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# Evaluation of the effectiveness of policies related to the sustainability of Mega Sports Events

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## 1. Introduction

“Die Welt zu Gast bei Freunden – A time to make friends”; that was the official slogan of the FIFA World Cup 2006 in Germany. Around 3.4 million viewers were counted by the Fédération Internationale de Football Association (FIFA) and the German government claimed that over 2 million foreigners came to Germany (FIFA, 2006: 116), (Bundesministerium des Inneren, 2006: 5). This enormous number of guests not only had an impact on the economic branches of gastronomy and hotels, but also led to a celebration with people from all nationalities and backgrounds. From ninth of June until the final match on ninth July 2006, Germany transformed into a huge fan festival, where 21 million people took part in, exceeding all expectations (German National Tourist Board, nd). So far, the FIFA World Cup 2006 can be considered as an event of exceptional size and openness.

But what does not come into one’s mind is the environmental impact that Mega Sports Events of this kind have. The great number of visitors is not only a catalyst for international cohesion and friendship, but also for pollution of all kinds. The most obvious ones are air pollution by plane and car travel, water consumption, increased waste production through catering services and merchandise. Next to the obvious production of rubbish, the use of electricity and the production of exhaust gases increase the amount of CO<sub>2</sub>-emissions and Greenhouse Gases in general, which are highly dangerous for the global climate. Therefore, heating or air-conditioning facilities at stadiums as well as transportation measures are also a critical contributor. In recent years, public and private organizers have discovered the need to address the environmental consequences of their events, as the global attention towards the sustainability topic rises with more and more international agreements such as the Kyoto Protocol or the Agenda 21 (Collins et al., 2009: 829). Potential host countries of Mega Events must fulfil high expectations and investments of high amounts are made in order to gain an international reputation. The bidding processes for Mega Sports Events are highly competitive because hosting an event of this exceptional size is not only a challenge but also an honour. During the decision-making process, in which the organizers decide on which applicant gets the acceptance, they refer to several criteria that potential host countries must accomplish, e.g. concerning infrastructural or safety issues. The application of countries is connected to many demanding as well as restrictive guidelines, so that commonly very ambitious promises are given.

The underlying question hereby is if those promises can actually be delivered or if they fail to be implemented during the course of a Mega Sports Event. This paper discusses this question by focussing of on specific case, namely the FIFA World Cup in Germany in 2006 and by evaluating the policies related to the sustainability of this Mega Sports Event.

## 2. Problem Statement

As the world becomes global in many aspects, not only economic, political or cultural matters travel the globe, but also sports competition takes place on an international level. According to the Anholt Nation Brands Index, the “globalization means that countries compete with each other for attention, respect and the trust of investors, tourists, consumers, donors, immigrants, the media and the government of other nations” (The Anholt Nation Brands Index, 2006). This holds also true for cultural and sporting events: nations compete in a fashionable bid for the acceptance, since the hosting of a MSE promises far reaching benefits from increased tourist flows, price rises, foreign and domestic investments and international image building (Kersting et al., 2009: 42). But this does not come for free: as an example, the expenditures for solely the World Cup stadiums in Germany aggregate to a total of 1.844 billion Euros mainly financed through the operators, private investors and football clubs. (Kersting et al., 2009: 41).

Because not all sports meetings have a worldwide reputation, sports events are characterized by five features which eventually make them Mega Sports Events (MSE): (1) the event schedule, (2) the event strategy, (3) the event period, (4) the event content and (5) the event size (Lienhard et al., 2014: 6; Preuss et al., 2009: 26). Despite there are many different possibilities to sort the multitude of events into categories, four events have an outstanding character: the Olympic Winter Games, the Olympic Summer Games, the World Exhibitions and the FIFA World Cups (Preuss et al., 2009).

The overall problem of Mega Sports Events is that the responsible stakeholders, namely Organization Committees and national governments, offer very optimistic policies and promises when competing in the bid for hosting a MSE. This development is due to the commonly high expectations of the population which forces the organizers to consider environmental factors, despite the official sides (e.g. the FIFA) do not requires such thoughts. The demands of the people are not ignored since this would endanger the political acceptance and satisfaction. However, most of the time there are so many different highly motivated objectives that they can only be reached partly or not at all. Therefore the question arises which effect these ambitious goals actually have and if the sustainability goal is a serious concern or just a hollow promise. Additionally, one has to ask if goals are set too high on purpose and if the failure of policies is thus deliberately accepted beforehand.

Having a closer look at such events it becomes evident how many areas are actually affected. MSE have an impact on the economic performance of the host country, since the tourism that is related to the event provides income for airlines, hotels, gastronomy and other local entrepreneurs. Unemployment and poverty can be targeted by job creation e.g. through construction work for stadiums (Konrad Adenauer Stiftung, 2011: 5) but remain problematic when poverty and the luxurious world of five-star hotels, tourists and happiness collide. With the improvement of the infrastructure and sports facilities, future sports events are likely to be hosted by that country again, adding economic investments and recovery.

On top, social consequences for the sustainable development are inevitable, which recently became obvious during the FIFA World Cup in Brazil in 2014, where poverty and violation of Human Rights led to nation-wide protests. These issues darken the very bright vision of solidarity and team spirit amongst the countries and nationalities.

Environmentally seen, MSE have a tremendous effect on the nature and local ecosystems, due to carbon emissions through airplane travel, resource consumption through construction work or high

amounts of waste (Konrad Adenauer Stiftung, 2011: 107; Collins et al., 2009: 829). But there are also positive effects of MSE, for example through the enhancement of stadiums and infrastructure towards a more energy efficient running of facilities and the rise of environmental awareness among the population (Collins et al., 2009: 829).

This paper will discuss on one particular Mega Sports Event, namely the FIFA World Cup 2006 in Germany, in order to be able to go more in depth in the analysis. The World Cup can be considered as a MSE because of its fixed and short-term duration which regularly repeats each four years and its sporting character. Its high influence on local economy and environment and its strong image-building capacity are significant factors for its world-wide prominence and recognition, contributed by their exceptional size and identity (Preuss et al., 2009: 28; Lienhard et al., 2014: 6).

The case selection of this paper addresses the environmental impacts, while social and economic stability are guaranteed among the broader population and will thus not be incorporated in the analysis of this work. Considering that this World Cup took place in Germany, which is a developed country, poverty and resistance were not a pressing issue as well as the new building of stadiums was not necessary. In addition, infrastructural networks and accommodations were already well developed.

The aggravation of the climate change is a serious threat for the world and therefore, the FIFA World Cup 2006 was the first World Cup to bring up an official sustainability strategy in order to be the first climate-neutral Mega Sports Event. This concept, called "Green Goal", involved strategies for the reasonable use of water, waste reduction, energy efficiency, sustainable transport and climate neutrality (FIFA, 2006: 6). A critical analysis will discuss if the Green Goal initiative was actually able to lead to climate neutrality of the FIFA World Cup and which other factors eventually played a role. The paper is supposed to discuss the various influences that might have had an impact on the result. The Green Goal program is expected to function as a representative for policies that are generally related to the sustainability of Mega Sports Events.

### **3. Objective**

The objective of this paper is to contribute to the existing body of knowledge on evaluation research by critically evaluating the policies related to sustainability during Mega Sports Events. By selecting the case of the FIFA World Cup 2006, the policies, measures and respective results will be assessed concerning the fulfilment of the policy goals. The effectiveness of the sustainable strategy called Green Goal is supposed to be discussed, aiming at finding out if specific policies towards the sustainability of Mega Sports Events actually hold true and which role the measures play. At the end of this paper, the reader shall be able to comprehend which impacts certain policies have, which intervening factors have to be considered and which potential adjustments must be made to guarantee climate neutrality for future Mega Sports Events. The audience of this work are not only organizers of Mega Sports Events, but also governments (of host countries), people that want to evaluate a MSE in regard to sustainability policies and people that are generally interested in evaluation research and want to add the results of this paper to their mind.

## 4. Research Question

The research question of this paper is: Can specific policies that are tailor-made in a situation of comparative bidding to ensure the sustainability of Mega Sports Events, actually lead to the sustainable course of Mega Sports Events?

In order to answer the research question, an analysis will be conducted while selecting one particular case, namely the FIFA World Cup 2006 in Germany.

