

Urban transformation in Rio de Janeiro, hurdles of Olympic magnitude?

A case study of mega-event impact on social sustainability

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ABSTRACT

According to the UN, in 2050, 70% of the world's population will live in cities. Already 10 % of those city residents live in mega-cities, such as Rio de Janeiro, with a population of more than 10 million people in its wider area. Thus, how to change the development path of cities and how to make them long-term sustainable becomes increasingly important. Lock-ins and complex intertwined issues of; mobility, infrastructure, social deprivation, waste management and environmental degradation represent only a few aspects to tackle in urban areas. This research tries to understand whether the urban transformation that the Olympic Games implies, can be a vehicle of change to benefit Rio de Janeiro in the transition process to a more sustainable city.

The collected material has been analysed through the lens of multi-level perspective, to provide a holistic understanding of urban planning issues and processes to furthermore investigate the balance of economic, social and environmental aspects, and to reveal possible trade-offs and contradictions to the issues. The principle of sustainability science aims at reaching a more sustainable future. Moreover, the outcome of this particular research provides solutions to the underlying barriers on how to resolve these for the Olympics Games in Rio de Janeiro to leave a legacy of a more sustainable city and improve social sustainability.

The implications of viewing mega-events as means of transforming a city for the better has potential, as the common problems with lack of economic means and investment are not present when hosting the mega events, and that creates an opportunity for change. However, the local context and long-term planning of each decision is imperative for a sustainable transformation, which additionally implicates inevitable trade-offs at least for the time being. The discussion of "what to develop and what to sustain" is nevertheless constantly part of sustainable development (SD), and has not reached saturation or a solid cure-all solution. Correspondingly, important for future Games implementation are alterations of how to standardize certain parts of the legislation within the Olympic Games constitution, to serve the greater good, but at the same time not undermining the local needs and possibilities.

The main findings in this research inherit issues of hosting Olympic games containing immense top down power structures and that it puts pressure on organizers and the government to finish projects quickly with no time to take all stakeholders into account neither fulfil a balanced sustainability focus. Through the lenses of sustainability science, the field of transitioning cities and urban planning it has been demonstrated that deep-rooted cultural aspects and political focus hinder further social progress of elevating Rio de Janeiro to a more sustainable city.

Key Words: Cities, Olympic Games, Multi-level perspective, Social Sustainability, Visioning Research, Rio de Janeiro

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ABBREVIATIONS AND DEFINITIONS

| | |
|----------|---|
| Cariocas | People born and raised in Rio de Janeiro |
| CDRUP | The Port Region Urban development Company of Rio de Janeiro |
| CNC | Critical Natural Capital |
| IOC | International Olympic Committee |
| MLP | Multi-level perspective |
| PPP | Private Public Partnership |
| SD | Sustainable Development |
| SS | Sustainability Science |
| TT | Transition Theory |
| UPP | Pacification Police Units |

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1 INTRODUCTION

1.1 Importance of Cities

According to the UN, in 2050, 70% of the world's population will live in cities and already 10 % of those city residents live in megacities, such as Rio de Janeiro. In 2016 the responsibility of hosting the Olympic Games falls to Rio de Janeiro, a mega-city with a population of more than 10 million people in its wider area. (Cox, 2013). Thus, how to change the development path of cities and how to make them sustainable in the long-term becomes increasingly important. Issues of mobility, infrastructure, social deprivation, waste management and environmental degradation represent only a few aspects to tackle in urban areas. Lock-ins and complex intertwined issues (Geels & Schot, 2007) are hard to address in mega-cities, nevertheless, it is important to comprehend, in the context of an urban development perspective, the power that cities inherit (ICLEI.org, 2013). There is still massive increase of urbanization everywhere and by 2025, mega-cities and mid-size cities will be the most powerful forces for global growth in the future, there are about six hundred cities that are expected to generate 60 percent of the global GDP growth in developing countries (Chen & Spaans, 2009).

In the debate on cities and urban planning, lock-ins (Geels & Schot, 2007) and the difficulties of reforming already built environment are common discussions. The importance of cities on the global arena, and joint effort for combating issues related to climate change, has received a lot of publicity since the first attempt to localize action through Agenda 21 in Rio de Janeiro in 1992 (Jabbour et al., 2012). Various sustainable city programs are being created to counteract failed global initiatives, such as the Kyoto protocol. Cities are the centre of power, culture and innovation and the lack of directive and commitment on the international and the national level has resulted in cities having a complete new role to play in development; economically, politically, socially and environmentally. Important aspects in sustainable development (SD) of cities are timing, financial resources, and capacity of changing structures in large urban areas, and all these aspects need to be harnessed in the best way possible, when the possibilities to do so emerge. Mega-events have suggested being such a possibility, but require tremendous amount of planning and extensive management of resources, departments and involvement of several of stakeholders to work in symbiosis for benefits to last (Chen & Spaans, 2009).

1.2 Power of the Olympic Movement

Until the 1930s the Olympic Games did not have a major impact on the urban life and structure of their host cities. In 1932 the city of Los Angeles hosted the Games and improved the city's economy and the first Olympic village was built for the competitors along with new sport venues (Chalkley & Essex, 1999). Ever since then, the Olympic Games have transformed the hosting cities for better, or for worse. There are after the London games, which were coined "The Greenest Games ever" (Interviewee nr 2, 2013), high expectations to establish a strong legacy afterwards. This legacy enhances the position of the post Olympic city and puts it on the map as a world leader for tourism, becoming an economic centre and continuing to reap benefits of hosting the games for many years to come (Furrer, 2002 & Interviewee nr 2, 2013). What has been observed, looking at past cities hosting Olympic games, is that it surely brings vast implications socially, environmentally and economically for the host city. The spectacle in urban design, with new sports stadiums, convention centres, transportation system and infrastructure could imply great potentials for lifting a city to new dimensions, but it also inherits a lot of long-term thinking for executing this in line with the three pillars for sustainability, to ultimately assure long-term sustainability. However, recent research trends of the Olympic Games shows the increasing negative tone of hosting the games (Furrer, 2002 & Interviewee nr 7, 2013). By hosting the games the city acquires a contribution of more than one billion US dollars from the International Olympic Committee (IOC). This investment can be used to upgrade infrastructure and increase mobility of both citizens and goods. Nevertheless, "only a true and honest

examination of the obstacles to success will allow organizers and city planners to draw the maximum benefit from the Games and turn it into a lasting legacy” (Furrer, 2002, p. 6).

The forthcoming Olympic Games in Rio will take place 2016, and pre-Games time is a great timing to uncover complexities and issues to be able to improve the coming games and learn for future execution of mega-events, as they have become a tool to promote not only the city itself, but the concept of sustainability in the wider context.

1.3 The lost social aspect

In the article “A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue” written by Boström (2012) he theorizes and emphasize the challenges for operationalizing and integrating social sustainability in large projects such as the Olympic Games for example. He found one prominent challenge to be missing institutional linkages and high expectations. “The relationships among these dimensions (economic, social and environmental) are generally assumed to be compatible and mutually supportive. However, previous research has found that when policy makers endorse sustainable development, the social dimension garners less attention and is particularly difficult to realize and operationalize” (Boström, 2012, p. 1). For this reason the social aspects will be more carefully studied in this research especially as Rio has several of issues related to the social sphere, on many levels in society. The essence of this paper is to both look at positive changes and how to overcome traits of development that have a negative effect and that are not in line with the criteria of social sustainability for the long-term, for everyone, in Rio de Janeiro. To be able to give solutions to barriers and to envision the goals being reached by 2016, and beyond for long-term social sustainability selected final recommendations will be presented in ch six following an end discussion (Wiek & Iwaniec, 2013).

1.4 Research aim

With this research I seek to uncover the barriers for mega-events and more particularly the Olympic games to be a *vehicle of change* for long-term improvements in Rio de Janeiro within the social, economical and environmental realm. I will explore what the issues are for realizing a path towards an improved and more sustainable city, in terms of normative sustainability.

More explicitly my intent is to answer these following questions;

1.5 Research Question

What are the desirable and undesirable implications for Rio hosting the Olympic Games?

Sub questions

Can the Olympic Games be a vehicle of change for social improvements in Rio?

What is the balance of economic, social and environmental aspects in the priorities and plans of the Olympic Games organization?

How can barriers be resolved to facilitate a transition through the Olympics Games and leave a legacy of a more sustainable city?

2 FRAMEWORK AND THEORETICAL CONCEPTS

This chapter describes the theoretical concepts and boundaries for this research. Starting with the constituents and aspects of the field of Sustainability science (SS), moving into the complexity of Transition Theory (TT) and how the Multi-level perspective (MLP) can be used within research for solution oriented research, such as visioning research; these are all considered under a new approach of viewing sustainable urban planning.

2.1 Sustainability Science and managing transitions

Today, we still face similar fundamental sustainability challenges of solving persistent social, economic and environmental problems in several domains as we did in 1972, when the field of sustainability emerged out of the United Nations Human Environment Conference in Stockholm (Robert et al, 2005). The mission of facilitating transition to something more sustainable constitutes the action-oriented and solution-oriented characteristics of the sustainability science field. To achieve this goal, in the past ten years, there has been a significant focus on analysing coupled human-environment systems in order to improve the understanding of the dynamics of these system (Wiek et al, 2012). In 1987 the Brundtland commission acknowledged the conflicts between environment and development (Robert et al, 2005), even though they are thought to be reasonably compatible and mutably supportive there has been many scholars theorizing on the balance between the three dimensions; economic, social and environmental. One argument is that the environment suits the sustainability framework more and “that a more systematic focus on the social dimension has been secondary to environmental and economic considerations” (Boström, 2012. p 4). Whereby, the social dimension should obtain increased attention, especially in densely populated urban areas, where the social aspects might be both, the most important and serve as the foundation for continual sustainable processes.

The concept of transitioning cities and managing the transition has emerged and developed over the past ten years “as novel mode of governance for sustainable development” (Loorbach & Rotmans, 2010.p 237). Transition management is a fairly new approach to deal with complex societal problems and governance in the context of cities (Loorbach, 2007). Transition management will not be used as a framework or main theory in this research, however, the ideas of successfully transitioning the city through mega-events builds onto some of these concepts (see figure 1).

Transition Management – Process structure



Figure 1: Transition Management – Process structure. In this figure the four phases of transition management are explained. Source: Loorbach, 2007

The city can be seen as an object of transition and its implications of achieving long-term sustainable practices includes e.g. mobility (Holden & Norland, 2005), managing sprawl, increase density (Kipfer et al, 2013) and construct sustainable residential developments (Næss & Vogel, 2012), these are a few of the objectives of the transitioning intentions. The process requires the disentanglement of the complexity, and to enable a co-creation process where all levels and sectors are involved. On these premises dimensions of innovation is needed, to foster a more pluralistic methodological approach (Rennings, 2000). The discussion “what to sustain and what to develop” (see figure 2) becomes central in managing transition, as the core objective is essentially to change something. Whether mega-events, such as the Olympics, can or cannot push this change in the right direction is widely debated (Interviewee nr 7, 2013 & Furrer, 2002).

Defining Sustainable Development



Figure 2: Defining sustainable development. In the figure common aspects of which is important and crucial for survival on earth for humans are under the “What to sustain column” to the right common themes that we want to develop or see improvement within are listed. Source: <http://www.sustainabledevelopmentinfo.com/the-definition-of-sustainable-development/>

“The concept of innovation and the principle of sustainability are featured by some relevant commonalities, such as the future perspective and the featuring uncertainty. But, they are also characterized by several conflicting insights. Innovation and experimenting solutions, that is part of the transition management wheel, always implies a change. However, within the sustainability realm the principle of conservation is strong (Maiello et al, 2011.p 2). These two statements are at the two ends of the spectrum, and where the Olympic organization and the Brazilian Government have to operate within for the transformation of Rio. Depending on what structures that is already in place, both organization-wise and the built environment, difficulty varies to mobilize a major change and transitioning the city into something better or to improve the situation. Moreover, undermining failures or shortcomings of mega-events in planning and procedure can certainly disturb the path towards a more sustainable city and wreck economies and communities for a long time to come (Pitts & Liao, 2009). Therefore to get the wide understanding of all components and processes that are occurring on all levels are important, and the most useful theory for detangling of this is the multi-level perspective within the family of transition theory.

