

## **City between nature reserves**

A case study of local governance for sustainability in Jundiaí,  
Brazil

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Master Thesis Series in Environmental Studies and Sustainability Science,  
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A thesis submitted in partial fulfillment of the requirements of Lund University  
International Master's Programme in Environmental Studies and Sustainability Science  
(30hp/credits)



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## **Abstract:**

As cities expand and climate change effects become more intense and frequent, local governance has gained increased attention as capable of implementing the necessary measures for sustainability. One city in Brazil, Jundiaí, has managed to integrate participatory processes in its local planning and has become an example for other cities in Brazil. This city lies between a water reserve and a biological reserve and became the case study for this research. Using a qualitative case-study approach, this study investigated the challenges in governance dynamics in creating a participatory process to address sustainability challenges. The study started with a content analysis of news articles in order to gain pre-knowledge about the local planning and environment in Jundiaí before interviews were conducted with key governmental and non-governmental actors. The content analysis revealed an especially important draft bill, “Plano Diretor Participativo”, the results of an extensive participatory process that included workshops, trainings, meetings and collaboration between government and civil society. This background informed interviews with key actors who represented different sectors and perspectives on the city’s development. The data was analyzed with a sociological institutionalist approach to reveal governance processes and culture and local governance dynamics. The main findings identify migration, power and neoliberalism as challenges for a path towards sustainability as population increase adds pressure on nature reserves and brings along different interests regarding urban planning. The results show that the identified success of the participative process in governance that Jundiaí has had in the last two and a half years seems to be an innovative milestone in these kinds of processes in Brazil. The participatory process and these findings are likely transferrable to similar settings. The participatory process analyzed in this case study seems promising as a means to achieve sustainable local governance. In order to achieve this, however, a shift in thinking is also required regarding trust in public authorities. The results emphasize the benefits of involving civil society to encourage dialogue and knowledge-sharing and to create a shared vision in local planning, but also express the need for more trust, communication and collaboration for such participatory processes to be guaranteed in the future.

**Keywords:** local development, participatory processes, migration, power, governance dynamics, Serra do Japi

**Word count:** 13.839

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## List of Abbreviations

DAE	Water and wastewater treatment company in Jundiaí
MRSP	Metropolitan Region of São Paulo
PD	Plano Diretor (draft bill)
PDP	Plano Diretor Participativo (participatory draft bill)
RB-PCJ	River Basin for the rivers Piracicaba, Capivari and Jundiaí
RQ	Research question
SP	São Paulo
UNICAMP	State University of Campinas



## 1 Introduction

Over half of the world's population lives in cities (Neij, Bulkeley, & McCormick, 2015; UNEP, 2011) and this trend is projected to increase (Roche et al., 2014). In Brazil, 85% of the population lives in cities (World Bank, 2015). Due to expanding borders and population of cities, local governance has gained even more attention as capable of implementing the necessary measures for an inclusive, sustainable future. The literature indicates that rapid population growth is one driver that may enhance the severity of local environmental problems in cities (Satterthwaite, 1999, p.112). These could be effectively addressed and solved through participation; however, there is a lack of effective mechanisms for citizen participation in governance (p.328).

Sustainability needs participatory processes because the problems it aims to solve are complex, related to the interdependency of social, environmental and economic spheres (Kates et al., 2001). Participatory processes mean including diverse actors in decision-making. Advocates of participatory approaches agree that such processes are key in achieving sustainability, because they require a dynamic understanding of social systems (Cornwall, 2008) and actors can identify conflicts and use their knowledge to create successful measures accordingly (Mitlin & Thompson, 1995). As a result, these processes have the potential to reduce inequality, especially when they generate more just governance structures (Ward, 2007).

For this research, the focus lies on the local governance processes that allow for participation and create a shared vision of the future local development. The city of Jundiaí was the first in Brazil to plan future development in a more inclusive manner. This city is used as the case study for this research to understand the underlying governance dynamics that created this participatory process and its challenges. Jundiaí is a middle-sized city in Southeastern Brazil. It lies in a unique location between nature reserves, a water reserve and a biological reserve, leading to complex dynamics in governance that need to address both urban and conservation interests in local planning.

There are several areas relevant for sustainability that require planning and collaboration among actors, such as water, wastewater, agriculture, forest and climate change. In particular, water availability is strongly affected by longer drought periods in Brazil (IPCC, 2014) and is also related to local governance issues in Jundiaí. The fifth IPCC assessment report (2014) notes that water availability can also be affected by non-climatic drivers of change, such as demographic, socio-economic, technological changes as well as lifestyle changes (p.240). The identified issues need to be

addressed to achieve sustainable local governance and participatory processes can help society as a whole to tackle them.

In local planning, developing climate change adaptation and mitigation strategies presents its own challenges: Who decides what is done? What are the governance processes like? And what characterizes the underlying governance culture?

### **1.1 Aim and research questions**

This research looks at participatory processes in governance that can enhance sustainability. To delve deeper into the governance processes and culture in Jundiaí, this thesis will consider the different interest groups, gain knowledge on their constructed views about local governance for sustainability and critically assess public participation in the current governance processes. Consequently, **the aim of this thesis is to explore the challenges in governance dynamics that allow for civil society participation in issues that have consequences for sustainability.**

This thesis explores the following research questions:

- 1. What are the challenges and opportunities on the pathways towards local governance for sustainability in the context of a city between reserves?**
- 2. How do the complex dynamics of the participatory process in governance play out in Jundiaí?**

### **1.2 Relevance of a Sustainability Science Approach**

This research is informed by sustainability science principles. According to Jerneck et al. (2010), in sustainability science research, it is necessary to combine problem-solving and critical approaches, i.e. while it aims at increasing the efficiency of existing institutional arenas, it also critically assesses them and the existing power relations. Sustainability science also aims to capture the “dynamic interactions between nature and society” (Kates et al., 2001, p.642) and produce “place-based knowledge” (Clark & Dickson, 2003, p.8059).

Sustainability science is transdisciplinary and includes non-traditional forms of knowledge production for social transformation, including non-academic sources (Fuller & Kitchin, 2004; Kates et al, 2001; Lang et al., 2012; Polk, 2014). This field is also interested in participation, especially how different stakeholders become involved in research or governance for sustainability (van Kerkhoff & Lebel,

2006). Participation enables shared visions, which are needed for sustainability transitions<sup>1</sup> (Geels, 2010). With these principles in mind, this thesis brings together different perspectives and actors: the private sector, government, academia, an NGO and civil society.

The case study aims at “a critical research priority for sustainability science [which] must be to foster such social and institutional learning and experimentation, advancing knowledge on how “learning by doing” occurs and how to make it more effective in order to build institutional capacity for sustainable development” (Miller et al., 2014, p.243).

Furthermore, Miller et al. (2014) argue that values are often omitted in sustainability science research. With this in mind, the central contribution of this thesis to the field of sustainability science is an analysis of local governance with the embedded cultural values that lead to participatory governance. Based on this argument, this research presents a promising example of participatory local governance in Brazil.

### **1.3 Thesis roadmap**

The next chapter introduces the sociological institutionalist approach and accompanying framework while chapter 3 describes the applied qualitative research methods. Chapter 4 overviews the case study and chapter 5 constructs an analysis of the gathered data aligned with the framework and answers the RQs. The discussion reviews the impacts of participatory processes on local governance before a concise conclusion chapter is provided.

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<sup>1</sup> This thesis defines sustainability transitions as social or governance innovations (Westley et al., 2011) in cultures, practices and structures that unfolds in phases with distinct dynamics (Franzeskaki & de Haan, 2009) over 1-2 generations (Rotmans, 2005).

## 2 Theory and framework

### 2.1 Sustainability and local governance

This thesis defines governance as systems of institutions capable of changing societies' track and transforming behaviors (Adger & Jordan, 2009; Delmas & Young, 2009). Governance is connected to sustainability because achieving environmental protection and a sustainable future requires understanding and cohesion of societies (Adger & Jordan, 2009). There are gains to be made in this area from changing behavior and values (Satterthwaite, 1999, p.42).

Local governance in cities has gained increasing attention and local-scale initiatives are believed to have better results for sustainability (Kenis & Mathijs, 2014; Lenhart, 2015; Ryan, Gaziulusoy, McCormick, & Trudgeon, 2016). Some claim that integrated and successful measures to follow sustainable development are pivotal at a city-level (UN-Habitat 2015; GIZ & ICLEI, 2012). There are several reasons to argue for local-scale initiatives. First, the diversity existing in cities helps stimulate creativity and innovation (Bettencourt, Lobo, Helbing, Kühnert, & West, 2007; Harvey, 2003; Neij et al., 2015; Rotmans & van Asselt, 2000; Satterthwaite, 1999; UNEP, 2011). Second, the proximity of local-scale initiatives allow for citizens to be engaged more easily, their participation is visible and the outcome is direct (Islar & Busch, 2016; Neij et al., 2015). Third, generally speaking personal interactions allow for trust relations among citizens to grow (Healey, 1999; Kenis & Mathijs, 2014). Fourth, local sustainability transitions may create new forms of institutions to fit new modes of governance (Frantzeskaki, Avelino, & Loorbach, 2013). Fifth, these transitions may contribute to wider structural changes and impact national sustainability transitions (Islar & Busch, 2016). Last, there are many economic benefits from local-scale initiatives, such as boosting local businesses (UNEP, 2011).