This paper will shed light on several sub-questions: it will be discussed (1) which policies were taken during the Green Goal initiative and (2) in how far they were achieved. As a next step, the analysis will reveal (3) if the FIFA World Cup 2006 was a climate neutral event and if this goal attainment was actually caused by the policies or (4) if there are any rival explanations for the results. Another important question is (5) which lessons can be learned from the methodology of evaluating MSE and lastly, the paper will discuss (6) in how far the bidding process can serve as an explanation for deliberate policy failure. In the context of a bid, goals are set unreasonably high on purpose in order to win the competition and policy failure is often accepted.

The overall objective of this research is the question if specific policies and the respective measures can contribute to the climate neutrality and sustainability of Mega Sports Events.

## 5. Research Design and Methodology

In order to answer the research question, a single-case study is conducted, which gives an “(up-)close or otherwise in-depth understanding of a single or small number of ‘cases’, set in their real-world contexts” (Yin, 2012: 4). The selected case here is the FIFA World Cup 2006 in Germany, whereby the centre of attention lays on the ecological and environmental aspect of this MSE, leaving aside social and economic factors. To evaluate the effectiveness of the measures of the Green Goal initiative, this paper will carry out an ex post Policy Evaluation (Crabbé et al., 2008: 10). A precondition for this would be a policy analysis, which is supposed to assess the internal consistency of a certain policy (Coenen et al., 2012: 20). Since the Green Goal strategy has already executed its policy goals, there is no need to conduct a policy analysis here. One can only assume the internal consistency of the respective policies, but due to the scope of this paper it will not go further into detail about this. The overall framework, policy theory, deals with the relation between policy measures (and side-factors) and policy results (and side-effects), emerging from a policy process: (1) Preparation Phase, (2) Execution Phase and (3) Evaluation Phase (Coenen et al., 2012: 18, 2012).

## 5.1. Policy Cycle

The following figure shows a policy cycle and thus gives a vivid and fanned-out overview over these phases.

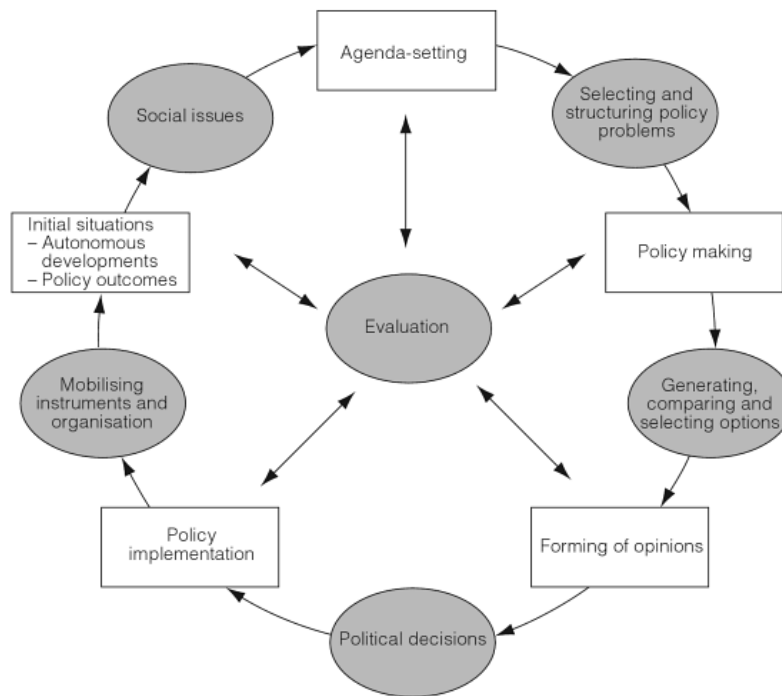


Figure 1: Policy Cycle

Source: (Crabbé et al., 2008: 3)

The Preparation Phase contains the identification of the overall policy problems and during the agenda-setting, possible solutions are developed which can later be transformed into actual policies. Hereby, factors such as domestic institutional conditions and the international status of the country play a role and not only the expected effectiveness of the policy (Crabbé et al., 2008: 8). During the Execution Phase, political decisions are made and the selected policies are realized through appropriate measures. In the aftermath of the respective policy implementation, the Evaluation Phase tries to expose their impacts. Here, policy outcomes exist next to autonomous developments, whereby both factors contribute to social change (positively or negatively). Those results are the precondition for further adjustment of the policies (Fischer et al., 2007: 44). Evaluation procedures take place mainly during that last part, especially in the here present case study, and are “intended to contribute to the further rationalization of policy” (Crabbé et al., 2008: 10).

Regarding the present case, the first phase started in 2001 when the Organization Committee (OC) started to work on a sustainability strategy for the FIFA World Cup 2006 (FIFA, 2006: 18). During this timeframe, policy theory was formulated and the best alternative was chosen. In 2006, the Execution Phase took place and from then on, during the Evaluation Phase, it was tried to assess the degree to which the policy goals have been achieved. Retrospective reasons for failure could be inadequacy of the policy, lack of financial support, sabotage by officials or other factors such as ignorance or resistance in the society (Coenen et al., 2012: 19).



## 5.2. Evaluation Steps

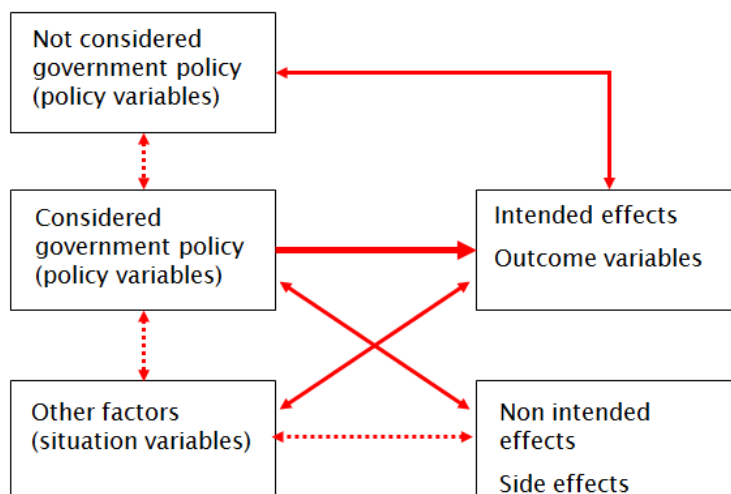
Now, in order to conduct the policy evaluation, the following steps were taken: (1) Firstly, the overall policy goals are reconstructed and then visualized in a policy tree. (2) The evaluation criteria derive from the policies in this case, meaning that the goals are evaluated based on the degree of their fulfilment. In this step, the actual measures and projects are displayed. The (3) criteria are applied and the success or failure of each policy goal is assessed (goal attainment). Here, official data material is used and finally, the (4) effectiveness of the measures is elaborated, discussing recent developments and trends that could have had an impact on the fulfilment of the policy goals (Coenen et al., 2012: 30). The latter step tries to clarify if there is a causal relationship between the measures and the results, or if any other factors influenced the outcome. The evaluation of this case is difficult since the Green Goal was the first of its kind and thus, no comparable programmes exist.

## 5.3. Data sources

In order to conduct the policy evaluation and to answer the research question, different sources are used. This includes official sides such as the German Football Association (DFB) and the OC, mostly under the umbrella of FIFA publications. Additionally, the data derives from other, unrelated and secondary sources that eventually deal with the impacts of Mega Sports Events and the FIFA World Cup 2006 in Germany.

## 5.4. Operationalization

Another important step during the evaluation of policies is the operationalization, which “literally means the operations involved in measuring a variable” (Babbie, 2014: 43). It is essential that policies are measurable so that valid data can be analyzed. In order to be able to state that the Green Goal sustainability strategy was successful or not, it is necessary to assure the correct operationalization and measurability of the policy goals. Since this paper does not conduct a new operationalization but relies on the already given operationalization and measurements, it will use the available data in a sophisticated and critical manner. The following graphic visualizes the broader concept.



**Figure 2: Operationalization Scheme**

In this paper, the focus is laid on the causal relationship between the considered government policies and the outcome variables or more precisely on the question if the respective policies of the government had the effects they intended. The outcome is also influenced by other factors (situation

variables) and policies that are not directly considered. These influences are additionally addressed, whereas the side effects of those intervening variables are left aside.