2.2 Transition Theory and Multi-Level Perspective

Transition Theory can be divided into three main sub directions. The first one being the, socio-technical approach where scholars like Geels and Schot apply past studies of historical transitions, generally spanning several decades, to explore where, usually, technical innovations have shaped and changed societies. The second take on TT follows by the complex system view, represented mainly by Rotmans and Loorbach. The last sub-direction of TT, advocated by Grin and Smith, explains the complexity through a governance perspective where the focus lies on transition management.(Næss & Vogel, 2012) For this research the second sub-direction will be applied and used for analytical understanding of the context. This corresponds to a system perspective where multi-domain, multi-actor and multi- levels are considered in the methodology to make sense of complexity through the integration of these.

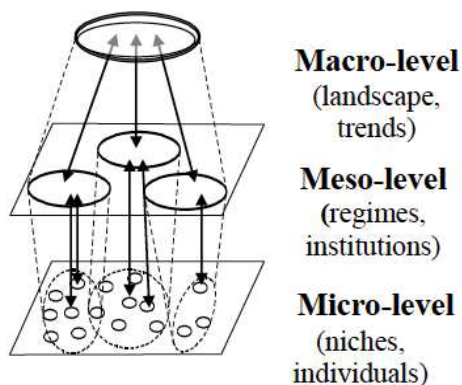


Figure 3: Multi-level perspective framework. This framework is the most common with in transition theory, where there are power and pressure from the different levels interacting and impacting other levels. This particular figure is taken from the article *Typology of sociotechnical transition pathways* in the journal *Research Policy*. Source: Geels and Schot, 2007

For a traditional understanding of the Multi-level perspective, according to Geels and Schot (2007) (see figure 3) “transitions occur as a result of interactions between the three levels. On the micro-level momentum through support from powerful groups can build up, in addition to be being challenged by the micro-level processes changes at the macro-level can create changes on the meso-level from above. Moreover the meso-level can become destabilized due to inner tensions or pressure from the outside (conceivably, from below), resulting in the emergence of windows of opportunities for innovations at the micro-level to gain influence. However, in an urban development context the micro-level has diminutive actual power and plays a minor part in the urban city transition. Nonetheless, the benefit of using the MLP in this type of research is that it demonstrates the three levels of governance and urban life, and ultimately, how they affect each other. In chapter 5 barriers are presented visually in a graph in order to get an overview of what the most pressing issues for long-term social sustainability in Rio de Janeiro based on the answers from the interviews. Naess and Vogel (2012) consider the MLP to be a useful descriptive

framework for structuring a transition process, however, “the complexity, scale and context-dependency of cities, the relative permanence of the urban built environment and the strong vested interests, cultural norms and lifestyles associated with present modes of urban development present huge challenges to a transition toward sustainability, politically as well as analytically”(Næss & Vogel, 2012. p. 16). In this research the MLP has therefore been used as visual tool to explain something about the situation on the ground to be able to give solution to those issues that interrelate and are particularly complex or predominant.

2.3 The perspective of TT on Sustainable Urban Development

The application of TT is a fairly new framework for analysing the prospects of sustainable urban planning. The complexity of cities makes it impossible to focus only on one, or two, thematic themes (for example infrastructure, built environment, environment and socio-economic issues) for this type of research. Therefore, the procedure of applying TT, on in this research context, applies looking into how functional the city is as a whole through observing the city as the object of transition, and further explore the barriers to a sustainable transition in order to improve the situation and overcome barriers the landscape, regime and niche level. The challenges associated with the governance for sustainable development are “managing change in a context where power is distributed across diverse societal subsystems and among many societal actors”(Meadowcroft, 2007.p 299). The process of deciphering the thematic areas and the barriers found within this research will be further presented and discussed in chapter 3.

Another challenge of the urban context and transitioning cities has been implementing long-term sustainability goals in existing institutions, were management of those inherits discontinuity and short term achievements, and further, where tangible issues such as; political ideologies and thematic singularity on the political agenda undermines more long-term efforts. Unclear and uncertain benefits from current actions similarly affect the possibilities for change, together with imprecise vision and goals, which will be discussed in the following section.

2.4 Visioning research

The discourse on SS and SD has recognized that common visions about our societies' future are an influential and crucial segment to spur change (Wiek & Iwaniec, 2013). Van der Helm, a theory-building scholar in the field of visioning research (O’Connell et al. 2011), points out the disputed recommendation that visions need to be both ‘realistic, inspiring and visionary. A vision is a “desirable future state” in this context (Wiek & Iwaniec, 2013) and to reach the vision it must contain features which are inspirational, hence still be reality-based in order to be successful. Further, in order to reach the vision the back-casting method, derived originally from Robinson in 1982 whereby Robinson wanted to highlight a less conventional path for energy transformation by setting “policy goals and then determining how those goals could be met”, serves as a tool to see what targets need to be met, and what changes need to be undertaken, in order to reach the bigger vision. “Visioning is thus considered a key method in sustainability research and problem solving, for instance, in transformational SS, or in planning for urban sustainability” (Wiek & Iwaniec, 2013.p.1) However, in reality, the visions are often undermined by numerous of diverse goals and visions, from several stakeholders coupled with; incoherence, unsatisfactory sustainability concepts, and lacking participation from society.

The critique of visions and visioning research is according to Wiek & Iwaniec (2013); credibility, applicability and that they are fragmented in their nature, and can be both incoherent and insufficient. Ideally, the Olympic Games could be viewed as a game changer for urban planning in Rio towards a more sustainable city, if executed in line with normative sustainability goals, consequently having balanced social, economical and environmental goals and visions, for all the developments. Since the Olympic Games 2016 has not occurred yet, a full evaluation cannot be made. However, Rio started to prepare the coming games since

they won the bid in 2007. Therefore, what has already been executed in the plan up until today, and further their vision of what changes that will take place up until 2016, are very relevant to look at. Accordingly, what needs to be changed or altered, in order for them to reach the goals of truly sustainable Games? Elements of change are either contributing to cities getting closer to sustainability goals, or the developments are pulling the other direction.

3 METHODOLOGY

3.1 Case Study

A case study approach was chosen for this research in order to obtain a more detailed analysis. This research is both of explanatory and exploratory nature. Punch (2005) explains a case study simply as following “the basic idea is that one case will be studied in detail, using whatever methods seem appropriate. While there may be a variety of specific purposes and research questions, the general objective is to develop as full an understanding of that case as possible” (Punch, 2005, p. 144). According to Yin (2009, p. 18) “ a case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” In this case Rio de Janeiro is the area under investigation and the phenomenon explored is the Olympic games. However, the exact boundaries of what is purely an outcome or impact of the changes for the Olympic games and what is solely Rio de Janeiro in transformation, is not entirely possible to determine.

Although case studies have been criticized for their lack of generalizability and external validity, the findings from this case could be used as a basis for better understanding of the circumstances involved in other similar cases (Bryman, 2012; Yin, 2009). Furthermore, this type of case study could contribute to theory of sustainable urban development with a multi-level transition perspective, or the fields of general urban planning and event management, because of its wide approach to the urban context and the contemporary concept of sustainability.

3.2 Design and Theoretical perspective

A qualitative research design, using a single case study design based on the organization and impact of the Olympic Games was employed for this exploratory research (Bryman, 2012; Silverman, 2010). Explanation building, to be able to explain a phenomenon and to further analyse it and stipulate a set of causal links about, how and why something happens, was further used. This research is predominantly based on deductive reasoning since the theory, the MLP, serves as the basis for the creation of data where the data gathered in the field was then fed back into framework. However, inductive aspects are to be found in the research, since the findings from the interviews focus on the participant’s perspectives and views of the context (Bryman, 2012).

The ontological standpoint taken is constructivist where the social phenomenon analysed is produced through social interaction, which is under perpetual state of change and revision, and whereby it is presented by the researcher through a specific version of reality. Ultimately, the aim of doing transdisciplinary sustainability research is to get a balanced representation of reality thematic, sector and opinion wise (Lang et al, 2012; Scholz, et al, 2006) Whereby, the epistemological perspective that was appropriated for this type of research was interpretivism, since “taking the interpretivism stance means that the researcher can come up with surprising, or at least appear surprising if a largely external stance is taken – that is, a position from outside the particular social context being studied” (Bryman, 2012, p. 31), and as the "goal is not necessarily to generate objective truths, but to revisit and critique existing interpretations, often to conceptually emancipate people or ideas that are oppressed or manipulated" (Khagram et al,

2010).

3.3 Collection and analysis of data

3.3.1 Interviews

The empirical data for this research was primarily collected through in-depth interviews. “Interviews are the most important source for a case study and entails typically more guided conversations than structured interviews” (Yin, 2009, p. 106). The in-depth nature of the interview provided insights into how research participants view the world (Bryman, 2012) which in this research was essential as the interviews were conducted from interviews from various sectors; Non-governmental organizations (NGO’s) (four in total), academia (four in total) and business (six in total in Rio and London), directly or indirectly, involved in the Olympic Games organization. The interviewees had expertise in certain areas, such as, infrastructure, urban development, socio-politics, environmental, economic, organization or legacy and sustainability of the Olympic Games. The flexibility of semi-structured interviews were most suitable as the interviewees were “guided by an inventory of issues which were to be covered in each session, interviewees themselves raised additional or complementary issues, and these form an integral part of the study’s findings” (Bryman, 2012, p. 472). Therefore the process followed a semi-structured process, where an interview mind-map (see appendix A) was used to guide the conversation and cover as many topics as possible for that specific interview. In London I met with one of the sustainability and legacy organizers. This is where I refined and tested my mind-map. This interview was very crucial in my research as it guided me through the jungle of topics within the Olympic Games planning, execution and organization, it gave me knowledge and guidance where to focus my research. I further gave me a very good overview of what a mega - event entails and its impacts on the hosting city post-games time, as the London summer Olympics were starting to feel the after-effects as I began my research.

All interviewees were made aware of the nature of the study and a formal letter was sent to all of them post the interviews stating their anonymity in the research as some of them wished, whereby I have had to discretely protect their anonymity through out this research. Purposive sampling (knowledge of, or involvement in, the urban transformation or the Olympic Games) was used as the method selecting the interviewees, and further availability of these people, were used to obtain the interviews. Theoretical saturation was met after conducting the fourteen interviews and interviews continued until the data gathered from the interviews became repetitive. “By ignoring theoretical saturation the researcher risks creating theory based on inadequate development of patterns or themes and the result might be findings based on the lack of reliability and/or validity” (Thomson, 2011, p. 46). To some extent the method of snowballing (Silverman, 2010) was part of collecting the interviews since some interviewees provided me with further connections.

The coding of the collected interview material was of a selective approach where “the researcher has decided which category (or categories are) central to the research project (Strauss, 1987, p. 69). The process was followed by identifying common themes which emerged from the interviewees descriptions and explanations of their perception and knowledge of the topics (Bryman, 2012). These common themes/thematic areas emerged out of this process and resulted in eight different areas; new builds, infrastructure, social, political, cultural, economic, environmental and organization. These are represented in this research as the eight thematic areas and they first appear in chapter 5 where the most persistent barriers on different levels in society are presented through the MLP framework. The barriers found through the interviews were thereby generated and systematically linked to these eight thematic areas, in a semi-inductive manner by reading and rereading the transcripts and label them. Further, they were derived by fostering *in vivo* codes that are explained by Strauss as topics “ taken from the language of that substantive field: essentially the terms used by actors in that field themselves”(Strauss, 1987, p. 33) and *in vivo* codes tend to be behaviours or processes which can provide an explanation to the analyst on how the basic problem of the actors or process is to be resolved (Strauss, 1987). Only the most repeated and interlinked barriers (both thematically and level wise) are brought up in chapter 5 since all my interviewees did not

bring up all thematic areas. However, they are there to represent the holistic view of issues/barriers in Rio and that was discussed to some extent, but was not necessarily the ones that all my interviewees raised and found predominantly persistent or complex.

