes of continuous improvement as proposed, for example, in the Environmental Management and Audit Scheme (EMAS). The idea of continuous improvement was developed with repetitive industrial processes in mind: Assuming that it is impossible to foresee everything and plan the perfect process, the idea of iterative management processes was developed. This means improving a process each time it is run; based on the difficulties observed during the previous cycle (compare Deming 1982, 88). Due to its project-like characteristics, though, organising and staging Olympic Games includes very few repetitive processes. This means that the potential for continuous improvement towards sustainable operations is limited. Nevertheless, organising Olympic Games takes seven years (counting from winning the bid), within which innovations that have the potential to improve the Games towards being sustainable are likely to occur.

The aspect of adaptation to a dynamic environment is particularly important in the realm of organising and staging Olympic Games, because a set of diverse tasks, out of which many are to be carried out consecutively, has to be managed. For example, tasks include building infrastructure, fitting out venues and staging an event. Thus, the operations and the related network of relations (at least partly) change over time. At the same time, particularly the organising committee (OCOG)[47] continually grows until the Games, and is wound up shortly after. Therefore, reassignments of staff and budget resources, variations in the designating

[47] A body that host cities have to establish in order to stage the Games, as required by the IOC.

of responsibilities and in the activities calendar occur regularly (compare Botella 1995, 6). The sustainability management system has to be built in a way that can cope with this continuous change.

For Olympic Games, the following challenges result from the need for change:

- For Olympic Games, many processes occur only once and changes within a running process can result in delays and, in turn, put pressure on cost or quality of delivery[48] (compare NAO 2007, 7). Thus, the challenge is to include the potential for innovation and improvement towards sustainability in a way that does not compromise time, cost or quality.
- The challenge for a sustainability management system is to ensure consistency in the decision making for sustainable Games and a sustainable legacy, despite the transformations that inevitably take place.

4.1.4 Integrating sustainability considerations and conventional management

The integration of sustainability into strategy and structure has already been dealt with at the beginning of this section. Additionally, sustainability has to be ingrained in the day-to-day decision making and become part of the organisational culture, if the aim is to achieve sustainable Games and a sustainable legacy.

As Olympic Games are not organised by a single entity, but rather a set of organisations, which are closely related to a network of stakeholders (see 4.1.2), organisational cultures and decision making processes may be inhomogeneous. An important aspect of integrating sustainability into conventional management across organisational boundaries is contracting, because some of the stakeholders relate to the organising bodies on a contractual basis, e.g. in sponsorship and procurement.

Contracting means that responsibility for projects (e.g. building venues) is split: the organising bodies can concentrate on the initial planning of projects, dialogue with future users when possible and control of development (compare Pastor & Lopez 1995, 8), while the realisation is acted out by enterprises with the necessary experience. Therefore, the contractual basis and the relationship between the respective organising body and contractual partner have to be designed to ensure the achievement of sustainability objectives, without limiting the contractors in utilising their experience and capacity for innovation.

[48] Reasons for the connection between delays and cost or quality include a weakened negotiation position and increased levels of inflation in the construction industry resulting from unplanned surges in demand (NAO 2007, 9).

This presents the following challenge:

- When striving towards sustainable Games and a sustainable legacy, it is crucial to consistently integrate sustainability considerations into everyday processes, e.g. decision making, procurement and sponsorship relations, as much as knowledge management. The challenge at Olympic Games is to ensure this happens, despite organisational boundaries.

The other facet of the integration is to integrate economic thinking into sustainability management. In this sense, striving for sustainable Games and a sustainable legacy includes considerations regarding financial viability and timeframes. Both budget and timeframe differ largely for the two aspects 'sustainable Games' and 'sustainable legacy': Legacy inherently requires long-term thinking, while staging Games is clearly restricted to seven years of preparation (counting from winning the bid) and four weeks of competitions. The budget for the Olympic Games is limited in time and scope to the Games themselves. This means that 'Olympic' funding typically ceases with the end of the Games and cannot be used for 'non-Olympic' purposes (such as general transport infrastructure improvements, compare NAO 2007, 18).

These restrictions in time and budget can be difficult to integrate with the idea of a lasting sustainable legacy, considering, for example, that construction costs make up only 20% of the whole-life cost for a stadium (Meinel 2001, 2) and that the organisation owning the building before and during the Games may differ from the one owning it for legacy use. Additionally, infrastructure and venues may serve different purposes during the Games and in legacy. According to Synadinos (2001, 39-40), the multiplicity of functions of a building is what gives it life in the longer term. Thus, he concludes, buildings constructed for the Olympic Games have to be integrated in a flexible programme of post-Olympic use, which incorporates the new buildings into the everyday functions of the city.

This presents several challenges for sustainability management, which include the following:

- The challenge is to make what is useful for the Games coincide with what is also a useful legacy for the city (compare Abad 1995, 14).
- Integrating conventional management means in this case, that if projects are to outlast the Games, they need to be sustained based on non-Olympic funding sources afterwards. The challenge is to find ways of creating a smooth transition from projects and buildings in Games-mode to legacy mode.

4.1.5 Ensuring accessibility of required sustainability knowledge

The following definition of knowledge is used in this context:

> "*Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the mind of knowers*." (Davenport & Prusak 1998, 5)

Based on this definition, it can be concluded that sustainability knowledge can only partly be made accessible by embedding it into documentation, into organisational routines, processes and practices. Making it fully accessible requires its application in “the mind of knowers”, that is, it takes the help of people with knowledge about sustainability and its applications.

By design, organising and staging Olympic Games, and particularly *sustainable* Olympic Games, comprise unique problems that need integrated solutions. This means that people with different organisational and professional backgrounds have to work together to create these solutions (compare Botella 1995, 6). In some cases, finding the solution also requires input from external stakeholders. In any case, if sustainability considerations are to be integrated in decision-making, sustainability knowledge needs to be accessible to decision-makers, whether solutions and decisions are derived in groups or by individuals. Based on the definition of knowledge as mentioned above, it can be made accessible by means of attending specialists. Additionally, the availability of training related to sustainability, supported by options to acquire additional knowledge (e.g. a library) can help to further the overall level of available sustainability knowledge.

A potential problem in interdisciplinary groups is that communication barriers exist, due to diverse backgrounds regarding expertise and organisational culture. Concerning sustainability, Clarke (1998, 166) points out that “what people understand by sustainable development is referenced to the relationships of which they are a part and through which they learn and are socialised”. Therefore, sustainability management not only needs to assist in providing or creating necessary sustainability knowledge, it also needs to facilitate communication about sustainability issues.

The resulting challenges for Olympic Games include the following:

- Making sustainability knowledge accessible across organisational boundaries
- Supporting the development of sustainable solutions (within time and budget constraints) by supporting the communication of people who perhaps have a different understanding of the issue at hand

4.1.6 Monitoring and evaluating progress

The systematic, documented, periodic and objective monitoring and evaluation of progress towards sustainability is needed to ensure achievement of sustainability objectives (Schmidheiny 1992, 94). Monitoring includes recording information to track performance, relevant operational controls, and conformance with objectives and targets (compare ISO 2002). Monitoring sustainability in the realm of Olympic Games relates to a host of diverse processes, operated by different organisations within different timeframes. Given the diversity among the Olympic organising bodies, as well as the multiple stakeholders and interested parties, monitoring and evaluation poses challenges, including the following:

- Establishing a consistent monitoring and evaluation system across organisational boundaries (including contractors, suppliers and sponsors).

- Communicating the outcomes of the monitoring and evaluation process in a way that is credible, relevant to the needs and expectations of the multiple stakeholders and understandable without being vague (compare Schmidheiny 1992, 94)

4.2 Addressing the challenges

This section provides examples of how the challenges can be addressed. The examples are mainly taken from the Olympic Games in London. Where applicable, examples from other Olympic Games are added. Each example is briefly discussed for its potential to fully address the challenge.

4.2.1 Providing direction and structure

***Challenge**: Creating a vision that motivates all the members of the organising bodies for working towards sustainable Games and a sustainable legacy.*

***Example**:* The vision of "great Games" in London's candidate file includes a commitment to principles of sustainable development (London 2012 Bid Committee 2005a, 11). These principles are detailed as zero carbon, zero waste, sustainable transport, local and sustainable materials, local and sustainable food, sustainable water, natural habitats and wildlife, culture and heritage, equity and fair trade, and health and happiness (London 2012 Bid Committee 2005b, 4)[49]. The vision calls Olympic Games, which are adhering to the named principles, "One Planet Olympics".

The "One planet" concept alludes to the earth's capacity to provide a limited amount of resources. It references a study, according to which it would take three earths to provide sufficient amounts of resources to sustain humanity, if everyone was to live like UK citizens currently do (London 2012 Bid Committee 2005b, 2).

After the bid had been won, the following vision for the London 2012 Games has been developed: "*To host an inspirational, safe and inclusive Olympic and Paralympic Games and leave a sustainable legacy for London and the UK*" (London2012 2006). This vision resonates with the organising bodies' respective visions[50] in the following ways:

- It relates to the UK government's sustainability definition's principles of safety, social cohesion and inclusion (compare UK Government 2005, 16), as well as to the government's general commitment to sustainable development in the UK. More specifically, the vision relates to the aim of the government's Department for Culture, Media and Sport (DCMS), which includes improving "the quality of life for all through cultural [and] sporting activities and support the pursuit of excellence..." (DCMS 2004, 4), particularly through the idea of hosting inspirational and inclusive Games.

[49] The principles have been developed in conjunction with two NGOs: BioRegional and WWF.

[50] The bodies, which have been established solely for the purpose of organising and staging the Games (i.e. LOCOG, ODA, and Olympic Board), endorsed the vision as stated above.

- It relates to the Mayor's vision of London as an "exemplary sustainable world city" by promising a sustainable legacy for the city, as well as relating to the Mayor's vision's element of social inclusivity (compare Mayor of London 2007b)
- It relates to the British Olympic Association's and IOC coordination commission's support for sustainable Games[51], to their commitment to refraining from discrimination, as well as to their aim of contributing to a peaceful world (compare IOC 2004a, 9).

Discussion: Taking a closer look at the phrasing in the candidate file, it aims at moving *towards* "One Planet Olympics". Thus, the London 2012 Games are not meant to be "One Planet Olympics", but rather the next step on the way towards achieving "One Planet Olympics" (London 2012 Bid Committee 2005b, 2). So in fact, "One Planet Olympics" is a vision for future Games. In this case, though, the One Planet Principles merely describe areas for action, rather than a vision to be achieved for the 2012 Olympics. This is in line with the vision statement, which explicitly refers to sustainability only with regard to the legacy of the Games. It can be questioned in how far this vision conveys a sense of urgency that spurs people into action for sustainability. However, it does provide a sense of direction towards sustainability and resonates with existing visions. Therefore, it offers the potential to use the Olympics for accelerating the achievement of these. The vision for the Olympics can therefore be assumed to be meaningful to each of the organising bodies.

Challenge: *Presenting strategies very early in the process of organising the Games, which make clear how the vision is going to be achieved.*

Example: The candidate file already comprises a description of the sustainability management system, as well as some focus areas for its work (compare London 2012 Bid Committee 2005a, 65 and 73-87). It specifically points out that the organizing bodies will enhance delivery of the Games through environmental excellence, regenerate east London communities and their environment, embed sustainability in all planning and implementation and demonstrate sustainable solutions for global problems (London 2012 Bid Committee 2005a, 65).

After the bid had been won, the question of how these promises could be kept had to be answered quickly. Therefore, the vision of *hosting inspirational, safe and inclusive Olympic and Paralympic Games and leave a sustainable legacy for London and the UK* was developed by the Olympic Board[52], which is responsible for ensuring the delivery of the Games and for ensuring that a sustainable legacy is achieved. It oversees the Olympic programme (see appendix 1). The vision has been broken down into strategic objectives and

[51] As determined in the Olympic Charter that guides these bodies.