## **6. Generalization**

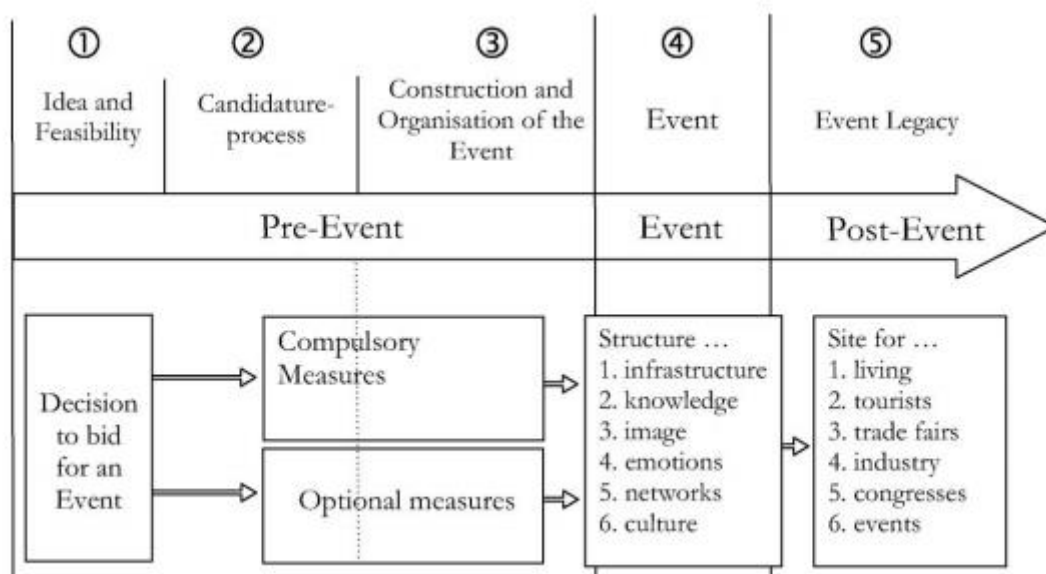
As was already mentioned before, Germany is considered a well developed country with functioning infrastructure, economy and political background. For that reason, the setup of an initiative such as Green Goal was comparatively welcomed and easy due to political, civilian and (international) financial support. As a result, the German case is hard to compare to other FIFA World Cup hosts such as South Africa, Brazil or Russia, which are considered less developed than Germany and therefore have different issues and structures. One of many indicators for this is the Human Development Index (HDI), which is defined by the United Nations Development Programme as “a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living” (United Nations Development Programme, 2013). In 2013, the HDI of Germany was 0.911 (rank 6), whereas Russia reached 0.778 and South Africa only 0.658 (rank 118), showing that there is still room for improvement. Consequently, it is hard to project the German case onto other cases and the generalization of this research is to be treated critically.

## 7. Policy Context

This chapter forms the background knowledge for further remarks as it explains the creation and development of the particular policies and sets them in a broader picture of Mega Sports Event impacts.

Each MSE requires preparation and planning long beforehand as well as it has long-term consequences on the environment it takes place in. These phenomena, so-called legacies, are “all that remains” (Chappelet J.-L., 2012: 77) of a sporting event, whereby they appear in different shapes and variations. All policies that are taken in relation to Mega (Sports) Events have effects that need to be considered in the short- and long-term perspective, as they trigger positive as well as negative results. The improvement of infrastructure can be a positive inheritance, whereas the erection of superfluous sport facilities without long-term usage is a rather negative one (Gratton et al., 2008: 1923).

There is no single definition of this concept as each author denotes different legacies. For example Gratton and Preuss (2008) name these six elements: Infrastructure; Knowledge, skill-development and education; Image; Emotions; Networks and Culture. The following graphic is adapted from the author’s text and visualizes their ideas. Not only does it shed light on the extensive planning process, but also on the various outcomes of (Mega Sports) Events with different stakeholders involved.



**Figure 3: Event Legacies**

Source: (Gratton et al., 2008: 1926)

In their definition, climate concerns do not have a special mentioning among the other factors such as image and culture. In contrast to that, the International Olympic Committee (IOC) gives five other legacies: Sporting; social, cultural and political; Environment; Economic and Urban (Chappelet J.-L., 2012: 78; International Olympic Committee, 2009). It is obvious that here, environmental topics are already on the agenda and thus are considered during the candidature, planning and implementation process of the event. In general, sustainability and ecological consciousness were and still are not an integral or evident part of Mega Sports Events, especially in the light of the FIFA World Cups. Distinct from the Olympic procedures, the FIFA does not demand an environmental concept in the

application process (FIFA, 2006: 18). In the light of this aspect, it is interesting to scrutinize the reasons of the German government to introduce an environmental chapter since they were not obligated to do so. It can be assumed that the German population has specific expectations concerning sustainability efforts and that the government therefore has an interest in embedding ecological topics in their application in order to initiate political satisfaction among the people. Surely, the additional outdoor advertising of Germany was a significant factor, but one cannot speak of a simply symbolic character of the policies, due to the relatively high awareness of environmental matters in Germany and the actual efforts that were put in the realization of the Green Goal programme.

But still, the stakeholders have vastly different interests and thus some interests have a higher priority than others. Looking at the balance that the German government drew in the aftermath of the FIFA World Cup 2006 in Germany, different points are discussed well before the sustainability subject is mentioned. For example, the additional value of tourist flow and price rises benefitted the economic growth and also improved the situation on the labour market (Bundesministerium des Inneren, 2006: 27) due to the necessity of more and more workers for construction work, catering, cleaning, media or hospitality. But this matter of fact is not without (negative) connotation, as the increase of income on the demand side was solely limited to the time frame of the event and fell back into the former balance after its end (Gratton et al., 2008: 1925), which made this economic boom only episodic but still significant.

People have never been more willing to pay high amounts of money for this unique spectacle, which made 'the 2006 soccer World Cup [...] one of the greatest and economically most important events in Germany' (Cornelissen et al., 2010: 98–99). Therefore, the economic influence of MSE is a welcomed externality of those events, triggered by public and private investments and expenditures from visitors. Beside the total economic gain, regional marketing was an important factor for the German authorities as the twelve host cities recorded massive stimuli on their regional economy (Bundesministerium des Inneren, 2006: 29). The development of regional structures, so to say the supply side, was a significant factor, because this progress is far more sustainable in the long-term and thus attracts more autonomous money even after the end of the Mega Event (Gratton et al., 2008: 1925).

Germany as a country profited from the various campaigns that were implemented in order to move the German image into a more positive direction and away from old burdens from the World Wars (Bundesministerium des Inneren, 2006: 30–32; Cornelissen et al., 2010: 97). In the retrospective, the program "Germany- Land of ideas" succeeded in transforming the international recognition of the country into a picture of a 'prosperous and future-ready economic location' (Cornelissen et al., 2010: 104). Next to substantial projects such as safety concepts or the improvements in infrastructure, sustainability ideas were internalized in one single program named 'Green Goal'.

The Green Goal initiative was the first of its kind, being voluntarily introduced by the German Organization Committee (OC) in 2001. The concept laid its focus on the sustainability of the twelve stadiums that were selected as match venues and therefore, a chapter about environmental issues was added to the FIFA document "Technical recommendations and requirements for World Cup Stadiums" (FIFA, 2006: 18, 2007: 32). The main work on the concept was done by the World Wide Fund for Nature (WWF) Germany and the Öko-Institut, a prestigious institution in Europe, which developed the environmental programme in 2002. The project was supported by the Federal

Environment Ministry and financed by the German Federal Environment Foundation, so that in 2003 already, a set of guidelines with measurable objectives was completed and published (FIFA, 2006: 18). During the then following implementation phase, the stadiums that were under reconstruction work had to adjust to the newly introduced specifications whereby each host city had much leeway in choosing an emphasis for their stadium, e.g. water savings, waste reduction, solar energy etc. (Öko-Institut e.V., 2006: 1). Another important actor joined in 2005 when the United Nations Environment Programme (UNEP) signed a “Memorandum of Understanding” for further cooperation on the Green Goal initiative with the OC (FIFA, 2006: 19). Due to the expanding international recognition of the concept, many international and domestic businesses became partners of Green Goal and FIFA decided to give financial support to three climate compensation projects. A total investment of 1.2 million Euros for those three climate projects was provided and those efforts led to the assumption that the FIFA World Cup 2006 would be the first climate neutral sports event of this scale (Öko-Institut e.V., 2006: 3); (FIFA, 2006: 19).