The interviews were the major part of this research to be able to get the newest information and further understand what the barriers truly were (Kvale & Brinkmann, 2009). The disconnect of plans/visions/goals and reality, were of major focus to get in-depth information of what the interconnections and short comings were, in order to find out where the problematic complex issues that needs to be solved and where they stem from.

3.3.2 Observations in the field

In addition, unstructured observations were made in the field throughout the six weeks stay in Rio de Janeiro. By spending a substantial time in the field you get an insight on how everyday life works, get to experience local life and understand the complexity of the present tangible issues. The purpose of the observations was to give further input to the knowledge about Rios transformation and this included various of field visits to, for ex; Favelas in process of urbanization (meaning undergoing upgrades in their sewage system, waste collection and receiving basic social services etc.), areas around Maracanã stadium, and several of highway and infrastructure projects around Rio de Janeiro. The observations have been used to increase validity and confirm the statements of the interviewees and further to see the urban changes in reality. These valid insights could not have been obtained through written material. Some selected photos of these observations can be found in appendix E.

3.3.3 Literature review

The information gathered through interviews and observation served as the primary base for the research, and the collected written material have underpinned the research findings, augmented the information and filled in gaps where interviewees have not been able to give the full perspective, or detailed facts. Literature has been collected from the interviewees (articles, reports, journal publications) and further found on databases (such as LUBsearch and Web of Science). The construction of a case study database worked towards increasing the research reliability (Yin, 2009) and have been organized in the similar thematic areas as presented in chapter 5. Data triangulation from these multiple sources of evidence served as a tool for increasing the credibility of the research.

3.4 Limitations

The language barrier was undoubtedly a limitation in the field, as I could not speak directly to the people affected. However, as this research is not solely focused on the impacts on the local people, the data gathered does still derive from several of sources with diverse perspectives. The time, 45 days, spent in the field in February and March 2013, was moreover a limitation both for the constraint of time, and the fact that the process leading up to the Games are still on going up until 2016, and plans can both be altered and improved up until that. Therefore, parts of the research findings shall not be considered as fully established, thus more as tendencies and trends of development.

4 BACKGROUND TO RIO AND POTENTIALS OF THE OLYMPIC GAMES

This chapter explains past and present situation in Rio de Janeiro and aims at providing a balanced and objective understanding of what the impacts are of the transformation in Rio and briefly explain the organization of the Olympic Games and their plans and visions.

4.1 Rio de Janeiro in transformation

Brazil's economic surge the last decades has paid off in financial terms and Brazil is now the 7th biggest economy in the world (Interviewee nr 7, 2013 & World Bank, 2012). The GNP of the municipality of Rio de Janeiro is approximately 50 billion US dollars, distributed among 13 municipalities (Acioly Jr, 2001). The macro economy of the city has recently been tailored and laws have been changed to make it easier to invest, concerning direct transfers, reduced interest tax, less difficult to take loans, which have resulted in increased consumerism in Rio. People in Rio are buying and this positive attitude of the economy is favouring further investment for the Olympic Games and indirectly in the city itself (Interviewee nr 7, 2013). The Brazilian government has estimated that up to a total of 50 billion US dollars, which equals 2% of the total GDP, will be spent over the next seven years in preparation for the Olympic Games and the World cup (Ramos, 2012). This number is prone to increase, according to many experts on the Olympic organization (Pitts & Liao, 2009). In 2011 income inequality, measured by the gini-coefficient was at record low of 0.519 (of the last 50 years) in Rio de Janeiro. This was achieved by income growth rate being high at 7% for the poorest 10 % of the population, and only 1.7% for the richest 10 % (World Bank, 2012). Albeit these accomplishments, the inequality in Rio remains at relatively high levels for a middle-income country.

Macro-political development has had an immense impact on the socio-economic situation in Rio de Janeiro. To put the rapid development in Rio in a context; in the 1950's industrialization took off in parts of Brazil and in the 1990's President Lula established twenty one industrial plants, increased the numbers federal universities and approximately 38 million people were said to be lifted out of poverty (Interviewee nr 14, 2013).

Since 2005 there is a regulating law in Brazil that states that public land must be used primarily for social housing, for the lower income classes. One of the bigger project for the Olympic Games are the Porto Maravilha project and 80% of the land used for this urban development is public land, and will not be used for social housing. The government are giving it to the private sector to build, for example mega-structures, for Donald trump to build five business towers, and people living there are moved through forced eviction (Interviewee nr 12, 2013). Evictions are legal if the process is according to law, forced evictions, contrarily, are not, and is defined by the Office of the High Commissioner for Human Rights "the involuntary removal of persons from their homes or land, directly or indirectly attributable to the State. It entails the effective elimination of the possibility of an individual or group living in a particular house, residence or place, and the assisted (in the case of resettlement) or unassisted (without resettlement) movement of evicted persons or groups to other areas." (OHCHR, 1993). The reason for these forced eviction is partly that the land was not valued before it became a "degraded area", and now, the government want to profit on the land for the upcoming mega-events, this makes it urgent to remove the residents (Interviewee nr 12, 2013).

"When the government take on these events, they have to deliver, there is no turning back, there is a deadline and no time for getting lost in bureaucracy. A deadline is there to get things done and the power of the Games are tremendously strong" (Interviewee nr 12, 2013). On a more meta-level of hosting the Olympic Games, a success will give a sense of accomplishment for people in Rio. The Complexo de Vira-lata, a stigma of the Cariocas, is historically described as how the Cariocas view themselves, and is a notion of low self-esteem, where they view others always doing things better, and products are always better made elsewhere. This can be explained also region wise in Brazil, where Sao Paolo have the financial means and Brasilia have the political power and Rio, at least in the past, have had the tourism, beach and carnival (Interviewee nr 10, 2013). Culturally, an achievement of the Games will bring the collective self-esteem of the Cariocas to a new level. Additionally, in recent years living in a favela have become more of a positive notion and a type of branding, even though there is still lots to be done and the standard of living differentiates tremendously between the favelas today, where some are defined as middle class, some still are completely ruled by heavy crime lords and extreme poverty still prevails in the poorest favelas. An important aspect to the poverty is the development through sports, which is part of the Rio legacy work and also already an acknowledged opportunity for the poor people in Rio to access education and lift

themselves out of poverty by focusing on a sports career. The Olympic Games can increase the number of sports for the Brazilians, on which they can build a career through having access to new arenas and new opportunities (Interviewee nr 10, 2013).

During the end of June, 2013 massive protests broke out in Rio and in 80 other Brazilian cities against the corruption within the government on all levels, for being unresponsive to the people and for the increasing costs of the Olympic Games and the World Cup. There are many citizens who want to see a systemic change in Rio, this protests are needed, claim the protesters, and should have happened a long time ago (Barchfield, 2013).

4.2 Potentials of the Games

In this section the potentials for Rio by hosting the games are presented. The three focus areas; new built zones, infrastructure and environmental improvements are part the physical transformation of the city for long-term sustainability that the Olympic organization presented in the bidding process (see appendix D for more information).

4.2.1 New built zones

The Olympic Games in London 2012 had a focus on one large area for new builds (Interviewee nr 2,2013), the concept in Rio includes four zones (see figure 4 on the next page), all with different socio-economic characteristics; they have been strategically reviewed and selected by an urban legacy committee led by the City government, for increased urban opportunities and long-term social legacy (rio2016.org).



Figure 4: Map of the Olympic zones in Rio. Here we see Deodoro, top left, Barra, bottom left, Copacabana, bottom right and Maracanã top right. These are the areas where most of the urban transformation of Rio will take place up until 2016. Source: rio2016.org

Barra is a wealthy expanding area of the city requiring considerable infrastructure and accommodation development. Construction of the Olympic Village, media village, International broadcast centre, media centre and the venues in the Olympic Park correspond with the needs of the area and the master plan of connecting Rio. In the Copacabana zone outdoor sports will be held in mainly temporary venues. The area around the Maracanã stadium is the most densely populated zone, which contain the athletics stadium and an indigenous museum that has been up for eviction due to new built plans, the plans has changed numerous of times and has been very controversial, as indigenous people have squatted there for years, they were recently forcefully evicted, and have been allocated land in northern parts of Rio de Janeiro (Interviewee nr 9 & 5, 2013). Deodoro is furthest away from the city centre with a lack of infrastructure.

The majority of the people living in Deodoro are young people. The new venues constructed for the Games could provide significant social opportunities for the young generation. In the core of these urban transformations in Rio are the strong and influential construction companies (Interviewee nr 9, 2013)

The race to revive public space up until the Games can be seen in many other parts of the city, and particularly in the port area were the largest and first private public partnership (PPP) the Porto Maravilha project, in Rio is under progress. The government together with the executing company, The Port Region Urban development Company of Rio de Janeiro (CDRUP) sets these plans. The mission of CDRUP is to “orchestrate initiatives that will fully integrate urban areas into the city and ensure all citizens their right to a sustainable city” (Porto Maravilha, 2013). There are five million square meters that are undergoing a complete revitalization. This area has low proportion of green areas (2,5%), prone to vast flooding, has degraded architectural heritage buildings and a sewage and drainage system that is directly released into rivers and canals (Interviewee nr 3 and 8, 2013 & Porto Maravilha, 2013). Demolishing of a viaduct (see figure 5 for the future plan of how the area will look like after the demolished viaduct) will create a more liveable area, but for who? This is a general view of the physical transformation when you talk to people in Rio. “The social aspects are always the most complex, and often forgotten. It is easier to put research money into solar power, or into collection of rain water” (Interviewee nr 6, 2013).



Figure 5: Porto Maravilha - Transformation of the port area. This is the targets PPP in Brazil yet and it will transform the whole port area when it is finished. Here is an image of how it will look like when they have taken away the large viaduct.

Source: www.Rio2016.org

The PPP have enabled many projects as well as created a lot of controversies in Rio in how they are set up and implemented as they are financed both with public money and private investments. Many projects taking place at present are funded through Brazil’s Growth Acceleration Program (PAC) and presented as part of the Olympic revitalization in Rio (and the rest of Brazil). The PAC 2 program (see table 1) initially encompasses investment in three major areas, logistical infrastructure, energy infrastructure and social and urban infrastructure (sanitation, housing, subways and urban rail) (Interviewee nr 12, 2013 & Loudiyi, 2013). Additional photos of the urban transformation in Rio can be found in appendix E.

Table 1: Brazil’s Growth Acceleration Program - PAC2 Investment plans. This figure shows focus of Brazils large investment plan and its area focus. Source: www.expandingobrazil.com

| PAC 2 INVESTMENTS - in US billion dollars | | | |
|---|-----------|------------|-------|
| PAC 2 INITIATIVES | 2011-2014 | Post- 2014 | TOTAL |
| Better City | 31.3 | - | 31.3 |
| Bringing citizenship to the community | 12.6 | - | 12.6 |
| Housing | 152.5 | - | 152.5 |
| Water and light for all | 16.6 | - | 16.6 |
| Transportation | 57.3 | 2.4 | 59.7 |
| Energy | 255.3 | 343.9 | 599.2 |
| TOTAL | 526.0 | 346.4 | 872.3 |

4.2.2 Infrastructure

Rio de Janeiro has vast on going urban sprawl and steep mountain terrain and it increase the difficulty of having functioning mobility of and for the citizens. Therefore the infrastructure is definitely the most obvious concern and focus of improvement for Rio.

There is a master plan for the whole city where extensive mobility and accessibility is of central focus for the Government of Brazil, Rio de Janeiro and the Olympic Committee (OC). This includes, fast busses, subway line expansion, more pavements and more active transportation, such as, biking paths (Interviewee nr 13 & 7, 2013). Rio did loose the opportunity to get a vast subway expansion for the Olympics, and the near future. This was due to many complex reasons, however, expressed to be political pressure from the bus companies. The subway planning should have been done much earlier according to researchers on the topic. (Interviewee nr 4, 2013) What is currently undertaking the largest part of new infrastructure are the Transoeste, Transolympica and Transcarioca (see figure 6). These infrastructure developments are not without controversies either due to its placement with unnecessary routes through communities, and externalities such as major accidents (Interviewee nr 4,2013).