Cities are complex adaptive systems, but “[w]hen dealing with social systems, it is often unclear where the boundary of a system is” (Heylighen, Cilliers, & Gershenson, 2007, p.16). So although the biophysical boundaries of a city between nature reserves are limited, the blurred boundary of a social system might show itself through migration patterns and population growth. A sustainable city might seem attractive to some and lead to migration from a neighboring city thus blurring these boundary lines and preventing a social and economic balance only within city boundaries (Amin & Thrift, 2002).

Moreover, governance capacity has changed significantly as the relation between state and civil society has shifted because civil society demands more participation in governance (González &

Healey, 2005; Swyngedouw, 2005). This is predominantly influenced by historical and geographical context. At a local level, González and Healey (2005) argue that local actions have led to raising the awareness of local citizens about matters that are neglected by local governments. One objective, as suggested by Wegelin and Lindfield (2010), might be the following:

At the local level, cities must plan strategically for inclusive development including access and equity issues, and involve communities in deciding economic and environmental investments. This can be accomplished by involving communities in the planning, design, implementation, and even financing of local infrastructure projects, and introducing participatory budgeting, where communities are involved in spending decisions and priorities of city governments. (p.269)

In the last 20 years, social innovation has become a primary topic in the area of societal and local development and strategy at various spatial levels (Moulaert, Martinelli, Swyngedouw, & González, 2005). In this thesis, a qualitative approach is used to assess how the governance capacity in the urban context promotes participation in local development. The capacity for socially innovative initiatives in governances may lie in the capacity for experimentation and reflective learning (Bettencourt et al., 2007; González & Healey, 2005; Neij et al., 2015; Stirling, 2007). According to Geels (2011), “innovations occur incrementally, with small adjustments accumulating towards stable trajectories” (p.27).

The definition of social innovation, taken from González and Healey (2005), is: “changes in governance institutions and agency that intend to or have the effect of contributing to improving quality-of-life experiences in a socially inclusive and socially just way” (p.2055). With this in mind, it is important to find the mechanisms that bring change in governance and development for better quality of life.

How can we identify the qualities of emerging governance dynamics and their transformative potential? According to González and Healey (2005), these dynamics need to be evaluated for their impacts on practices and for the relations that result after every action. Because of the continuous evolving social dynamic, it is difficult to do a pre-assessment of this. Thus, it is necessary to study the culture of people and how they engage in their routines and in their specific context, as it is from there that social innovative practices can emerge (Bogason, 2000; González & Healey, 2005). Even the sense of belonging can lead to social innovation practices with transformative potential. If deep cultural frames clash, however, then they can become a constraint for social innovation and development (Moulaert et al., 2005).

## **2.2 Sustainability and participation**

Participation is desired for sustainability because it creates interactions in civil society and may lead to transdisciplinarity. There are a wide range of participatory approaches but, in this thesis, I describe participation as a way to empower local communities by giving them decision-making power in governance processes regarding development.

For this study, a good model of participation is defined as one that is well-planned (van Kerkhoff & Lebel, 2006) and that invites civil society to be proactive and take responsibility (Mitlin & Thompson, 1995). The typology that fits here is that of “Interactive participation”, a learning process where control over local decisions, determining structures and practices is given to the locals these decisions affect (Pretty, 1995). This way “participatory development is directly linked to state accountability, empowerment of local groups, and transparency in decision-making” (Mitlin & Thompson, 1995, p.233). Additionally, participation allows for the identification of local conditions, needs and knowledge and helps with implementing successful strategies for sustainability (Mitlin & Thompson, 1995). Finally, local dynamics can only be understood with participants’ involvement. In essence, the process means to collaborate with those for whom the planning process is for (Ward, 2007). The challenge lies in making participation an inherent political process (Cornwall, 2008).

## **2.3 Sociological institutionalist approach (in planning)**

### ***2.3.1 Planning as a tool for sustainability***

Planning is an important aspect in designing sustainable cities. It requires combining sustainability principles as well as innovation and reflexive approaches, building scenarios and combining knowledge. This case study can provide the field with an innovative way of involving civil society in governance processes to shape a shared future.

The role of local governance and dynamics between actors, institutions, participatory and decision-making processes will be analyzed with the help of a sociological institutionalist approach. This approach was chosen due to the importance of the role of local governance in sustainability. Within planning theory, this approach attempts to identify governance practices in a specific context and link them to wider structural mechanisms (Fainstein, 2000; González & Healey, 2005; Gualini & Majoor, 2007; van den Broeck, 2010). Van den Broeck (2010) states that "institutional planning theory is an appropriate starting point for an analysis in the interactions between planning processes, instruments and their societal context" (p.53).

The interest in a sociological institutionalist approach lies in its analysis of context and culture and the actors involved in planning and governance processes. Part of this analysis reflects the attachment people may feel to their context and environment (González & Healey, 2005). The participatory process aims at involving non-traditional actors who may challenge the established practices to broaden the chances of social innovation (González & Healey, 2005; Moulaert et al., 2005). For instance, non-traditional actors could be educators, farmers, low-income residents and NGOs.

While the analysis presents the perspectives of each institution, it also considers the influence that dynamics and interactions of actors between different institutions may have, from where it is possible to identify the transformative capacity of governance. Moreover, it may allow for cultivating positive synergies and shared visions.

With this approach, the analysis focuses on human action and how it can create new governance practices (Bogason, 2000; González & Healey, 2005; Gualini & Majoor, 2007; Hillier, 2000; Innes & Booher, 1999). This is important because “planning and specifically environmental planning, is a process for collectively, and interactively, addressing and working out how to act with respect to shared concerns about how far to go and how to “manage” environmental change” (Healey in Fischer & Forester, 1993, p.240). It calls for innovative planning in governance processes (Gualini & Majoor, 2007; Neij et al., 2015), justifying the tight linkage to social innovation described above.

## **2.4 Framework – analytical levels of governance**

The following framework was developed from a sociological institutionalist approach and can help to identify the ability of the local governance dynamics to work collectively in order to promote participation and socially innovative initiatives for sustainability (Table 1).

**Table 1.** Analytical levels of governance (adapted from Healey, 2004)

<b>Level</b>	<b>Dimension</b>
Specific episodes of governance	Actors: key players – positions, roles, strategies and interests Arenas: institutional sites Ambiences and interactive practices: communicative repertoires (metaphors, narratives)
Governance processes through which bias is mobilized	Delegates selection processes Practices: routines and repertoires for acting Specification of laws, formal competences and resource flow principles
Governance cultures	Accepted modes of governance Embedded cultural values Formal and informal structures for policing discourses and practices

The framework has been adapted from Healey (2004) to make it more suitable for this study. The dimensions “Networks and coalitions” and “Discourses” under the second level were removed, because they were not the focus of the RQs or of the analyzed governance process. Additionally, the term “Stakeholders” was changed to “Delegates” for consistency. The word “range” was left out from the first two dimensions of the third level, because it has an intangible definition and was not relevant for this study.

There are three levels in this framework: “specific episodes” of governance, “governance processes through which bias is mobilized”, and “governance cultures”. Put simply, this research views these levels more or less as “what is done”, “how it is done” and “why it is done”, looking at the underlying meanings of actions taken. Under each level, different dimensions are found (Table 1). Under specific episodes there are actors who have certain positions, roles, strategies and interests within specific arenas. For example, these arenas can be sites of decision-making, élite, formal and informal. This level is the most visible one because it portrays daily actions. In this case study, the main analysis is focused on the specific episode of the creation of a draft bill and its dimensions (see 5.1.1). Coaffee and Healey (2003) stress, however, to go below this level to governance processes in order to analyze the developed practices and therefrom rising biases and conflicts that may become visible in the specific episodes. González and Healey (2005) point out that the focus at this level should be on finding out what mobilizes socially innovative action and if there is sufficient openness to invite new actors into governance processes. Reaching a level deeper involves exploring governance cultures, i.e. the complex cultural values and modes that are rooted in context-specific institutions that allow



for certain governance practices. This requires delving into the assumptions and habits shaping governance processes to see if they are in accordance with or contrast to emerging alternative governance and how much space they offer for socially innovative transformations. These assumptions give authority and legitimize the actors and the processes of level 2 (Healey, 2006). The intention of using this tool to analyze local dynamics is “to identify the momentum of different governance possibilities and the barriers, opportunities and forces which could carry forward discourses and practices which might lead to [a diverse, open-minded, ethical and sustainable] kind of governance culture” (Healey, 2004, p.98).

If initiatives with socially innovative transformative capacity can be identified, then it may be easier to understand how much power they need to gain and how they interact with other arenas and governance processes in order to bring about change. For a transformation to happen, the specific episode of governance would have to affect and move to the second level, the level of processes, and to some extent be reinforced by the third level of cultural assumptions (Healey, 2006). Thus, the framework attempts to capture the complexity of social-environmental systems and its implications. Some studies, however, point out that it is very difficult to change practices because of this complexity and embedded power (Avelino & Rotmans, 2011; González & Healey, 2005; Smith, Stirling, & Berkhout, 2005).

#### **2.4.1 Limitations**

There are certain limitations to consider in using Healey’s framework. The three-tiered framework includes the complexity of urban governance transformations processes, but by doing so seems broad and vague. The framework is unclear about certain terms, leaving them open for interpretation. By focusing on the process, this may take away importance from the outcomes, even though both dimensions are relevant for sustainability (Adger & Jordan, 2009). Healey’s framework is also based on collaborative planning and communicative planning theory, both of which have been criticized for lacking an underlying social theory (Healey, 2003; Yiftachel & Huxley, 2000). I aim to overcome this weakness by integrating power studies into my analysis.

