

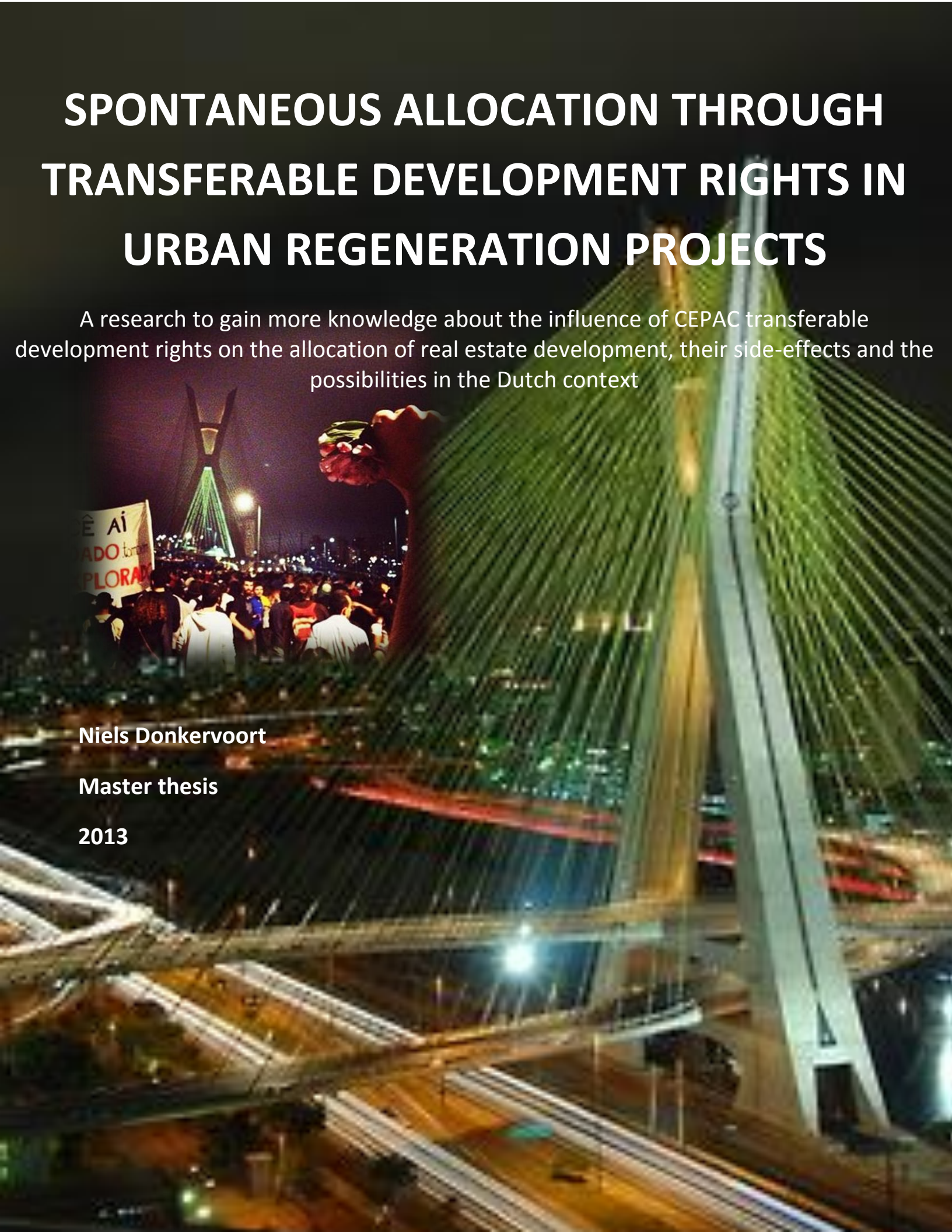
# SPONTANEOUS ALLOCATION THROUGH TRANSFERABLE DEVELOPMENT RIGHTS IN URBAN REGENERATION PROJECTS

A research to gain more knowledge about the influence of CEPAC transferable development rights on the allocation of real estate development, their side-effects and the possibilities in the Dutch context

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**Spontaneous allocation through transferable development rights in urban  
regeneration projects.**

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rights on the allocation of real estate development, their side-effects and the possibilities in  
the Dutch context***

**Keywords**

**Urban regeneration, transferable development rights (TDR), CEPAC, spontaneous allocation**

**Colophon**

This research is performed during the master program 'urban and regional planning' at the Radboud University Nijmegen in collaboration with Mackenzie University and The University of Sao Paulo (USP).