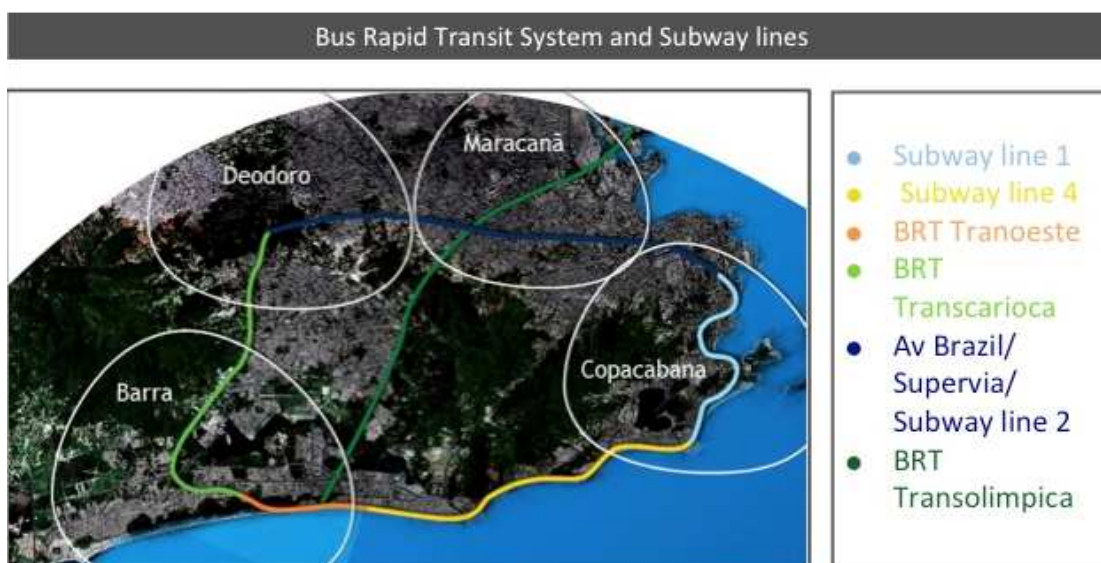


Figure 6: Rio de Janeiro existent and planned Bus Rapid Transit System (BRT) and Subway lines. On this map you can see the public transportation routes and type of transportation in between the four Olympic zones. Note: Not all were completed at the time of submission of this research. Source: www.rio2016.com.br

These Bus Rapid Transit systems (BRT's) are though flexible and less expensive compared to building new

subway lines (Interviewee nr 4 and 8, 2013) the potentials to build light rails in the future are still present with this kind of system (Interviewee nr 8, 2013). According to business and organizers of the Olympic Games this is certainly an opportunity to excel Rio's infrastructure to new levels and connect the whole city (Interviewee nr 10, 2013). To a certain extent the mobility of people is the primary issue to tackle for Rio, nonetheless correspondingly to not further build into a fossil fuel lock-in is important, with nine million citizens in the Rio State area (Interviewee nr 5, 2013). Today, the population is not necessarily growing in the centre of Rio, and show some urbanization patterns as other megacities were "cities tend to become less dense as they grow, at least until they reach predominantly automobile oriented densities" (Cox, 2013), this is likewise true for Rio where the total population is 11,6 million today (Cox, 2013). Even though Rio is no longer booming its population the middle class is growing, more people aspire a personal vehicle and unless the public transport is not rapidly improving, cars are definitely going to consume Rio on many levels, economical, environmentally and socially.

4.2.3 Environmental improvement

The trend of including sustainability in mega event planning is certainly a chance for the urgent need for environmental improvements to move further up the political agenda in Rio de Janeiro now and in the future.

Some of the main issues that Rio is tackling in the environmental domain are poor waste collection, lack of sewage and drainage systems, and pollution and bad water quality in the Guarana bay. The mega-events has already catalysed improvement of waste management systems, where before 80% of the collective waste went into informal landfills. The aim is that 100% will go into treatment facilities and up running in all areas by 2016 (Interviewee nr 13 & 8, 2013) and in 2010 after two decades of debate—the National Congress passed a law (12.305), which established the National Policy on Solid Residues (NPSR) where all stakeholders involved in the production chain for environmental damage arising from the disposal of the residues from this process, are, since 2010 having joint responsibility for the waste. It was moreover established that landfill site disposal of residue is permitted only when alternative use, such as; re-utilization and recycle, and is not technically, economically or environmentally viable for other further use (Carvalho, et al, 2012).

CO₂ reduction and optimizing transport and mobility connecting Rio with Sao Paulo and other economic zones and ports for international trade has been on the political agenda for many years and only recently has Rio got the financial means to improve within these areas (Interviewee nr 11, 2013). However, for example, the Guarana Bay clean-up has been an overarching plan in Rio for decades with little concrete undertakings and actions, it has solely been a blue print with no actions (Interviewee nr 8, 2013).

4.3 The Olympic Movement and the organization of Rio 2016

The founder of the Olympic Games, Pierre de Coubertin's (1863-1937), saw intercultural understanding imperative to the vision of the Games, and it has later even been linked with the United Nations peace agenda. After the II World War the Olympic games were perceived to be structural urban projects with the implications of revive and improve urban structure (Chatziefstathiou, 2005) However, according to some scholars and academics in Rio, there is no real evidence that these events does create economic growth (Interviewee nr 7, 2013). A preceding project manager within the IOC explains it as an tremendous challenge for public authorities and planners to evade a situation whereby the positive effects of the Olympic Games are predominantly benefitting already prosperous classes (Furrer, 2002) and ultimately becoming expensive for tax payers where the public money could be put to better use for the citizens (de Oliveira, 2011).

The sustainability focus of the Rio Olympic Games has three dimensions that the OC is working towards; the Planet, People and Prosperity. The objective under the planet dimension is to have games with reduced

environmental footprint. It entails mainly environmental restoration and restoration of water bodies, such as Guarana bay, Jacerapagua and the Laguna complex, and also environmental restoration of degraded areas. Partly this focus is incentives to compensate for the carbon emissions of the Games. Furthermore, since some of the sports disciplines will take place in the natural water bodies and these needs to be cleaned. There are further temporary structures for Olympic Games and no new builds are according to the organizers being constructed without the end use in mind. Nomad architecture, which mean, mobile flexible structures that can be moved to other areas in Brazil are considered. For example, the handball arena will be used for schools, and the aquatic centre will go to the west of the country. (Interviewee nr 10 & 13, 2013 & rio2016.org, 2013)

For the second dimension, people; engagement of different stakeholders and youth is their main commitment. To organize an education program in schools, and directly work with teachers in the region of Rio state including about two million students from 7-17 years old were they will educate on values, social and healthy lifestyles and citizenship and further to encourage them to work with sustainability will be introduced. The OC does not have an emphasis on the favelas or re-urbanization, and according to themselves it is not exactly connected to the organization of the Games, however the Brazilian government cannot stress this more clearly, or justify new builds, for the Olympic Games to be improvements for degraded areas and Favelas (Interviewee nr 10 and 13, 2013). The other part of the people dimension is accessibility. Rio has very few pavements and roads for disabled people. The improvements entail not solely increasing infrastructure around the venues and making them more accessible, but to improve the whole city, and to make it more pedestrian friendly. Sufficient pavements are a rarity and how to change the car focus of the city is part of changing the whole culture in Rio. Although as expressed by the OC, "We are not connected to the government, we are a non-profit association who are here to deliver the Games, we are the producers, we are not responsible for the BRT's, it is the government, the games will happen with or without BRT's. The only difference is that people will come by car and the traffic is going to be crazy" (Interviewee nr 13, 2013). The third area within this dimension is diversity, where inclusion and having diversity in the workspace of the staff and volunteers is important. The contractors will get educated on inclusion, the OC aims at providing skills in order for people to get better jobs. The OC will achieve this by building different types of partnerships for the 90 000 volunteers that are needed. Volunteers will be trained and it can be a push for a future, formal, job of these individuals but it also requires responsibility from the government for continuation of harnessing the skills that have been provided to the people, post-Games time.

In the third and last area, Prosperity – responsible management and accountability, are the key aspects. "The role of the games is a catalyser and accelerator for old plans, and it helps to get it done quicker" (Interviewee nr, 13). Prosperity initially means that it should help the local economy through increased job creations and skills building within the supply chain. A comprehensive program on how to deal with the supply chain will be established and early communicating standards and guidelines to suppliers. There is an aspiration for the Games to within the supply chain improvements for sustainable practices create a spill over effect to the organizational practice of mega-events in general and to other parts of Brazil (Interviewee nr 13, 2013). The OC are further creating partnership with companies abroad, and merging them with local companies to exchange knowledge and to lift the local economy with the expertise of business whom have been involved in doing large-scale events in the past. "Within these types of events you only have a few companies in the world who can do a certain task. It is very specialized and the organizers of the event cannot risk failing this (Interviewee nr 13,2013). The complete summary of the Olympic organization and the actors can be found in appendix D.

4.3.1 Vision and Legacy

The Pan American Games was hosted in Rio 2007, 5000 athletes and 60,000 tourists from the 42 participating countries came together in Rio (Curi, Knijnik, & Mascarenhas, 2011). The general view from the public in Rio, and involved people from academia and NGO's deem the legacy of the Pan American Games solely has provided easier access swimming and volleyball facilities. It was private companies running the games and the World cup and the Olympic Games are facing similar risk and opinions

(Interviewee nr 4 and 7, 2013). The costs of the Pan American Games are still, in complete numbers, unknown and have not fully been made public. The government was very hesitated to give out even initial costs and the transparency of the event has been low (Interviewee nr 7, 2013).

This time around prior to the bidding process, representatives of the Rio 2016 Business Council, Government, NGO's and the Brazilian Olympic and Paralympic Committee developed a legacy framework called "A new era for Rio and its people". In the initial bid paper the key Olympic legacy attributes focus on transformation through sport and a sustainable legacy. Further, it has developed into a strong focus on accessibility. There are many examples engineered into the 2016 Olympic Games legacy plan of programs that will improve the city, and the entire nation. The completed legacy plan is now based on four key priorities, all fully integrated into Rio's long-term plan (summary outlined below, the complete plan can be found in appendix B).

- Transformation of the city; Enhanced public transport, improved air quality, forest preservation and regeneration projects including new housing.
- Social inclusion: homes, training and jobs; Provision of apartments, skills development leading to jobs post-games and local and sustainable procurement when possible.
- Youth and education; Sports and education for all Brazilians
- Sports; Athlete scholarships, federal investments in sports, training facilities (rio2016.org)

The main legacy that the people anticipate is more safety and curbing the levels of violence in the city. In the last three years Rio de Janeiro has been implementing safety programs, the escalation of these initiatives and "clean up" of the favelas has been a radical shift in how Rio deals with violence and drug trafficking in the city. The Pacification Police Unit (UPP) is definitely part of the preparations for the 2014 World Cup and the 2016 Olympics. The mission has been to maintain control and be present in favela territory, where local drug traders have been overthrown. While many believe that UPPs have helped to keep all citizens in the favelas safe coupled with urbanization and provision of public services, such as; legal electricity, garbage collection, education and social assistance programs, are improving the situation for the people in favelas, others view the UPP's as a temporary solution to a very pervasive security problem in Rio de Janeiro (observations in the field & Interviewee nr 14, 2013).

5 BARRIERS FOR LONG-TERM SOCIAL SUSTAINABILITY

The underlying barriers and key profound inconsistencies hindering long-term social sustainability within the eight thematic areas that have been found in the interviews are analysed in this chapter, were the MLP is applied to see the city as the object of transition based on the concept of complex systems (Rotmans, 2005).