[52] The Board comprises representatives of the Secretary of State for Culture, Media and Sport, the Mayor of London, and the Chairs of the British Olympic Association and LOCOG. The Chair of the Olympic Delivery Authority attends Board meetings as a non-voting member (see appendix 1)

sub-objectives (see appendix 2). Responsibility for each objective has been allocated to a lead stakeholder among the organising bodies. These objectives define success for the London Olympics in some detail, and they explicitly include the provision for sustainable Games and a sustainable legacy in the following ways:

- 1.10 Operate sustainable and environmentally responsible Olympic Games and Paralympic Games
- 2.2 Create infrastructure and facilities associated with Games venues to time and agreed budget in accordance with principles of sustainable development
- 2.6 Deliver agreed sustainable legacy plans for the Olympic Park and all venues
- 3.1.5 Ensure that the Games contribute to Sustainable Communities priorities, including the wider Thames Gateway
- 3.1.6 Agree and promote sustainable development and procurement policies, including commitments to sustainable energy and waste management goals
- 3.2.6 Agree and promote sustainable development and procurement policies, including commitments to sustainable energy and waste management goals

  (compare NAO 2007, 35-37)

Though the other sub-objectives do not explicitly refer to sustainable development, some of them relate to sustainability aspects, e.g. social benefits including in health and education.

Additionally, in summer 2006, the Olympic Board published a sustainability policy document, which points out that the sustainability efforts throughout the organising bodies will focus on five themes. The Board believes that the biggest sustainability impact can be achieved by focusing sustainability efforts upon five headline themes, which are: waste, climate change, biodiversity, healthy living and inclusion. Currently, the organising bodies are working on developing their own strategies and action plans, which spell out how each organising body is planning to achieve the respective objectives.

The Olympic Delivery Authority has already published a sustainability strategy (ODA 2007a), as well as a procurement policy (ODA 2007b)[53] that present its strategy towards achieving its mission to “deliver venues, facilities and infrastructure and transport on time and in a way that maximises the delivery of a sustainable legacy within the available budget” (ODA 2007a, 5). The ODA sustainability strategy defines sustainable development objectives for the ODA and describes in some detail how these are going to be achieved. The ODA is the first among the organising bodies to publish this kind of document, because its work is mainly related to construction, which is due to start soon. This summer, a sustainability policy document for the whole Olympic Programme will be published, which will incorporate what the ODA have published, as well as providing wider details of what LOCOG, involved

[53] As well as other, more specific, documents including references to the ODA’s sustainability commitment, for example the commitment to sustainable regeneration (ODA & LDA 2007)

government bodies and the Greater London Authority (GLA) are doing in the area of sustainable Games and a sustainable legacy (Expert A 2007, 8)[54].

Discussion: Considering that less than two years have passed since London won the bid to host the Games, the strategic frame for sustainability as sketched out above is quite advanced and detailed. This could be due to the involvement of sustainability experts already during the bid-phase. The early consensus about sustainability objectives and strategies could also be attributed partly to the fact that the vision is linked to existing visions of the organising bodies, rather than presenting an unattached, self-contained concept. Additionally, the clear timeframe of Olympic Games and recent struggles to adhere to timeframes for major events (e.g. Athens Olympics (BBC 2004)); Wembley football stadium (BBC 2006)), may have contributed to the notion that the item of controversy is beyond the possibilities of the calendar for these Olympic Games (compare Botella 1995, 17). In general, the intensive and early work on defining sustainability policies, objectives and strategies is likely to pay off during the course of the preparations for Games and legacy, because they provide a sense of direction and structure that confines the room for conflict later on in the process. In particular, setting clear targets early in the process will help to provide a basis for moving towards sustainable Games and a sustainable legacy (compare Stubbs 2001, 4).

It needs to be said, though, that the documents mentioned above (i.e. the candidate file, the objectives, the ODA sustainability strategy and the overall policy document) utilise diverse concepts and ideas of sustainability, which makes it hard to understand their connexion. The candidate file refers to the One Planet concept as well as to the Mayor's sustainability concept; the objectives are based on a three-dimensional model of sustainability (economic, ecological and social dimension); and the ODA sustainability strategy relates the five key areas from the overall sustainability policy to its own areas of action, which seem related to, but not entirely overlapping with the One Planet concept. This diversity impedes an easy understanding of how the diverse actions related to sustainability form a whole picture of sustainable Games and a sustainable legacy.

Challenge: *Establishing core values, which are particularly clear and resonate with the members of the organising bodies, thereby providing a sound basis for collectively striving towards sustainable Games and a sustainable legacy*

Example: Core values *as such* have not been published for the Olympic Games in London. However, based on fact that the vision statement references the ideals of inspiration, safety and inclusion, it can be assumed that these are valued within the Olympic Board and maybe also among the organising bodies.

[54] This refers to an interview conducted in March 2007. The figure refers to the transcript's respective page number.

Discussion: Safety and inclusion obviously relate to sustainability (in particular, to social aspects of sustainability as defined in the UK government's sustainability strategy, see section 2.1). Inspiration can relate to sustainability, if it is an inspiration to, for example, reconsider one's consumption habits.

Olympic Games in general are supposed to represent the values of Olympism (compare IOC 2005b, 3 and 11), which are related to sustainability concepts (see section 2.2). Critical voices question whether the Olympic Games actually represent the values of Olympism; Crowther (2004, 446) goes as far as claiming the Olympic Games were in some ways the opposite of the Olympic ideals they are supposed to represent[55]. Additionally, the Olympic Image was developed based on a market research methodology (see section 2.2.1) rather than on research into the current core values of the Olympic Movement, which can be interpreted as a sign that the meaning of Olympism as a value base is deteriorating. Therefore, it can be questioned in how far a more explicit integration of Olympism with the sustainability-related values in the vision statement would help further the cause for sustainable Games and a sustainable legacy.

Challenge*: Allocating the authority to lobby for sustainable solutions strategically within new and pre-existing organisations*

Example: Each of the organising bodies of the Games in London employs sustainability experts. They form a subgroup to the Olympic Board Steering Group, together with representatives from the government Department for Environment, Food and Rural Affairs (Defra) and from the Commission for a Sustainable 2012. The subgroup has delegated power from the Olympic Board, though issues that are particularly controversial or involve substantial costs get referred up for agreement by the Olympic Board itself. The subgroup meets at least bi-monthly (compare Expert A 2007, 10).

As pointed out above, sustainability has been integrated into the vision, and objectives and strategies are being developed for achieving these. As a result, sustainability experts can refer to these guiding documents in lobbying people to work towards sustainable Games. With the Olympic Board backing the vision of a sustainable legacy and senior managers being supportive of sustainable development[56], the sustainability experts have the option of referring issues up to a more senior level if issues occur (compare Expert A 2007, 9-10).

---

[55] To illustrate this point: According to Olympic values, Olympic competitions should be characterised by individual athletes meeting in a spirit of friendship and peace, striving to exceed their own expectations rather than to win, and seeking self-completion though sports. In fact, the competitors wear national emblems and there are national medal counts; the winners of the competitions are singled out to stand higher than the competitors, up on a podium; and doping is a widespread issue, related (among other things) to the fact that continued funding for an athlete is often attached to continued winning.

[56] For example, the Director General of the Government Olympic Executive agreed to host and to attend a conference on sustainability and the Olympic Games (organised by an NGO for other NGOs, businesses and public bodies) and the CEO of the Olympic Delivery Authority has a background in sustainable regeneration (compare Expert A, 9-10).

Discussion: Strategically allocating the authority to lobby for sustainable solutions in the context of Olympic Games includes positioning responsibility for sustainability within the organisations as well as ensuring co-operation for sustainability. The structures in London provide the option for both lobbying people to work for sustainability and co-ordinating work towards sustainability among the organising bodies.

Challenge*: Establishing co-operative decision making processes that do not compromise timely decision making or consistency.*

Example I: Examples of decision-making processes in London, which were aimed at including diverse stakeholders and their respective knowledge include the following:

- The vision was developed by the Olympic Board, with representatives of the core stakeholders being part of the Board.
- The ODA Procurement Policy is the result of consultation with nearly 60 organisations since publication of the consultation version in July 2006 (ODA 2007b, 3).

Other processes are still in stages of development. For example, the ODA has committed to "involve, communicate and consult with stakeholders and the diverse communities surrounding the Olympic Park and venues" (ODA 2007a, 49) and has recently tendered for supplier to develop and deliver a programme of sustainability stakeholder management to meet the objectives of the ODA Sustainable Development Strategy (ODA 2007c).

Example II: According to Green Games Watch for the Games in Sydney, "*the pressures to construct many large venues, meet immovable deadlines, successfully stage a world event and ensure security, has produced a regime which in significant respects departs from principles of public participation, accountability and access to information normally observed in planning and environmental protection in Australia*." (Green Games Watch 2000)

Discussion: Successful Olympic Games are unthinkable without co-operation among stakeholders like government, local authorities and contractors, which has therefore been a regular item on the agendas of Olympic Games Organising Committees for some Olympiads. The issue of their co-operation links back to a vision that is compelling for all of them (for a discussion see above). Concerning sustainability, though, a wider range of stakeholders needs to be consulted. Sustainability itself has a subjective component to it, due to its reference to needs being met: What the needs are and how they can be met can differ culturally and even individually (compare Max-Neef 1989). Therefore, participatory processes are needed to shed some light on the question, what sustainable Olympic Games and a sustainable legacy actually look like. Such processes require that participants are qualified to take part in the development of solutions (compare Severin 2005, 67), which may partly be

achieved through publications as the candidate file, policy documents and the like. It might require additional communication as well, though, which is tailored to the needs of the respective stakeholders (compare Severin 2005, 67). However, the tight timeframe of Olympic Games and the general perception that information and education of the potential participants, as well as participatory processes themselves take a long time, may hinder the implementation of such processes. Methods of group facilitation can help to solve this problem, though. For example, focus groups[57] can help to explore perceptions, values and priorities of stakeholders; and the results can be used to tailor information to their needs. Other facilitation techniques allow for relatively rapid information flows and the generation of ideas in large groups[58].

4.2.2 Ongoing interaction with stakeholders

***Challenge**: Organising stakeholder interaction in a way that is focused on certain issues rather than certain organising bodies*.

Example I: Examples of issue-focused processes of stakeholder interaction in London include the following:

- Since bid time, there has been a “London 2012 Forum”, which is a quarterly meeting of interested parties with LOCOG and ODA representatives, to collectively discuss upcoming issues.
- The organising bodies have committed to establishing a new six monthly sustainability forum, where information on sustainability activities of the organising bodies will be provided and some of the challenges of delivery will be communicated and discussed. Attendance to the forum will be open to a wide range of organisations, which have an interest in the delivery of sustainable development.
- In the process of development is a mechanism for regularly updating the public on progress towards the sustainability objectives (of all organising bodies), with an option to give feedback (compare Expert A 2007, 8).

Example II: For the Games in Sydney, an environment forum was established, which comprised representatives from the organising bodies, the Environmental Protection Authority, and several NGOs. Together, the participants of this forum published a document on environmental benchmarks, while focusing on guidelines, achievements and lessons for sustainable buildings and events (compare Stubbs 2001, 6).

[57] A methodology of involving relatively small, representative groups in a semi-structured conversation about a certain issue, e.g. their attitude towards something

[58] E.g. café style conversations, a methodology that has been applied in groups with up to 500 people

Discussion: The London 2012 forum was still occupied with discussing its terms of reference in spring 2006, after almost two years of existence. Given the tight timeframe for the Olympics, such inefficiencies in participative processes are rather counterproductive, because they discourage both the participants, willing but unable to provide their expertise and help, and the organisers who do not receive the outcomes they had hoped for. Focussing on specific issues and clarifying the intention of the participatory process, as in the Sydney environment forum, are essential to ensure a solutions-oriented approach in this kind of engagement processes.

Challenge*: Creating processes of participation, which neither compromise on time or cost nor on the quality of the obtained solutions.*

Example: This challenge very much relates to the one above. A process that seems to be widely used is inviting consultation on draft documents, e.g. the transport strategy for the Games.

Discussion: Olympic Games attract much interest, particularly in the direct host community, which will be very much affected by the Games themselves and the legacy they leave. While inviting written consultation is an interesting process to involve NGOs and interested parties that have some background on the issue at hand, many of the stakeholders in the host boroughs are unlikely to voice their ideas and concerns in such a process. Innovative ways of communication have to be found and applied to reach these stakeholders.