#### **2.5 Power in sustainability**

Within sustainability research, power plays an important role (van Kerkhoff & Lebel, 2006). The concept of power dynamics can be useful to empirically analyze local governance in specific contexts, paradigms and governance processes (Avelino & Rotmans, 2011; González & Healey, 2005; Smith et al., 2005).

Avelino and Rotmans (2011) developed a dynamic power framework with three types of power: innovative, transformative and constitutive. For this research, it is relevant to understand transformative governance capacity as the actors' capacity to exercise power in order to mobilize resources. If there is a change in how resources are distributed, then transformative power would be present (Avelino & Rotmans, 2011). Additionally, there might exist innovative power (i.e. creating or discovering new resources) and constitutive power (i.e. existing institutions and structures). The concept also considers intergenerational dynamics, where "social processes are subject to an interplay between short-term and long-term change and stability" (p.798). All three types are not exclusive of one another, may enable each other and are essential to consider for sustainability.

Power is a relation, so if the actors have a collective goal, then a cooperation can emerge. Still, it might be necessary to have some antagonistic power dynamics in order for real transformation to occur and not just be incorporated into existing institutions (Avelino & Rotmans, 2011; González & Healey, 2005).

These power dynamics were integrated in the sociological institutionalist analysis. Power can be exercised at every level but in the chosen framework they become clearer at the level of specific episodes as this is where "power games" are fought out (González & Healey, 2005).

## 3 Methods

### 3.1 Social-constructivist approach

Qualitative research stresses an “understanding of the social world through an examination of the interpretation of that world by its participants” (Bryman, 2016, p.375). I have adopted a social-constructivist position as it informs the theoretical approaches of this study. As my research interest lies in culture, values, governance processes and interactions between different actors, a social-constructivist perspective fits well in this study.

From this position, “social order is a human product, or, more precisely, an ongoing human production” (Berger & Luckmann, 1967, p.117)<sup>2</sup>. In other words, reality is socially constructed based on the interactions between individuals and culture which in turn create individuals’ knowledge about reality. This knowledge is continuously created and indeterminate (Bogason, 2000; Bryman, 2016). Culture is “an emergent reality in a continuous state of construction and reconstruction” (Bryman, 2016, p.30), embedded in institutions within a nested context. Here, “constructivists basically desire understanding in order to be able to participate in reconstruction” (Bogason, 2000, p.145).

Using a framework within this social-constructivist approach is useful because it is “a way of selecting, organizing, interpreting, and making sense of complex reality to provide guideposts for knowing, analyzing, persuading, and acting”, as described by Rein and Schön (in Fischer & Forester, 1993, p.146). In this sense, I attempt to portray the dynamics and governance processes with an analytical framework to construct an evaluative position of the participation for local governance.

### 3.2 Case study research

The research questions in relation to the presented theory and case study require the analysis of the dynamics within and between institutional arenas, including the perspectives of actors to evaluate if there is transformative capacity to allow for non-traditional actors in local governance. In order to answer “what” and “how” questions the research is based on qualitative research methods and case study analysis (Yin, 2014). Qualitative research methodology for collection and analysis of data applies to this case because the analyzed phenomenon is new (Yin, 2014). A single case was chosen in order to undergo detailed and intensive analysis as deeply as possible (Bryman, 2016). As with

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<sup>2</sup> The origin of much social constructivism is based on the work of Berger and Luckmann (1966) *The Social Construction of Reality*.

most case studies, the purpose is not to generalize but rather to strengthen the social science discipline (Flyvbjerg, 2006). Its findings, however, are valuable and might be transferrable to cities of similar size and cultural aspects.

First, I did a content analysis on news articles regarding local planning and environment of the case study. This then informed pre-knowledge for the semi-structured interviews and observation. During the five weeks of fieldwork in Jundiaí between April and May I arranged and did face-to-face interviews. I established first contacts while I was in Sweden through emails. I was only able to schedule the first appointment with the local water supply and wastewater treatment company DAE in advance of leaving for Brazil. DAE acted as a gatekeeper to help me access the research area of the biological reserve easier and connect with some interviewees. Once in Jundiaí, it was easier to request meetings with the municipality over the telephone and because I was available on short-notice.

### **3.3 Content analysis**

Content analysis refers to constructing meaning of texts by allowing categories to emerge out of data and puts emphasis “on recognizing the significance for understanding meaning in the context in which an item being analysed (...) appeared” (Bryman, 2016, p.285). It has advantages such as being an unobtrusive (Webb, Campbell, Schwartz, & Sechrest, 2000), transparent and flexible research method (Bryman, 2016).

With this approach, I analyzed news articles published by the municipality. These articles highlighted the municipality’s actions and mainly contain successful events for local development such as new infrastructure, social and festivity events. This source of information is available freely to anyone who accesses their website but cannot be accessed during municipal elections period. News articles published under the subject “planning and environment” on Jundiaí Municipality’s website<sup>3</sup> that are relevant for sustainability and connect topics such as participation, water, wastewater, agriculture, forest and climate change were analyzed. The news articles were published between 2013 and today. I analyzed the articles posted since 2014.

This method can be linked to the term thematic analysis, where core themes in data are extracted and in turn could lead to thematic synthesis to present an overall sense of the institutional published data (Bryman, 2016). By using content analysis, I aim to address research question 1 and “specific episodes of governance” in relation to the framework mentioned on page 8-Table 1.

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<sup>3</sup> See <http://www.jundiai.sp.gov.br/noticias/tag/planejamento-e-meio-ambiente/>

When analyzing this type of documents, however, Atkinson and Coffey (2011) stress that they do not represent social reality but rather “documentary reality” with a distinctive purpose. They can only represent how an organization works to a certain extent. How the municipality works and the governance dynamics was uncovered through interviews and observation methods. Thus, the content analysis is complemented with semi-structured interviews.

### **3.4 Semi-structured interviews**

Qualitative semi-structured interviews were chosen as a research method in order to keep an open mind during data collection and allow concepts and theories to emerge from the data (Bryman, 2016). Semi-structured interviews are less time-consuming than unstructured interviews and better when there is only one opportunity to interview an individual (Bernard, 2011). Furthermore, additional questions and complementary issues can emerge depending on the replies. To facilitate these interviews, an interview guide was created that included a variety of question to be asked as suggested by Kvale (1996; 2007).

A set of 7 semi-structured in-depth interviews were conducted with key informants of different backgrounds and involvement in the local development issues<sup>4</sup>. The selection process included first the identification of the organizations to approach and then the appropriate people within these organizations/departments. Informants were from the community, such as the municipality, the company DAE, a research department and an NGO initiative for community participation. Interviewees usually had high-ranking positions at their different organizations and informants were 70% men and 30% women, ranging from ages approximately 30 to 80+. On average each interview was 60 minutes long. With each interviewee, the idea was to probe deeply into visions, innovation, political dynamics and social cohesion, including questions about representation, accountability and legitimation. Needless to say, these conversations covered complex topics.

Prior to the interview, informed consent about participation, using their identity, recording as well as using the obtained information was requested after giving the interviewees sufficient information about the objectives of the research. Recording the interviews ensured that nothing would be missed, but was also complemented with notes of impressions (Bernard, 2011; Bryman, 2016).

The interview guide had 6 main questions. They addressed topics such as interviewee’s understanding about local development, public participation, past and future sustainable planning as well as related challenges and opportunities. Balance between guiding the interview and giving

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<sup>4</sup> A list of interviewees can be found in Appendix I.

informants space allowed for the extraction of information, world-views and ideas (Bryman, 2016). This helped to establish a degree of trust and openness with the interviewees, which were conducted in their native language (Bernard, 2011). During the interview, it was also possible to observe the surroundings and to get a feeling for which questions were more difficult to answer or when the answer was rather vague (Bernard, 2011).

The sample size is appropriate for analysis given that theoretical saturation was achieved. This is “until all categories are saturated; that is, no new or significant data emerge and each category is well developed in terms of its properties and dimensions” (Corbin & Strauss, 2008, p.157). The interviews provided voices for the different sectors included in governance processes. Interviewees gave their own perceptions on the same topics until no new theoretical insights or dimensions of theoretical categories could be identified allowing a case-oriented analysis (Onwuegbuzie & Collins, 2007).

Eventually the interviews lead to snowball sampling, also referred to as non-probability sampling, a technique through which new contacts can be identified after contacting a small group of key informants for the interviews in order to broaden the scope of the research (Bryman, 2016).

The obtained data was analyzed, compared and aligned with the analytical governance levels presented in the framework. This was done by transcribing and transferring the relevant information into a matrix, so that interview answers could be compared based on their similarities and differences. All of the interviews except one were held in different institutional offices. This guaranteed mostly quiet interview sessions. There were small interruptions such as phone-calls and door-knockings but the interview quality did not suffer from that. All interviewees seemed relaxed, friendly and willing to answer all the questions and more despite their busy schedules. The only interview that took place in a louder environment was with the NGO in the hallways of the educational center Senac Jundiaí. The interview experience will be further elaborated on under 5.2.

### **3.5 Observation**

During the interviews and while at the different institutional arenas, simple observation was conducted. This means that the behaviors of the key informants (interviewees) as well as the encountered people at the different institutions were passively and unobtrusively observed (Bryman, 2016; Webb et al., 2000).

### **3.6 Role of the researcher**

As a Portuguese-speaker and former inhabitant in Brazil, I am acquainted with the context and Brazilian culture to a certain extent. I wish not to position myself as an insider or outsider and agree with Dwyer and Buckle (2009) that the “core ingredient is not insider or outsider status but an ability to be open, authentic, honest, deeply interested in the experience of one’s research participants, and committed to accurately and adequately representing their experience” (p.59).