Examples of fundamental issues to change or transitions are; normative or motivational reasons to respond (Haddad, 2005). The motivational reasons for change has to be created within the present system. It has moreover been argued by scholars, such as, Burch and Robinson (Olowa & Olowa, 2011) "that we must look to the deeper underlying path-dependent development trajectories to reveal the true sources of barriers to action". This section is based, as explained in chapter 3, on the semi-structured interviews in Rio, the interviewees repeatedly mentioned similar barriers which in the sections are written in italics for visual connection to figure 7 (see page 27) and therefore the compilation of this data is not referenced. Their responses are the respondents own words, in order enhance and reveal the true story, and further, to understand the complexity of interconnections between place (Rio de Janeiro as an administrative and geographic object), event (The Olympic Games) and time (pre -, during and post Games time). The barriers are plotted below in the MLP framework within the eight areas (see figure 8), and further more thoroughly explained on each level (macro, meso and micro) in following text.

5.1 Macro Level

The macro-level consists of "trends with a relatively slow progress and developments with a high

autonomous character. At this level we find global trends such as globalization, individualization, culture and paradigms”(Rotmans, 2005. p. 25).

- The cultural meta-barriers have a pervasive grip of the ways and customs of doing business and regarding political decisions in Rio. The slogan *50 years in 5 years* was coined and implemented by the Brazilian President Juscelino Kubitschek in the early 1960's and is still a present mode in which Rio is operating within. This slogan means initially to develop fast, and has through history not necessarily had the best long-term effects, or been good investments in the long run. The mode of *demolish and construct* has further been an approach to generate the macro financial situation and which has fostered further corruption on all levels in society, as the bureaucracy takes too long. There are further many *different dimensions* of stakeholders that want to get involved. People involved are expressing worry about the fact that everyone “wants a piece of the Olympic cake” and this creates too many plans and not one joint project, rather a cluster of separate ones.
- In the larger social perspective, *segregation* is a force of Olympic games, which are common to be perpetuated in the hosting cities. Citizens in the Favelas are being relocated to less valuable land in the outskirts of the city, and are further being moved on dubious grounds, such as, insecure living situations due to inclination of hillside, soil density, etc.
- The Olympic Games creates opportunities for political decisions to be moved up on the agenda and accelerated decisions making as the limited time until the games start demand that infrastructure and arenas, Olympic villages etc. are finished on time. This can generate a *state of exception*, where the laws and force of The Olympic Games as well as the World Cup outdo municipal and state laws. Since the Games are very visible in the cities media it acts as a catalyser, even though it is a just a part of the whole change in Rio it is easy to “blame the games”, both for the positives and the negatives. “We get credit for things we did not have any involvement in, and get blamed for things that has nothing to do with” (Interviewee nr 12,2013). *The Blame Game* is a very perplexing issue as it sometimes is hard to determine who is truly responsible for some decisions and actions.

Barriers for long-term social sustainability in Rio de Janeiro

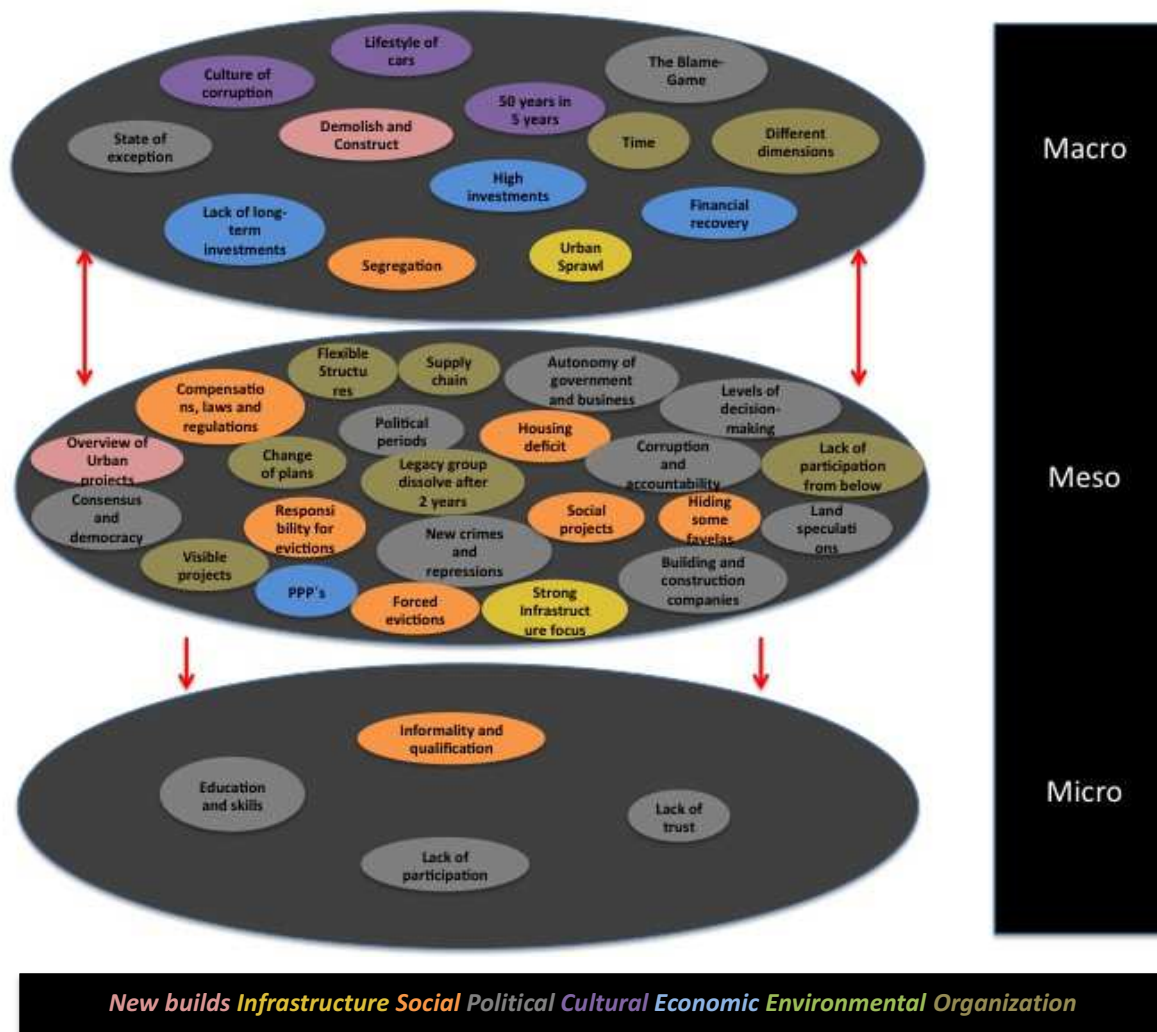


Figure 7: Multi-Level Perspective: Barriers for long-term Social Sustainability in Rio de Janeiro

- As for the meta-organizational barriers the limitation of *time* that the organization of these events entails from the start creates predicaments of taking fast decisions, which are not favourable for all stakeholders involved. Over all, time is very short and it is a fundamental issue of hosting the Games, decisions needs to be taken, implemented and executed with minor regards to external, or internal disagreements.
- In Rio there is a *lack of long-term sustainable investments* in the economy, especially for infrastructure, and this is offsetting any attempts to truly improve the situation in Rio. This has partly to do with the shorter span of *financial recovery* that is stemming from uncertain future revenues, or it is simply an effect of a different political agenda. On the other hand, there is a fear, and reality, of *high investments* in these events where the benefits are never to be reaped by the people on the ground, who need basic health care rather than big large event complexes.
- The semi lock-in that Rio finds it self in has been influenced by the “*lifestyle of cars*” and how the urban structure has been developed, the *urban sprawl* is furthermore an issue for trying to contain unsustainable infrastructure in Rio. Another underlying unsustainable trend, that is not favouring long-term sustainability, goes back to the actuality of a strong consumer society. The bustling production, how to measure who has wealth in the society and the desired lifestyle that people, generally, want to achieve is benchmarked by “the American way of life”. Consequently, the consumer society is very present in Rio and it has spurred the economy and does sustain the Brazilian economy today by several means, the question is for how long this can continue being the

main pathway? Connected to the extensive advancement of car users, Brazil has made new discoveries of oil reserves outside the coast of Rio, this has led to decreased incentives to any fuel and energy alternative, and accordingly a more sustainable path. On the ground, this desire of both individuals and the society at large, creates a paradox for truly swing the unsustainable practices around.

5.2 Meso Level

The meso-level contains systems of dominant practices, policies and regulations, and interests that are shared by several actors. These are structural issues of the stakeholders involved (the Brazilian government, the Olympic organization and others such as the building companies for ex) directly or indirectly in the planning and execution of the projects; the set up of the entire event, organization around it and further organic context based barriers in Rio for example, existing structures in the organization of society. It similarly explains the organizational issues that are halting progress towards long-term sustainability internally within the Olympic Games structure. "At this level there is much resistance to change because existing organizations, institutions and networks want to maintain the status quo, i.e. the existing configuration of regulations, working practices and interests" (Rotmans, 2005, p. 25).

- In the *supply chain* for the Olympic Games there are few businesses involved. This could ultimately exclude small business to be able to be competitive and get the economic benefits of the games. Further, issues that have been on going since the beginning are the *change of plans* on many of the Olympic sites. For example, some Favelas have not been subjected to change in the original blueprint of development plans, while they are now at risk of facing evictions. This is not only creating doubt and scepticism from the public, the organizers further lose valuable time in preparing the sites, venues and areas surrounding it. Since time is a systematic constraint and Rio needs to maximize the improvements of connecting infrastructure with sustainable public transportation. In the attempts to create innovative and *flexible structures* it can potentially be negative for Rio in the sense that flexible structure does not entail a real investment for Rio, when the structures are to be reconstructed and moved somewhere else.
- Another flaw on the organization of the Olympics is that the *legacy group will dissolve two years after the games*, this creates discontinuity, disrupts the actual long-term plans and worsens the lack of an overview. This notion has been strongly opposed by urban scholars, such as Raquel Rolnik, special rapporteur in the UN especially; she critiques the lack of transparency and participation of the Olympic Master Plan in general and expresses the lack of an initial plan in place independent of the Olympics (Rolnik, 2012).
- The organization of inclusion and participation of the citizens living in the areas, which are subjected to change, has huge flaws for different reasons. One example is the *lack of participation from below* in the participatory meetings that are to be established before new developments, according to law. It has been reported that in these meetings the public representations there have been company representatives and non-community members. There are however no strict laws on how to announce a public meeting, for example, this has resulted in very minute advertisements and a non-representative number of local residents in these meetings.
- On the socio-political side there are several barriers that need to be dealt with. There is a disconnect of the *Secretary of Housing holding the full responsibility* of all the forced evictions, evictions and removals of communities, allowing a relief the Olympic Games congregation of responsibility, and thereby a disregard of social *laws and regulation* being followed. It is common for these types of events, but does not necessarily need to worsen the situation, however, coupled with the time constraint, wrong and inconsiderate decisions follow. The present *housing deficit* is further used in Rio to underpin the reasons for more new builds, which however, are not always up

to standard, and later result in demolition or need of upgrading in just a few years.