4.2.3 Inducing organisational change

Challenge*: Including the potential for innovation and improvement towards sustainability in a way that does not compromise time, cost or quality.*

Example I: "*It is proposed that energy to the Olympic Park and Village will be supplied efficiently through a gas-fired CCHP [combined cooling, heating and power plant] .... The capacity of the building will allow for potential changes to fuel sources, as new renewable technologies become available. The heat network throughout the Park has been sized for legacy requirements, and is being shared with the Stratford City development, to provide the optimal solution. After the Games there will be opportunities for this network to grow into surrounding areas and for extra sources of heat and power to be added."* (ODA 2007a, 15)

Though major changes in the design of a venue can present difficulties, as experience with Wembley stadium has shown[59], there are options to design venues in a way that leaves room for adjustments along the way (compare Synadinos 2001, 40). The ODA is reported to recognise the need to decide on the venues' concepts before building starts (compare BBC 2006b), but is also planning to work with designers, contractors and designers over the life of each project, to ensure that opportunities to maximise value for money[60] are identified and realised (ODA 2007b, 16).

Example II: Strategies of technology in Barcelona

In designing, creating and applying the technology for the Olympic Games in Barcelona, the organising committee found a way of dealing with both the need for delivering on time and the option for innovation along the way. It included three basic criteria, which were: conservative planning, participation in binding tests and priority of functionality. Conservative planning meant planning to be ready some time in advance, to be in a position to absorb unforeseen delays. Binding tests were scheduled at milestones along the way, to ensure sufficient motivation for being on time all the way through. Priority of functionality meant that firstly, absolutely necessary functions of the technology were developed, with convenient functionalities to be added later on. (compare Pastor & Lopez 1995, 5)

Pastor and Lopez stress the importance of knowing "how to decide how to freeze a version, leaving aside advantages that a new version could bring, for there is always the risk of a lack of stability in its use." (Pastor & Lopez 1995, 7)

Discussion: In general, the approach suggested here can be described as building flexible platforms that provide options for next steps, rather than locking development into a specific path. As Pastor& Lopez (1995, 7) highlighted, however, it can be necessary to stop further development at some point to ensure ease of application during the Games themselves. It is crucial, then, to establish rules beforehand, according to which the decision about 'freezing or keeping on improving' can be taken.

Challenge*: Ensuring consistency in the decision making for sustainable Games and a sustainable legacy, despite the transformations that inevitably take place.*

Example: For the London 2012 Games, an independent assurance body has been established that monitors sustainability across delivery, staging and legacy. This body is called Commission for a Sustainable 2012. Its tasks include the following:

[59] The new Wembley stadium has been built with considerable delays in the construction. Part of the reason for these delays has been change in the design along the way (Design Build Network 2007).

[60] Value for money includes, where applicable, legacy considerations (ODA 2007, 16)

- Helping to deliver the most sustainable Games to date by providing independent assurance and expert commentary, directly to the Olympic Board.
- By assessing the sustainability of the 2012 programme relevant policies, procedures and performance, the commission will identify good practice and areas for improvement, assess risks and make recommendations to the Olympic Board.
- Providing a valuable source of expertise to help the delivery bodies meet their objectives.
- Acting as a 'critical friend' and provide a credible point of reference for its Olympic partners
- It will not set the sustainable development targets or deliver the outcomes. (compare Expert B 2007, 1)[61]

It will perform its tasks by reviewing overarching governance and strategy for sustainable development issues, identifying specific issues for further review, gathering related information, analysing it and reporting to the Olympic Board and stakeholders (CSL 2012 2007, 3). As a result, the organising bodies can be held accountable for staying in line with their sustainability objectives.

Discussion: Transformations take place in the organisational structure of the organising bodies, particularly the organising committee, which tends to grow fast during the course of the preparations and is then wound up shortly after the Games. Additionally, changes in the tasks of the organising bodies occur as the project develops. To ensure consistency with regards to sustainability over the course of these changes, clear direction and structure for sustainable development are needed. These have been addressed above (see section 4.2.1). Additionally, consistency requires a mechanism that keeps track of whether the respective organisations are actually moving in the given direction. Corrective action needs to be taken, if discrepancies between the envisioned and the actual direction are observed. The new assurance body in London provides independent public scrutiny regarding sustainability issues relating to the Olympic Games in London 2012 and

acts as a critical friend and informal advisory body for the organising bodies of the Olympic Games 2012 (compare Expert B, 1). This kind of body is an innovation for Olympic Games that seems very well placed to aid consistency, by both identifying problems and helping to find solutions.

[61] This refers to an interview conducted on March 21, 2007

4.2.4 Integrating sustainability considerations and conventional management

***Challenge**: Consistently integrating sustainability considerations into everyday processes (e.g. decision making, procurement and sponsorship relations, and knowledge management) despite organisational boundaries.*

Example: For the Games in London, the integration of sustainability into the vision is a sound basis for addressing this challenge. Additionally, the overall objectives include that sustainable development and procurement policies, including commitments to sustainable energy and waste management goals, are agreed and promoted (objectives 3.1.6 and 3.2.6, see NAO 2007, 36), which supports the integration of sustainability considerations into contracting and conventional management.

The system of reporting progress against the objectives (internally) will not be separated into several lines of reporting, for example, financial and environmental. The aim is to unify all the reporting into a single system, which is currently in a stage of development (compare Expert A 2007, 8). An integrated reporting system ensures that sustainability issues are communicated to top management and can therefore be integrated in its decision making.

Discussion: Nevertheless, for sustainability to be completely integrated into everyday processes, it also takes a corporate culture of generally considering (and prioritising) sustainability. Within departmental structures, there is always a risk that people expect sustainability to fit into the prevailing structure and to be allocated to a specific department, which is responsible for it. Thus, responsibility for sustainability would be assumed to rest solely with the sustainability experts, which counteracts an integration of sustainability considerations into everyday processes. Whether this is the case in the London organising bodies could not be determined in the scope of this study. In any case, the need for sustainability's integration into the respective processes has to be abundantly clear to everyone involved. People have to understand why they should think about sustainability and how it affects their particular field of responsibility, otherwise they can hardly be expected to perform an integration of sustainability into their work. Therefore, the accessibility of sustainability knowledge is very important.

***Challenge**: Making what is useful for the Games coincide with what is also a useful legacy for the city and creating a smooth transition from Games-mode to legacy mode*

Example I: The government Department for Trade and Industry (DTI) and the London Development Agency (LDA) have ongoing programmes to support businesses in developing the skills and abilities to tender for public contracts. Connecting these programmes to the preparations for Olympic Games by offering to support businesses in developing the skills and abilities to tender for Olympic contracts draws more businesses into the programmes. As

a result, more companies improve their potential to tender for Olympic contracts, and also for future public contracts. (compare Expert A 2007, 4)

An example for ensuring a useful material legacy of the Olympic Games is the Aquatics Centre, the main swimming venue for the Games in London: Plans for the Aquatics Centre originally included relatively cheap filtration systems, which were designed to cope with the soiling caused by a few athletes at competitions. These filtration systems would not be able to cope with daily public use. In effect, the public would not have been able to use the pools after the Games, unless the building was retrofitted for legacy use. Retrofitting would result in additional costs, amounting to higher total costs than building pools capable of coping with legacy use right away. Additionally, retrofitting would result in a time delay for public use, which could mean missing the time span of increased public interest in sporting activities. The plans had been developed against the background of the ODA being responsible for delivering the Games' infrastructure and paying for the building costs, whereas the costs for retrofitting the building would have been borne by the LDA. After being challenged by the Commission for a Sustainable 2012 and other stakeholders, the ODA changed the plans and decided to build the Aquatics Centre suitable for potential legacy use right away (compare Expert B 2007, 3).

Example II: The approach of fitting Olympic Games' objectives into existing plans was used in Barcelona as well. In particular, regeneration projects related to the Games were based on existing plans. As Abad has phrased it: "The immense work...has been carried out... without substantially altering the territorial model existent in 1985. The work was done on the basis of a received model, and interventions were made to accelerate the achievement of objectives that could be considered obvious: open the city to the sea, supply it with basic transportation infrastructure, turn the old port into a place for public use, modernise the commercial port and the airport. That is, conceptually, nothing was new" (Abad 1995, 13). These regeneration projects are largely regarded a success (compare Moragas & Botella 1995)[62].

Discussion: As mentioned above, the vision and objectives for the Games in London resonate with existing visions and objectives for London and the UK. The approach of using the Olympic Games as an accelerator rather than an extra event is widely used across the organising bodies in London. Part of the reason for this approach is that the funding for the Games is meant to be used for Games delivery only (compare Expert A 2007, 4; NAO 2007, 18) and other benefits from the Games are to be funded from other sources. As a result, the Games are used to intensify ongoing programmes, thereby ensuring an easy transition into the legacy mode.

[62] For critique see Del Olmo 2004

4.2.5 Ensuring accessibility of required sustainability knowledge

***Challenge**: Making sustainability knowledge accessible across organisational boundaries*

***Example I**: Drawing in external knowledge*

The organising bodies in London draw in external sustainability knowledge where they consider it necessary. For example, two NGOs (BioRegional and WWF) helped developing the "One Planet" concept (compare London 2012 Bid Committee 2005a, 75), other NGOs were also involved during bid time (e.g. London Sustainability Exchange and Green Alliance; compare London 2012 Bid Committee 2005a, 77), the Carbon Trust is supporting the development of the methodology to measure the Games' carbon footprint (compare Expert A 2007, 11) and the organising bodies are seeking further support in this regard (compare London2012 2007b). The ODA recently tendered for a supplier to develop and deliver a programme of sustainability stakeholder management to meet the objectives of the ODA Sustainable Development Strategy (ODA 2007c). The Organising Committee's (LOCOG) representatives are in frequent contact with other organising committees, e.g. from Beijing (2008) and Vancouver (2010) to learn from them and exchange experiences in organising the Games.

***Example II**: Accessibility of sustainability knowledge in the network of organising bodies*

Within the respective organising bodies in London, there are internal reporting systems, which also provide information to the Olympic Board[63] (compare Expert A 2007, 9). Thus, the lines of reporting meet in the Olympic Board. The formalised and written transfer process among the organising bodies seems to work through publications like policies, strategies, progress updates and the like. These are available to the public as well. The Commission for a Sustainable London 2012 will also regularly publish reports on the organising bodies' progress towards sustainable operations (compare CSL 2012 2007, 5). Additionally, a monitoring system based on indicators for sustainability is developed (see below).

In terms of knowledge provision to aid the development of integrated solutions (compare section 4.1.5), different options are used:

- Firstly, secondments are used to solve the issue of knowledge transfer. In this case, people have the chance to work with and learn from a seconded expert (compare Expert A 2007, 7).
- Secondly, structures like shared offices, available meeting spaces, and a culture of open, informal communication can support the transfer of knowledge. For example, LOCOG and the ODA have their offices in the same building, on the same floor,

[63] or rather the Olympic Programme Support Unit, which then prepares briefings for the Olympic Board

thereby allowing staff to meet and chat.[64] Another example for informal communication as means of knowledge transfer was presented by an interviewee, who described how he expands his knowledge about sustainability the following way (excerpt): “I went knocking about, asking people, reading..., absorbing the knowledge… We’ve gone around the specialists in those areas and talked to them about it. And still are, to be honest. And we will probably continue to do so.” (Expert A 2007, 7).

- Thirdly, sustainability experts from all the organising bodies meet regularly in the Olympic Board’s sustainability subgroup (compare Expert A 2007, 8).

Discussion: While the knowledge exchange among sustainability experts in the organising bodies and beyond seems to work well, few insights could be obtained regarding further spreading of sustainability related knowledge among staff of the organising bodies. It seems that there is a relatively clear distinction between staff that has sustainability be part of their job and staff that does not (compare Expert A 2007, 11). Given the pervasive nature of sustainability issues, this distinction does not seem appropriate. As this distinction is manifested in the minds of people, a change in mindsets would probably necessary to arouse interest in improving individual sustainability knowledge. The resulting question is whether the opportunities, that Olympic Games bring, include an opportunity to shift the mindsets in existing organisations towards a more inclusive view of what sustainability means.

Challenge*: Supporting the development of sustainable solutions (within time and budget constraints) by supporting the communication of people*

Example: With the “One Planet” concept, an attempt was made to present a rather tangible explanation of what sustainable development means. This concept was meant to be guiding the work towards sustainable Games and a sustainable legacy.

Discussion: The candidate file also refers to the Mayor’s sustainability strategy and its definition of sustainability; and the sustainability policy document refers to five key themes of sustainability. Though these documents are actually based on similar definitions of sustainability[65], the differing ideas about how to address sustainability expressed in them can be confusing. The ODA sustainability strategy tries to handle the situation by presenting the

[64] This was the case in spring 2006. At the time of writing, this might have changed, though, due to the growth of both organizations.