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***"There is no decision we can make  
that doesn't come with some sort of  
balance or sacrifice" -Simon O. Sinek***

## Abstract

This research aims to contribute to the international planning context through new insights in the use of transferable development rights, based on the CEPAC system in Brazil. It has been performed in the scope of an international changing planning context with the city as a central place in the society, a shifting responsibility for planning towards the market, greenfield development traded in for inner-city redevelopment and towards strategic planning approaches. The outcomes for this research can be useful to critically reflect on the current the approach in Brazil and for adaptations on TDR systems in new and existing contexts.

In Sao Paulo has the CEPAC system been introduced to capture value from real estate developments. CEPACs are transferable additional development rights and are sold in public auctions. The revenues are used to finance public infrastructure within the project area. CEPAC transferable development rights are used in line with the property rights approach. The owner of the CEPAC right should become the residual claimant over the rights through the inclusion of externalities by using the subsidiarity rule to achieve a total welfare optimum.

The research has been performed within two changing planning contexts, Brazil and the Netherlands, between March 2013 and September 2013. It has studied the use, effects and possibilities for CEPACs through relating these rights to the property rights approach and spontaneous allocation, based on Webster & Lai (2003). The research has been performed through four case studies, desk research, four exploring interviews and 16 semi-structured interviews to peer into the effects and possibilities of TDR.

The provided information from the Brazilian studies have been used to explore possibilities for TDR in the Netherlands in the second stage of this research. But it has to be considered that the Dutch context is different than Brazil. Nevertheless, this does not mean that we cannot learn from the approach. This research used the strengths and weaknesses from the Brazilian approach to explore new possibilities for the Dutch context which resulted in a retrospective TDR approach. It connects an allocative development approach to a reversed allocative demolition approach to balance the market and is further described in chapter nine.

This research concludes that the, in theory described, allocative market behaviour does happen in practice through the CEPACs. The CEPACs are valued through a system of supply and demand and are obtained by the party who values these rights the most. The system does influence the allocation of the market and makes partly use of the subsidiarity rule to include externalities, when the preconditions are met. However, these preconditions are critical since the current approach does not ensure the socio-economic and GDP growth of Brazil which are necessary in the future for the approach to be effective. The current approach will not lead to a total welfare optimum since not all externalities are included. This is impossible through time and context, which implies that planning will always require some kind of regulative framework and cannot be left to the market.

## Preface

With this thesis am I concluding the MSc program urban and regional planning, with a specialisation in real estate and land management at the Radboud University Nijmegen, faculty of management sciences. This research aims to contribute to the current knowledge of transferable development rights approaches in spatial planning, based on the property rights approach and the practices in Brazil.

This study has focused on the allocative influence of the CEPAC transferable development rights. It also provides useful information about the possible side-effects of such an approach and explores the possibilities for transferable development rights in the Netherlands. My interest in urban redevelopment programs and new, market led approaches, inspired me to perform of this study and led to this thesis as result. The fascinating experience to explore new approaches in urban planning, in a country where areas are being redeveloped in a pace that we, in the Netherlands, almost cannot imagine has added extra value to my knowledge which I hope to use soon at Turner & Townsend Europe as of September 2013.

Professor E. (Erwin) van der Krabben has offered me the opportunity and academic connections to perform my research in Brazil and I am very grateful for this. I have used the facilities from the CAPES NUFFIC collaboration program from the University of Sao Paulo, the Mackenzie University and the Radboud University for this study and would like to thank these universities for their collaboration to my research. Furthermore, I would like to thank my professor, P. (Peter) Ache for his contribution, critics and quick responses on my work.

Besides the academic support goes a special thanks to Danilo Castro for his warm welcome in Brazil and to set me up with some contacts for my research, to all companies and institutions who were willing to share their experiences with me and all other persons who contained in any possible way to this research. Finally, I am very grateful to my parents who have supported me during all my studies and my girlfriend Ellen, for her patience and for support through this process.

All that is left for me is to thank you, as reader, for the interest in my research and taking the time to read it. I hope you will enjoy reading my thesis and that this research will give you, just as it did to me, new insights to spatial planning approaches.