## 8. Reconstruction of the Policy Goals

This chapter gives the answer to the first sub-question that asks which policies were implemented. The overall **policy goals** of the Green Goal program 2006 focused on optimization of the official World Cup stadiums in Berlin, Dortmund, Munich, Stuttgart, Gelsenkirchen, Hamburg, Kaiserslautern, Frankfurt, Cologne, Hanover, Leipzig, and Nuremberg. The policies were supposed to be achieved through different measures, which will be explained briefly and after that visualized in a more detailed policy tree. As was stated in the beginning, the policy goals are equivalent to the evaluation criteria since the degree of fulfilment of the measures is the criteria for denoting the goals as successful or not. Additionally it is to repeat that the operationalization of the measurement was already done beforehand by the OC and can thus not be influenced by the author. However, the adequacy of the operationalization is elusive.

### 8.1. Water

The objective to **reduce the use of potable water by 20%** includes all sorts of water use: toilets, showers, pitch watering, catering and stadium cleaning; each of these dependent of number of events and number of visitors. In general, the World Cup stadiums have an annual consumption between 10,000 and 20,000 cubic meters (FIFA, 2006: 42). In order to reduce this amount of water, several measures were taken. An important one was the use of rainwater or non-potable water for the watering of pitches, made available through cisterns systems, surface water and infiltration systems. An improvement of sanitary facilities such as toilets or basins made a significant contribution to the reduction of water consumption, as well as the greening of roofs contributed to the natural water cycle (FIFA, 2006: 42–45). These measures contributed to the fulfilment of three sub-goals, namely the increased use of rainwater by 20%, the reduction of land sealing and the reduction of wastewater and groundwater contamination (FIFA, 2006: 46).

### 8.2. Waste

In order to **reduce the production of waste by 20%**, the primary waste sources were identified, which are plastics, paper, glass and bio waste, mainly produced through catering (serviettes, leftover food etc.). Other types of waste, such as batteries or waste metal, were not considered in the calculation (FIFA, 2006: 49). Since the catering service has proven to be the most problematic area, measures were especially taken to address this field. The most striking improvement was the

introduction of returnable beaker for drinks, which had never been used before at a Mega Sports Event. This multi-use system was also applied for PET bottles for all sorts of drinks and also for delivery and sale of food. The general avoidance of waste was another big topic, so that all unnecessary materials of food packaging, flyers and give-aways were dropped. The majority of bureaucratic issues were solved electronically, in order to avoid paper waste, and most bureaus and stand were only temporary built up and re-used later on. The amount of waste that could not be avoided was separated as far as possible in order to make recycling more feasible and was thus an important point on the waste reduction agenda (FIFA, 2006: 50–54).

### 8.3. Energy

Energy is mostly used in World Cup stadiums in the form of heat (4 million kWh) and electricity (3.5 million kWh), whereby numbers vary depending on the frequency and intensity of match days and the surrounding action, for example catering or media centres (FIFA, 2006: 62). The primary objective of Green Goal, namely the **reduction of energy consumption of World Cup stadiums by 20%**, was to be reached through measures which increase the energy efficiency, e.g. improved light bulbs or isolation of pipes. These measures are part of the conventional modernization of stadiums and therefore, special methods were added: an optimized lights and energy management, better systems for heating and air-conditioning as well as the switch to more efficient sources (FIFA, 2006: 63–64). The second objective, the **extensive use of renewable energy sources**, was targeted especially through measures in the field of hydropower, solar plants and also a biogas plant in Northern Germany for the use of biomass. In addition, certain cities supported the renovation of buildings in order to make them capable of using renewable resources (FIFA, 2006: 65–66).

### 8.4. Transport

The transport of 3.4 million visitors, with over one million foreigners, challenged the infrastructure in Germany. The OC aimed at inspiring as many guests as possible to use bus and rail transport, bikes or feet in spite of airplanes or cars so that the **share of public transport was at minimum 50%** (FIFA, 2006: 71–72). In order to make this happen, the Federal Ministry of Transport invested a total of 802 million Euros in the expansion of the already well developed infrastructure of public transport (FIFA, 2006: 71–72). Plus, the frequency and the amount of services were extended on match days and a significant innovation was the “KombiTicket”, which allowed ticket holder so use public transport services on match days for free. Furthermore, different special tickets were offered by Deutsche Bahn, the national supplier of public railways, in order to attract more clients. Related to this are the bus shuttle services and few parking spaces for cars, complemented by the establishment of more bicycle parking spaces (FIFA, 2006: 74).

Not only should more public infrastructure be used, but also the **eco-friendliness** of the services was to be improved **by 20%**. Therefore, hydrogen busses were used, which emit nearly no emissions, and many transport companies installed better filters in their busses (FIFA, 2006: 76–77).

### 8.5. Climate Neutrality

Finally, **climate neutrality** was the overall objective under whose umbrella the different measures were taken. The emissions that could not be avoided are supposed to be compensated through **climate protection projects** (FIFA, 2006: 85). Those were conducted in developing countries and did not only have a great environmental impact but also benefitted the local population. The projects were awarded the so-called “Gold Standard”, which was introduced in 2003 by the World Wide Fund for Nature (WWF) and others and which is a symbol for quality and sustainability of environmental

projects (World Wide Fund for Nature, 2015). As a result from detailed calculation, an approximate number of 92.000 tonnes of carbon dioxide had to be offset. In order to reach this ambitious goal, three projects were selected: one in Tamil Nadu, India, where a tsunami in 2004 left great destruction, and two in South Africa, forward-looking to the World Cup 2010 to be hosted by South Africa (FIFA, 2006: 89).

- a. "Family Clean Energy Packages" (India): Supported by half a million Euros from the German Football Association, small biogas units were installed in the Indian Province of Nagapattinam, which were filled with the dung of cows. Not only does this procedure save around 30.000 tonnes of CO<sub>2</sub>, but also it reduced the number of illnesses caused by smoke from cooking on obsolete stoves (FIFA, 2006: 90).
- b. Regenerative materials for fruit farm (South Africa): A citrus fruit farm in Lebata, South Africa, benefitted from a new boiler system that uses sawdust instead of coal. The sawdust was already given by the paper industry in the region and therefore annual savings of about 19.000 tonnes CO<sub>2</sub> were expected (FIFA, 2006: 90).
- c. Sewage gas for electricity (South Africa): In Sebokeng Township, near Johannesburg, electricity was produced through the methane gas that is contained in sewage gas of the local sewage plant. 5.800 tonnes of carbon dioxide were predicted to be saved annually (FIFA, 2006: 90).

Both African projects were financed with 700.000 Euros in total (FIFA: 400.000, Deutsche Telekom: 200.000, Plastics Europe: 100.000 Euros. Together with the budget for the Indian project (500.000), this makes an amount of 1.2 million Euros in sum (FIFA, 2006: 92).

## 8.6. Policy Tree

Please see next page for full graphic.

Climate Neutrality						
Water	Waste	Mobility		Energy		Projects
REDUCE USE OF POTABLE WATER BY 20%	REDUCE WASTE BY 20%	INCREASE USE OF PUBLIC TRANSPORT BY 50%	REDUCE ENVIRONMENTAL IMPACT OF TRANSPORT CARRIERS	REDUCE TOTAL ENERGY CONSUMPTION BY 20%	INCREASE USE OF RENEWABLE RESOURCES AS FAR AS POSSIBLE	COMPENSATE 92.000 TONNES OF CARBON DIOXIDE EMISSIONS
Rainwater cisterns	Returnable beaker and plates	Stadium links	Promotion of travel by bike	Optimized light management	Green electricity	Family Clean Energy Packages (India)
Dry Urinals	Multi-use systems (drinks and food)	Expansion of local public transport services	Environmental-friendly vehicle concept	Air conditioning and refrigeration	Solar Plants	Citrus Farm (South Africa)
Water-saving toilets	Multi-use transportation systems	KombiTicket		Gas instead of electricity	Biogas Plant	Sewage Gas (South Africa)
Flow regulators	“put it in a roll”	Guidance for public transport		Floodlighting system	Hydropower	
Less watering	Dispensing with flyers	Additional trains		District Heat from CHP		
Infiltration trenches	Instructions on waste concept	Special offers by Deutsche Bahn		Condensing technology		
Desealing	Temporary offices	Mobility Bahncard		Heat recovery		
Diverting Rainwater	Separate waste collection	Parking management		Heat insulation		
Green Roofs	Paperless offices	World Cup Miles		Temperature control		
Water-permeable surfaces		More parking spaces for bikes		Optimization of pitch heating		

Figure 4: Policy Tree



## 9. Goal Attainment

The following section addresses the second sub-question, which asks in how far the policies that are explained above have been achieved.