[65] i.e. the need to integrate economic, ecological and social interests

interface between the five key themes and its own areas of action, in a chart (ODA 2007a, 8-9). These areas of action[66] are related to, but slightly different from the One Planet principles.

This situation can be confusing and does not aid the communication between representatives of the organising bodies or the communication with other stakeholders.

4.2.6 Monitoring and evaluating progress

***Challenge**: Establishing a consistent monitoring and evaluation system across organisational boundaries (including contractors, suppliers and sponsors).*

Example: The IOC requires the London organising bodies to report on a set of sustainability indicators, which is called the Olympic Games Impact assessment (OGI, compare IOC 2007h). Indicators have been used to measure sustainability in the UK for some time already, on a national regional and local level (Defra 2006). Thus, the OGI has been adapted to enhance comparability over time, so that the impact of the Olympics can become visible in changes of the indicators. Additionally, the organising bodies intend to measure the Games' carbon footprint (compare London2012 2007b), which will require considerable coordination across organisational boundaries and involve a large number of stakeholders.

Discussion: The OGI includes a large set of indicators, which are meant to be measured over a period of several years before and after the Games. It is generally important for monitoring systems to be balanced between effort and significance. There is little value in spending lots of effort to measure an insignificant indicator. As the set for the OGI has not been published yet, no insight could be gained on whether it keeps this balance.

Measuring the carbon footprint of Olympic Games is a major task. The most critical decision will be about where to draw the boundaries, e.g. whether spectators' flights will be counted in or not. Whatever the boundaries and methodology will be, many diverse organisations will need to be involved in measurement and it will take up some resources to implement and run this monitoring system. Afterwards, though, the knowledge about how to manage a system like this will be quite valuable, because if it can be used for something as complex as Olympic Games, it is likely to be applicable in many other contexts (compare Expert A 2007, 11).

[66] These are: Carbon; Water; Waste; Materials; Biodiversity and ecology; Land, water, noise, air; Supporting communities; Transport and mobility; Access; Employment and business; Health and well-being; Inclusion

***Challenge**: Communicating the outcomes of the monitoring and evaluation process in a way that is credible, relevant to the needs and expectations of the multiple stakeholders and understandable without being vague*

Example: So far, the monitoring system for sustainability is still in a stage of development (see above). In any case, the quality and credibility and of monitoring and evaluation will be supported by the Commission for a Sustainable London 2012, which provides public assurance. Its work includes the following:

- Assessing the management of specific sustainability impacts
- Looking at how sustainability is integrated into processes (like sponsorship relations, for example)
- Validating performance measures; for example: If sustainable timber is to be used for construction on Olympic sites, the commission would assess the way in which the organising bodies try to ensure sustainable practices throughout the procurement chain of the timber (compare Expert B, 2)

Discussion: As some of the organising bodies are public bodies, the Freedom of Information Act is applicable to them, which constitutes that…

> *"any person making a request for information to a public authority is entitled- (a) to be informed in writing by the public authority whether it holds information of the description specified in the request, and (b) if that is the case, to have that information communicated to him."* (Great Britain Parliament 2000, 1(1))

With this act in place, public authorities have become increasingly used to and skilled at communicating their work, which will be an advantage for the communication regarding the Games.

5 DISCUSSION AND CONCLUSIONS

This section summarises the findings and discusses their significance in relation to the primary question. It provides a critical view on methodology and its implications for the outcomes of the study. Additionally, recommendations for sustainability management systems are derived based on the research findings. The section concludes with pointing out opportunities for further research.

5.1 Summary

This thesis is based on a systemic view on sustainability, which includes the understanding that sustainability can only be defined for the whole system (that is, “the earth”, see section 2.1). Therefore, it is recognised that individuals or other entities cannot achieve sustainability on their own. Nevertheless, they can contribute to achieving sustainability for the whole system.

Olympic Games present unique opportunities for contributing to sustainability for the whole system (see section 2.2.3). These include the following:

- Based on synergies in promoting both Olympism and sustainability, efforts to achieve sustainable Olympics will not face resistance regarding the concept of sustainable Olympics itself.
- There is a potential to learn from previous Games and improve against the baseline established by their sustainability successes.
- Organising and staging Olympic Games stimulates innovation and learning. It can, therefore, lead to innovations and learning regarding sustainable solutions.
- The Games can be utilised as an accelerator of urban renewal, thereby establishing communities that can serve as a model of sustainable living.
- In trying to solve the issues related to stage this complex mega-event, new networks, ideas and strategies for problem solving develop in the host city. These can be utilised after the Games as well, to keep the host city moving towards sustainability.
- Olympic and Paralympic Games attract interest from a diverse range of stakeholders, from sponsors to television viewers. They therefore have the opportunity to present sustainable solutions to a huge and diverse audience.
- Additionally, a large number of people and organisation is directly involved with the Games. These are stakeholders including employees of the organising bodies, thousands of volunteers, but also sponsors and suppliers. All of them that can learn about sustainable solutions as developed for and presented at Olympic and Paralympic Games, and then spread the word.

This thesis looks into how these opportunities can be seized. Specifically, it questions which characteristics a sustainability management system for Olympic and Paralympic Games needs to have, in order to be successful. “Successful”, in this context, can be defined narrowly as ensuring the achievement of sustainability objectives. Taking a wider view, as related to the systemic understanding of sustainability, means to define successful sustainability management in terms of its capacity to ensure a contribution to sustainability for the whole system. This contribution can be delivered by striving towards hosting sustainable Games and leaving a sustainable legacy, thereby promoting sustainability through the connections with stakeholders.

In striving to realise the aspired contribution to sustainability, the management system will face challenges. Thus, in this thesis, a sustainability management system for Olympic and Paralympic Games is considered successful, if it has the capacity to fully address these challenges and can, therefore, deliver the best possible contribution to sustainability.

Therefore, the next step of the analysis in this report was to define what the specific challenges for Olympic and Paralympic Games’ sustainability management systems are. These challenges are related to the specific characteristics of Olympic Games on the one hand, and to the functions of the sustainability management system on the other.

The specific characteristics of Olympic and Paralympic Games are (see section 3.1):

- They are linked to a set of organisations, i.e. the organising bodies.
- They relate to a clear spatial dimension, that is, the host city.
- They have a limited life span: seven years of preparation (counting from winning the bid) and four weeks of events (two weeks of each Olympic and Paralympic competitions)
- They are intended to leave a positive legacy.
- Their goals are largely defined at the outset.
- Funding is provided for a finite period of time.

The functions of a sustainability management system comprise the following (see section 3.2.2):

- Providing direction and structure
- Ongoing interaction with stakeholders
- Inducing organisational change
- Integrating sustainability considerations and conventional management
- Ensuring accessibility of sustainability knowledge
- Monitoring and evaluating progress

Within the frame that is set by the characteristics of the Games and the functions of the management system, challenges for the sustainability management system in striving towards sustainable Games and a sustainable legacy could be derived.

These challenges relate particularly to the fact that the management system has to operate across organisational boundaries: within the network of organising bodies, as well as including a diverse range of stakeholders. Another main reason for challenges is the difference in timeframe, funding and scope for the Games and for the legacy. Trying to promote both sustainable Games and a sustainable legacy under these circumstances poses difficulties to the management system. The third main source for challenges is the need for intensive interaction with large numbers of diverse stakeholders. This need is rooted in the complexity of organising and staging the Games and the additional complexity arising from the integration of sustainability considerations, because both the Games themselves and sustainability pose a wide range of interrelated problems that require integrated solutions.

Given that each Olympic and Paralympic Games are unique in the way that they combine the local environment and culture with traditions and requirements related to organising and staging the Games, it is impossible to define *the* way for addressing the challenges for sustainability management. Therefore, next step in the present analysis was to find examples where the challenges had been addressed and to discuss them for their potential to address the full scope of the challenge. Where the application in the example did not seem to fully address the challenge, suggestions for improvement have been discussed.

The examples provide three things:

- Firstly, they illustrate the fact that it is actually possible to face the challenges and strive for staging sustainable Games and leaving a sustainable legacy.
- Secondly, they provide valuable insights on how the challenges can be addressed. Of course, transferability is limited due to the different circumstances in each host city, but in connexion with the discussion, the examples can serve as an inspiration for the sustainability management systems of future host cities.
- Thirdly, they can reveal potential pitfalls in addressing the challenges.

5.2 Conclusions

With regard to the characteristics of successful sustainability management systems for Olympic and Paralympic Games, the following conclusions can be drawn, based on the research presented in this report:

- A successful system is based on a vision that is compelling for all the organisations involved in organising and staging the Games. This vision provides a clear sense of direction and spurs people into action towards sustainable Games and a sustainable legacy.
- Sustainability is addressed in a strategic way, which means that policies, objectives and actions related to sustainability are clearly geared towards achieving the vision. It

has to be obvious, in how far sustainability-related actions and objectives present stepping stones towards the compelling vision. This ensures that the people involved can retain an understanding of *what for* they include specific sustainability considerations in their work.

- Addressing sustainability in a strategic way also includes that it is integrated into policies, contractual relations and decision-making processes and therefore pervades all operations related to the Games and their legacy. Thus, a successful system includes mechanisms that ensure the integration of sustainability into conventional management.
- The organisational structure includes strategically placed sustainability managers, as well as ensuring co-operation among the organising bodies, thereby offering the potential for generating integrated solutions.
- To realise the potential for generating integrated, holistic solutions for sustainability issues, co-operative processes of creating, deciding and implementing solutions are needed. This co-operation can be limited to representatives of the organising bodies, but it can also involve external stakeholders (e.g. community residents, sponsors, contractors, experts etc.), depending on the issue at hand. Therefore, a successful system utilises appropriate means
    - to enable the respective stakeholders to participate
    - to ensure the accessibility of required knowledge and
    - to facilitate the communication process.
- Legacy considerations are included and prioritised in decision-making for the Games, whereby the fact that Games cannot be called sustainable if they do not lead to a sustainable legacy, is conceded.
- Innovation and change inevitably occur during the course of the preparations for the Games. A successful system provides options to include or dismiss innovations based on transparent reasoning.
- Monitoring progress towards sustainability is essential for ensuring that the vision is achieved. Ideally, sustainability monitoring and documentation is validated independently.
- A successful system requires independent assurance and public scrutiny, as well as the will to take on and adapt to critique.

5.3 Discussion

The present study is based on a relatively extensive discussion of the links between sustainability and Olympic Games. This is considered an important aspect of the background, because it constitutes the unique opportunities that Olympic Games present in initiating change towards sustainability on a global scale.

A main method used in this study was applying plain logic, particularly in deriving the challenges before the background of an understanding of sustainability and the Olympic Games' opportunities related to it; and in combining the characteristics of the Games with the functions of the management system. This approach has turned out to be challenging, but in the end it was successful in its application.

The study focuses on a management system itself, its functions and the challenges it is designed to address. This is a high-level analysis that tries to handle the complexity and scope of Olympic Games. The analysis has then been illustrated by examples.. This approach allowed for both gaining an understanding of the whole management system, as well as providing more tangible results and inspiration with regards to the applications of a management system.

The examples are by no means meant to be prescriptive in the sense that they present the only solution to dealing with the respective challenges. They are meant to provide some insight on the current development with regards to sustainability management for Olympic Games. As each Olympic Games' host builds on what has been tested at earlier Games and tries to stage the 'best Games ever', these examples may help future hosts in designing their sustainability management system. The bidding process for the Olympic and Paralympic Games in 2016 has just been launched. In how far those future Games will build on and exceed current sustainability management achievements, remains to be seen.

5.4 Opportunities for further research

This study is acknowledged to address the potential, of furthering the cause of sustainable development through the involvement and education of thousands of volunteers in a very limited way. Volunteers can bring in valuable knowledge, they can spread knowledge, and volunteering in itself could be evaluated for its contribution to social sustainability. Therefore, I suggest further research regarding the question, in how far volunteering at Olympic Games contributes to sustainability.

Furthermore, concerning the examples, this study has an exploratory character: It mainly refers to the Olympic Games in London 2012, because of their current and intensive efforts towards sustainable Games. Therefore, it would be interesting to determine best practice, based on a wider set of examples, which could be drawn from other events or projects that are similar to Olympic Games in relevant aspects.