Despite my familiarity with the Brazilian context and culture, I did encounter setbacks. For instance, I had considerable difficulty accessing the biological reserve during this study. Had I not been doing research on Jundiaí, met with the DAE that accompanied me to the water treatment site on one occasion or, on another occasion, had signed permission from the municipality to enter the research base, I would not have been allowed to enter the reserve.

### **3.7 Limitations**

One of the main limitations of this research was time. Having 5 weeks in Jundiaí restricted the number of interviews that could be scheduled. Second, despite this being a study about local governance, the city of Jundiaí and its boundaries are completely permeable, as described above. Third, the State has an enormous influence on the municipalities. The scope of the research, however, means that I have had to omit discussion of regional and federal laws that contribute to and hinder sustainability. Last, the inherent subjectivity in the way this case has been portrayed can never be completely ruled out.

## 4 Case study

This chapter presents information about Brazil and Jundiaí, including its location, demographics, a brief natural hazard profile and its water resource management. The information here will later be complemented with findings from the content analysis (see 5.1).

### 4.1 Background

While Brazil is classified as a middle-income country, social inequality is prevalent (World Bank, 2016). Of the over 200 million inhabitants, a large proportion remain poor due to unequal distribution of resources (e.g. income<sup>5</sup>), and access to education (Velez et al., 2004). Democracy in Brazil is fairly young (1985) and since it was established, the country has experienced varying levels of political stability. Brazil's first elected president suffered an impeachment in 1992. After periods of political stability and steady economic growth, Brazilian economy has begun struggling again recently. This August president Rousseff was impeached by the Senate who accused her of manipulating government budget. Even though Brazil is a federation, central government plays a decisive role in many instances, from national to local level, and tends to outshine the role of local Executive (municipality) together with local participation. The political situation proves that participatory processes can be very challenging in Brazil.

The case study for this thesis is the city of Jundiaí, located in Southeastern Brazil in the State of São Paulo (Figure 1). It has a population of 405,896 people in an area of 431,207 km<sup>2</sup> (IBGE, 2016) and is located 60 km from the city of São Paulo (SP). In 2010, Jundiaí had a population of 370,126 (180,049 men and 190,077 women)<sup>6</sup> (IBGE, 2016), meaning that there has been an increase of about 6,000 people per year. Jundiaí has a high Human Development Index<sup>7</sup> (0.822), ranking fourth in the State of São Paulo and well above the country's average.

Water availability is seen as an important governance issue and a limiting growth factor. Brazil is categorized as a self-sustaining country regarding water consumption (Ivanova et al., 2015), but its economic development puts high demands on water resources (Sánchez-Román, Folegatti, Orellana-González, & da Silva, 2009). In the past, studies by the São Paulo State Department of Water and Energy DAEE have claimed low water availability to be a limiting factor of development for the region (Ribeiro, 2014).

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<sup>5</sup> Gini coefficient 0.59.

<sup>6</sup> More info at <http://cidades.ibge.gov.br/xtras/perfil.php?lang=&codmun=352590&search=sao-paulo|jundiai>.

<sup>7</sup> See definition at <http://hdr.undp.org/en/content/human-development-index-hdi>.



Even though Jundiaí and SP are geographically very close (Figure 2), they deal with water planning in vastly different ways. The state government is in charge of the water supply for the city and nearby regions. In the last years, SP has faced a water shortage problem because of prolonged droughts. This threatened the availability of water and electricity and led to rationing in the Metropolitan Region of São Paulo (MRSP) (Geraque & Lobel, 2015). Beyond these hazards, though, a combination of lower rainfall, high demand, pollution and wasted water also threatens the overall sustainability of the system in the MRSP (Ribeiro, 2014). Nevertheless, in the case of Jundiaí, the municipality decided to be in charge of their own water supply through local planning.



**Figure 1.** Map Jundiaí in Brazil (GoogleMaps, 2016)



**Figure 2.** Zoom Campinas – Jundiaí – SP (GoogleMaps, 2016)

Due to different factors (e.g. seeking a better quality of life), there has been migration from SP to Jundiaí. Jundiaí is close to two of the most important state highways making it possible to conveniently reach three airports (Guarulhos, Congonhas and Viracopos). In addition, the closeness to these highways makes it possible and attractive to commute between Jundiaí and SP on a daily basis. Consequently, Jundiaí now faces an emerging problem and its citizens are already concerned. Migration has led to accelerated growth in an unorganized way and challenging local sustainability. Yet, in the Brazilian news, the success of Jundiaí's water management is still promoted on national television and local news (Calixto, 2014; Souza, 2015). Thus, with this case study, it is possible to

analyze how responsible planning can be attractive to neighboring cities and at the same time how local sustainability solutions cannot be detached from the national level.

A unique characteristic of Jundiaí and another reason for its attractiveness is that the city is situated between two nature reserves. On the one hand, there is a planned local water reservoir that supplies 95% of the water demand of the entire city (DAE, 2016). On the other hand, there is the biological reserve named Serra do Japi, recognized by UNESCO since 1992. The biological reserve is considered Atlantic Forest domain, which extends along the coast of Brazil. From an ecological point of view, its preservation is vital because of its high biodiversity including endemic species, which exist because of the microclimates found there.

Because living near to either of the nature reserves is seen as valuable, the migrating population is usually one with financial means seeking a higher quality of life. Therefore, as the urbanization in Jundiaí increases, so does pressure on the nature reserves and new urbanization areas are created close to the water reservoir or adjacent to the biological reserve.

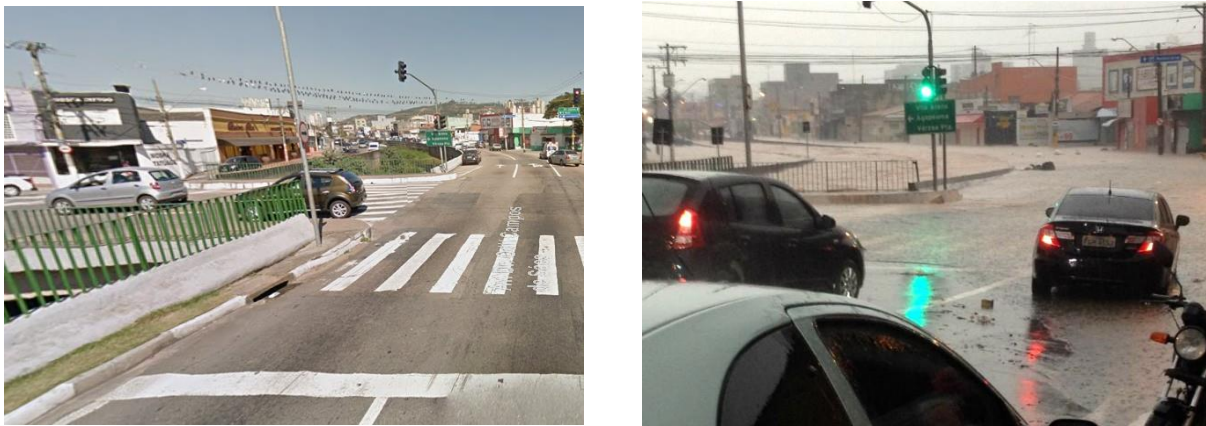
Several studies highlight the importance of preserving the vegetation in this highly urbanized region but none really discuss the impacts that this would have on the city and its residents. For instance, there is extensive research on the flora (Lombardi, Carvalho, Biral, Saka, & Hieda, 2012) and on the aquatic biome. These results show that the Serra do Japi houses species from 138 taxonomic units, which represent 0.2% of the world's freshwater fauna biodiversity, 2.4% of that of Brazil and almost 20% of the State of São Paulo (Yoshida & Uieda, 2014). Species that were thought to be extinct were found in the Serra do Japi (Yoshida & Uieda, 2014) as well as new species (Sá, Canedo, Lyra, & Haddad, 2015). The fragility and low resilience of the Atlantic Forest is also well-studied. Furthermore, some research shows that since 1962, there has, in fact, been an urban expansion to meet urban demand that has affected the Serra do Japi region (Hardt, dos Santos, & Pereira-Silva, 2012; Mattos, 2006). How urban and conservation interests are addressed in the local planning in Jundiaí is explored through the first research question.

#### ***4.1.1 Natural hazard profile***

From a sustainable planning perspective, it seems necessary to include Jundiaí's hazard profile in order to find a balance between the different sectors, e.g. agricultural, environmental protection and urban growth while taking climate variability and change into consideration.

Because of its geographical location there are no geological destructive events (e.g. earthquakes, cyclones, volcanos) threatening Jundiaí, making it somewhat easier to plan for sustainability. Natural

hazards affecting the area are hydro-meteorological events such as droughts, urban floods and heatwaves (World Bank, 2016). During these dry periods, the locally planned water reservoir of Jundiaí suffered some consequences but never reached its minimal capacity. On the opposite side of droughts lies the hazard of floods. Because it is a flood prone area, it is important to assess the risk of floods happening more often due to more extreme weather events resulting from climate change and urbanization (Figure 3). According to Wamsler (2014), if enhanced resilience is what the city of Jundiaí is aiming for, then risk reduction and adaptation need to be an inherent part of urban planning and governance systems.



**Figure 3.** Urban floods in Jundiaí. **Left:** Street view with Guapeva River to the left (GoogleMaps, 2016). **Right:** Same street view flooded on January 8, 2016 (Globo, 2016).