Niels Donkervoort  
2013

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## Abbreviations

- UO Urban Operation
- TDR Transferable development right
- CEPAC Certificados de Potencial Adicional de Construção (Certificates of additional building potential)
- PPP Public private partnership
- GDP Gross Domestic Product
- ZEIS Zona Especial de Interesse Social (zone of special social interest)
- PC Personal communication during interviews, dates in table 4.2 and 4.3
- FAR Floor Area Ratio
- Sq/m Square meter
- CBD Central Business District
- CEF Caixa Economica Federal
- GREX Grondexploitatiewet
- PFI Private Finance Initiative
- PMC Private Marginal Cost
- PMB Private Marginal Benefit
- SMC Social Marginal Cost
- SMB Social Marginal Benefit
- MEC Marginal External Costs
- DBFMO Design, Build, Finance, Maintain and Operate

## 1. Introduction

This first chapter will explore and introduce the problem and objective to perform this research on transferable development rights. It will provide the relevance and reason for this research, the research question, the approach and structure of the report.

### 1.1 Exploration of the problem

Global urban expansion is a fact and a challenge cities have to deal with these days (Abbot, 2001, p. 304). Sao Paulo in Brazil is such an example of urban expansion. Brazil is the largest country and economy in South America and Sao Paulo is the economic heart of it. Brazil became independent from Portugal in 1822 and has become one of the BRICS countries, Brazil, Russia, India, China and South Africa, which are the world's fastest growing and emerging markets. The country's economy was based on sugar from the northern region from the 16th till 18th century, followed by a diamond and gold rush in the 18th century. From 1850, coffee from the state Sao Paulo became a main factor for the economy. The Brazilian industrialization started in the 1930s and after WWII foreign capital was welcome in Brazil. This caused an exponential growth in the industrial sectors (Nobre, 1994). The process of economic growth through industrialization placed Brazil on the sixth place of world economics (CNN, 2013) but the country's economic and political course has recently shown a large resistance through demonstrations and social unrest (National post, 2013).

The biggest city in Brazil is Sao Paulo. Sao Paulo's population has rapidly been growing through economic growth since the 1930s till roughly 20-25 million residents in the metropolitan region. Official numbers note that the urban growth is slowing down but cities like Rio de Janeiro and Sao Paulo attract millions of residents on the city's informal edge, while the inner-city is in decay (Levy, 2010, p. 51). The process of urbanization has caused many problems. Traffic is one of the major problems Sao Paulo is facing. Sao Paulo's growth increased the density and the city requires better public infrastructure which is currently mostly provided by roads. Roads and buildings put pressure on the city's scarce public space and are directly connected to the city's environmental challenges (Nobre, 1998).

Sao Paulo's inner-city has problems with informal housing, urban decay, obsolete areas and urban renewal. Informal housing exists due to the process of rapid unplanned urbanization (Nobre, 1994) and the inner-city areas in Sao Paulo are housing more than 40.000 abandoned buildings (Geiss, 2006). These are wastelands of old buildings, which are left for more modern buildings by companies or residents. In fact, many of these buildings are housing illegal residents. These buildings are named vertical slums and create their own social problems. Residents risk demolition of their (illegal) houses since laws do not protect these people, but offer no solutions either (UN-Habitat, 2010, pp. 20-23).

Over all the world have properties been built to house different social classes in different forms of housing. A lot of these urban (re)development projects eventually caused gentrification or even worsened the vital situation of the city as Jane Jacobs describes:

*But look what we have built .... Low income projects that become worse centres of delinquency and general social hopelessness than the slums they were supposed to replace; middle income housing projects which are truly marvels of dullness and regimentation, sealed against buoyancy or vitality of the city life; luxury housing projects to mitigate their inanity or try to, with vapid vulgarity ... expressways that eviscerate great cities. This is not rebuilding cities. This is the sacking of cities. (Jacobs, 1961, pp. 13-14)*

The quote from Jacobs above especially applies to Sao Paulo. The city has major problems with low-income housing and slums, middle class neighbourhoods which are everything but vital and high class apartments which are a statement for the separation between rich and poor. The city's urban development approaches did have these effects over the last decades. The quality of life is impoverished through the demolished vital areas, the prioritization of the car, and land speculation (Nobre, 1994).

To redevelop brownfields and abandoned areas into attractive neighbourhoods did the municipality of Sao Paulo started with urban interventions in the city, named Urban Operations (UO). An UO is "a tool for structural transformation of part of the city, basically promoted through a partnership of public authorities and private developers" (Sandroni, 2010). In several of these UOs are transferable building rights for additional construction potential used, named CEPACs. CEPACs are introduced as an incentive to the market to invest in the UO areas since it creates an opportunity to make more profit from real estate developments while the municipality of Sao Paulo captures more value for public facilities to improve the UO area (Sandroni, 2011).