### 9.1. Water

During the World Cup, around 51.000 cubic meters of potable water were consumed in all stadiums and facilities taken together, which accounts for about 800 cubic meters per match. Despite there were several measures taken, the assessment only takes into account four elements, namely rainwater use, dry urinals, water-saving toilets and water-flow regulators, because other elements are not unambiguously measurable (FIFA, 2006: 46). Due to the use of rainwater (applied in six stadiums), 31.000 cubic meters of potable water could be saved. The use of dry urinals (applied in five stadiums) helped saving 4.780 cubic meters of potable water, adding to the 4.670 cubic meters that could be saved through toilets with a more efficient flushing system. An estimated number of 1.600 cubic meters were saved through water-flow regulator systems (applied in four stadiums) (FIFA 2006: 46–47). The usage of rain-, well- and surface water was partly successful. The 31.000 cubic meters that were hereby saved signify only about 14% of the total. Because rainwater was used for the watering of external, non-related pitches, those 10.000 cubic meters of savings are not added to the calculation and therefore, the sub-objective of 20% of rainwater use was not achieved. The next sub-goal is the avoidance of land sealing, which was considered as to be achieved due to the use of water-permeable materials contributing to the natural rainwater cycle. Lastly, the objective of reduction of wastewater and groundwater contamination was not achieved at all, since the planned measures were not realized (FIFA, 2006: 47). All in all, the consumption of potable water was reduced by 18%, not considering the additional measures that could not be measured, which leads to the conclusion that the objective was almost fulfilled (FIFA, 2006: 11).

### 9.2. Waste

The main objective of waste reduction was reached by 17%, accompanied by a clean and proper image of World Cup stadiums after matches. The returnable beaker was a great success since they were either returned or taken as a souvenir and re-used at home, so that around 51.000 tonnes of plastic waste could be saved due to this measure. On the one hand, hospitality areas were an issue because of the total of 1.494 tonnes of waste that were collected during the FIFA World Cup, over half of it having derived from these areas (FIFA, 2006: 56). The highest share had residual waste (66%) with 979 tonnes. On the other hand, waste separation was especially successful in these areas, outclassing the separation measure of spectator areas. There, the opportunities to separate one's trash were often not sufficiently given and therefore counter-productive. Better information and more waste-collection islands could have been a solution (FIFA, 2006: 59). Summarizing, savings of approximately 46 tonnes of cardboard, 54 tonnes of plastic waste, 9 tonnes of paper waste, 109 tonnes of PET non-returnable bottles and 86 tonnes of glass bottles could be achieved, all in all 305 tonnes (FIFA, 2006: 56–57).

### 9.3. Energy

The energy objective was tackled in the light of the energy consumption of the World Cup stadiums and their associated facilities for media or hospitality. The stadiums had the highest demand with 7.9 million kWh, whereas the International Broadcasting Centre with 1.9 million kWh and heat consumption with 1.4 million kWh had a clearly smaller share. When adding the 660.000 liters of

diesel that were used, an overall electricity demand of 12.6 million kWh could be denoted. Through efficiency measures, the goal of energy reduction by 20% was supposed to be reached, but not all potentials have been exploited to their full extent, which leads to a final reduction of energy by 13% only (FIFA, 2006: 68). Induced by an optimized light management, 1.7 million kWh have been saved and are also annually saved. Due to the supply of energy from an alternative source, namely block CHP (combined heat and power) plants, 31% of primary energy could be saved. CHP, or cogeneration, is considered to be a clean renewable energy source, since it is “the concurrent production of electricity or mechanical power and useful thermal energy (heating and/or cooling) from a single source of energy. CHP is a type of distributed generation and [...] is located at or near the point of consumption” (Oak Ridge National Laboratory, 2008: 5). In general, district heat saved around 5 million kWh and in three stadiums, condensing boilers led to an additional saving of 1 million kWh (FIFA, 2006: 69). Applied in six stadiums, 2.7 million kWh can be saved annually through heat recovery, further were 300.000 kWh of heat each saved through either measures such as insulation in one stadium or measures to guarantee temperature reduction and control. 250.000 kWh can be dispensed with through reductions of pitch heating facilities in two stadiums (FIFA, 2006: 69). Another goal was the implementation of renewable energy sources as far as possible. To achieve this, 13 million kWh were contributed by hydropower, which exceeded the 12.6 million kWh that were demanded. Additionally, the constructed solar plants will produce 2.5 million kWh annually, which could cover the total demand of the stadium for the next years and together with the biogas plant in Hamburg, this goal is considered as to be achieved.

#### **9.4. Transport**

Concerning the first objective of the initiative, namely the increase of public transport to World Cup stadiums by 50%, one can draw an optimistic conclusion. Approximately 52% of the visitors used the public railway and buses in cities, 23% used the car, 11% used a coach and 5% used park & ride facilities (FIFA, 2006: 68). In addition, many spectators (6%) resigned using any public transport but walked on foot or ride their bikes to the matches. Summarizing, 57% of visitors used public transport (railway and park & ride) and all in all 74% of the transport was undertaken in an environmentally friendly manner, adding the travellers by coach, by foot and by bike. Many of those travellers had the KombiTicket or other specific tickets which allowed them to use public transport for free and therefore, they extensively used the well developed public transport network (FIFA, 2006: 80).

The second objective, which was the reduction of the effects of transport on the climate, was almost fully achieved. Around 73.000 tonnes of greenhouse gases were emitted through transportation of travellers and supplies within Germany, not considering the journeys from foreigners to German stations or airports (FIFA, 2006: 80). These figures are mainly caused by the travel of guests of honour, World Cup partners, journalists and representatives, travelling by car or plane within Germany. Due to the measures that were taken, 19% (or 17.000 tonnes) of CO<sub>2</sub> equivalents could be saved. The fact that many of the official participants (representatives, guests of honour) used coaches saved 7.000 tonnes, adding to the exceeding number of public transport usage by foreigners (5.000 tonnes). Many German spectators and journalists travelled by rail, local transport and official World Cup vehicles, saving a total number of another 5000 tonnes of carbon dioxide (FIFA, 2006: 82).

#### **9.5. Climate Neutrality**

The project in Tamil Nadu, India, was started in 2006 when 230 biogas generation units were built, with 70 more units and 100 repaired houses upcoming until the end of that year and even more in

the course of 2007. Due to bureaucratic procedures, the citrus farm in South Africa could only start operating in 2008, just as the sewage gas project because of renovation work on the piping systems (FIFA, 2006: 93). All projects received the previously mentioned 'Gold Standard', by which it is ensured that the quality of compensation is the top priority and a significant role model for future sporting events (FIFA, 2006: 95).

**9.6. Overview**

<b>Policy</b>	<b>Goal</b>	<b>Achieved by:</b>
Water reduction	20%	18%
Waste reduction	20%	17%
Reduction of energy consumption	20%	13 %
Use of renewable sources	as far as possible	achieved
Use of public transport	50%	57%
Reduction of environmental effects	20%	19%
Climate Neutrality	compensate 100.000 tonnes of carbon dioxide	achieved

**Figure 5: Overview**

## Effectiveness

In order to assess the effectiveness of policies that are related to the sustainability of Mega Sports Events, this chapter will shed light on several ideas why there was no full goal attainment of the Green Goal program. In fact, the chapter above shows that the objectives could only partly be achieved despite the many measures that were taken. Since the measures were planned to fulfil the defined goals, the obvious question is why this did not come true. As was indicated before, the most natural assumption here is that there are other variables that influenced the goal achievement process. This means that this chapter will focus on the third and fourth sub-question, asking if there is a causal relationship between the policies and the goal attainment or if there are any rival explanations for it.

Before beginning with the analysis, a general concern about the accuracy of operationalization should be stated. As was already mentioned it is not possible today and in the scope of this paper to assess if the measurement was adequate or correct. It is hard to trace back if each relevant part was considered and if the limitations were set at the right points. But in order to conduct an analysis, this thesis will rely on the given data and scrutinize it properly. Each of the five superordinated goals (Water, Waste, Energy, Mobility and Climate Neutrality) will be discussed separately and the potential reasons for success as well as for difficulties will be considered.