#### **4.1.2 Water resource management**

The predominant water paradigm in Brazil is that of integrated water resource management (IWRM) and river basin management, “which implies going beyond the administrative boundaries to deal with water within its hydrological boundaries” (Gupta, 2009, p.47). After 1988, the constitutional reform in Brazil created River Basin Committees (GWP & INBO, 2009). Then, in 1997, Brazil committed to transitioning to IWRM, promoting an integrated, decentralized and participatory approach (GWP & INBO, 2009), which is known to not always being carried out as it should in the MRSP. Jundiaí, however, has been praised as an example of good water management because they did not have to implement any rationing during the water crisis (Souza, 2015). Over the years, the industry activity has declined in Jundiaí, but some intensive water-demanding companies such as Coca-Cola have been active since 1992. During the water crisis, there was criticism that Coca-Cola

was supposedly diverting water for their production that should be for the city of Campinas (Figure 2) (Sperb, 2014).

For the study area, the River Basin Committee for the rivers Piracicaba, Capivari and Jundiaí (RB-PCJ) is relevant. It covers an area of 15,414 km<sup>2</sup> and supplies “water to 9% of Brazil’s population in 0.18% of the Brazilian territory” (Sánchez-Román et al., 2009, p.428). Jundiaí is supplied by water sources belonging to the RB-PCJ. The main municipal supply source is the Jundiaí-Mirim River (DAE, 2016), the same source that supplies the city’s reservoir (Figure 4). During drought periods, it is the Atibaia River that supplies the reservoir (DAE, 2016). According to DAE, the average water consumption per inhabitant is 6-7 m<sup>3</sup>/month. The prices are set to recognize water as an economic good and to ensure rational use of water (GWP & INBO, 2009). DAE is a public-private-partnership, where the municipality owns the largest part of the shares of the company.



**Figure 4.** View of Jundiaí with the nature reserves. Water reservoir at its maximum capacity and the Serra do Japi in the background (Prefeitura de Jundiaí, 2015).

## 5 Data

This section reports the constructed data aligned with the framework and is divided into three parts: Content Analysis, Semi-structured interviews and Analysis.

In the interviews, as well as in the content analysis, one of the main topics was the “Plano Diretor Participativo” (PDP), which I categorize in the first level of Healey’s framework as a specific episode of governance. This research topic is considered fundamental as it allowed for unprecedented civil society’s participation in an important governance process. The interviews permitted to delve into the second and third levels of the framework, i.e. into the challenges, dynamics and cultural aspects of these governance processes. These findings are analyzed in the third part (see 5.3 Analysis), subdivided into the RQs.

### 5.1 Content Analysis: Planning and Environment in Jundiaí

The content analysis was based on news articles categorized under “planning and environment” and released by the municipality of Jundiaí on their website. This broad category encompasses a variety of topics ranging from disease spread to environmental education and actions, infrastructure, art/culture and the biological reserve. The selection of articles was based on the relevance for sustainability and how they connect the mentioned participation, water, wastewater, agriculture, forest and climate change topics. Excluded were articles that did not connect to two or more of these issues or when the emerged category was saturated.

These restrictions lead to two main categories: “Plano Diretor Participativo” and “Serra do Japi and rural area”. First, I describe the draft bill elaboration that defines the city’s development for the next decade as is it the main subject found. The Brazilian Federal Constitution of 1988 and City Statute define a bill as the basic instrument of urban development policy and urban expansion organization. Then, I discuss the second topic area that emerged out of the media data.

If a topic seemed to be relevant, it was posted several times in a row over a period of days. This was especially evident in the case of cultural heritage declarations like the “Ponte Torta” monument. This monument is relevant mentioning in regards to governance culture, because it is claimed to represent the values and the relationship between community and municipality.

The data presented in this section aligns with Healey’s first level of specific episodes of governance because it discusses what is visible. Considering the information is derived from the municipality’s website, understanding this level as “what is done” seems accurate.

### ***5.1.1 Participatory process for “Plano Diretor Participativo”***

One of the most relevant categories that emerged from the data is the draft bill PDP. It is relevant because it represents a new type of governance process with the involvement of non-traditional actors and highlights issues in local development, which are crucial for this thesis. A significant number of news articles since 2014 focus on the draft bill PDP. So far in 2016, the focus has been on the final executive phase before submission to the Municipal Chamber for approval. This draft bill has had, since 2014, over two years of planning and over 11,000 participants were involved. It includes 12 strategic objectives pointed out by the residents over all the preparatory stages (see Appendix II) and establishes the land use of 400 km<sup>2</sup> in Jundiaí for the next decade. Its main objective is to create a more democratic, inclusive and sustainable city. In this draft bill, several maps were produced that include the Atlantic Forest fragments and water springs in order to secure their future. At some point, news articles regarding this topic were excluded due to their repetitiveness or because they were just informative in terms of planning or preparation.

Participation during the draft bill process was consistently presented as the highest in history. The participation of diverse segments was guaranteed by having 40% delegates of municipal authorities and 60% delegates coming from civil society, which is recommended by the City Statute. Hence, the 102 delegates came from different organizations in society such as public authorities, labor unions, businesses, academia, NGOs and residents.

Participation was encouraged by having a simplified document that would be transformed into a technical document afterwards. The reason behind this, according to the municipality, is that such a document affects the entire community and everyone should be able to participate in its creation.

Moreover, the PDP strives for the conservation of life quality in Jundiaí, which, according to the Mayor Bigardi, has been “shaken” in past decades. Every time he participated in an event it seemed to be mentioned in the news. In those cases his participation usually was referred to as “contributions”, “orientation” and “adjustments”. Even when articles included direct quotes from the municipal secretaries, they would usually mention the positive action/initiative/achievement/values and emphasize its relation to Mayor Bigardi’s government. A reason for this could be that once a Mayor is elected in a Brazilian city, they will choose their head of secretaries. Consequently, it is in

the interest of the secretary to make the Mayor popular to encourage their reelection<sup>8</sup>. These dynamics are shown to be increasingly important after the interviews conducted for this study.

The PDP is new and one of the first of this kind in Brazil. It included different phases with community readings during 2014, open invitations to two forum events for all residents as well as 11 regional workshops. The aim of these workshops was to gather the citizens' visions and concrete projections of local development. Questionnaires were distributed alongside residents' water bills and at schools, companies and community associations related to sustainability issues such as water consumption. An online alternative to filling out the questionnaire was also provided, asking the community for their inputs, suggestions and proposals. According to the municipality, the plan was created from these proposals, which were described as especially innovative. Examples were given during the interviews but can also be found on the PDP website<sup>9</sup>.

So far the process is considered an achievement of community dialogue. Meetings and forums about the process were continuously undertaken (usually on weekends or evenings). On the day of these events, information was spread about additional busses to the venues. The municipality gathered 500 proposals in the first phase and 363 in the second phase, already within the final project construction. Of this amount, 198 "conflicts" emerged, which prompted a series of consensus meetings and led to a final public audience called City Congress.

### ***5.1.2 Lungs of Jundiaí: Serra do Japi and rural area***

The biological reserve Serra do Japi and the rural area each make up 1/3 of Jundiaí's area. Governance processes regarding both these topics seem to be inclusive of civil society because of the councils and meetings. Important from a sustainability and governance perspective is that the management council (10 members) is elected every two years and inscriptions to be part of this council are open to labor unions, the area's residents associations and registered home-owners individually, non-governmental organizations and community or neighborhood associations, and environmental organizations.

The biological reserve is a recurrent topic in the news articles. It is clear that it is preserved for its status as part of the Atlantic Forest domain, and because it is considered the "lung" of the region and an important research area. Many news articles refer to its preservation, protection, the

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<sup>8</sup> The Mayor in Brazilian municipalities can be seen as the tip of a pyramid. Every 4 years there are elections and mayors can be reelected once. If the new mayor belongs to a different political party, most likely large parts of the technical body will be completely replaced.

<sup>9</sup> See <http://planodiretor.jundiai.sp.gov.br>

consequences of drought such as forest fires, housing character for (new) species, monitored hiking paths and more. There are discrepancies in the interviewed perspectives about how this area is managed, especially regarding the access to the area and the research base.

The rural area is not only very important for Jundiaí's production of fruits and vegetables but also overall for its history and cultural identity. It is mainly represented by family farming<sup>10</sup> (Prefeitura de Jundiaí, 2016). In the news articles, they explain that Italian immigrants settled in this area during the 18<sup>th</sup> century and today Jundiaí is considered the "land of grapes" because it is the most-widely produced fruit and because of the annual grape festival.

The unorganized expansion of the city as well as the intrusive development onto sensitive areas (e.g. River Jundiaí-Mirim) was also underlined in some news articles. The articles mention that this is supposed to be designed differently in the PDP and the mentioned maps allow for the identification of vacant lots within the city, promoting a compact but not vertical city. More information on this was gathered from the interviews later on.

Within this plan and maps, the borders of biological reserve, urban and rural areas have been redefined, showing also the locations and quality of water springs. The rural area has been expanded and therein, water springs will be protected and/or recovered. The water springs in the biological reserve are shown to be preserved while the ones in the rural area need to be recovered (Figure 5).



**Figure 5.** In the biological reserve Serra do Japi (Taken by author, May 2016).

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<sup>10</sup> There are 1.578 production units, of which 53% own less than 5ha.



## 5.2 Semi-structured interviews and observation: the Brazilian way

This section first recounts the interviewing experience, e.g. how snowballing took place, the challenges and curiosities at the interviews, before moving on to the analysis of the topics and answering the RQs.

Snowballing was very important for this study. During the first interview J. Yatim (DAE) contacted D. da Câmara (municipality) to follow up on my request to interview her. It was also him that gave me the contact of the professor at UNICAMP. DAE offered to show me the treatment plant at Serra do Japi and to organize this with someone from his team.