Transferable development rights, like CEPACs, can be useful within the current international shift from greenfield towards brownfield (re)development (Ministerie van Infrastructuur & Milieu, 2012; Van der Krabben & Jacobs, 2013) and from government responsibility towards market responsibility (Bertolini, 2011; Carmona, 2012; Needham, 2006; Webster & Lai, 2003). Like Brazil, The Netherlands is facing the shifts towards brownfield (re)development, private incentives and many of the related challenges in a different context and proportion. The Dutch economy is currently struggling vs. growth in Brazilian and our social challenges are different since we do face a redevelopment tasks in which the municipality has to deal with inner-city slums and a national political resistance through (violent) demonstrations.

Another problem in the Netherlands is related to vacancy rates of commercial real estate. New solutions have to be found for abandoned offices and areas. The aim is to redevelop such abandoned urban areas, however there are problems in attracting investments and new users. These are related to the global economic and financial crises that put investments on hold. We are facing a challenge in which our context is changing and the tools planners have to work with should adapt to a new situation. Transferable development rights are one of the mentioned tools as a possible option to adapt to a new planning context and to stimulate the Dutch market (Dieperink, 2009; Geuting, 2011; Kantorenloods, 2011; Ministerie van Infrastructuur & Milieu, 2012; Needham, 2005a; Van der Krabben, 2009; VORM, 2006).

This research will start with a study on CEPACs and how these are used in Brazilian cities. It will further study if the CEPAC transferable development rights do have an influence on the allocation of the market, related to the theory of spontaneous order. The second phase of this research is used to explore the possibilities for TDR in the Dutch market.

#### 1.2 Research objective

The urban context is constantly changing under influence of economics, climate, social, technological development etcetera. Urban planners have to adapt the human environment, or the structure in which this is regulated, to this changing context. Spontaneous urban development (Chapter 3), through market allocation, is a way to adapt to a changing context and time (Webster & Lai, 2003). According to Needham (2006) is the market able to adapt faster to changes if they have the freedom to innovate. This research aims to provide a broader understanding about the organisation of this market-led planning approach with transferable development rights and whether spontaneous urban (re)development is an option to use as planning strategy.

Spontaneity, in this research, refers to a free allocation and this research aims studies if the UO strategy in Sao Paulo leads to spontaneous urban regeneration. This with the use of transferable development rights to capture value for public facilities, space and transport. The market led approach in Brazil, with transferable development rights, might be a useful example for the Dutch Real Estate market. This market has to reinvent itself in today's changing context towards an integrated urban approach for redevelopment with more responsibility for the market now municipalities are not able to organize this process anymore.

This research is an useful topic as (1) the Brazilian and Dutch planning context are both changing and include new stakeholders (Klaarenbeek, 2012) (2) building in 'conflict-free zones' like greenfield development, with few stakeholders, has shifted towards brownfield redevelopment, with many stakeholders, (Salet, 2008) (3) urban regeneration is becoming the new planning challenge (Scheurwater, Hartenberger and Lindberg, 2010) (4) integrated urban development in Europe is shifting from plan led to project led development (Carmona, 2010) (5) value capturing for public facilities is one of the challenges to ensure integrated development (Muñoz Gielen, 2012; Van der Krabben, 2011) and (6) new tools have to be implemented in planning to ensure sustainable development (Bertolini, 2011).

For the Brazilian context is it useful to study the effects of CEPACs on allocation now these have been used for eight years. The first effects of the CEPAC building rights are visible now several CEPAC auctions have occurred and the UO areas have (partially) been redeveloped. It is important to understand the effects and organisation of this tool before making any decisions about introducing and utilizing this tool in the Dutch planning system. Studying the use of the transferable development rights, to increase the possibilities for urban regeneration projects, can be useful for the Dutch planning context after understanding the possible effects of the tool in Brazil.

### 1.3 Relevance of the topic and the objective

Planning research is constantly required since cities are changing in time through residents, expansion, transport, social factors, context etc. (Töws & Mendes, 2011). As Webster and Lai (2003) quote: *“Interactions happen in space and time, thus making cities complex systems in which the outcome of any planned action is largely unpredictable”* (p. 3). CEPAC is a relative new tool in the market and results are just starting to show themselves in practice. Performed studies on CEPAC and TDR have been mainly associated with the increasing public value capturing (Sandroni, 2010) or on social displacement (Carlos, 2010) while this research will focus on the market stimulating effect and allocation of developments through this tool. The scientific relevance for this research is in the possibility to study whether spontaneous city development would be possible to achieve through TDR. This research tests whether the use of TDR leads to a spontaneous allocation of real estate development. The outcomes contribute to the property rights theory of spontaneous cities from Webster & Lai (2003) and to the practical use of these rights in the current urban environment. Side-effects, positive and negative, of the transferable development rights will be discussed in this research and related to the society's interest.