BIBLIOGRAPHY

Abad, M. (1995): "A summary of the activities of COOB '92", in Moragas, M. & Botella (eds.): The keys of success: the social, sporting, economic and communications impact of Barcelona '92. Barcelona: Bellaterra

Arias-Maldonado, M. (2000): "The democratization of sustainability. The search for a green democratic model" Environmental Politics, 9(4), 43-58

Ayres, R. (1989): "Industrial Metabolism", in Ausubel, J. & Sladowich, H. (eds.): Technology and environment. Washington: National Academy, 23-50

Balderstone, S. (2001): Agenda 21 and IOC Requirements. IOC: Lausanne

BBC (2004): Athens gets Olympics report card, http://news.bbc.co.uk/2/hi/europe/3610014.stm (accessed on 15.05.2007)

BBC (2005): Beijing eyes Games Profit in 2008, http://news.bbc.co.uk/sport2/hi/other_sports/4559728.stm (accessed on 22.02.2007)

BBC (2006a): Wembley faces more delays, http://news.bbc.co.uk/2/hi/uk_news/england/london/5139864.stm (accessed on 16.05.2007)

BBC (2006b): Lessons for the Olympics, http://news.bbc.co.uk/sport2/hi/front_page/4864788.stm (accessed on 15.05.2007)

Beijing Organising Committee of the Olympic Games (BOCOG)(2007): BOCOG begins to train volunteer programme officers, http://en.beijing2008.cn/83/67/column211716783.shtml (accessed on 06.05.2007)

Bell, S. & Morse, S. (1999): Sustainability indicators. Measuring the immesurable? London: Earthscan

Boggan, S. (2001): Nike admits to mistakes over child labor, http://www.commondreams.org/headlines01/1020-01.htm (accessed on 11.03.2007)

Botella, M. (1995): "The Keys to success of the Barcelona Games", in Moragas, M. & Botella (eds.): The keys of success: the social, sporting, economic and communications impact of Barcelona '92. Barcelona: Bellaterra

Braun, B. (2000): „Wie grün sind Sydneys Grüne Spiele? Umweltaspekte der 27.Olympischen Sommerspiele“, Zeitschrift für angewandte Umweltforschung, Jg.13, H. 1/2, 196-209.

Bringezu, S. (2004): "Ziele und Indikatoren des gesellschaftlichen Stoffwechsels", in Wiggering, H. & Müller, F. (eds.): Umweltziele und Indikatoren. Wissenschaftliche Anforderungen an ihre Festlegung und Fallbeispiele. Berlin: Springer Verlag

British Olympic Association (BOA)(2006): Faster, Higher, Stronger. London: BOA

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU) (ed.) (1997): Umweltpolitik. Konferenz der Vereinten Nationen für Umwelt und Entwicklung im Juni 1992 in Rio de Janeiro. Agenda 21. Bonn: BMU, 2nd edition

Canadian Olympic Committee (COC) (2007): What is the Olympic creed?, http://www.olympic.ca/EN/faq.shtml#15 (accessed on 27.02.2007)

Carley, M. & Chrisie, J. (1992): Managing sustainable development. London: Earthscan

CBC news (2006): Quebec's big owe stadium debt is over, http://www.cbc.ca/canada/montreal/story/2006/12/19/qc-olympicstadium.html?ref=rss (accessed on 22.02.2007)

Chernushenko, D.; van der Kamp, A. & Stubbs, D. (2001): Sustainable sport management. Nairobi: UNEP

Clarke, S. (1998): "Sustainable Technology Management. The role of networks of learning", in Roome (ed.): Sustainability strategies for industry. Washington: Island Press, 145-170

Collins, J. C. & Porras, J. I. (1994): Built to Last. Successful Habits of Visionary Companies. Harper Collins

Commission for a sustainable London 2012 (CSL 2012) (2007): Assuring a legacy. The sustainable development asurance framework for the London 2012 Games Programme. London: CSL 2012

Crowther, J. (ed.) (1995): Oxford advanced learner's dictionary. Oxford: Oxford University Press

Crowther, N. (2004): The State of the Modern Olympics: citius, altius, fortius? European review No. 12

Davenport, T. & Prusak, L. (1998): Working Knowledge. How organizations manage what they know. Boston: Harvard Business School Press

de Coubertin, P. (1887): L'Èducation Anglaise, cited according to MacAloon, J. (1981): This Great Symbol. Pierre de Coubertin and the Origins of the Modern Olympic Games. Chicago/ London: University of Chicago

Deccio, C. & Baloglu, S. (2002): "Nonhost community resident reactions to the 2002 winter Olympics: The spillover impacts", Journal of Trave Research, 2002, 41, 46-56

del Olmo, C. (2004): The role of mega events in urban competitiveness and ist consequences on people. Madrid: Universidad Complutense

Deming, W. E. (1982): Out of the crisis. Cambridge: Cambridge University Press

Department for Culture, Media and Sport (DCMS)(2004): Sustainable development strategy. London: DCMS, http://www.culture.gov.uk/NR/rdonlyres/ECD51F93-3C61-4FCB-841D-DC140C3CF204/0/sdsfeb04.pdf (accessed on 03.01.2007)

Department for Environment, Food and Rural Affairs (Defra)(2006): Reviewing Progress, http://www.sustainable-development.gov.uk/progress/index.htm (accessed on 02.03.2007)

Design Build Network (2007): Wembley Stadium, http://www.designbuild-network.com/projects/wembley/, accessed on 12.05.2007

Dunphy, D. et al. (2000): Sustainability. Corporate challenge for the 21st Century. Sydney: Allen and Unwin.

Essex, S. & Chalkley, B. (1998): Olympic Games: catalyst of urban change. Plymouth: University of Plymouth

European Commission (2007): What is environmental management? http://ec.europa.eu/environment/emas/about/enviro_en.htm (accessed on 12.01.2007)

Flick, U.; Kardoff, E. v. & Steinke, I. (2000): "Was ist qualitative Forschung? Einleitung und Überblick", in Flick, U.; Kardoff, E. v. & Steinke, I. (eds.): Qualitative Forschung. Ein Handbuch. Hamburg: Rowohlt, S. 13-29.

Freeman, R. E. (1984): Strategic Management. A Stakeholder Approach. Marshfield Mass.: Pitman, 2nd edition.

Frohmader, B. (2004): Die Olympische Idee als Grundlage für erzieherisches Wirken im Schulsport heute. Erlangen/Nürnberg: Friedrich-Alexander-Universität: Examensarbeit

Gehrlein, U. (2004): Nachhaltigkeitsindikatoren zur Steuerung kommunaler Entwicklung. Wiesbaden: Verlag für Sozialwissenschaften

Gläser, J. & Laudel, G. (2004): Experteninterviews und qualitative Inhaltsanalyse. Wiesbaden: Verlag für Sozialwissenschaften

Great Britain Parliament (2000): Freedom of Information Act 2000. London: The Stationery Office

Green Games Watch 2000 (2000): After the Games: Ongoing ecologically sustainable development management at Homebush Bay and other Sydney Olympic venues

Grupe, O. (1997): Olympismus und Olympische Erziehung. Abschied von einer großen Idee? in Grupe, O. (ed.): Olympischer Sport: Rückblick und Perspektiven. Schorndorf: Hofmann, 223-243

Heinrichs, H. (2005): "Kultur-Evolution: Partizipation und Nachhaltigkeit", in Michelsen, G. & Godemann, J. (eds.): Handbuch Nachhaltigkeitskommunikation. München: Oekom-Verlag, 709-720

Holmberg, J. & Robèrt, K-H. (2000): "Backcasting from non-overlapping sustainability principles – a framework for strategic planning", International Journal of Sustainable Development and World Ecology, 7, 291-308

Intergovernmental Panel on Climate Change (2007): Climate Change 2007: Impacts, Adaptation and Vulnerability, Brussles: IPCC; http://www.ipcc.ch/SPM13apr07.pdf (accessed on 18.04.2007)

International Olympic Committee (1999): Olympic Movement's Agenda 21. Sport for sustainable development. Lausanne: IOC

International Olympic Committee (2002): The Olympic Image and the Sydney 2000 brand, http://www.olympic.org/uk/utilities/reports/level2_uk.asp?HEAD2=37&HEAD1=8 (accessed on 01.02.2007)

International Olympic Committee (2003): The Torino commitments on sport and the environment. Torino: IOC

International Olympic Committee (2004a): Olympic Charter. In force as from September 2004, Lausanne: IOC

International Olympic Committee (2004b) Marketing Fact File, http://multimedia.olympic.org/pdf/en_report_252.pdf

International Olympic Committee (2005a): Marketing Fact File, http://multimedia.olympic.org/pdf/en_report_252.pdf (accessed on 26.04.2005)

International Olympic Committee (2005b): Host City Contract. Games of the XXX Olympiad in 2012. Lausanne: IOC

International Olympic Committee (2005c): Manual on Sport and the environment. 2nd edition, Lausanne: IOC

International Olympic Committee (2007a): IOC guide on sport, environment and sustainable development. Lausanne: IOC

International Olympic Committee (2007b): Coordination Commissions for the Olympic Games, http://www.olympic.org/uk/organisation/commissions/ogcc/index_uk.asp (accessed on 04.01.2007)

International Olympic Committee (2007c): Athens 2004. http://www.olympic.org/uk/games/past/index_uk.asp?OLGT=1&OLGY=200428.02.2007 (accessed on 28.02.2007)

International Olympic Committee (2007d): Sydney 2000, http://www.olympic.org/uk/games/past/index_uk.asp?OLGT=1&OLGY=2000 (accessed on 07.01.2007)

International Olympic Committee (2007e): Broadcast rights, http://www.olympic.org/uk/organisation/facts/revenue/broadcast_uk.asp (accessed on 12.04.2007)

International Olympic Committee (2007f): The organising committees of the Olympic Games, http://www.olympic.org/uk/organisation/ocog/index_uk.asp (accessed on 03.03.2007)

International Olympic Committee (2007g): Olympic Sponsorship, http://www.olympic.org/uk/organisation/facts/programme/index_uk.asp (accessed on 03.03.2007)

International Olympic Committee (2007h): Factsheet environment and sustainable development, http://multimedia.olympic.org/pdf/en_report_842.pdf (accessed on 28.03.2007)

International Organization for Standardization (ISO) (2002): Environmental Management: The ISO 14000 family of international standards, Geneva: ISO

Johnson, G.; Scholes, K. & Whittington, R. (2005): Exploring Corporate Strategy. Harlow: Prentice Hall

Kim, C. (1987): "The Olympic Games as a Force of Cultural Exchange and Change", in Kang, S.; MacAloon, J. & da Matta, R. (eds.): The Olympics and East/West and North/South Cultural Exchange. Seoul: The Insitute for Ethnological Studies Hanyang University

Kim, J. et al. (1989): Impact of the Seoul Olympic Games on National Development. Korea Development Institute

Kopfmüller, J. et al. (2001): Nachhaltige Entwicklung integrativ betrachtet. Konstitutive Elemente, Regeln, Indikatoren. Global zukunftsfähige Entwicklung - Perspektiven für Deutschland, Berlin: Ed. Sigma

Kosiewicz, J. (2003): "Olympic Games as a reflection of needs, objectives and aliments of contemporary sport", in Pawlucki, A. Gdansk: Postmodernity and Olympism. Akademia Wychowania Fizycznego i Sportur

Lamnek, S. (1995): Qualitative Sozialforschung. Methodologie. Weinheim: Psychologie Verlags Union. 3rd edition

London 2012 Bid Committee (2005a): Candidate File. http://www.london2012.com/en/news/publications/Candidatefile/Candidatefile.htm(accessed on 10.12.2006)

London 2012 Bid Committee (2005b): Towards a One Planet Olympics. Achieving the first sustainable Olympic Games and Paralympic Games, http://www.london2012.com/en/ourvision/greengames/a+one+planet+olympics.htm (accessed on 15.06.2006)

London2012 (2007a): Our vision. http://www.london2012.com/en/ourvision/ (accessed on 02.03.2007)

London2012 (2007b): Carbon footprint consultancy, http://www.london2012.com/en/gettinginvolved/Business/Carbon+Footprint+Consultancy.htm (accessed on 20.05.2007)

MacAloon, J. (1981): This Great Symbol. Pierre de Coubertin and the Origins of the Modern Olympic Games. Chicago, London: University of Chicago