- In the non-urbanized areas and favelas several of *social projects* have been introduced over the last decades, not without controversy or concerns of focus and on what grounds some areas have been chosen for “upgrading”. There are basic concerns with some of these projects, considerations like; it supports the lower classes until they reach a minimum wage of times ten, which is considered to be upper middle class. They divide the communities in three classes of income; 1-3, 3-6 and 6-10. When looking at the budget distribution of the project you can see that there is a very small part that goes to housing of the poorest with income, between, 1-3 minimum wage. All together, most of the budget goes to the middles classes. There is also a problem of implementation, and it is up to the municipalities to take action and implement it (additional information of the social projects can be found in appendix C). Correspondingly the promise of *compensation* of either financial aid, or a new house, has not been realized in some areas where people have been evicted. There are, besides these flaws, those that believe that the social programs sometimes has a hidden agenda when it comes to the upgrades, for example, what areas that considered important to upgrade for the Olympic Games.
- In the favela, Vila Autodromo, in Barra area, where the Olympic Village will be built, the citizens have pervasively felt the implications of *forced evictions*. It has further been very obvious in the planning of the Transolympica (see figure 7) that the process has not been neither legal nor transparent. On the map of the plan for infrastructure 2030, Vila Autodromo is planned to be kept, however, the government has been wanting to move this area for a long time as market prices for those apartments that are close to this poor area become less valuable. On-going *land speculations* are said to be a reason for many of the forced evictions that at first never was part of the original plans. In the case of Vila Autodromo, the authorities last year created another reason to move it, the reason was the Transolympica. Transolympica is not a new road it is going to be built above the existing road. The established plan however, is now that Transolympica takes a sudden turn into the community, and is then a reason for evicting the community. Further reasons for the eviction are said to be that two thirds of the community is located in an environmental preservation area, and the fact that most residents do not have access to basic sanitation and live in risky and harmful conditions. It is seems that the government pick and choose whether to obey laws and regulations when it suits the urban makeover and their building spree. The forced evictions have certainly increased as Rio has these large events coming up. The social effects of the on the individual level are further devastating for families that are forced to leave their whole life behind. Social ties are broken and the school years for the children are disrupted.
- The stories of evictions that media portrays are unbalanced, it is difficult for opposing groups to get out information of the issues that are occurring with the privatization of space, arenas and forced evictions. There has also been a weighted coverage on *visibility of projects* that have fairly given a voice to the communities. The reality is that there are far more areas being up for forced evictions, or areas being demolished where the people living there receive no compensation, then those that got some recognition. Rio only has two larger daily newspapers and they are closely linked to private business for funding etc.
- Further, the *political periods* of politicians in office (on a four year basis) on city level limits the investment for long-term projects. The political inconsistency is further affected by the different *levels of decision making* in the federalist state system that Brazil has, national, state and city level, both for communication directly regarding the Olympic Games and communication between the different levels for decision making, in general. The aggregated bureaucracy that is part of everyday life in Rio is a side effect of the implementation of democracy in the country. With the greatest of intentions to impede corruption it has instead created more corruption, as the “legal way” takes too long. Rio has a substantial culture of entrepreneurship; although, innovation and advancement in sustainability processes can be difficult to get momentum due to the strong *autonomy of the*

government and large businesses. Too few players in the top stimulate *corruption*, and further *accountability* reduces when only a few have all the power.

- The mega-events has also brought a whole new pack of legislation to Rio; Leisarao da copa and the Olympic Act, it defines, for example, security trading near the stadiums, which represses business activity for the poorest. This has resulted in further concerns that they will create *new types of crimes*, for example; crimes of protest, crime of using the logo, which can be used as excuses to arrest people. These types of laws generates the state of exception over the time of the games and does not improve the situation for the poor as it will create repression through the regulations of what and whom are allowed to have their business in the areas of where the Olympic stadiums are.
- As for economic related barriers the *PPP's*, which are part of the urban development strategies in Rio, created during the last decade in Rio has created a huge public debate, there are different voices and opinions on these and it is definitely an issue if more public money is used then the initial bidding presented. The *PPP's* all look differently and there are no set standards or regulations. Many voices on them express concern for aggravated corruption.

5.3 Micro Level

Traditionally on the micro level new initiatives, new techniques and new forms of culture and management can develop. In this research, the micro level contains of the people, who are affected by the trends on the macro level and the organization on the meso level particularly in this wider urban context, and they have very diminutive influence as the Olympic Games organizational structure is a very top down construction and that is further true within the culture of politics in Rio.

As expressed, by Naess and Vogel (2012, p.1), the focus is not on the micro level when using and adapting the MLP on an sustainable urban development context, “rather than depending first and foremost on micro innovations, a transition toward sustainable urban development is a matter of changing the composition of existing multi-segmented areas on the meso-level”. Therefore what is described on the micro-level is the situation on the ground, in the communities who get affected by the transformation dynamics on the other levels. However, the barriers that exist on the micro level need to be understood and dealt with as transitions does not start in one place, but at different locations at different scale levels and “only when these opposing dynamics modulate, can a scaling up effect, and thus a spiral effect, emerge as a necessary condition for achieving a transition (Rotmans, 2005, p. 26).

- The social barriers are the level of *education and skills* in the many poor low-income areas of Rio. This situation hinders their involvement and ability to take part in the transformations, and there is furthermore a presence of reliance on top down steering, as the dictatorship in the past left no leeway for bottom up input. *Informality and qualification* is furthermore a vast issue and the programs organized for pre –games to raise the bar, or bringing the informal workers into the formal sector and increase their professional skills, is unfortunately questionable, according to human rights experts and academics within the field.
- There is a *lack of participation* and involvement of poor people in some communities. This undermines the work of those that do try to rise up and inform about the violations that are taking place. The power lies in the hands of very few and the masses are unaware, or feel defenceless against the elite. Conversely, there is a *lack of trust* among people in the communities, for politicians and organizers of the Olympic Games, whom has seen and felt the effects of the social “projects” were compensations have not been adequate, or completely left out. The barriers on the micro level can be considered more reactions or symptoms of actions (or lack of action), trends and present conditions on the meso- and macro- level.

6 FACILITATING A TRANSITION – SOLUTIONS SUGGESTIONS

Proposed solutions to the main, deep-rooted, complex barriers that are determining the success of hosting truly sustainable Games which potentially could have a positive long-term effect on Rio de Janeiro, and that further could benefit a transition to a more sustainable city, will be presented in the proceeding chapter, following an end discussion.

This scheme and section attempts to deeper explore the linkages, trying to find the underlying structures and “uncover the generative mechanisms and casual influences of structures as well as agency” (Næss & Vogel, 2012, p. 6). Plotted in this scheme are the most important solutions and priority suggestions explained and arranged to see what area that encompass most urgent solution and priority, that block the success and which calls to be detangled in order to overcome the barriers explained in chapter 5. On the y-axis the three levels are listed (macro, meso and micro), and on the x-axis the importance in time leading up to the Games is accounted for. To visually connect the text to figure 8, after each solution there is a number with brackets, which is equally presented on the three levels in figure 8. Further, the initial barrier is written in italics for clarification and connection to chapter 5. There is obviously a lot that could be scrutinized and that are in need of changed, but not all barriers has a one-to-one connection to a solution, rather a few barriers, or a cluster of them, could be resolved by enacting and prioritize the right solutions. The numbers in this figure does not represent the exact order of which these solutions should be realized, however, it gives an idea of what solutions that are urgent to focus on and it gives and indication of what thematic areas that are most important to detangle the complex barriers that Rio are facing to realize long-term social sustainability.

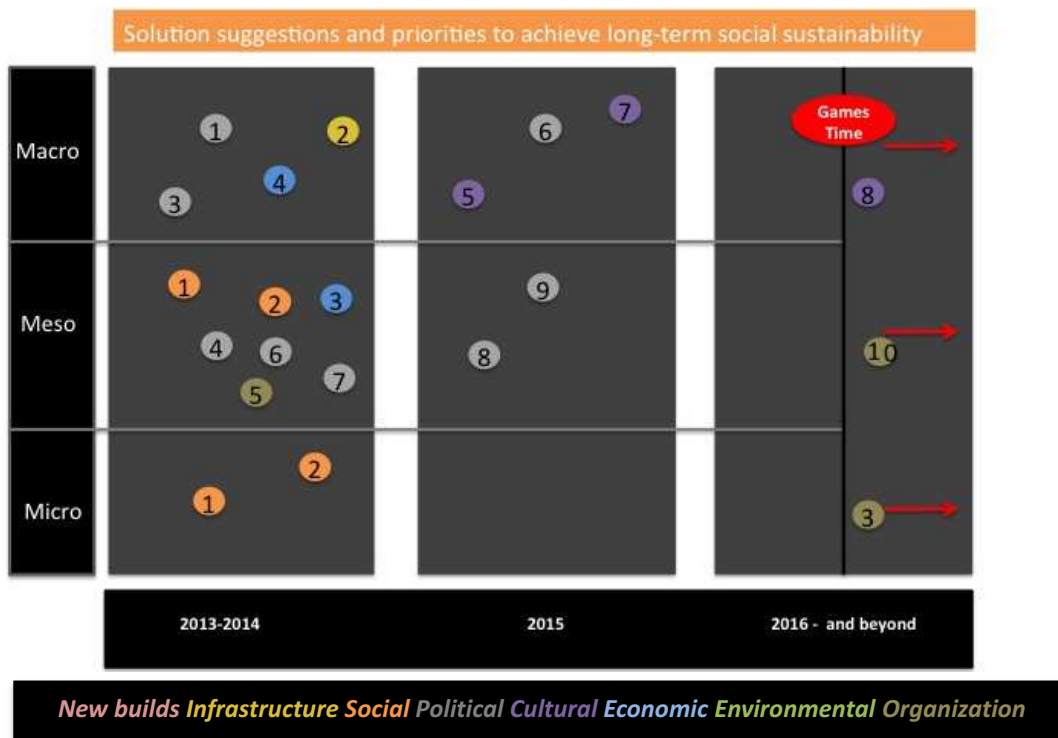


Figure 8: Solution suggestions and priorities to barriers for long-term social sustainability

6.1 Macro level solutions

In “Sustainable urban development and the multi-level transition perspective” published in the journal Environmental Innovation and Societal Transitions (2012), Naess and Vogel describes the wide gap between present conditions and what is needed to realize a sustainable urban development and they further direct

attention to the macro level and possibilities and necessities to overcome them first in order to change the paradigm. There needs to be a change in the political and economical arena for leading up to the Games to improve the *lack of long-term investments* in Rio. More money needs to go into the long-term plans and less into focus of realizing the Games (4). The expression *50 years in 5 years* and ways of operating urban development and growth must further be curbed within the process of taking political decisions about new projects (3). As expressed by interviewees the economic upswing in Brazil has created a climate where investments are possible, therefore, moral and just decisions should be able to be taken by political leaders and those in power, and the means to the end cannot be to win the upcoming election, but to plant a seed of change in the right direction for anyone to take over and build on to (1). This can further only be done within a system with less *corruption*, where people trust where the tax money is put towards and where the goal is to truly improve the lives of all classes and areas (7). Ultimately, more transparent communication with the citizens, and likewise creating a less top down and less hierarchical society, is part of the solutions to pave a foundation for a democracy, not just on paper (6).

The need to limit the *urban sprawl and lifestyle of cars* is something that gradually has to be introduced and the promotion of an active lifestyle rather than a car focused society needs to transpire on various of levels. (5)(2). Especially focusing on values and infrastructure for this to begin to take off. The notion of the consumerism society, with growing numbers of obese people and usage of cars, must be portrayed as something negative and an alternative must be given space and be established as more of a norm than being an unconventional cultural paradigm in people's minds, in media and urban development (8).

6.2 Meso level solutions

Legacy has become increasingly important within the Olympic Games from year to year and further intensified in the branding and marketing of the host cities. However, the issue with having a core group responsible for the *legacy being dissolved two years after the games* have taken place should be changed and a crucial part both for the IOC and a heavy responsibility for the host cities. The way it is run today gives the OC very little influence as they know that the government of Brazil are to take over after they are finished with what they are responsible for, mainly stage the Games and try to have as much of a environmentally and socially responsible games as possible. An ultimate solution would be to have more rigid standards and sustainability audits from the top steering with in Olympic organization to put more pressure on the hosting cities, and re-organize this from the Olympic organization, as part of their terms and conditions to begin with (5). This could also involve having the people and citizens participate early on and maintain a rigid and trustworthy communication with all stakeholders (10). Since the *lack of participation from below* certainly has to do with not communicating, or not wanting to engage in communication. The government and its institutions also need to support and empower people to believe that what they can make a difference (1), by increasing social welfare services, people will start asking for rights, and furthermore claim their rights.

Since *the corruption* in Rio is manifested on several grounds and exists on all levels in society it needs to be controlled, this process will, if ever, take decades. However, the stepping stones to start building and creating a less corrupt society with increased equality and opportunities for all must start somewhere and an event such as the Olympic games either perpetuate this, or it can try to sway the inclinations of corruption and move present corporate and political climate in another direction by openly present plans, keep a dialogue through the whole process and honestly admit mistakes and increased costs. Foremost, the government and the Olympic organization must live up to promises and not solely take decisions in the dark (4). *The strong autonomy of the Brazilian Government and the large corporations* with a clear top down approach should be diffused with more participation from below and more actors involved, lessening the elitist climate, which only letting few people and companies to truly benefit from the Olympic games (6).