Research could result in new knowledge for decision making about governing complex urban transformations and becomes increasingly important in a process towards innovative urban infill development (Buitelaar & Segeren, 2010; Schetke, Haase & Kotter, 2012; 't Hart et al., 2009). Because of new challenges, which exist within the changing relationship between stakeholders, new knowledge about future public and private planning tools, like the possibilities for the CEPAC development rights, is needed. More transparency is achieved when we gain more knowledge on these processes and the systems of governance that lead to new outcomes which can help us to improve planning systems (Buitelaar, 2012).

This research will be performed within two changing planning contexts, Brazil and the Netherlands, to explore possible approaches and differences. Both countries face challenges on three important social and scientific levels of interests which this research emphasizes. (1) Urban regeneration (Geiss, 2006, Levy, 2010, Van der Krabben & Jacobs, 2013), (2) land-titling programs (Galiani & Schargrodsky, 2011; Halleux, Marzcinak & Van der Krabben, 2011; Sandroni, 2010) and (3) dynamics in regularization (Galiani & Schargrodsky, 2011; Webster & Lai, 2003).

This research can be useful for the international planning context because it contributes to scientific norms for practical situations ('t Hart et al., 2009, p. 81) and is especially focussed on the TDR tool which is widely discussed in the Netherlands (i.e. Dieperink, 2009; Geuting, 2011; Kantorenloods, 2011; Ministerie van Infrastructuur & Milieu, 2012; Needham, 2005a; Van der Krabben, 2009; VORm, 2006). This research could also contribute to the available English literature about CEPACs which is scarce. There is a need for new tools which stimulate the market in a new environment of redevelopment and private responsibility in the changing Dutch planning context (Dieperink, 2009). In addition to Brazil and the Netherlands are several other countries that use TDR, mentioned in this research too, of which especially the Valencian land-readjustment system with TDR and the 'sending and receiving' system in

the United States of America. These approaches are being discussed to relate to the Brazilian approach and eventually the possibilities for the Dutch planning system.

This research will contribute to societies that face urban regeneration challenges by studying the possible approach with transferable development rights. This related to social, financial and scientific challenges and can be seen in the need to move away from controlled development (Been & Infranca, 2012) and the global context of urban expansion (Abbot, 2001) which makes our future urban challenges, and the importance to deal with them, even bigger.

#### 1.4 Research Question

In order to meet the above mentioned problems and the objective, the following research question has been formulated:

*'How do the transferable development rights in Sao Paulo's UOs influence spontaneous urban regeneration?'*

Several sub-questions have been identified to support the research question;

- What are UOs in Sao Paulo, why do they exist and how do they work?
- How does the market system with transferable development rights in Sao Paulo work?
- Who are the parties involved in UOs?
- What are the (possible) positive and negative effects for the involved stakeholders of the UOs and the use of the transferable development rights in these projects?
- What are the externalities of CEPACs in urban regeneration?
- Does this tool works without regulation or should market regulation be integrated in the system?
- What are other important influencing factors in urban regeneration?

With a focus on the possibilities for the approach and the TDR tool in the Dutch context will an exploration be set. The second part of this research will contain this topic with an important sub-question in mind:

*'In which way can we learn from the use of transferable development rights in Sao Paulo and how is this tool suited for Dutch urban regeneration projects?'*

#### **1.5 Explanation of important terms:**

- Urban Operations / UO:

*"A legal instrument that seeks to provide local governments with the power to undertake interventions related to urbanistic and city planning improvements in an association with the private sector. It identifies the a potential area in the city that has the potential to attract private real estate investments to benefit the city as a whole"* (Biderman, Ciro, Sandroni and Smolke, 2006, p. 1).

- CEPACs / transferable development rights in Sao Paulo

*“The CEPACs (Certificates of Additional Construction Potential) are securities issued by the Municipality of Sao Paulo, used as means of payment counterpart for awarding ‘Additional Urban Law’ within the perimeter of an Urban Operation. Each CEPACs equals certain value of m2 for the use in additional construction or modification of parameters and uses of land”* ([http://www.prefeitura.sp.gov.br/cidade/secretarias/desenvolvimento\\_urbano/sp\\_urbanismo/cepac/index.php?p=19456](http://www.prefeitura.sp.gov.br/cidade/secretarias/desenvolvimento_urbano/sp_urbanismo/cepac/index.php?p=19456) on 12/05/2013).