Max-Neef, M. et al. (1989): "Human scale development: An option for the future", Development Dialogue, 1989:1, 5-80

Mayor of London (2007a): The 2012 Games and sustainability, http://www.london.gov.uk/mayor/olympics/benefits-sustainability.jsp (accessed on 02.03.2007)

Mayor of London (2007b): Sustainable development, http://www.london.gov.uk/londonissues/sustainability.jsp (accessed on 02.03.2007)

Mayring, P. (2002): Einführung in die qualitative Sozialforschung. Eine Anleitung zu qualitativem Denken. Weinheim: Beltz-Verlag, 5th edition

Meadows, D. et al. (1972): The limits to growth. New York: Universe Books

Meinel, K. (2001): Sustainability. Management issues for the design. Lausanne: IOC

Meuser, M. & Nagel, U. (2002): „Expertinneninterviews – vielfach erprobt, wenig bedacht. Ein Beitrag zur qualitativen Methodendiskussion“, in: Bogner, A.; Littig, B. & Menz, W. (eds.): Das Experteninterview. Theorie, Methode, Anwendung. Opladen: Leske + Budrich, 71-93

Miller, D. (1992): Olympic Revolution: The Olympic Biography of Juan Antonio Samaranch, London: Pavillion

Moragas, M. & Botella (eds.): The keys of success: the social, sporting, economic and communications impact of Barcelona '92. Barcelona: Bellaterra

Moska, W. (2003): "Sport in Euro-regional structures as an element of the European integration", in Pawlucki, A. (ed.): Postmodernity and Olympism, Gdansk: Akademia Wychowania Fizycznego i Sportur

National Audit Office (NAO)(2007): Preparations for the London 2012 Olympic and Paralympic Games - Risk assesment and management. London: The Stationery Office

O’Riordan, T. and Voisey, H. (ed.) (1997): Sustainable Development in Western Europe: Coming to terms with Agenda 21. London: Cass

O'Connor et al. (1996): "Emergent Complexity and Procedural Rationality", in Constanza, R.; Segura, O. & Martinez-Alier, J. (eds.): Getting down to earth. Washington: Island press

Offshore (2005): Shell's Hofmeister discusses innovation's importance, http://www.offshore-mag.com/Articles/Article_Display.cfm?Article_ID=239588 (accessed on 13.02.2007)

Olympic Delivery Authority (ODA) & London Development Agency (LDA)(2007): Commitment to sustainable regeneration. Olympic, Paralympic & Legacy transformation planning applications for the Olympic Park. London: ODA

Olympic Delivery Authority (ODA)(2007a): Sustainable development strategy. London: ODA

Olympic Delivery Authority (ODA)(2007b): Procurement Policy. London: ODA

Olympic Delivery Authority (ODA)(2007c): Tender. Sustainability Stakeholder Management Programme, file:///D:/Studium/Olympia/Olympic%20Games/London/tender.do.html (accessed on 25.03.2007)

Olympic Games Study Commission (2003): Report to the 115th IOC session, ed. Richard W. Pound. Prague: IOC

Olympic Programme Commission (2002): Review of the Olympic Programme. Report to the Executive Board. IOC: Lausanne

Pastor, F. & Lopez, J. (1995): "Barcelona '92. Strategies of Technology", in Moragas, M. & Botella (eds.): The keys of success: the social, sporting, economic and communications impact of Barcelona '92. Barcelona: Bellaterra

Renn, O.; Webler, T. & Wiedemann, P. (eds.)(1995): Fairness and competence in citizen participation. Evaluating Models for environmental discourse. Dordrecht: Kluver Academic Publishers

Robèrt et al. (2004): Strategic leadership towards sustainability. Karlskrona: Blekinge Institute of Technology

Robèrt, K.-H. (2000): “Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other?”, Journal of Cleaner Production, 2000, 8, 243-254

Robèrt, K.-H. et al. (2002): “Strategic sustainable development – selection, design and synergies of applied tools”, Journal of Cleaner Production, 2002, 10, 197-214

Roome, N. (1997): Learning to integrate Environmental concerns into business organisations. 1997 Meeting. Boston: American Academy of Management

Roome, N. (1998): "Sustainable development and the industrial firm", in Roome (ed.): Sustainability strategies for industry. Washington: Island Press, 1-26

Sabapathy, J. (2007): Sustainable consumption and production. A business primer. Cambridge: University of Cambridge

Schaltegger, S. & Burritt, R. (2005): "Corporate Sustainability", in Folmer, H. & Tietenberg, T. (eds.): The international yearbook of environmental and resource economics 2005/2006. A survey of current issues, Cheltenham: Edward Elgar, 185-222

Schaltegger, S. et al. (2002): Nachhaltigkeitsmanagement in Unternehmen. Konzepte und Instrumente zur nachhaltigen Unternehmensentwicklung. Bonn: Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU)

Schaltegger, S.; Burritt, R. & Petersen, H. (2003): An introduction to corporate environmental management. Striving for sustainability. Sheffield: Greenleaf Publishing

Schemel, H.-J. & Erbguth, W. (2000): Handbuch Sport und Umwelt. Aachen: Meyer & Meyer Verlag

Schmidheiny, S. with the Business Council for Sustainable Development (1992): Changing Course. A global business perspective on development and the environment, Cambridge/London: The MIT Press

Severin, A. (2005): "Nachhaltigkeit als Herausforderung für das Kommunikationsmanagement in Unternehmen", in Michelsen, G. & Godemann, J. (eds.): Handbuch Nachhaltigkeitskommunikation. München: Oekom-Verlag, 64-75

Simon, B. (2006): "Cost of Canadian 2010 Winter Olympics escalates", Financial Times Online, http://www.ft.com/cms/s/2f02fd94-972d-11da-82b7-0000779e2340.html (accessed on 06.02.2007)

Smith, A. (2001): "Sporting a new image? Sport-based regeneration strategies as a means of enhancing the image of the city tourist destination", in Gratton, C. & Henry, I.P. (eds.): Sport in the city. New York: Routledge, 127-148

Spangenberg, J. H. (2003): "Vision 2020: Arbeit, Umwelt, Gerechtigkeit. Strategien für ein zukunftsfähiges Deutschland", in: Spangenberg, J.H.: Vision 2020: Arbeit, Umwelt, Gerechtigkeit. Strategien für ein zukunftsfähiges Deutschland. München: Oekom Verlag, 19-144

Spencer-Cooke, A. (1998): "A dinosaur's survival kit. Tools and strategies for sustainability", in Roome (ed.): Sustainability strategies for industry. Washington: Island Press, 99-114

Steurer, R. (2001): Paradigms of sustainability, Journal of environmental policy and law, 4, 537-67

Steurer, R. (2001): "Paradigmen der Nachhaltigkeit", Zeitschrift für Umweltpolitik und Umweltrecht, 2001, 4, 537-566.

Stoltenberg, U. (2000): "Umweltkommunikation in lokalen Agenda 21-Prozessen", in: Stoltenberg, U. & Eriuccio, N. (eds.): Lokale Agenda 21. Akteure und Aktionen in Deutschland und Italien - Agenda 21 Locale. Attori ed Azioni in Germania ed in Italia. Frankfurt am Main: VAS, 11-14

Stubbs, D. (2001): Sydney Olympic Games 2000. The environmental Games. Dorking: Committed to Green Foundation

Synadinos, P. (2001): "Post-Plympic use. A picture for the future", Olympism, XXVII, 41, 39-41

Tremmel, J. (2003): Nachhaltigkeit als politische und analytische Kategorie. Der deutsche Diskurs um nachhaltige Entwicklung im Spiegel der Interessen der Akteure. München: Ökom-Verlag

UK Government (2005): Securing the Future. The UK Government Sustainable Development Strategy. Norwich: The Stationary Office

Umweltbundesamt (ed.) (2002): Nachhaltige Entwicklung in Deutschland. Die Zukunft dauerhaft umweltgerecht gestalten. Berlin: Umweltbundesamt

UN General Assembly (2005): 2005 World Summit Outcome. Resolution 60/1

UN Security Council / Department of Public Information (2007): Security council holds first-ever debate on impact of climate change on peace, www.un.org/News/Press/docs//2007/sc9000.doc.htm (accessed 19.04.2007)

UNEP (2001): Sydney Olympic Organising Committee for the Olympic Games and the Olympic Coordinating Authority of Australia one of 18 individuals and organisations to receive United Nations Environment Award, http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=201&ArticleID=2853&l=en (accessed on 22.03.2007)

Vancouver 2010 Bid Corporation (2003): Accelerating the journey to a sustainable future. Vancouver: The Vancouver 2012 Bid Corporation

Wesseling, H. L. (2002): Certain Ideas of France: Essays on French History and Civilization. Greenwood Publishing Group

Whitelegg, D. (2000): "Going for gold: Atlanta's bid for fame", International Journal of Urban and Regional Research, 24, 4, 801-817

World Commission on Environment and Development (WCED)(1987): Our Common Future. Report to the UN General Assembly. Oxford University Press

Yin, R.K. (2003): Applications of case study research. Thousand Oaks: Sage publications

APPENDIX 1: CORE STAKEHOLDERS

Appendix

Details of key organisations and groups involved in delivering and funding the London 2012 Games (in alphabetical order)

Organisation / group	Background	Role in relation to the London 2012 Games
British Olympic Association	• The National Olympic Committee for Great Britain and Northern Ireland	• Co-signatory to the Host City Contract, signed with the International Olympic Committee • Co-signatory to the joint venture agreement which established LOCOG. • The Chair is a member of the Olympic Board. • Represented on LOCOG's Board, the Olympic Board Steering Group and other stakeholder groups.
British Paralympic Association	• The National Paralympic Committee for Great Britain and Northern Ireland.	• Represented on LOCOG's Board, the Olympic Board Steering Group and other stakeholder groups.
CLM Consortium	• Consortium of three companies – CH2M HILL, Laing O'Rourke and Mace.	• As the Olympic Delivery Authority's Delivery Partner, will support in project managing the delivery programme for the Olympic venues and infrastructure.
Department for Culture, Media and Sport	• Government department	• The lead government department for the Games, with over-arching responsibility for managing the Government's interests and responsibilities. • Co-ordinating £1.044 billion of Exchequer funding towards the costs of 'non-Olympic' infrastructure • Oversees the public bodies involved in the Games, including the Olympic Delivery Authority, LOCOG, the Olympic Lottery Distributor and Sport England. • The Secretary of State for Culture, Media and Sport is a member of the Olympic Board. • The Secretary of State for Culture, Media and Sport is a co-signatory to the joint venture agreement which established LOCOG. • The approval of the Secretary of State for Culture, Media and Sport is required for projects above the Olympic Delivery Authority's financial delegation limit of £20 million or which are deemed "novel or contentious".
Government Olympic Executive	• Dedicated unit within the Department for Culture, Media and Sport.	• The team responsible for handling Olympic matters within the Department for Culture, Media and Sport. • The Chief Executive was designated as the Accounting • Officer for the Games.

Organisation / group	Background	Role in relation to the London 2012 Games
Greater London Authority	• Strategic governing body for London covering transport, policing, fire and emergency services, economic development, planning, culture and the environment. • Comprises the Mayor of London (the Executive of the Authority) and the London Assembly which scrutinises the Mayor's activities.	• Contributing up to £625 million to the public sector funding package for the Games, raised via a council tax precept. • The Mayor of London is a co-signatory to the Host City Contract, signed with the International Olympic Committee. • The Mayor of London is a member of the Olympic Board. • The Mayor of London is a co-signatory to the joint venture agreement which established LOCOG. • The approval of the Mayor of London is required for projects above the Olympic Delivery Authority's financial delegation limit of £20 million or which are deemed "novel or contentious".
HM Treasury	• Government department	• Involved in discussions about the cost estimates and funding for the Games. • Treasury approval is required for projects above the Olympic Delivery Authority's financial delegation limit of £20 million or which are deemed "novel or contentious".
Inter-Departmental Steering Group	• Comprises senior officials from all government departments, the devolved administrations, and the Greater London Authority, and representatives from the Regional Development Agencies and Government Offices for the regions of England. • Chaired by the Government Olympic Executive.	• Sets the strategic direction for the Government's contribution to the Games. • Accountable for timely progress to deliver the Government's Olympic objectives. • Identifies and manages risks to the delivery of the Government's interests and responsibilities.
International Olympic Committee	• International non-governmental organisation and creator of the Olympic Movement. Its primary responsibility is to supervise the organisation of the Summer and Winter Olympic Games.	• Elected London as the host city for 2012 in July 2005. • Has Host City Contract with the Mayor of London, the British Olympic Association and LOCOG to deliver the Games as planned, or as amended by mutual agreement.
London Development Agency	• The Regional Development Agency for London, co-ordinating economic development and regeneration. • Accountable to the Mayor of London.	• Responsible for acquiring the land on the Olympic Park site. • Contributing up to £250 million to the public sector funding package for the Games, in addition to funding the land acquisition. • Aims to maximise the opportunities to support London businesses and people into jobs, contracts and training arising from the Games and their legacy.
London Organising Committee of the Olympic Games and Paralympic Games (LOCOG)	• Company limited by guarantee, and a body within the central government sector, established by a joint venture agreement between the Secretary of State for Culture, Media and Sport, the Mayor of London and the British Olympic Association. Within central government LOCOG is overseen by the Department for Culture, Media and Sport.	• Responsible for the operational and staging aspects of the Games. • The liaison point for the International Olympic Committee and a party to the Host City Contract, signed with the International Olympic Committee. • The Chair of LOCOG is a member of the Olympic Board.