### 9.7. Water

The objective to reduce water consumption was only achieved by 18%, which is still close to the set goal of 20%. A possible reason why the full achievement could not be reached could be the weather in June and July 2006. According to online news, the FIFA World Cup had optimal weather as July 2006 was the hottest month since the beginning of record, and both June and July were characterized with much sunshine and only little rainfall. This arid phase was topped by temperatures of over 30 degrees (Wetter Online, 2006). These circumstances mark an external and not considered factor on the event, leading to the assumption that rainwater cisterns could not exploit their full potential due to the lack of rainfall. Also, high temperatures and dryness made additional watering for pitches or other related green spaces necessary.

In addition, such a good weather probably motivated many people from the proximity to come spontaneously to the match venues and take part in the festivities. As a result, over 21 million visitors were recorded, which exceeded all expectations and forced some host cities to expand the capacities of their fan miles (German National Tourist Board, nd: 5). This large number of people was not calculated and neither was the additional water consumption they brought about on public viewing sites and fan fests.

These factors are important since the water consumption of visitors could not be controlled properly. The use of water for drinking, showering or toilets could not be influenced and therefore, the OC could only react to the increased consumption which they did not calculate. The German newspaper Focus announced in 2006 that during the half-time break of the opening game in Munich (Germany vs. Costa Rica), the water consumption escalated from 3532 liters per second to 5254 liters per second, for about 15 minutes, caused by toilet flushing. (Focus Online, 2006). The problem was targeted through dry urinals and water-saving toilets (FIFA, 2006: 43), but it is to assume that this phenomenon is also valid for the many public viewing sites and private activities, so that more spectators basically mean more toilet use and thus more water consumption that is left out from the

calculation. On the other hand, the handling of wastewater was comparatively easy to control by the responsible municipal utilities.

It should be added that the increased consumption of the indirectly related economy (gastronomy, hotels) was not considered in the calculation for this objective. The high amount of visitors causes 2.5 million additional overnight stays in the first half of 2006 as well as increased sales of food, merchandise articles or souvenirs (German National Tourist Board, nd: 7), but still their consumption of resources, especially water for all kinds of purposes, is lacking in the calculation. Despite this deficiency it is to admit that it is impossible to measure the impact of all involved branches of economy and that limitations need to be set. The same applies for the other objectives, thus it will not be mentioned further.

## 9.8. Waste

The production of waste is an evident consequence connected to all Mega (Sport) Events (FIFA, 2006: 26). Especially plastic waste (e.g. drinking cups) is inevitable, since it is often used as an alternative to glass, which is avoided because of its high risk of injury. Compromises of this kind make waste management necessary. The primary objective of Green Goal was the avoidance of waste, which was easy to organize in areas where security controls stopped spectators from taking potential waste into the stadium. In the official kiosks at the stadiums, waste avoidance measures were taken in order to reduce the amount of merchandise, flyers and give aways (FIFA, 2006: 52) and the “foundations for successful waste avoidance are created backstage, in an area for which the organizers are responsible, and where they can implement appropriate measures” (FIFA, 2006: 26). It becomes evident that the OC only had only partial control over the total waste production, since spectator areas and sales by non-official and private vendors laid outside its realm. The OC claimed that “visitors to stadiums and open-air events in host cities account for the largest share of waste [...] [and] are [...] part of the waste concept” (FIFA, 2006: 26), which means that private visitors outside the stadiums were not considered in the waste concept. Therefore, fan miles and public events were not only problematic because of their lack of controllability, but also because of the massive crowd of people that came to the host cities unexpectedly (as mentioned above). The additional visitors produced even more waste and the capacities for waste collection were only geared to suffice a smaller amount of people.

Another difficulty was the reliance on voluntary actions outside the authority of the organizer. This means that “in contrast to water and energy, the signals for a well-functioning waste concept were set not by the technical infrastructure of stadiums, but through the provision of specific instructions of individual areas and those employed there” (FIFA, 2006: 27). Voluntary action requires a certain degree of environmental consciousness and commitment, so another rival explanation could be the lack of interest among the population to engage actively. At this point it is reasonable to have a closer look at the general situation in Germany concerning these matters.

Every two years, the German Federal Ministry for the Environment (BMU) publishes a survey which they conduct among the German population, asking about the knowledge and awareness about ecological concerns. The results give some indications about the positions that Germans had before (2004), during (2006) and after the FIFA World Cup (2008) towards the environment. This short digression sheds light on the general attitudes of the broad German population towards environmental matters, unrelated to the World Cup. Waste is only one part of this wide concept and

is thus not addresses particularly in this section. Additionally, the study only includes German citizens, so that foreigners have to be left out of the analysis.

The survey firstly asked which field is particularly important in Germany, and in 2004, 18% named environmental protection as their first response. In 2006, even 25% did this, whereas in the number decreased to 22% in 2008 (Kuckartz et al., 2004: 14; Kuckartz et al., 2006: 14; Wippermann et al., 2008: 13). Maybe this is due to the emergence of other pressing problems or to the improved perception of the environmental situation, so that there is no need to address the climate as a priority.

Being asked about the perceived quality of the environment, the question was separated into three sections: regional/community level, Germany and the global perspective. Of those surveyed 86% (2004), 84% (2006) and 85% (2008) answered with “very good” or “rather good” concerning the community level, showing a stable situation. Also the German case was answered positively and in a stable manner: 64% (2004), 66% (2006) and 64% (2008) are convinced that the environmental quality in Germany is good. The global level by contrast is seen pessimistically: 16% (2004), only 9% (2006) and 18% (2008) find that quality is good (Kuckartz et al., 2004: 19; Kuckartz et al., 2006: 20; Wippermann et al., 2008: 20).

The main contributor to climate protection efforts in Germany is the German government. But still, the majority of those surveyed think that the government could and should do more for further environmental protection: 63% in 2004, 70% in 2006 and 56% in 2008 (Kuckartz et al., 2004: 41; Kuckartz et al., 2006: 41; Wippermann et al., 2008: 18). The latter decrease could be due to an increased positive perception of governmental actions towards the environment, expressing a higher satisfaction and a decreased need to intensify the efforts.

The commitment of citizens themselves is deficient, despite the general willingness to participate is high: 33% (2004), 45% (2006) and 36% (2008) could imagine taking part in an environmental association. But in reality, only 4% in 2004, 6% in 2006 and 4% in 2008 did so (Kuckartz et al., 2004: 74; Kuckartz et al., 2006: 69; Wippermann et al., 2008: 46). The peaks in 2006 could actually be due to the FIFA World Cup when an increased environmental consciousness was spread and various clubs and associations started related projects, but this is not proven.

In general, people are willing to act sustainably in their everyday life, for example through effective waste avoidance and disposal (65% in 2006), energy saving measures (26% in 2006) or active engagement in the community (8% in 2006) (Kuckartz et al., 2006: 54). But this is not valid for all areas of living: Transportation is mostly done by car (45% used their cars regularly in 2004, 38% used it daily in 2006) whereas public transport has only a small share (only 18% used it regularly in 2004, 11% used it daily in 2006) (Kuckartz et al., 2004: 48; Kuckartz et al., 2006: 52). Main contributors to this are age, living place and income, since the public transport services are mostly taken by young people, people living in an urban environment or people with low income (Kuckartz et al., 2006: 56).

The results show that among the broader population, no significant or surprising increase or decrease can be denoted after the FIFA World Cup. This could be due to the short-term period of the FIFA World Cup or to the lack of interest for environmental topics during this exciting tournament. Of course the general German population is not equivalent to the visitors of the matches, of which many were foreigners with different attitudes towards the environmental importance. The final

observation is that despite the relatively high willingness and demand for environmental protection, few people behave accordingly.