Up until this point, I had tried for quite some time to contact an NGO that appeared as a PDP delegate. Apparently this NGO no longer had an established office nor was it that active. I ended up interviewing the NGO Voto Consciente, which focuses in public participation and which had much valuable input for this study as they reviewed closely the PDP process. They developed an indicator in 2010 to evaluate the degree of accountability, how the process ensured transparency and enabled participation of the population<sup>11</sup>. After the interview with NGO members, H. Parra put me in contact with the well-known architect A. Martino<sup>12</sup> via email, whom I interviewed shortly after.

Curiously, even though I had contacted and scheduled individual interviews, when I arrived for the appointments, more than one person received me. This was the case in the first interview at DAE where I partly interviewed the CEO and commercial director at the same time. They had expertise in different areas which was beneficial for gathering answers to a range of questions. Second, this was the case for the first interview at the municipality where the interview was held with the director of environment and coordinator of urban projects. Lastly, during the NGO interview, three members participated, although the person I had contacted first definitely was the prime interviewee. There might be a cultural aspect behind having more than one person participate in an interview and it has positive as well as negative aspects. This did help me gain more perspectives in my research and those I interviewed may also have been more at ease. Methodologically speaking, however, it makes the analysis more complicated, the interviews took longer and interviewees may have more easily gotten off track. For example, I found sometimes one interviewee interrupted the other.

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<sup>11</sup> In the evaluation, the PDP had a mark of 7.9 of 10, compared to 2011 and 2010 where it had marks of 4.7 and 3.2 respectively.

<sup>12</sup> A. Martino (80+y/o) has participated since the beginning in the planning processes of Jundiaí.

The interviewees work in and represent diverse sectors of society, which allowed for different perspectives to emerge during the interviews. The main topics discussed were the PDP process, participation, local governance and the future development of Jundiaí. Positively, there were reoccurring themes on the success or improvement of the participatory level of civil society during the PDP, which will be shown in the next section. I also spoke with citizens, e.g. middle-upper class and employees taking care of the biological reserve. Both citizens reinforced their strong place-bounded values and emotional attachment to Jundiaí (Table 2).

The current political situation in Brazil is turbulent and complicated to say the least. Brief comments by individuals during the interviews were made categorizing the situation as “interesting but sad” making their disappointment clear, but focus was kept on the local context.

With the understanding of the urban development and future planning of Jundiaí, the following sections return to the questions raised at the beginning of this thesis.

### 5.3 Analysis

With the sociological institutionalist framework, data and insights of the participatory process of the draft bill were aligned with each level and summarized in Table 2. The following sections elaborate on these findings with the analysis of the interviewees' perspectives to answer the RQs.

**Table 2.** Analytical levels of governance in Jundiaí

Level	Dimension of draft bill PDP
<p><i>Specific episodes of governance</i></p> <p>Actors</p> <p>Arenas</p> <p>Ambiences and interactive practices</p>	<ul style="list-style-type: none"> <li>- Collaboration between government and civil society</li> <li>- Non-traditional actors</li> <li>- Personal and emotional commitment</li> <li>- Participation encouraged but voluntary</li> <li>- Formal rules like training workshops, meetings</li> </ul>
<p><i>Governance processes</i></p> <p>Delegates selection processes</p> <p>Practices</p> <p>Specification of laws</p>	<ul style="list-style-type: none"> <li>- 102 Delegates (40 from municipality and 62 from civil society, representing different regions and sectors)</li> <li>- Urban, rural and biological reserve areas</li> <li>- Mix of land uses, sustainability, life quality</li> <li>- Strong social class division</li> <li>- Setting up of future local (sustainable) planning</li> <li>- Combined two laws: Land use and PD</li> <li>- Knowledge-sharing and shared vision</li> </ul>
<p><i>Governance cultures</i></p> <p>Accepted modes of governance</p> <p>Embedded cultural values</p>	<ul style="list-style-type: none"> <li>- Participatory governance</li> <li>- Critical attitude towards past governance culture</li> <li>- Value and respect for the environment</li> <li>- Place-bounded values</li> <li>- Inclusive governance centered on a particular place</li> <li>- Increasingly more formal strategies to contest having few decision-makers</li> <li>- Mutual learning process</li> </ul>

### ***5.3.1 Challenges and opportunities on the pathways towards local governance for sustainability in Jundiaí***

Challenges were mostly identified at the governance culture level, because they are linked to the modes of governance and embedded cultural values. There are many examples in which clashes of different cultural values have been expressed in the case study.

#### ***Migration as a challenge***

More than ever, local governments are working on making their cities more sustainable and attractive, which can lead to migration that puts pressure on a city's natural resources. This sustainability is threatened as the achieved local attractiveness is not detachable from possible migration at the national level. At the same time, this shows that sustainability is not a fixed point that can be achieved once. Rather, it requires a dynamic, iterative and continuous learning process that should be approached from different perspectives in a holistic way (Adger & Jordan, 2009). Exploring how migration patterns can lead to a deviation of a path towards sustainability is illustrated in the following examples. Inherent in this type of challenge is conflict of values.

The CEO of DAE J. Yatim described Jundiaí as a dormitory town and said there is a "violent" migration trend as Jundiaí is close to SP and Campinas (Figure 2). This migration trend can become a challenge for diverse sectors in Jundiaí. One of the outcomes could affect the water reserve and lead to water scarcity. Currently, migration is not a problem for the water sector, because there is enough water to supply demand. J. Yatim believes, however, that this might become an issue in 20 years with water already identified as the limiting factor for long-term development (A. Martinho; D. da Câmara; J. Yatim). The municipality shares this view: they are working towards a compact city and opting for verticalization<sup>13</sup> in the transport areas, and said there is still space to expand. The municipality made clear, however, they want to keep development within the city boundaries and avoid verticalizing the neighborhood areas as this is what citizens, according to surveys, want (D. da Câmara).

Another outcome of migration is pollution, and the relationship between these exemplifies how current governance processes and practices can lead to conflicts of values regarding verticalization. Specifically there is a conflict between growth and remaining sustainable. Members of the NGO say that the PD has not been able to break the real-estate speculation. New middle-/upper-class high-rise buildings have been constructed close to the highway, gentrifying the area (Utida, 2016). As a consequence, this creates both a threat to the environment and to people's health as people that

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<sup>13</sup> In urbanism, referred to high-rise buildings.

work in SP have intentionally decided to live next to the highway to have a quicker commute. “This is toxic, the pollutants from cars bring terrible air quality to the family’s health”, A. Martinho skeptically adds. This combination of migration, verticalization and commuting, according to the NGO and A. Martinho, has upset the small town neighborhood dynamic. As described above, a sustainable city may attract people to move leading to outcomes that are a threat to that sustainability. This example emphasizes the need for sustainable urban planning and in particular for a low-carbon transition, such as developing public transport, ever more critical (Neij et al., 2015). Trains, however, are not perceived as effective public transport by most citizens in Brazil.

### ***Power***

Another challenge towards sustainable local governance in the context of Jundiaí was reflected as a constitutive type of power exercise between existing institutions (Avelino & Rotmans, 2011). Professor J.Teixeira noted tension between academia and municipality. The project in the Serra do Japi that he is working on is in coordination with DAE. According to J. Teixeira it would be “interesting” to count on the support of the municipality, but apparently there is not much of a relationship between universities and municipalities because research is relatively new to the municipal sector. It is necessary, however, to ask for the municipality’s permission to do research and there are rules to follow. J. Teixeira criticizes the municipalities for feeling ownership over any research data and compares “Jundiaí to the Serra do Japi as a mother is to its child, if it hugs too tight it will suffocate and kill it. It needs to give it freedom”.

Companies are seen as economic powerful and potential investors, e.g. DAE has a treatment plant within the reserve. Organized groups from companies and by the municipality can gain access to the biological reserve more easily whereas for non-organized civil society it becomes more difficult. J. Teixeira adds:

If compared to a European city and its relationship to the environment, it is very different. Of course the reserve has wild plants and wild life that needs to be protected but with these actions, the public is kept distant. So this area remains unavailable for the public. As in their minds, people that will enter will also want to extract something from it.

The challenge to this individualistic view is to think collectively, as neither the biological nor the water reserve are just for Jundiaí either. Academia and the municipality agree that a sustainable city requires creating public policies and instruments to support collective interests instead of individual ones. This also aligns with the NGO’s statement that in the last 25 years, planning and decision-

making in Jundiaí was left to only a few people, reflecting past power structures that allowed for personal interests to follow through. One challenge to support collective interest is globalization. Stepping back and considering global scales of power structures, it becomes clear why some power imbalances persist at the local level. A. Martinho's quote also fits the conflict of values dimension, when he says "the world is no longer functional (...) the city functions around stocks and flows, and around globalization. I'm no longer able to have balance within the city". He believes planners are not prepared for globalization. Above all, fulfilling the different individual wishes is challenging. The citizens became consumers, which he denominates as "fatal", because instead of feeling recognized for good deeds, these individuals believe they are recognized for what they own.

### ***Neoliberalism as rural gentrification***

There are criticisms when utilizing an approach that encourages governance-beyond-the-state like the one Healey proposes. Swyngedouw (2005) argues that socially innovative arrangements in governance are fundamentally Janus-faced, especially when they are influenced by market forces because the restructuring of governance would lead to the market gaining more power. Amin and Thrift (2002) claim that because of this dynamic, however, there can always be an opportune moment for alternative practices.