Organisation / group	Background	Role in relation to the London 2012 Games
Nations and Regions Group	• Group comprising 12 members representing Scotland, Wales, Northern Ireland and the nine English regions. The Group also involves representatives from the Department for Culture, Media and Sport, the Olympic Delivery Authority, Visit Britain, the Local Government Association and the British Olympic Association. • Chaired by a LOCOG Board Member.	• To help engage the whole of the UK with the 2012 Games and deliver a nationwide legacy.
Office of Government Commerce	• Independent office of HM Treasury, which works with public sector organisations to help them achieve efficiency, value for money in commercial activities, and improved success from programmes and projects.	• Conducts Gateway Reviews of procurement, major projects and programme management.
Olympic Board	• Established by a memorandum of understanding between the Secretary of State for Culture, Media and Sport, the Mayor of London and the British Olympic Association. • Comprises the Secretary of State for Culture, Media and Sport, the Mayor of London, and the Chairs of the British Olympic Association and LOCOG. The Chair of the Olympic Delivery Authority attends Board meetings as a non-voting member. • Chaired alternately by the Secretary of State for Culture, Media and Sport and the Mayor of London.	• Responsible for resolving and determining issues raised by members of the Olympic Board to ensure the delivery of the Games, and for ensuring that a sustainable legacy is achieved following the staging of the Games. • Oversees the Olympic programme, and receives reports and plans from the bodies involved in staging the Games.
Olympic Board Steering Group	• Comprises senior officials from the Government Olympic Executive, the Greater London Authority, the British Olympic Association, LOCOG, the Olympic Delivery Authority, the Olympic Lottery Distributor, the Department for Communities and Local Government, the British Paralympic Association and the Olympic Programme Support Unit. • Chaired by the Chief Executive of the Government Olympic Executive.	• Supports the Olympic Board at official level. • Takes a strategic overview of the work of the stakeholders in relation to the Olympic programme as a whole. • Responsible for ensuring that the Olympic Board is kept informed and regularly briefed on all relevant matters.
Olympic Co-ordinators Group	• Sits below the Inter-Departmental Steering Group and reports to it. • Comprises officials from across government.	• Considers operational aspects of cross-departmental Olympic matters.

Organisation / group	Background	Role in relation to the London 2012 Games
Olympic Delivery Authority	• Established by the London Olympic and Paralympic Games Act 2006. • Non-departmental public body, sponsored by the Department for Culture, Media and Sport.	• Will prepare the Olympic Park site, build the new venues and provide for their legacy use, and deliver the Olympic Village, media facilities, and infrastructure for the Games. • The planning authority for the Olympic Park area – any application relating to land within the area is considered by the Olympic Delivery Authority's Planning Committee rather than the local borough. • Responsible for developing an Olympic transport plan and for delivering Olympic transport projects.
Olympic Lottery Distributor	• Established by the Horserace Betting and Olympic Lottery Act 2004. • Non-departmental public body, sponsored by the Department for Culture, Media and Sport.	• Draws down from the Olympic Lottery Distribution Fund funds raised for the Olympics and Paralympics by the designated Olympic lottery games, and from 2009 from the proceeds of mainstream National Lottery games. • Awards funding to projects which it considers are "necessary or expedient" for hosting the Games. The funding will go principally to the Olympic Delivery Authority but the Distributor is not precluded from funding other bodies.
Olympic Programme Support Unit	• A dedicated unit to support the Olympic Board and the Olympic Board • Steering Group. • To be funded jointly by the Department for Culture, Media and Sport, the Greater London Authority and LOCOG.	• Responsible for tracking the overall health of the Olympic programme and providing reports to the Olympic Board and the Olympic Board Steering Group. • Provides a secretariat function to the Olympic Board and the Olympic Board Steering Group.
Olympic Projects Review Group	• Working group of officials including from the Government Olympic Executive, HM Treasury, the Greater London Authority, LOCOG, the Office of Government • Commerce, the Olympic Delivery Authority and the Olympic Lottery Distributor. • Chaired by the Government Olympic Executive.	• Assesses whether projects over the Olympic Delivery Authority's financial delegation limit of £20 million or which are deemed "novel or contentious" can be recommended to the Secretary of State for Culture, Media and Sport, the Treasury and the Mayor of London for financial approval
Sport England	• Non-departmental public body, sponsored by the Department for Culture, Media and Sport. • Provides leadership for community sport in England and distributes National Lottery funding.	• Contributing £50.5 million of National Lottery funding to the Olympic Delivery Authority towards the costs of the Aquatics Centre (£40 million) and Velopark (£10.5 million). • Along with the other sports lottery distributors (Sport Scotland, the Sports Council for Northern Ireland, the Sports Council for Wales and UK Sport), will spend £289.5 million of the public sector funding package for the Games on elite and community sport.
Transport for London	• Responsible for London's transport system. • Chaired by and accountable to the Mayor of London.	• Delivery of transport infrastructure improvements in London. • Works with the Olympic Delivery Authority to develop transport plans for the Games.

Adapted from NAO 2007, 31-34

APPENDIX 2: OLYMPIC AND PARALYMPIC GAMES PROGRAMME OBJECTIVES

Strategic objective	Lead stakeholder	Sub-objective	
1 To stage an inspirational Olympic Games and Paralympic Games for the athletes, the Olympic Family and the viewing public	LOCOG	1.1	Deliver an inspirational environment and experience for athletes and provide a first class experience for the Olympic Family and spectators
	LOCOG	1.2	Meet International Olympic Committee and International Paralympic Committee needs and specifications, including venue overlays
	LOCOG	1.3	Ensure effective and efficient planning and operation of the Olympic and Paralympic Games (including security, transport, technology, health, volunteering and accessibility)
	LOCOG	1.4	Maximise audience size at venues
	LOCOG	1.5	Secure support and engagement across all sections of the UK public
	LOCOG	1.6	Deliver effective media presentation and maximise global audience size
	LOCOG	1.7	Communicate Olympic values across the world, particularly amongst young people
	LOCOG	1.8	Stage inspiring ceremonies and cultural events
	LOCOG	1.9	Deliver an operating surplus from the Olympic Games and Paralympic Games
	LOCOG	1.10	Operate sustainable and environmentally responsible Olympic Games and Paralympic Games
2 To deliver the Olympic Park and all venues on time, within agreed budget and to specification, minimising the call on public funds and providing for a sustainable legacy	London Development Agency	2.1	Assemble and remediate land for Games venues
	Olympic Delivery Authority	2.2	Create infrastructure and facilities associated with Games venues to time and agreed budget in accordance with principles of sustainable development

	Olympic Delivery Authority	2.3	Deliver Olympic and Paralympic venues to time, to design and building specification and to agreed budget, providing for agreed legacy use
	Department for Culture, Media and Sport	2.4	Secure smooth flow of public funds to the Olympic Delivery Authority
	Olympic Delivery Authority	2.5	Deliver necessary transport infrastructure for the Games, and devise and implement effective transport plans which provide for legacy use
	Olympic Delivery Authority	2.6	Deliver agreed sustainable legacy plans for the Olympic Park and all venues
	British Olympic Association	2.7	Deliver a viable London Olympic Institute
3 To maximise the economic, social, health and environmental benefits of the Games for the UK, particularly through regeneration and sustainable development in East London	Government	3.1	Maximise the economic, social, health and environmental benefits the Games bring to the UK and all sections of the UK population
	Department for Education and Skills and Department for Work and Pensions	3.1.1	Maximise the employment and skills benefits for the UK arising from Games-related business
	Department for Culture, Media and Sport and Department for Trade and Industry	3.1.2	Maximise the wider economic benefits of the Games across the UK, including those for tourism and business promotion
	Department for Culture, Media and Sport	3.1.3	Maximise cultural benefits from hosting the Games and the Cultural Olympiad
	Department of Health, Department for Education and Skills and Cabinet Office	3.1.4	Maximise social benefits, including in health, education and volunteering, of hosting the Games
	Department for Communities and Local Government	3.1.5	Ensure that the Games contribute to Sustainable Communities priorities, including the wider Thames Gateway
	Department for Environment, Food and Rural Affairs	3.1.6	Agree and promote sustainable development and procurement policies, including commitments to sustainable energy and waste management goals
	Foreign and Commonwealth Office	3.1.7	Promote positive images of the UK to an international audience
	Department for Communities and Local Government	3.1.8	Ensure the UK's diverse communities are engaged with, and benefit from, the changes and opportunities arising from hosting the Games in the UK

	Mayor of London	3.2	Maximise the economic, social, health and environmental benefits the Games bring to London and all Londoners
	London Development Agency	3.2.1	Maximise the employment and skills benefits for Londoners arising from Games-related business
	London Development Agency	3.2.2	Maximise the wider economic benefits of the Games to London, including those for tourism and business promotion
	Greater London Authority	3.2.3	Maximise cultural benefits to Londoners from hosting the Games and the Cultural Olympiad
	Department of Health, Learning and Skills Council and London Development Agency	3.2.4	Maximise social benefits to Londoners, including in health, education and volunteering, of hosting the Games
	Greater London Authority	3.2.5	Ensure that the Games contribute to Sustainable Communities priorities, including the London Thames Gateway
	Greater London Authority	3.2.6	Agree and promote sustainable development and procurement policies, including commitments to sustainable energy and waste management goals
	Visit London	3.2.7	Promote London's image as a leading world city to an international audience
	London Development Agency	3.2.8	Ensure London's diverse communities are engaged with, and benefit from, the changes and opportunities arising from hosting the Games in London and business promotion
4 To achieve a sustained improvement in UK sport before, during and after the Games, in both elite performance – particularly in Olympic and Paralympic sports – and grassroots participation	British Olympic Association	4.1	Secure UK Olympic and Paralympic athletes' success in the Games
	Department for Culture, Media and Sport and UK Sport	4.2	Maximise British athlete success in the Olympic and Paralympic Games through investing funds in, and supporting, our most talented athletes
	Department for Culture, Media and Sport and UK Sport	4.3	Secure long term benefits to elite sport competitors – particularly in Olympic and Paralympic sports
	Department for Culture, Media and Sport and Sport England	4.4	Maximise increase in UK participation at community and grassroots level in all sport and across all groups
	Mayor of London	4.5	Maximise increase in London participation at community and grassroots level in all sport and across all groups
	Department for Culture, Media and Sport and Sport England	4.6	Implement viable legacy use for Olympic sports facilities outside London

	Mayor of London	4.7	Implement viable legacy use for Olympic sports facilities in London
	Department for Culture, Media and Sport	4.8	Work with those in other countries, particularly those in development, to promote sport excellence and participation
	British Olympic Association	4.9	Promote, through sport, the Olympic ideals across the 2012 programme

Source: NAO 2007, 35-37

EIDESSTATTLICHE ERKLÄRUNG / STATUTORY DECLARATION

Hiermit erkläre ich an Eides statt, dass ich die vorliegende Diplomarbeit selbständig und ohne fremde Hilfe angefertigt, andere als die angegebenen Quellen und Hilfsmittel nicht benutzt und die aus Veröffentlichungen wörtlich oder inhaltlich entnommenen Stellen als solche kenntlich gemacht habe.