## 9.9. Energy

### **Reduction of energy consumption**

The objective of the reduction of energy by 20% could not be achieved: only 13% of energy was saved. Despite the organizers had sufficient control over the measures taken in this area, the results are still not satisfactory. An important factor for this could be that the controllability of stadiums was indeed given during the World Cup, but not during the construction work. Germany had the advantages of an already very comprehensive landscape of football stadiums from which they choose their match venues, but some of these stadiums needed renovation and overhaul. This process started early and restricted the influence of the organizers, as they could not upset the stadium planning or the ongoing construction work, but only adapt their ideas to it (FIFA, 2006: 10). Another point would be the hot and sunny weather that was mentioned above. Floodlighting systems are the largest energy consumer in stadiums (FIFA, 2006: 62), but the question is if floodlighting was really necessary when the sun shone throughout the tournament. The complete shut-down of lights is not possible, since the FIFA has strict technical requirements and recommendations that limit the stadium planning. For example, in order to guarantee optimal visibility conditions for spectators, players and the video recording, it is necessary to avoid 'hard' shadows, which can be achieved through the illumination of the pitch and the players from different sides and angles at the same time (FIFA, 2007: 170). The only recommendation concerning the environment is to avoid that light leaves the stadium and eventually glares car drivers or pedestrians, but the shut-down of floodlighting is not an option since the quality of video record would decrease as a consequence (FIFA, 2007: 174–178).

The same query applies for heating systems: with temperatures around thirty degrees it seems senseless to use heating facilities. In fact, the actual demand for heating itself was very little during the FIFA World Cup and the external temperature led to an additional reduction of heating (FIFA, 2006: 32). The demand for hot water had only a marginal impact, but air-conditioning was inevitable and led to the improvement of production and distribution processes (FIFA, 2006: 61, 63). The true value of the energy saving methods will be revealed during Bundesliga operations in the future, where they can exploit their full potential on the long term (FIFA, 2006: 32).

### **Use of renewable energies**

When addressing the objective of renewable energy sources, the first thing to mention is the problematic formulation of this policy goal: "the efficient supply of energy for the 2006 FIFA World Cup will be provided as far as possible from renewable energy sources" (FIFA, 2006: 28). The phrase 'as far as possible' does not give a suitable threshold by which one could decide if the goal was achieved or not. This is a clear problem of operationalization as it is not possible to measure a valid value. Nevertheless, this objective is considered to be achieved due to the use of solar power and hydro power, which could cover the total energy demand of stadiums, media centres and hospitality (FIFA, 2006: 12). One reason why the application of renewable energies was successful could be the approval of the broad population. According to the report of the Federal Ministry for the Environment from 2006, approximately 95% of those surveyed thought that public facilities should act as role models and thus use more renewable energies, financed by public money from the government (Kuckartz et al., 2006: 26). Renewable energies are considered to be an important pillar for the "Energy of the Future" concept in Germany, since they are supposed to guarantee the



sustainable and long-term energy supply of the country, therefore the political support is given (Bundesministerium für Wirtschaft und Energie, 2014: 12). The long-term prospect is for many providers an indicator for the worthiness of an investment, because it is likely to pay off in the near future due to the increasing trend towards 'green energy'. Additionally, the Renewable Energies Act (German: Erneuerbare Energien Gesetz, EEG) which entered into force firstly in 2000, constituted particular subsidies for the supply of renewable energies for providers and thus made the investment even more worthwhile (Bundesministerium für Wirtschaft und Energie, 2015).

## 9.10. Transport

### **Increase the use of public transport**

The objective to increase the use of public transport by 50% was by far the most ambitious policy goal and also the one with the best result. Around 57% used public transport, which includes railway and park & ride offers, and 74% used environmentally friendly carriers. It is likely that this observation is related to the usefulness for the visitors. The use of public transportation has many advantages, for example it give the travellers the opportunity to consume alcohol during the game and have an uncomplicated arrival at the stadium, because they do not have to take the car (Münchener Verkehrs- und Tarifverbund, 2004).

Alcoholic drinks were standard practice during the FIFA World Cup 2006. The Land Statistical Office of Thuringia recorded a sale of 367.000 hectolitres of beer in May 2006, right before the World Cup started and which exceed the number of May 2005 by 5.3% and all other former years (Thüringer Landesamt für Statistik, 2006).

The sales of beer in Germany as a whole accounted for 10.8 million hectolitres in May 2006, which is an increase of 8%. Especially North Rhine-Westphalia, Bavaria and Lower-Saxony/Bremen had a high share with 57% of the total amount (Thüringer Landesamt für Statistik, 2006). This is not a surprising result, since North Rhine-Westphalia had three match venues (Dortmund, Gelsenkirchen and Cologne), Bavaria had two (Munich, Nuremberg) and Lower Saxony/Bremen profited from the stadiums in Hanover and Hamburg. The amount of fans consuming alcohol right before a match accounted for around 18%, and alcohol appeared as one important factor for many fans (Bogusch et al., 2009: 128).

However, many foreigners came by plane and would have had to rent a car in order to get to the stadium, which requires a certain degree of effort, linguistically as well as financially. Only few parking spaces were available in the proximity of stadiums (FIFA, 2006: 13) so car travel became even more unattractive.

The German railway system is well developed and has a high quality and frequency, so that for nearly each town there is good accessibility to the railway network and the connections for various distances are given. This makes travelling not only easy but also fast. Plus, the financial aspect is significant. The KombiTicket allowed ticket holders to use the public network for free and several special offers from the Deutsche Bahn attracted clients (FIFA, 2006: 74–77).

The spectators also had the possibility to travel by foot on the so-called fan miles, which were for example in Dortmund equipped with catering and cultural activities (FIFA, 2006: 76), but this was rather attractive for local residents. Despite the certainly pleasant atmosphere on those routes, people from the periphery or other cities had to consider the journey to the respective fan miles.



## **Ecological friendliness of transport carriers**

Due to the fact that the organizers had much control over the use of environmentally friendly carriers, at least in the public transportation systems, this goal could nearly be achieved, namely by 19%. Unfortunately it is to assume that this is also the main reason for the achievement, and not the active interest of the people. Most visitors only want to enjoy the match and do not think about which bus to take in order to protect to climate. An active alteration of one's own choice of transport is unlikely and thus, organizers (not only those of the World Cup) try to actively direct the demand towards public transportation instead of simply serving it (Schlag et al., 2007). As a consequence, the organizers could have done more, since they were not relying on the cooperation of the guests.

In addition, bicycle rides were rather attractive for locals than for foreigners which would probably have a hard time borrowing a bicycle due to language barriers, then find the way to the stadium and bring it back afterwards. The utility of a bicycle also decreases if the spectators want to drink alcohol during the game, because the German law prohibits driving on a bike when drunk. The risk of paying a penalty, losing the drivers license or even getting an accusation (Allgemeiner Deutscher Fahrrad-Club e.V., 2014) is just too high for most people, especially for foreigners that do not know about the German law system.

### **9.11. Climate Neutrality**

The projects, realized in order to compensate the carbon dioxide emissions that could not be avoided, were implemented in a sustainable way with long-term benefits for the regions in India and South Africa. At the same time, this perspective is problematic since there are no immediate results to see and it takes a long time to assess the projects. Despite the projects were awarded with the 'Gold Standard', which testifies a project with high environmental quality, this lack of visibility could lead to a decrease of public interest if the projects fade into the background in people's minds.

Generally, the assessment is difficult since the authority over the funding was given to the 3C Climate Change Consulting GmbH (FIFA, 2006: 92) and is not directly executed by the OC or the German Government. This makes it hard to comprehend which role the organizers actually play and in how far they can govern and control the projects.

Lastly, and most importantly, the results are nowhere to be found. Since the effects were predicted to occur over the course of a few years, an immediate evaluation was impossible. But today, there is still no official document about the projects, now that their implementation is done and their impacts should be evident. This leads to growing scepticism about the success of the ventures. Even though there are "binding and transparent procedures" (FIFA, 2006: 87) that are supposed to ensure a solid development of the projects, their ecological impacts cannot be assessed properly without an official report.

## 10. Conclusion

This final chapter will have a summarizing look at the sub-questions of this paper and will also shed light on the results and prospects of the FIFA World Cup 2006 in Germany and of Mega Sports Events in general. The FIFA World Cup in Germany was the first of its kind by introducing an environmental chapter in its planning, which was an utter innovation at that time. Nowadays, environmental concerns have become more popular, but are still not internalized in the organization of Mega Sports Events. The first sub-question of this paper asks which policies were actually implemented in order to realize the ambitious goals for making the World Cup a climate neutral event. Different measures were taken in order to ensure the reduction of water and energy consumption by each 20%, the reduction of waste by 20%, the increased use of environmentally friendly transportation by 50% and the compensation of 100.000 tonnes of CO<sub>2</sub>-emission. Especially the stadiums were set in the centre of attention and were thus equipped with e.g. modern heating and air-conditioning, improved sanitary facilities and optimized catering and waste management.