M. Pilon believes Jundiaí needs to be a sustainable community, where family farming in the field can be maintained and the city adequately developed, while simultaneously preserving water reserves. At the third framework level, another challenge is explained by the director of environment, regarding the oppression of family farming due to an accepted mode of governance (Table 2). He says, "in reality there is always a neoliberal strategy in the process where you oppress in order to devalue the area, make an acquisition not that concrete nor correct and then through other ways you sell it", because the area is seen as someone's propriety instead of the community's. The "governance processes through which bias is mobilized" surface and reflect the strong social class division that is present. This way people from the outside come with purchasing power that may be interesting for the city but not necessarily for sustainability (cf. "eco-branding", Anderberg & Clark, 2013).

### ***Urbanization as a challenge***

Neoliberal ideals have contributed to urbanization. The following challenge appears because some of the place-bounded values such as having neighborhood proximity are in contrast to governance processes that promote new buildings (Table 2).

The previous PD was going in an expansion direction which in the PDP would not be allowed anymore: “Between 2004 and 2012 approximately 40 million m<sup>2</sup> changed from rural to urban area” (D. Pradella). In the case study, the PDP challenged these dominant forces of governance and allowed for deeply entrenched values of conservation to prevail in local governance. Jundiaí was the first municipality to talk about a PD joined with civil society in order to homogeneously organize the territory and to preserve the two unique environmental areas, which in the last decade have become more diffuse over the urban area (M. Pilon; D. Pradella). According to J. Teixeira, the great difficulty in addressing both interests is to have an understanding of the growing sectors. He doubts that the PD is legitimizing something that is not already consolidated or in process. This statement contradicts the municipality’s perspective, in which they explain that they are reversing the urbanization trend that was allowed in the rural area. The main reason is that there are necessary water springs in the area that need to recover and some of them are still in the Atlantic Forest. The maps shown during the interview with the municipality corroborate the reversing trend in the current zoning of the Northern rural area. Learning how to have these type of conversations with the population in order to reverse the land use of a private area, e.g. from industry back to rural, because it is beneficial for the entire city was hard (D. da Câmara). Finally the population understood because, as D. da Câmara summarizes, “more than skyscrapers, economic growth, Jundiaí wants an economic development with life quality (...) the population is very demanding and very qualified in that matter”.

### ***Challenge as opportunity for sustainability***

*“On Earth there are no travelers, everyone is a crew member” (A. Martinho).*

All previously analyzed challenges have been identified by the actors and show how the opportunity for action for sustainability can arise. Actions that challenge the dominant form of governance are seen as opportunities for sustainable governance practices to emerge. The question about how urban and conservation interests are addressed was directly discussed in all interviews. The answers present challenges faced in the past and the opportunities for action taken in order to create a balance among the diverse interests.

The following is D. da Câmara’s reasoning behind sustainability challenges:

There is a very strong learnt lesson which is that without the environment in a healthy state, there is no life possible. Humans cannot be its own villain, thinking that it can develop the city at any cost and forget that without environmental respect there will be no development.

The conservation interests regarding both the biological reserve and water reserve are very strong. Laws but most importantly citizens of Jundiaí, as shown through all interviews, have well-entrenched awareness of the importance of protecting the Serra do Japi. More than a governance process, this can be seen as a governance culture, as Healey (2004) would call it, which is a reason why these sustainability challenges have been seen as opportunity. Citizens know the Serra do Japi is protected by law and at the same time this is something they respect and value. Moreover, there are actions for sustainability taken by institutional arenas like DAE, e.g. water consumption trends are analyzed to help guarantee the future water availability. So, if there is a new industry that wants to install itself in Jundiaí but consumes too much water, then they will be declined (F. Neves). This position by the DAE may be a reaction to intensive water-demanding companies like Coca-Cola in Jundiaí (A. Martinho).

### ***5.3.2 Complex dynamics of the participatory process in governance in Jundiaí***

In Jundiaí, the governance culture, as Healey would label it, has always been somewhat different from other municipalities. The reason for this might be that embedded cultural values are more place-bound (Table 2). The CEO of DAE is convinced that Jundiaí did not suffer from the water crisis because of the visionary minds in the past that planned the water reserve whereas other interviewees said the only difference is that their water reserve is bigger compared to neighboring municipalities. “No governor wants to install subterranean tubes” (J. Yatim) as this would not be a visible action that can be used in reelection campaigns. Either way it means that the project “left the paper and was set in practice”. J. Yatim of the DAE claims that this governance culture of saying but not doing is something that is now changing in Brazil. When asked about the local governance, J. Teixeira admits that Jundiaí has a different political-party action that incorporates the population in decision-making, but that the difficulty comes with how civil society gets organized and because “Brazilian society is not organized at all”.

In his interview, J. Yatim mentioned that the secretary of planning and environment was criticized by people with special interests and praised by others that wanted life quality for all. Primary examples that could lead to this type of judgement were decisions about bus lanes that would affect car-owners and where to construct low-income housing. Depending on the perspective, the institution is seen as a bandit or a hero, reinforcing mistrust and trust between the actors.

The sociological institutionalist approach stresses that governance episodes that lead to change require change at the culture level. Through a process like the PDP, it became clear both to government and civil society that collective work is hard and takes a long time. The planning process



pursued quality of life, as explained in the theory section of this thesis. This planning affects all the dimensions in the city as it has affected all the levels in the framework (Table 2).

Pursuing a governance culture that is inclusive and with formal strategies to prevent having few decision-makers led to new governance processes that combined two separated laws, land use and PD. “It was absurd, and many times they were even contradictory”, M. Pilon states, “some [laws] are auto-applicable but others require change (...) the progress may be believing in the empowerment of the population and communities”.

### ***Knowledge-sharing***

Coming back to the framework, at the level of specific episodes, the interaction of diverse members of civil society makes achieving sustainability objectives especially challenging. The secretary D. da Câmara explained the dynamics at the neighborhood workshops held at the beginning of the process and their challenges:

We had the dweller and the businessman sitting at the same table. Sometimes we [municipality] sided with one, sometimes with the other. At the beginning the businessman did not understand (...) the private sector thought we were benefitting other actors. They wanted to be exclusive, they always were the economic power. We treated everyone the same.

Overcoming these social barriers to recognize that everybody has some sort of valuable knowledge (non-expert knowledge) and, as citizens, everyone is entitled to their own decision, speaks for a new governance process that actually reduces bias (cf. framework). The process reduced how society is compartmentalized and allowed for knowledge to be shared. Both A. Martinho and D. da Câmara said this was an eye-opening experience for the “knowledgeable guy” showing there are valuable things he/she can learn from “Dona Maria”<sup>14</sup>.

This knowledge-sharing was achieved through the selection of delegates by region or sector and running training workshops through which the municipality sought to empower citizens and elevate the discussion level, raising topics, for example, like instruments of land management. The training workshops included everything from public finance to urban instruments, how the municipal budget works and why certain sectors receive x amount of money, so that people who wanted to criticize

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<sup>14</sup> Common name used for examples, in this case referring to the neighborhood lady.

would have a basic understanding and make more qualified and supported criticism<sup>15</sup>. The process included ludic exercises where people were asked to think in groups about three of the best and worst things in the city, because the “city is not a decision of my belly button<sup>16</sup>, of what I think is important” (D. da Câmara). Again D. da Câmara states this was a difficult conversation to have with the population.

### ***New governance modes***

The proposals made by civil society are in line with the framework’s idea that involving non-traditional actors may carry transformative capacity as they promote other values. As D. da Câmara describes, this empowerment led to valuable and innovative proposals from the population’s side. One example she gave was an economic incentive to build theaters on the ground floor of buildings. This would encourage the use of public space and enhance cultural events in the city. Another proposal was that country-club areas should be special zoning and environmentally protected. If one day these areas need to be sold<sup>17</sup>, then they could only have an environmental purpose.

Allowing for a new governance culture to emerge can challenge accepted modes of governance. A. Martinho praises the PDP in this sense for allowing for an “honest contact” between government and population, and that the population chose delegates from civil society, which made the process reliable. A. Martinho describes that previously a PD process would have had a designated commission chosen by the government to create the draft bill, which he believes is “an extremely competent process for the few”.

The NGO had positive feedback and improvement suggestions on the process. First, they affirmed the initial collection was well done. It was not seen as a critical problem that there was only one final public audience as these tend to be only for feedback, i.e. the government presents something to hear any reactions but it is not a moment of data collection (H. Parra; D. da Câmara). Second, some design aspects could have been better such as choosing delegates at the neighborhood meetings instead of regions. This suggestion was made in order to guarantee the information transmission to the neighborhood but, according to the municipality, transmission did happen anyway. Third, H. Parra confirms their indicator shows that there has been significant advancement in representation as previously there were no delegates chosen by the population.

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<sup>15</sup> “People will only support policies and plans if they believe such plans will ultimately improve their general welfare and, if well-informed, they are generally capable of making intelligent decisions and trade-offs” (Satterthwaite, 1999, p.47).

<sup>16</sup> Brazilian expression referring to decision-making based on personal interest.

<sup>17</sup> Usually sold as allotment.

### ***Power at the Municipal Chamber***

So far the case study shows a promising, innovative participatory governance process. The dynamics during the PDP have been played out well at all levels of the framework (Table 2). In summary, with the framework in mind: the draft bill is visible at the specific episodes level, where governance processes with an open delegates' selection process demanded personal commitment in order to develop a shared vision and allowed for different modes of governance with a mutual learning process and the highest participation so far in such a process.