The several of various decisions that are taken on *city, provincial and state level* in Brazil are hard to surpass as the federalist state works this way. However, there needs to be an explicit order of the laws and

regulations, and who is responsible for what. Whereas this is not the situation in Brazil today the legitimacy of decisions are less valuable, and further, even more important it creates an uncertainty of what institution, on what level, to hold responsible for unethical or unlawfully actions (8). The *forced evictions* are a demonstrable and illegal actions against human rights of people in the favelas, the *Secretary of housing who are the one being responsible for these* must firstly, follow the laws that exist (7) and secondly, the government should provide and educate people on their rights, so justice can be served to these people by giving them the compensation they have the right to. The issue with the *housing deficit* is a linked with the problem of forced evictions for the reason that the law of providing social housing for the poor for all areas that are being developed, foremost is neither being followed as the government rather make profit on expensive housing and other projects, for example. A long-term social focus needs to be introduced in the political sphere in Rio, which in the future, otherwise, can create deeper social issues and cause more serious uprisings and conflict (2). Lastly, one of the main issues on the meso-level lies within the *lack of a overview of the urban projects* within Rio in general, not just with the Olympic Games and the World cup. This issue is stems from a fragmented administrative system, which is far from unique anywhere, but a huge issue when trying to assess development and for urban planning in general. Even though the value of expertise and proficiency is an obvious component in a society and its institutions, an increased understanding for other fields and a complete overview of projects, developments and its impacts on various of other aspects, in society, is necessary for creating a more sustainable future (9). It can be both more time consuming and costly to introduce new routines and attitudes on how to run a city or a business, but undoubtedly worth it in the long run. The disconnections could be curbed by; less corruption, more transparent society and investing in having more control of new developments (3), and consequently not pursue the old tendency of the development mode “50 years in 5 years”.

6.3 Micro level solutions

From a sustainable urban development perspective the micro-level solutions are almost entirely dependent on barriers being solved and overcome on the meso- and macro- levels (Naess and Vogel, 2013), as the most prevalent barriers to overcome on the micro level are the *issue of informality and qualification, and low level of education*. The level of education and skills needs to be increased, and this has to arise from altering the present mode at the meso-level, where, for example, tax money and investment needs to be more even and used for the good of the people (1). Further, to be focused on relieving people out of poverty by providing better education, also including university studies. The amount of tax that the average Brazilian pay, should give them more social benefits (2). It needs to be worth people’s time and effort to work within the formal economy, and not paying tax on most of their income their entire lives.

On the OC lies a responsibility to enhance, and really go through with the skills programs for the Olympic Games, consequently moreover to improve the post - Games work situation, organizers together with the government and business need to maintain this, and use the skills that have been invested in people that received training pre-games time (3).

6.4 Contradictions, balance and sustainability visions

To solve the large all-encompassing deep-rooted structural issues of complexity, scale and context-dependency in Rio there are fundamental questions, such as; who are the changes for, and what will the long-term outcome be? There is an obvious trend of lifting the already prosperous classes and forgetting about investing in the poorest. However, not to forget, in the predicament of SD, when time wise do you measure success of a sustainability process? By lifting the macro economy it could, in the future, benefit everyone, even though it seem, at present, that they are forgotten, or their basic needs not being met. When you look at what to develop and what to sustain there needs to be some sort of sacrifice, and mid-way, to reach your vision or goal later on.

In a report, created by the Economist Intelligence Unit, based on a webinar discussion (in July 2012) on

business, economic and social impact of the Olympic games in host cities, it was discussed whether this will result in a boost of Rio's international image and civic pride, and whether it will be worth the economic cost of putting on the 2016 games. The business and economic benefits may (or may not) be short-lived, but the value of pride and prestige is not according to the participants to be underestimated. The mayor of Rio, Eduardo Paes expressed his thoughts on the impacts of the Olympic Games "The situation is different from one city to another, for Rio, when you talk about the Olympics, you're talking about benefits that are not tangible; there aren't percentages, however, the Olympics will help things in the city to move, the games are opportunities for business". A leader with this mindset will reflect the paradigm of where the Games and the preparations, leading up to the Games, operate within. Others believe that the Olympic Games is more of a symptom of Rio de Janeiro now having the economy to transform the city, that now has the financial means to do so and using the Games to accelerate this process. In a sense, it has a function as a vehicle of change, but the effects are certainly contradicting each other within the realm of economic, social and environmental improvements. The Olympic Games has been described as having a snowball effect on urban projects in Rio, and changes are put in motion for something better. Many stakeholders, both in business, academia and NGO's agree on the proverb; to change present conditions "you need to crack a few eggs to make an omelette, but what eggs are to be cracked? (Interviewee nr 11, 12 & 13, 2013). The question is what trade-offs can they afford economically, socially and environmentally? New objectives require new efforts, and an un-learning of old behavior, rewards and incentives need to change in all levels of society. Non of the barriers mentioned in ch 5 are made in a short-term period, however, it is necessary to not continue with unsustainable practices that will not lead to the goals and visions of the organizers for the Olympic Games, nor other sustainability improvements for Rio.

Visions, and consequently results and outcomes, to begin with, must be, according to Wiek and Binder (2005) and Potschin, et al (2010) "coherent and composed of compatible goals, free of irreconcilable contradictions". Other criteria for a sustainable vision is that it needs to be sustainable, consisting radical change in structures and processes and be shared by relevant stakeholders, and further, entail a critical degree of convergence, agreement and support (Wiek & Binder, 2005.) It can certainly be argued that the visions, or the "Long-term sustainability plan" that the Olympic Organization has for Rio, containing the elements; Transformation of the city, Social inclusion, Youth, education and Sports, already here has a very strong emphasis on the transformation. As shown in the MLP of the barriers, were social projects and the vision of social inclusion might turn out to be another blueprint unless the bars are raised within the social area. When stressing the social benefits through new housing, for example, it is apparent that the lower classes that today live in the favelas will not benefit, neither will they be able afford to move into Donald Trumps new housing complex post-Games time. The lack of insight in the preparations of the visions and long-term goals from the public goes against the sustainability criteria's for visions suggested by Wiek and Binder (2005). There is further a great importance in communicating the vision, for example through use of language that is inclusive, specification of tasks and goals, clarity in vision and finally also present, openly, the vision challenges. Leaders and organizers such as the Olympic organization, are typically understating the importance of communication (O'Connell et al, 2011). Even though the vision posed is weak in environmental terms and containing a contradicting relationship between transformation of the city and provision of basic social welfare, there are unquestionably progressive and positive projects within the Olympic plans, and transformations are never simple, a few backlashes and mistakes are deemed to occur.

The actual content and paradigm of the three P's; Planet, Prosperity and People within the vision, priorities and plans can be claimed to be within Solow's concept of weak sustainability (Hediger, 2004). The fundamental truth of avoiding a unsustainable path for Rio are essentially to aim for long-term sustainability, while they have short-term means, based on the findings on barriers in chapter 5, to realize this with. The concept of sustainability has advocates from both weak and strong sustainability, "advocates of weak sustainability emphasize the necessity of maintaining the stock of total capital, man-made and natural, or, to use Solow's words, "an economy's generalized productive capacity" On the other side, advocates of strong sustainability emphasize the necessity of maintaining the stock of natural capital rather than total capital as a prerequisite of sustainable development" (Hediger, 2004). Drawing from both argument of strong and weak sustainability, fundamentally the question is whether it is possible, to leapfrogging to more complete sustainable practices for Rio. It is clear that the social issues are both

dependent and suffering from the economic agenda, which is closely tied to the political reality in Rio. As seen in the solution scheme it is mainly within the political, or aspects interwoven to the political domain, where most solutions originate. As discussed by Naess and Vogel in their article, Sustainable urban development and the multi-level transition perspective (2012), “barriers to sustainability constituted by the capitalist economic system through its growth imperative, competition, uneven spatial development and aversion against regulations hampering environmentally (and socially) harmful entrepreneurialism need to be addressed”.

Whether this transformation in Rio is simply green washing and sustainability branding of another mega-event, or if Rio is accelerating towards a sustainable transition, will only be possible to determine post-Games or even decades after. To facilitate a transition to a more sustainable city a joint vision of how this future look like is essential according to sustainability scientists, “envisioning how a desirable future might look is a long-standing effort in human evolution and social change. Utopian thoughts and visions provide direction for actions and behavior; even more, they create identity and community”. Therefore, the whole city needs a joint vision, which inherits all these aspects and where possible, includes traits of strong sustainability. As Etkins et al (2003) explains, the pathway to strong sustainability includes sustaining critical natural capital (CNC), which can be social, cultural, economic or ethical in nature. Where it is necessary to “identify which activities, customs or attitudes are having, or might have, a negative impact on CNC and then devise ways of easing these pressures”(Etkins et al., 2003, p. 20). This likely involves costs and implies a system of “decision-analysis, such as multi-criteria analysis, which might or might not seek to weigh the different impacts on a common scale, to give insights into the implications of applying the strong sustainability principle and into the various trade-offs that could be made short of applying this principle” (Etkins et al., 2003, p. 20). By applying a similar analysis of Olympic Games activities, and other transformation processes in Rio, it would be clear, to what extent, if the aspects of strong sustainability was not being applied, the future is then being traded off for the sake of the present. This is a highly significant consideration for Rio today, especially on the social side, by where, shrinking the total economy (as part of strong-sustainability thinking) poses “ a risk that low-income people, will be locked-in continually or even worsen poverty, unless this is counteracted by active redistributive policies” (Næss & Vogel, 2012. p. 12).

There is therefore not only a need to create better solutions to long-term social sustainability, but to “build away”, and constrain the unsustainable elements of the urban context. There is certainly a gap between the present conditions and what is considered required to realize a sustainable urban development in Rio and improvements of the social issues, with or without the Olympic Games. Firstly, more attention need be directed toward the macro-level circumstances and the potentials for changing them. Secondly, observing the barriers presented in the MLP (figure 7), on the meso-level the dominating issues are the political structures, social issues and the inter-linkages of the organization of the Olympic Games and the cooperation with the government of Brazil. Therefore, the structures of the institutions involved and their organization, structure and purpose need to change. Finally, on the micro-level there is not much room or involvement in the larger picture, as the focus of this research lies on transformation of the city and urban planning. However, what is happening on the micro-level and who ultimately gets affected by the intervention of the Olympic Games and the larger trends on the macro level are the people in the communities.

7 CONCLUDING REMARKS

The Olympic Games is both a global phenomena and a local event, which could entail tremendous positive, or negative aftermaths. As Costanza (2000) has expressed, “The most critical task facing humanity today is the creation of a shared vision of a sustainable and desirable society, one that can provide permanent prosperity within the biophysical constraints of the real world in a way that is fair and equitable to all of

humanity, to other species, and to future generations". In managing transitions for SD it is valid to remember that SD is intrinsically a normative, dubiously and a subjective concept in it-self, and a practical implementation of sustainable development has to incorporate the inherent conflicts between the values, ambitions and goals of all stakeholders. Perhaps Rio will reap the benefits of the Games in a few decades, or in some areas it will see improvements instantly. There are no easy, panacea solutions for persistent societal problems as discussed by Rotmans (2005).

"These (issues) are caused by fundamental flaws in our societal systems. Such systemic errors demand radical changes in our thinking and actions, transitions require a long period, one to two generations, and take time, patience, money, confidence, but also courage, daring and perseverance to gain the upper hand over various types of resistance" (Rotmans, 2005).