- Spontaneous

*“It is the order that emerges as individuals and organisations are free to exchange rights and liabilities – those over land, labour, capital and other resources and over distinct attributes of these resources”* (Webster & Lai, 2003, p. 13).

- Urban regeneration

*“a comprehensive and integrated vision and action which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of an area that has been subject to change”* (Goksin & Muderrisoglu, 2005, p. 5).

### 1.7 Research approach

This research is based on the pragmatic and interpretative philosophy. It starts with the context of urban regeneration strategies in Sao Paulo and the theory of property rights and spontaneous order within the UOs. The effects of the transferable development rights are testing the theory in the urban context in this research. This results in a deductive way of working in which the outcomes of the theory are being explored in practice (Saunders, Lewis and Thornhill, 2008, p. 71 & 146). This will be done with a focus on the results of the urban regeneration strategy in Sao Paulo to see if spontaneous order, like Webster and Lai (2003) describe, exists in a system where the property rights are ‘free’ to the market. This approach will provide the required information to answer the research question. The acquired information is socially constructed and based on the Brazilian market, but the outcomes can give the changing Dutch planning context an interesting perspective to adapt its planning approach. Possibilities for this new perspective and the use of TDR in the Netherlands will be discussed in chapter 10.

To understand the outcomes and the context in which the tool is used will this research start with an overview of the current planning context which can be seen in step two of the research structure in figure 1.1. The international context will be followed by the property rights theory and the use of transferable development rights related to this theory and context. The effects of the tool will be related to the theory through the use of case studies and interviews in step 3 to answer my research question. The outcomes of step 3 will be used to explore the possibilities for TDR in the Dutch context in step 4. This will be followed by a discussion in which the outcomes of the performed study will be reflected on the theory to draw a conclusion and to answer the research question.