The dynamics and interests for the local development in Jundiaí are explained by H. Parra:

The fact is that all delegates were allowed to do amendments, all of which were consolidated. The delegates themselves then voted, approved the amendments at the City Congress and formed a commission for the draft bill systematization. Many proposals were contradictory and they spent two weeks with almost daily meetings for conflict resolution, so even without looking at the law what would be approved is fruit of consensus.

H. Parra goes on to explain that “this is a delicate moment [in the approval process] where the Municipal Chamber has the authority to make changes”. The problem is that the chamber will not be held accountable for these changes as they are able to pronounce that they represent and speak for the entire city<sup>18</sup>. There is more to it, H. Parra adds: “If there were more honest people in the chamber, that we would trust, I don't think there'd be a problem. It's more a problem of who is occupying the Legislative assembly today, if they were honest, we'd be calmer, but I'm not calm”.

This year the political environment is further complicated because there are also municipal elections. Apparently, it is never recommended to put a PD up for discussion at this time, especially with more controversial issues like the ones in the PDP, because chances of rejection might be higher. On the one hand, councilmen might be inclined to make amendments to the draft bill in order not to become unpopular with corporations. On the other hand, these corporations might already contribute financially to their political campaigns.

The data shows that what might have been an accepted mode of governance, leading to certain governance processes and practicing constitutive power, may have been challenged by the PDP which demanded participatory governance as well as transformative and innovative power. As noted

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<sup>18</sup> 19 councilmen vs. 62 civil society delegates.

above, the Municipal Chamber has the power to make any amendments to the PDP and there is no defined period when the decision must be made by. D. Pradella mentions, “it has a lot to do with political articulation and the relationship between Mayor and Municipal Chamber”, to which M. Pilon confidently adds “and civil mobilization”. A. Martinho agrees that this time the chamber will face many more people. D. da Câmara is worried but confident that the population will demand its rights and that the draft bill will remain unchanged if they feel it represents them. “What is the justification for changing something with this depth of discussion with society?” she asks. The least she would expect is if amendments are needed from the chamber’s perspective that they would ask the municipality, but this dialogue is not guaranteed. Therefore, the NGO is looking closely at this outcome too, ready to demand that the process continues being participatory and that amendments are discussed in a public audience.

## 6 Discussion

This section serves as a summary and complements the previous section. To further construct an evaluative position, key elements are discussed through a sustainability lens. In answering research question 1, there are many governance challenges a sustainable city, particularly one between reserves, may face. First, migration can be seen as a sustainability challenge when rapid population growth calls for different needs, which should be addressed holistically in order not to cause other problems, e.g. how new housing area has been affected by air pollution from commuting cars. Second, power issues that are visible at the local level between actors and institutions may be influenced by global power structures. Here, neoliberal ideals become a threat when important rural areas are transformed into urban areas because of economic benefits for a select few. But importantly, these challenges can become opportunities for sustainability when coupled with a clear idea that both urban and conservation interests need to be addressed, so that balance can be kept.

In answering research question 2, to achieve the desired development path, governance processes need to be well-thought. In Jundiaí a new way of creating a draft bill including civil society was implemented where participatory processes allowed several actors and citizens to articulate sustainability but with their embedded cultural values. This process was therefore marked by complex dynamics between different actors. The present social class division was overcome by choosing delegates and giving a voice to each sector and region. This reduced bias and allowed for knowledge-sharing to foster new governance modes.

The constructed data showed the complexity and diversity in governance dynamics as well as in the local context. The collaborative planning of the draft bill promoted participation from diverse sectors and led to a shared vision of future development. For this to happen, “participatory processes need to be carefully designed and executed to fulfill their promise in sustainab[ility]” (van Kerkhoff & Lebel, 2006, p.461), because it is a “complex, long-term, multi-level, integrative, multi-actor process” (Frantzeskaki, Loorbach, & Meadowcroft, 2012, p.23).

Developing governance in this participatory way had transformative power and will not likely become an “institutional memory” (González & Healey, 2005). As theorized in the framework, mutual learning and empowerment experienced during the draft bill episode have transformed the governance processes in general. This was possible because of the inclusion of diverse perspectives and a well-included community voice. Interviewees recognized the bias present in past PD processes because of lack of participation and the former commission chosen by the government. Put simply,

with participation of civil society, the PDP has gained reliability. These are features in Brazilian governance in general that interviewees identified needed strengthening.

From a sustainability research point of view, combining knowledge found in civil society aligns with a transdisciplinarity research approach (Polk, 2014). The in-depth participation of civil society throughout the PDP has produced “socially robust results that contribute to sustainability” (Polk, 2014, p.439). Potentially, the participatory process speaks to challenging “the authority of research-based knowledge in any given decision-making scenario [which] is negotiated through the interaction of researchers and decision-makers” (van Kerkhoff & Lebel, 2006, p.455).

Participatory governance, as the PDP process indicated, does bring some logistical challenges. According to J.Teixeira, the most difficult task in a participatory process is to disseminate information and discuss proposals. Even though “civil society has been involved and say they want a sustainable Jundiaí in the future, what is sustainability for them?” he asks. This question is valid and yet the PDP allowed for all viewpoints to be considered, merged and included. “It may not be the best draft bill but is legitimate and agreed upon” (D. da Câmara), recognizing that “these processes of deliberation, argumentation and discussion are constitutive of governance” (Adger & Jordan, 2009, p.7).

The data suggests that mistrust of and between institutions so became apparent that it can be seen as a culturally embedded assumption. The draft bill creation had democratic participation in one governance process, but there is a clear mistrust in the higher power of the Municipal Chamber. For instance, the NGO presumed that maybe consensus was found because the Executive knows everything might still be changed by the chamber. The problem here lies in the reinforcement of power imbalance that could hinder sustainability. Only when existing power relations in the entire governance structures become more balanced will trust in public authorities be re-established.

Beyond the local level, there is still the perception that the government defines and determines future decisions, and even if the population does not understand, there is no dialogue. Thus, it remains uncertain if this participatory governance process is embedded culturally enough to allow for long-term change in future governance processes should a new government be elected.

## 7 Conclusion

This thesis has investigated the current governance processes in the local development of Jundiaí, especially focusing on the participatory process of the draft bill during the past two and a half years. After learning about the different perspectives and sectors involved in the process, this thesis concludes that such a process carries benefits for the greater part of society and for sustainability as it creates a shared vision of the city. The main findings show that inevitably **embedded cultural values** will emerge, **social barriers** must be confronted and overcome and dominant forms of **power** will be challenged and hopefully transformed. The gathered insights suggest that demand for a participatory process in the future seem highly probable as well as demand for further inclusive governance; however, there is no clear evidence that such a development will occur as it remains a government choice.

We live in a complex world, where cities are growing and where boundaries and definitions are becoming blurry and challenging us as human beings. Jundiaí has a long way to go to be a sustainable city but involving civil society in this process can be considered a first step in the right direction, especially considering that democracy is fairly young in Brazil. Further research on the municipality-state-relationship could be valuable. At a national level, there are far deeper issues occurring in Brazil and this study has not delved into these or the complications of the current political situation.

Jundiaí is a middle-sized city that allows for this type of participatory process. The process and analytically-informed main findings from this research could be transferrable to and valuable for similar settings and sized cities. Because the cultural aspects and dynamics in governance are complex there is a need for participatory governance to improve life quality for all. This process may be long and hard, but this case study is an example of progress and hope to restore trust in public authorities and foster dialogue and collaboration in local planning.

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## 9 Appendix

### Appendix I. Interviewees

Interviews for this study followed 6 main questions in order to cover relevant topics. All interviews took place in the institutional arenas except the interview with the NGO that was held in the educational center of SENAC Jundiaí. All interviews took place between April 14 and April 29, 2016.

Date	Interviewee	Organization	Position	Interview Type
April 14, 2016	Jamil Yatim	DAE	CEO	In-person, recorded
April 14, 2016	Fernando Neves	DAE	Commercial Director	In-person, recorded
April 19, 2016	José Teixeira Filho	UNICAMP	Professor	In-person, recorded
April 20, 2016	Marcelo Pilon	Municipality	Director of environment	In-person, recorded
April 20, 2016	Décio Pradella	Municipality	Coordinator of urban projects	In-person, recorded
April 27, 2016	Henrique Parra, Lívia Siqueira, Márcia Pires	NGO Voto Consciente	Volunteer Members	In-person, recorded
April 28, 2016	Daniela da Câmara	Municipality	Secretary of environment and planning	In-person, recorded
April 29, 2016	Araken Martinho	Architecture and Urbanism Office	Architect	In-person, recorded

## **Appendix II. 12 Strategic objectives in PDP**

Strategic objectives pointed out by the residents over all the preparatory stages. These are:

1. Preservation, conservation and restoration of water and natural ecosystems;
2. Protection, promotion and recovery of goods and properties of cultural history interest and cultural initiatives;
3. Protection and promotion of rural development and agricultural production;
4. Strengthen the local economic base;
5. Improved urban mobility and accessibility conditions;
6. Regulation of the land use and occupation and real estate production;
7. Containment of the dispersed and disorganized urbanization;
8. Idle property utilization located in consolidated urban areas;
9. Improvement of urban conditions in neighborhoods with adequate education, health, sport, leisure and culture;
10. Provision of social housing interest;
11. Urbanization and regularization of informal settlements occupied by low-income population and of specific interest;
12. Democratic management to strengthen popular participation in the decisions of city development.

Retrieved from <http://planodiretor.jundiai.sp.gov.br/2016/01/confira-o-documento-jundiai-voce-e-o-novo-plano-diretor-participativo/> (accessed April 2016, own translation).