This study has explored the potential of the Olympic Games being a vehicle of change based on Rio de Janeiro as a case study. The MLP of the TT's was applied to see the city as the object of transition based on Rotmans and Loorbachs concept of complex systems. The key barriers were identified and then analysed to determine how these conflicting forces need to be reconciled to bring about a transition for a more sustainable Rio de Janeiro. The analytical framework revealed that in order to break the current systemic issues and lock-ins, the majority of barriers of the transition were found to be at the macro- and meso-levels, and needed solutions dominated foremost at the meso level, changing the political focus and climate, which are in Rio closely tied to macro cultural behaviours, macro developments and the rooted and top-down present paradigm. Further, the lack of responsibility from the Brazilian government, on both city and state level, especially for social issues, has shown to be a complex cluster of concerns to disentangle. The Olympic Games and the International Olympic Committee, for example, are dependent on the government, and in personal communication with organizing staff, business officials and NGO's it became very clear that the Olympic Games is much of a political game, on all levels in society. "Institutions, organizational structures, and the cultures that characterize them, are crucial elements of a society's development path that clearly influence the success" (Wiek & Iwaniec, 2013) The urban changes that are inflicted on Rio through the Olympic Games certainly are characterized by the institutions involved, and their structures and customs, and this is the system where everyone is operating within and where change potentially can be undertaken to alter trends on the macro-level and ultimately improve the situation on the micro level.

The findings, and discussion, in the research primarily revolved towards having a strong social sustainability focus albeit this was not part of the initial proposal. As Rio has not yet covered the essential social provisions for its citizens and the large gaps of "who has and who has not's", a change such as the Olympic games, poses both expectations for improvements, and contrariwise fear and resistant for change, for those that want to keep the status quo. There are certainly more flaws that could be further investigated when it comes to the environmental efforts for example in Rio, coupled with the Olympic Games. However, the interviewees I spoke to did not lift these issues, as the social aspects are still so alarming, that the environmental aspects are put a side.



Figure 9: Word-cloud on main topics deriving from the interviews

In this word-cloud the most frequent topics deriving from the transcribed interviews are presented.

7.1 Suggestion for further research

The empirical research provides useful material to add to the concepts of merging the MLP with urban sustainable planning, particularly as it is incorporating the fairly new ideas of visioning research and its importance of joint sustainability goals and visions, and how to overcome the barriers for enabling improved urban sustainability. As, put forward, for sustainability science it attempts to draw on these theories to create a fuller understanding of how to transition cities as they have become increasingly important.

For further research on the more local scale, it would be interesting to see, a few years post-Games time what the Olympic Games brought to Rio de Janeiro in the long-run, especially socially and environmentally.

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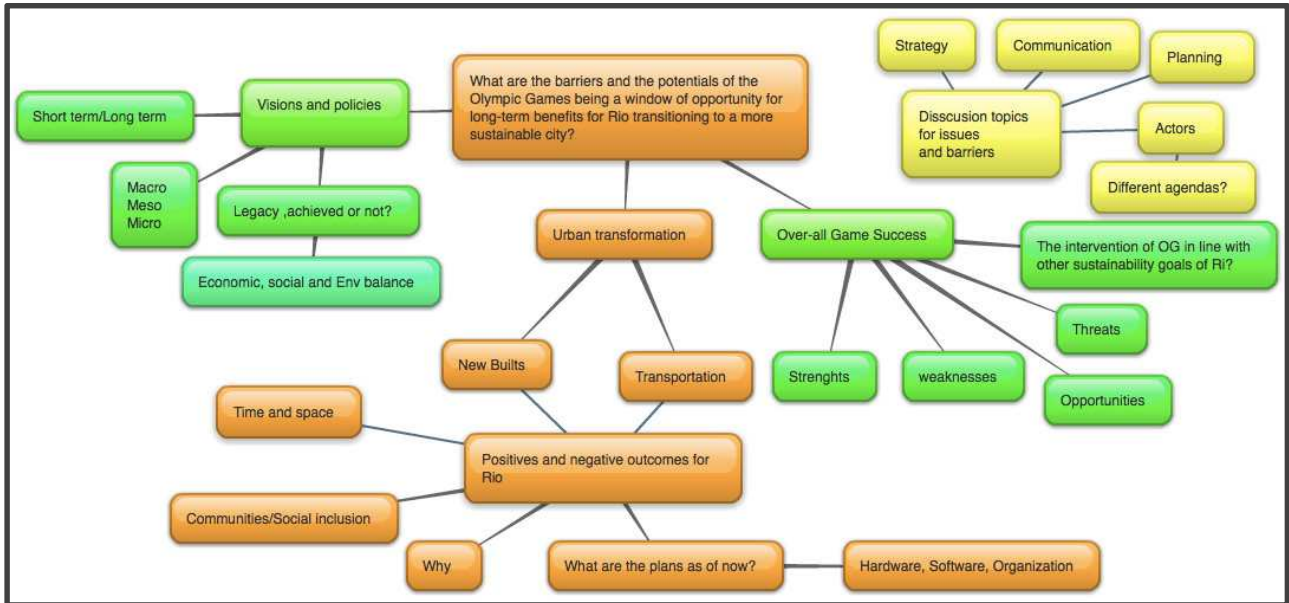
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APPENDICES

Appendix A: Interview topic mind-map



Appendix B: Long-term Sustainability plan of the Olympic Games in Rio de Janeiro 2016

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| <p>“Transformation of the city</p> <p>The Games will help herald a new era for Rio. A wide range of programs, funded by the Government in support of the Games, will provide the foundations for sustainable long-term development. These programs, many of them already under way, include:</p> <ul style="list-style-type: none"> • Better air quality through stronger emissions controls for industry and mass transport • Enhanced public transport through the development of the High Performance Transport Ring • Extensively improved security, including new skills and systems • Preservation of the largest urban forest in the world, including the planting of 24 million trees by 2016 • Significant regeneration projects, such as: -The transformation of the Port area into a major accommodation, entertainment and tourist district, reconnecting the harbor to the heart of the city. - New housing, retail and leisure outlets in the Maracanã and Deodoro zones, extensive sport, recreation, transport and other infrastructure developments in Barra. - The X Park Precinct in Deodoro, the area with the largest percentage of young people, offering a wide range of sport and recreation facilities. |
| <p>Social inclusion: homes, training and jobs</p> <p>Rio 2016 will also directly benefit the lives of Rio’s population, bringing the best Games-time experience and long-term benefits, including:</p> <ul style="list-style-type: none"> • Housing: the four legacy villages will provide new apartments (more than 24,000 rooms) around Games locations • Skills development: 48,000 adults and young people will undergo an extensive Rio 2016-funded program of Professional and Volunteer Training in areas of strategic importance for the Games. This program, integrating Government, training institutions and universities, will help participants find jobs after the Games. • Employment: 50,000 temporary and 15,000 additional permanent jobs will be generated in events, sport management, tourism and venue operations, in addition to a significant number of jobs in construction related industries as a result of the substantial infrastructure investments. Permanent retail and commercial roles will also be created. • Games procurement: Rio 2016 is committed to sourcing Games services and equipment from local communities, where possible. It will support the licensing of environmental and socially responsible products, as was successfully achieved during the 2007 Pan American and Para pan American Games. |
| <p>Youth and Education</p> <p>Rio 2016 will build on the Federal Government’s commitment to bring the powerful combination of education and sport to all Brazilians. Among the specific initiatives are:</p> <ul style="list-style-type: none"> • The increase of Programa Segundo Tempo (PST), a United Nations-supported program providing sports at public schools. From 2009 to 2016, PST will grow from 1 to 3 million Brazilian children • Investment of more than USD400 million between 2009 and 2016 in Mais Educação, a Federal program that funds sport infrastructure for public schools. Physical education (PE) teaching methods will be enhanced, strengthening the broader objective to have PE classes in all schools. In addition, the School and University Games (an IOC-awarded initiative) will be expanded from 2.5 to 5 million young people, stimulating participation in Olympic sports. This program is aligned to the IOC Youth Olympic |
| <p>Sports</p> <p>Promotion and development of sport. In addition to the physical legacy of sporting facilities and trained sport volunteers resulting from the Games, the Rio 2016 Legacy Plan includes initiatives to develop sport in Brazil, South America and the rest of the world.</p> <p>Among them are:</p> <ul style="list-style-type: none"> • Athlete scholarships Up to 11,000 young and talented Brazilian athletes who are not supported through private sponsorship will be offered funding between now and 2018 • Olympic Training Center scholarships coupled with Olympic Solidarity, the OTC will provide scholarships to athletes and coaches from nations across the globe. These scholarships will build on Brazil's current international programs and be consistent with IOC support programs • Increased Federal investment in sport, an increase of more than USD210 million will help prepare Brazil’s Olympic and Paralympic teams • Legacy training facilities <p>Built in preparation for the Games, Rio 2016 will leave a legacy of 14 pre-Games training sites outside Rio and 29 within Rio, located in local communities and next to public schools</p> <ul style="list-style-type: none"> • National technical officials training. Discussions with National Federations whose sports are less developed in Brazil have led to a plan for training and participation courses both in Rio and throughout South America. The courses will increase technical proficiency, leaving a legacy of trained and experienced South American officials.”(rio2016.org) |

Appendix C: Additional Information on social projects

For example; Favela Bairro (1988-2008), where the main focus was on pavement of roads and installation of drainage ditches in their centers and sewage systems, Morar Carioca (2008-present), is a more extensive upgrading of the past urbanization project “with public works to improve water and sewerage services, drainage systems, road surfacing, street lighting, the provision of green areas, sports fields, recreational areas, and the construction and equipping of social service centers, plus land titling and social services such as education and health centers in favelas” (Osborn & Catherine, 2013). The Mayor of Rio, Eduardo Paes, announced in 2010 that all Favelas will be upgraded by 2020. The final influential program is the housing project Minha Casa Minha Vida which is set up to promote human rights, and the goal is to provide adequate housing in all its senses (Interviewee nr 11, 2013)

Appendix D: Additional information on The Olympic organization

The Government’s Structure

“Apart from specific projects coordinated by individual Ministries, the Federal Government’s overview of the Olympic Games is three-fold:

- a. The Olympic Public Authority (APO) is responsible for the delivery of major government projects and services related to the Games’ infrastructure (including sports facilities, nonsporting and transport infrastructure), interfacing between local, state, and federal governments, and the Rio 2016 Organizing Committee. It is also in charge of the disbursal of funds, timetable assurance, and legacy assurance for Rio de Janeiro and Brazil.
- b. The Brazilian National Development Bank (BNDES) will lend several US\$ billion to support infrastructure projects. For example, it will lend approximately US\$1 billion to the hotel industry alone. BNDES has also signed a co-finance agreement with the Export-Import Bank of the United States, and a Preliminary Commitment with the State of Rio de Janeiro.
- c. The National Secretariat of Security (SENASP), a branch of the Ministry of Justice, will be responsible for overall security projects of the games.

At the state level, Rio de Janeiro’s Secretariat of Sports, Tourism, and Leisure has been given the oversight role of the new Maracanã stadium project. This stadium will host the closing ceremonies of the World Cup in 2014 and the both the opening and closing ceremonies for the Olympics in 2016.

The city of Rio de Janeiro created a Special Olympics Secretariat that will be responsible for managing part of the venues and infrastructure projects (such as Bus Rapid Transit systems, new avenues, etc.). The City also created a Municipal Olympic Company (their president, Ms. Maria Silvia Bastos Marques, is the former president of the steel company Companhia Siderúrgica Nacional - CSN), that is responsible for coordinating the municipal projects and activities related to the 2014 World Cup and the 2016 Olympics and Paralympics. As for investments, the City created an Investment Promotion Agency called RIO NEGOCIOS. The City Hall is conducting a large Port Area renewal project, involving the creation of museums, an aquarium, and other projects already under way. New hotels (17 already licensed) will be created and many existing hotels will be renovated. All projects will follow Green Building standards.

There are several other organizations and partners active in the organization of the 2016 games.

They include:

- The 2016 Rio Organizing Olympic Committee, which is linked institutionally to the International Olympic Committee (IOC) and is responsible for planning and issuing the main tenders and delivery of services inside sports venues;
- The Brazilian Olympic Committee, a non-profit, private company also linked to the International Olympic Committee (IOC), which is responsible for supporting the Brazilian athletes and teams;
- The Brazilian Soccer Federation, which works with FIFA in preparation for the 2014 World Cup; and
- Industry Associations such as the Construction Association (SINDUSCON Rio), the state of Rio Federation of Industries (FIRJAN), and others”. (US Commercial Service, 2013)

Appendix E: Photos of Rio's urban transformation