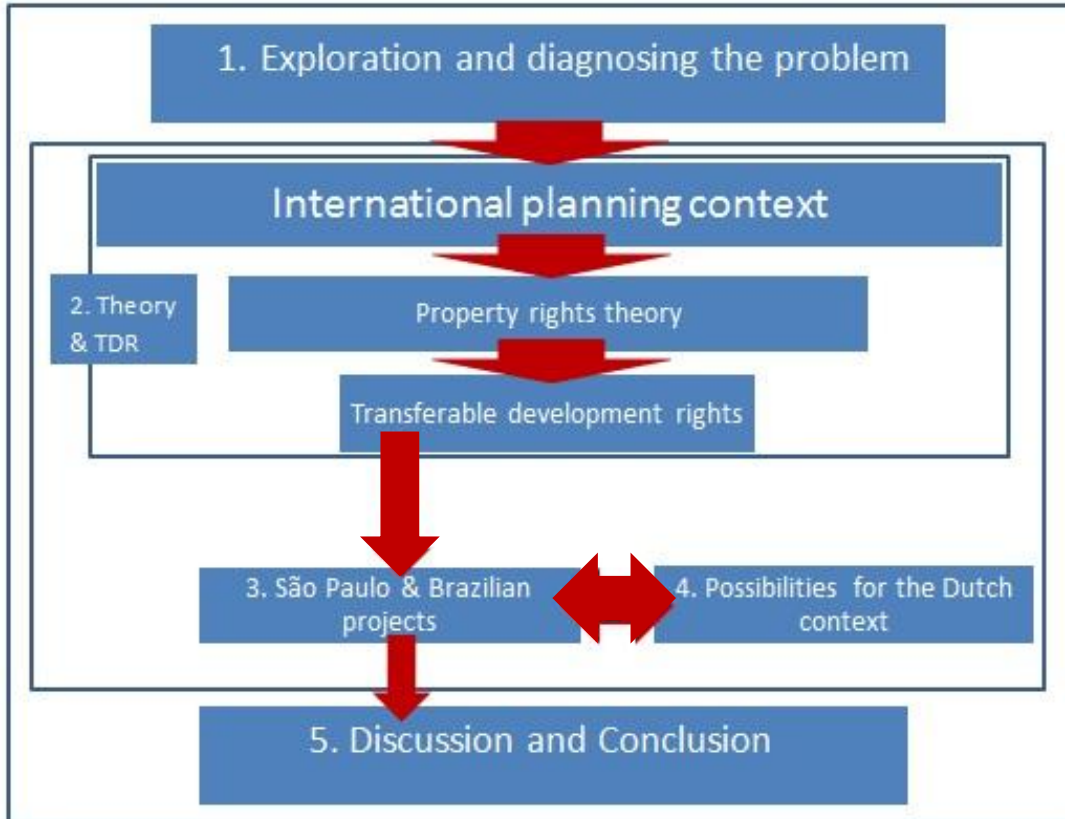


Figure 1.1: Research structure

### 1.8 Report structure

The following structure will be used to answer the research question. After this chapter the second chapter will provide more information about urban planning and current shifts and trends in planning. The third chapter will introduce the property rights approach, followed by the research method chapter four and a comparison to clarify the differences between the Dutch and Brazilian planning system in chapter five before describing the UO and CEPAC system. After studying the system have case studies been performed followed by a validation of the findings in chapter eight. Since this is the end of the Brazilian part of this research has an interim conclusion been fitted in in chapter nine before proceeding to the possibilities for TDR in the Netherlands. This research will end with a discussion and final conclusion in chapter eleven.

## 2. Current shifts and related challenges in urban planning:

While looking at our world today on television, internet, or in our direct environment, we experience urban planning and all the relations planning has with other disciplines. Planned infrastructure does influence the journey to the office and the economy, or a planned park influences how people spent their time with friends. These relations imply that the challenges we face in today's global planning context are connected to other disciplines and that we can influence these with planning (Nadin & Stead, 2008; Webster & Lai, 2003). Changes in the urban and economic context will influence our urban environment. A sad example is the current situation of the American city Detroit which has filed for bankruptcy through a declining economy (Huffington post, 2013). It implies that we cannot treat urban planning as a single focus academic and practical discipline since the urban environment is influenced by changes elsewhere.

Spatial planning is embedded in a socio-economic, political and cultural context and adjusts to internal and external pressures for change (Webster & Lai, 2003). Since each context is different, we cannot standardize the planning process under globalization because different identities enrich cities and their quality of life (Nadin & Stead, 2008). Planning is an expression of different fundamental values of a specific society (Nadin & Stead, 2008, p. 43) which implies that we must adapt planning to its context. Still, there are approaches in which we can use generic and specific rules and tools for planning in different situations (Needham, 2006) since these approaches suit the same system of governance but facilitate the freedom for different outcomes.

Several movements / shifts are happening in the international planning context. These can be divided in four important shifts; (1) more people are attracted to the city, (2) a movement towards private responsibility, (3) a movement towards redevelopment and (4) a movement towards strategic planning. These shifts have effects on planning systems that have to adapt to a changing context. A consequence from these shifts is that the Dutch method of value capturing is not effective anymore. What the consequences are for planning and value capturing are being described in this chapter.

### 2.1 Attraction of the city

Cities function as 'places of hope' since cities keep growing, under the influence of new residents who are attracted by economic growth (Ache, 2011, quoting Friedman, 2002). Growth related challenges are present globally and are related to land use planning. Through the current growth related pressure on land is it important to use land effective to fulfil all our requirements on the short and long term.

A successful city requires a vision and good governance to provide all necessary facilities (Ache, 2011). But these growing 'places of hope' create problems too. Urban opportunities have their side effects (Ache, 2011; Nijkamp, Van den Burch & Vindigni, 2002). Cities develop themselves as accumulated centres of wealth and knowledge (Webster & Lai, 2003, p. 50), and attract people who are looking for a better life (Ache, 2011). Urban expansion through economic growth occurred in an exceptional large scale in Sao Paulo the last decennia's and caused new growth related urban challenges.

There are many growth related challenges. First example is urban sprawl, which is internationally recognized and considered as a challenge causing changes in planning approaches (Nadin & Stead, 2008). Urban sprawl is regularly mentioned in relation with environmental, infrastructural and land use challenges which we face today (Bertolini, 2011; Cervero, 2000). Secondly is the shift from industrial growth towards a knowledge economy, globalization and de-industrialization (Jalaludin et al., 2012). Upcoming footloose industries require cities which can quickly adapt to their preferences. This instead of the old mono-functional industrial areas which are in decay, like Detroit currently is (Huffington post, 2013). The currently changing context requires quick adaptation's in the planning system and is causing a shift from public to market-led planning. This requires a new set of planning rules since the market wants to be more flexible in the shift from blue-print planning towards strategic planning (Carmona, 2010). This creates the third challenge; a new governance system which is able to fulfil this duty with quick adaptation's to answer to new economic and social demands from new stakeholders (Goksin & Muderrisoglu, 2005). Fourth challenge, which is important for the economic success of a city, is attracting the right businesses, economies and connected people (Webster & Lai, 2003). Fifth is the (financial) interest of public and private parties in planning. Both prefer projects which are profitable without high pre-investments and risks (Van der Krabben, 2013). Sixth challenge is the socio-economic aspect of planning. The organization of space is important to solve socio-spatial challenges in planning (Lungo & Baires, 2001). Last challenge, which applies to Brazil, is the economic growth which has caused segregation between rich and poor. This has been reflected in the current social and political unrest throughout the country which was originally based on transport-prices but broadens its critical position towards politics, economy and large property developments related to mega-events.