Answering the second sub-question of goal attainment, the objectives were achieved in great parts so that the FIFA World Cup 2006 is now considered to be the first climate neutral sports events of this type. The third sub-question calls into question if the measures actually were the reason for improvement. It is to assume that the respective policies had a significant influence since they initiated technologic modernization of facilities and raised environmental awareness among the population. Even though this is a positive result, full goal attainment could not be achieved, which might be due to the influence of other factors that were unforeseen and altered the outcome of the measures. Since this is the fourth sub-questions, these rival explanations were already discussed in detail in the preceding chapter.

All in all, the Green Goal concept appeared to be a success for organizers, spectators and the environment. It was the first time that an OC introduced an ecological perspective voluntarily into their World Cup planning, which could mark the start of even more environmental activity during future FIFA World Cups and Mega Sports Events in general. Despite the fact that not all objectives could be reached satisfactorily, the project will pay off on the long-term since the optimized stadiums will provide sustainable savings during everyday actions, for example during Bundesliga matches (FIFA, 2006: 39). Unfortunately there is no assessment of the indirectly involved economies, but on the other hand there are also savings that could not be quantified in the first place (FIFA, 2006: 11). In addition, it is still better to have a little bit of enhancement than no progress at all. The focus on sustainable policies helped to reduce the environmental impact that would have been a lot bigger without the policies.

But, to put a damper on this enthusiastic summary, it is to say that Germany enjoyed the luxury of being a developed country with a lot of financial and political power. In comparison to other recent host countries of FIFA World Cups, Germany had to cope with few other problems. For example South Africa features difficulties such as xenophobic attitudes. But not only that: “the racial and language cleavages are strongly overlapped by class and extremely unequal income structures” (Kersting, 2007: 281). This means that the country has to manage serious safety issues and does not primarily care about sustainability concerns (Cornelissen et al., 2010: 115).

The limited influence of the OC is also due to the already ongoing construction work on the stadiums, which hindered them from exploiting their full potential. The lack of controllability is also evident in other areas: despite the organizers tried their best to provoke sustainable performance, behaviour

change of people is difficult to initiate. This could be due to the lack of interest or knowledge. Nowadays, the environmental consciousness is greater than it was in 2006 and the respective technologies are well advanced.

The concept might have been a little too optimistic concerning the interest of the people: the extensive use of public transport might be due to the personal utility of these services for the visitors. Additionally, the consumption of alcohol is a mechanism for further indifference, because the personal fun often gets a higher priority than the sustainable disposal of for example beer bottles (Alkoholsucht - Ratgeber zum Thema Alkoholismus, 2015). As was already shown, common attitudes (among the German population) could not be changed significantly, which indicates that the measures had no long-term effect among the general public. Another critical point is the problematic measurement. As was mentioned before, some related factors were not evaluated and flights from visitors to and from Germany were left out of the calculation. This biases the final results and makes it hard to assess the full picture.

For future MSE it is certainly important and also advisable to have such a sustainability concept in order to guarantee progress. Environmental concerns in general are on the way to get a higher priority in the future and should therefore be obligatory when hosting a MSE. At this point, the study reveals its outer limitations, namely the external validity. Since the upcoming FIFA World Cup hosts (Russia 2018 and Qatar 2022) have extremely different circumstances than Germany, the cases are hard to compare. However, in the words of Babbie and Rubin, "a study's external validity could be adequate even if it cannot be generalized to many other settings" (Babbie et al., 2010: 72). This means that the study only has to be sufficient in regard to similar cases, not to every possible case. This research is meant to address policies related to environmental sustainability of Mega Sports Events, especially during FIFA World Cups. Indeed, if there is a lack of such particular policies, the cases are not comparable and the results cannot be considered as valid for both cases. Despite the 'Green efforts', environmental thinking is still not self-evident in Russia and thus, the real outcomes will not be visible until the tournament takes place (FIFA, 2015).

Due to the scope of this paper, the recent headlines about the corruption scandal of the FIFA could not be addressed, but they play an important role since the hosts were perhaps not chosen because of their application but because of bribery. The responsibility for the achievement of a green vision in Russia is with the federal politicians as well as the people, which have to actively express their ecological interest and concern. In order to answer the research question more comprehensively the policies of other MSE such as the Olympic Games could be considered, which would broaden the scope of research and give a more complete picture.

The fifth sub-question deals with the methodology of evaluation and which lessons can be drawn from it. First of all it is to say that it is sensible to evaluate Mega Sports Events as they gain more and more popularity nowadays and will therefore even grow in future times. The evaluation of MSE helps to understand their functioning and can thus facilitate improvement and efficiency for upcoming events. This paper tries to give the reader an impression of the employment of sustainable policies during Mega Sports Events, contributing to the existing body of knowledge on this matter. However, it is not easy to evaluate a MSE from 2006 and it is difficult to assess the internal validity of the policies as it is not possible to reconstruct the policy-making process adequately. Future programs should be more transparent, especially during the developing phase, in order to illustrate the calculations and thoughts that build the basis for sustainable policies. Additionally, all related factors

should be taken into account even if they have a negative impact on the evaluation results. The population should be included more extensively since they are in charge of acting sustainably and should thus be more confronted with this matter. Also, there should be an option for the people to participate in the decision-making process and take part in developing the respective policies.

The last sub-question asks if the comparative bidding process has an influence on the development of policy goals. One can observe that this competitive situation often leads to the fact that goals are set too high on purpose, only to make a good impression and win the bid. Failure of those irrationally high goals is accepted since it is known beforehand that they are too ambitious. This is a typical case for evaluation, which also includes the limited controllability that organizers have over the measures (and of which they are well aware) and the short-term impact that those measures have. Behaviour of visitors and natural circumstances cannot be managed properly, but they have an important influence on the outcome of measures. Additionally, the tournament lasts for only four weeks, which is too short to have a sustainable effect on the environment.

If sustainability becomes an obligatory criterion in the application for MSE, it is advisable to give strict requirements for environmental action including fixed specifications, for example fixed amounts of waste that have to be avoided or recycled. This would prevent the countries from giving cheap promises. On the other hand it is disputable if the sustainability aspect is a convenient criterion. As was mentioned before, MSE also take place in countries with lower living standards, where the conditions require various strict targets for other topics that might seem even more pressing than climate protection. For example in Qatar, host of the FIFA World Cup 2022, slave labor has become a current issue despite it has not been an evident problem for the other host countries. Thus, restrictions for slavery should be added to the application requirements. In Brazil and South Africa, high amounts of money were spent for stadiums and facilities, but not for schools or hospitals, leading especially in Brazil to massive protests of the population. The FIFA should demand careful spending of money when applying in the bid. So much for theory; in practice, the controllability of these factors is still very limited. Making those problems an official matter in the bidding process could also lead to an overestimation of the countries, where high promises are made with little intention to fulfill them. Also, the countries can hardly cover all instructions and are thus over-challenged.

It is obvious that each country has different problems to cope with and that it is not easy to ban these problems by making them application criteria. Many issues only appear during the actual preparation phase of the respective MSE and unfortunately, sustainability often gets lost in the shuffle and does not seem as important. Additionally, if the FIFA committee would set new criteria such as environmental care and social spending, many developing and emerging countries would not have any chance to win the bid and the hosting of a MSE would be reserved for industrialized countries.

Finally, this paper sheds light on the policies that were developed in order to make a Mega Sports Event more sustainable. It transpired that those policies actually have an influence on the way MSE are realized. But this process is still in its infancy and demands commitment of official and civilian stakeholders. Only if their minds are altered towards a more sustainable treatment of the environment, future policies can be improved and implemented successfully.

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## List of Abbreviations

BMU	German Federal Ministry for the Environment
CHP	Combined Heat and Power
DFB	German Football Association
EEG	Renewable Energies Act
FIFA	Fédération Internationale de Football Association
GNTB	German National Tourist Board
HDI	Human Development Index
IOC	International Olympic Committee
MSE	Mega Sports Events
OC	Organization Committee
WWF	World Wide Fund for Nature
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme

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## Declaration of Academic Honesty

Hereby I declared on oath that I have written this Bachelor thesis independently, without outside assistance and without making use of any other sources than stated in the thesis. All parts adopted literally or correspondingly from any publication have been acknowledged and fully cited.

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