Herewith I assure that I wrote the present Diploma Thesis independently. No aids other than those specified in the thesis have been used. All citations from literature and other publications, whether literal or analogous, are indicated.

Lüneburg, May 25th, 2007

Birte Berlemann

Publikationen

2007

Berlemann, B. (2007): Sustainability management for the Olympic and Paralympic Games in London 2012. Lüneburg: Centre for Sustainability Management e.V. & Institut für Umweltkommunikation.

Bundesumweltministerium (BMU); econsense & Centre for Sustainability Management (CSM) (Hrsg.) (2007): Nachhaltigkeitsmanagement in Unternehmen. Von der Idee zur Praxis: Managementansätze zur Umsetzung von Corporate Social Responsibility und Corporate Sustainability. 3. vollständig überarbeitete und erweiterte Auflage. Berlin/Lüneburg: BMU, econsense & CSM.

2006

Albrecht, P. (2006): Nachhaltigkeitsberichterstattung an Hochschulen. Diskussion möglicher Ansatzpunkte und ihrer Konsequenzen für die Praxis. Lüneburg: Centre for Sustainability Management e.V. & Institut für Umweltkommunikation.

Brix, K.; Bromma, B. & Jaenisch, J. (2006): Nachhaltiges Unternehmertum. Diskussion des Konzepts an Unternehmensbeispielen vom Bionier bis zum sustainable Entrepreneur. Lüneburg: Centre for Sustainability Management e.V.

Fitschen, U. (2006): Umweltmanagement ausgewählter Großveranstaltungen – Effektiver Umweltschutz oder Greenwashing? Lüneburg: Centre for Sustainability Management e.V.

Knolle, M. (2006): Implementierung von Sozialstandards in die Wertschöpfungskette von Bekleidungsunternehmen durch die Bildung von Kooperationen. Lüneburg: Centre for Sustainability Management e.V.

Pinter, A. (2006): Corporate Volunteering in der Personalarbeit: ein strategischer Ansatz zur Kombination von Unternehmensinteresse und Gemeinwohl? Lüneburg: Centre for Sustainability Management e.V.

2005

Hellmann, K. (2005): Formen des Biodiversitätsmanagements. Ein öffentlicher und ein unternehmerischer Ansatz im Vergleich. Lüneburg: Centre for Sustainability Management e.V.

Schaltegger, S. & Hasenmüller, P. (2005): Nachhaltiges Wirtschaften aus Sicht des "Business Case of Sustainability." Ergebnispapier zum Fachdialog des Bundesumweltministeriums (BMU) am 17. November 2005. Lüneburg: Centre for Sustainability Management e.V.

Wagner, M. (2005): An Estimation of the Total Benefit Value of the British Countryside for Recreational Activities. Discussion Paper. Lüneburg: Centre for Sustainability Management e.V.

2004

Dubielzig, F.; Schaltegger, S. (2004): Methoden transdisziplinärer Forschung und Lehre. Ein zusammenfassender Überblick. Lüneburg: Centre for Sustainability Management e.V.

Herzig, C. (2004): Corporate Volunteering in Germany. Survey and Empirical Evidence. Lüneburg: Centre for Sustainability Management e.V.

Herzig, C. & Schaltegger, S. (2004): Nachhaltigkeit in der Unternehmensberichterstattung - Gründe, Probleme, Lösungsansätze. Lüneburg: Centre for Sustainability Management e.V.

Wagner, M. (2004): Firms, the Framework Convention on Climate Change & the EU Emissions Trading System. Corporate Energy Management Strategies to address Climate Change and GHG Emissions in the European Union. Lüneburg: Centre for Sustainability Management e.V.

Zöckler, J. (2004): Die Einführung des Emissionshandels in Deutschland. Eine polit-ökonomische Analyse unternehmerischer Interessenvertretung am Beispiel der Elektrizitätswirtschaft. Lüneburg: Centre for Sustainability Management e.V.

2003

Burandt, S.; Döscher, K.; Fuisz, S.-K.; Helgenberger, S. & Maly L. (2003): Transdiziplinäre Fallstudien in Lüneburg. Beschreibung eines Entwicklungskonzepts hin zur Erweiterung des Curriculums an der Universität Lüneburg. Lüneburg: Centre for Sustainability Management e.V.

Frenzel, S. (2003): Operative Umsetzung der projektorientierten Kyoto-Mechanismen bei Kraftwerken. Erarbeitung eines Instruments. Lüneburg: Centre for Sustainability Management e.V.

Herzig, C.; Rheingans-Heintze, A.; Schaltegger, S. & Tischer, M. (2003): Auf dem Weg zu einem nachhaltigen Unternehmertum. Entwicklung eines integrierten Konzepts. Lüneburg: Centre for Sustainability Management e.V.

Herzig, C.; Rheingans-Heintze, A. & Schaltegger, S. unter Mitarbeit von Jeuthe, K. (2003): Nachhaltiges Wirtschaften im Handwerk. Stand der Praxis in Hamburg, Nordrhein-Westfalen und Thüringen. Lüneburg: Centre for Sustainability Management e.V.

Kim, K. (2003): Kriterien der interaktiven Unternehmenskommunikation im Internet. Lüneburg: Centre for Sustainability Management e.V.

Lühmann, B. (2003): Entwicklung eines Nachhaltigekeitskommunikationskonzepts für Unternehmen. Modellanwendung am Beispiel T-Mobile Deutschland GmbH. Lüneburg: Centre for Sustainability Management e.V.

Wagner, M. (2003): The Porter Hypothesis Revisited: A Literature Review of Theoretical Models and Empirical Tests. Lüneburg: Centre for Sustainability Management e.V.

2002

Bilecen, E. & Kleiber, O. (2002): Erholung im Wald: Des einen Freund des anderen Leid. Kosten für Waldeigentümer und deren Einflussfaktoren. Lüneburg: Centre for Sustainability Management e.V.

BMU & BDI (Hrsg.); Schaltegger, S.; Herzig, C.; Kleiber, O. & Müller, J. (2002): Nachhaltigkeitsmanagement in Unternehmen. Konzepte und Instrumente zur nachhaltigen Unternehmensentwicklung. Lüneburg: Centre for Sustainability Management e.V.

Figge, F. (2002): Stakeholder und Unternehmensrisiko. Eine stakeholderbasierte Herleitung des Unternehmensrisikos. Lüneburg: Centre for Sustainability Management e.V.

Figge, F. (2002): Stakeholder Value Matrix. Die Verbindung zwischen Shareholder Value und Stakeholder Value. Lüneburg: Centre for Sustainability Management e.V.

Figge, F. & Hahn, T. (2002): Environmental Shareholder Value Matrix. Konzeption, Anwendung und Berechnung. Lüneburg: Centre for Sustainability Management e.V.

Figge, F. & Hahn, T. (2002): Sustainable Value Added. Measuring Corporate Sustainable Performance beyond Eco-Efficiency. 2nd, revised edition. Lüneburg: Centre for Sustainability Management e.V.

German Federal Ministry for the Environment and Federation of German Industries (Eds.); Schaltegger, S.; Herzig, C.; Kleiber, O. & Müller, J. (2002): Sustainability Management in Business Enterprises. Concepts and Instruments for Sustainable Development. Lüneburg: Centre for Sustainability Management e.V.

Hellmann, K. (2002): Ermittlung von Präferenzen verschiedener Anspruchsgruppen für die Landschaft in einem Naturschutzgebiet. Anwendung einer Conjoint-Analyse am Fallbeispiel der Lüneburger Heide. Lüneburg: Centre for Sustainability Management e.V.

Kim, K. (2002): Methoden zur Evaluation der Nachhaltigkeit von Unternehmen. Kategorisierung und Analyse ihrer Stakeholderorientierung. Lüneburg: Centre for Sustainability Management e.V.

Petersen, H. (2002): Sustainable Champions. Positionierung von Marktführern im Umweltbereich. Eine empirische Untersuchung. Lüneburg: Centre for Sustainability Management e.V.

Trautwein, S. (2002): Chancen und Probleme des betriebsinternen CO_2-Zertifikatehandels - am Beispiel des Otto Versand, Hamburg. Lüneburg: Centre for Sustainability Management e.V.

Wagner, M. (2002): Empirical identification of corporate environmental strategies. Their determinants and effects for firms in the United Kingdom and Germany. Lüneburg: Centre for Sustainability Management e.V.

Wagner, M. & Schaltegger, S. (2002): Umweltmanagement in deutschen Unternehmen - der aktuelle Stand der Praxis. Lüneburg: Centre for Sustainability Management e.V.

2001

Burritt, R.L. & Schaltegger, S. (2001): Eco-Efficiency in Corporate Budgeting. Lüneburg: Centre for Sustainability Management e.V.

Deegen, T. (2001): Ansatzpunkte zur Integration von Umweltaspekten in die „Balanced Scorecard“. Lüneburg: Centre for Sustainability Management e.V.

Figge, F. (2001): Biodiversität richtig managen - Effizientes Portfoliomanagement als effektiver Artenschutz. Lüneburg: Centre for Sustainability Management e.V.

Figge, F. (2001): Wertschaffendes Umweltmanagement. Keine Nachhaltigkeit ohne ökonomischen Erfolg. Kein ökonomischer Erfolg ohne Nachhaltigkeit. Frankfurt: Fachverlag Moderne Wirtschaft in Zusammenarbeit mit PriceWaterhouseCoopers und dem Centre for Sustainability Management (CSM) e.V.

Figge, F. (2001): Environmental Value Added – ein neuer Ansatz zur Messung der Öko-Effizienz. Lüneburg: Centre for Sustainability Management e.V.

Figge, F.; Hahn, T.; Schaltegger, S. & Wagner, M. (2001): Sustainability Balanced Scorecard. Wertorientiertes Nachhaltigkeitsmanagement mit der Balanced Scorecard. Lüneburg: Centre for Sustainability Management e.V.

Hahn, T. & Wagner, M. (2001): Sustainability Balanced Scorecard. Von der Theorie zur Umsetzung. Lüneburg: Centre for Sustainability Management e.V.

Hroch, N. & Schaltegger, S. (2001): Wie gut berücksichtigen Umwelterklärungen und -berichte zentrale umweltpolitische Themen? Vergleichende Untersuchung am Beispiel von Angaben über CO_2-Emissionen und Energieverbrauch für 1995/96 und 1998/99. Lüneburg: Centre for Sustainability Management e.V.

Petersen, H. (2001): Gewinner der Nachhaltigkeit. Sustainable Champions. Ansätze zur Analyse von Marktführern im Umweltbereich. Lüneburg: Centre for Sustainability Management e.V.

Schaltegger, S.; Hahn, T. & Burritt, R.L. (2001): EMA – Links. Government, Management and Stakeholders (UN-Workbook 2). Lüneburg: Centre for Sustainability Management e.V.

Schaltegger, S. & Petersen, H. (2001): Ecopreneurship – Konzept und Typologie. Lüneburg: Centre for Sustainability Management e.V.

Schaltegger, S. & Synnestvedt, T. (2001): The Forgotten Link Between „Green" and Economic Success. Environmental Management as the Crucial Trigger between Environmental and Economic Performance. Lüneburg: Centre for Sustainability Management e.V.

Wagner, M. (2001): A review of empirical studies concerning the relationship between environmental and economic performance. What does the evidence tell us? 2nd, revised edition. Lüneburg: Centre for Sustainability Management e.V.

2000

Figge, F. & Schaltegger, S. (2000): Was ist „Stakeholder Value"? Vom Schlagwort zur Messung. Lüneburg: Centre for Sustainability Management e.V. und Bank Pictet in Zusammenarbeit mit UNEP.

Figge, F. & Schaltegger, S. (2000): What is "Stakeholder Value"? Developing a catchphrase into a benchmarking tool. Lüneburg: Centre for Sustainability Management e.V. and Bank Pictet in association with UNEP.

Figge, F. & Schaltegger, S. (2000): Qu'est-ce que la «Stakeholder Value»? Du mot-clé à sa quantification. Lüneburg: Centre for Sustainability Management e.V. et Banque Pictet en association avec UNEP.

Schaltegger, S.; Hahn, T. & Burritt, R.L. (2000): Environmental Management Accounting – Overview and Main Approaches. Lüneburg: Centre for Sustainability Management e.V.