Megacities, like Sao Paulo, have risen under the trend of industrial globalisation and face growth related challenges (Ferreira, 2000). Land use regulation for residents are in many cases not provided and the environment is suffering under (uncontrolled) urban growth (Brennan, 1999). New systems of governance and tools have to be developed to deal with challenges and to improve urban quality of life (Buitelaar, 2003; Wegener, 2009). It is a future challenge to create strong socio-economic, diverse, attractive, cohesive, green, sustainable and healthy cities. The success is dependent on forms of governance, the stakeholders and objectives (Wegener, 2009). Cervero (2000) argues that the solution lies in a more compact and smarter development approach for our (mega)cities. A sustainable approach with integrated infrastructure and facilities is required to serve residents, industries and related economies for future progress (Wegener, 2009). This will help us to develop compact but liveable cities which could attract educated residents, businesses and functions as basis for urban economy. Goksin & Muderrisoglu (2005) mention the importance of flexibility and creativity in a strategic urban plan that is based on a few important factors which can cause an agglomeration of positive factors.

UOs in Sao Paulo try to deal with urban challenges through several large interventions and new planning tools which combine law, land use and market interest. Planning with TDR, like CEPAC, could, in theory, cause an agglomeration of positive factors to solve the current challenges since it aims to attract these positive factors through economic incentives. TDR, is seen as a tool to stimulate the market and to capture value for public space, facilities and transport (Walls, 2012). It provides more freedom and

responsibility to the market. This in contrast to master or blue-print planning which is based pre-set and inflexible systems which requires strong state power for regulation and control (Carmona, 2010).

## 2.2 From public towards private responsibility

Planning has to deal with urban challenges in a changing context towards private responsibility and private initiatives in Public Private Partnerships (PPP) (Alexander, 2002; Nijkamp et al., 2002; Van der Krabben, 2009). This corresponds to a more liberal vision which proposes freedom for individual property rights and possible benefits. But even Libertarians (must) accept that the state is allowed to restrict some actions as a cost for living in a society (Needham, 2006). The redistribution of regulating power between state, market and society requires new policies that determine the regulatory space to use individual rights. Since the market struggles to serve the public interest does the current shift emphasize the need for new structures of governance in which public and private interests are insured.

Planning exists to serve the public by steering developments and to recover money for public facilities (Van der Krabben & Jacobs, 2013). In this way do public parties fulfil their planning duty. Through public involvement do public parties have a guarantee for the outcomes, quality and are able to recover costs or to capture value. Where cost recovery only covers the costs for public facilities (Samsura & Van der Krabben, 2013) does value capturing allow municipalities to capture (a part of) the increment value through the changes in zoning laws (Brown & Smolka, 2007). This can be done through different mechanisms and tools, like CEPACs. Private parties are simply involved in this business since they can make profit with urban and real estate developments, which is their objective (Webster & Lai, 2003).

There is a common misunderstanding that there is a choice between planning with or without rules (Needham, 2005a). Public parties give the market a certain level of freedom through rights. Webster & Lai (2003) explain that it is not a question of planning by the public or by the market but about the process and rights. Planning is happening to achieve certain public goals. In the welfare-state, planning happens with strong government involvement, which is criticized for being slow, un-effective and not able to respond to the society's requirements (Buitelaar & Needham, 2007; Webster & Lai, 2003). Some say that this planning process should be handled by the market since it is able to better and quicker adapt to the society's preferences (Needham, 2006). Public planning approaches are in many situations too much based on the interest of the government instead of on the society's interest, which the government should represent (Needham, 2006). The society influences politics only ones in the four or five years while they influence the market every day (Webster & Lai, 2003).

Others, like Deakin & Allwinkle (2007), argue that the neoliberal market tries to create a vicious circle which is only good for their own profit. They advocate a plan-led approach instead of market-led approach to ensure the society's interest through the development of social capital. But Needham (2006) proves that the society's interest is not always guaranteed by the state since regulation could hinder innovation. Webster and Lai (2003) argue that when the system does not meet the society's interest, the property rights are not well defined since the market does not bear the full effects of its action. Needham (2005a & 2006) argues that the market needs a system to work in, but that planning is not only to the market within a, by the public defined, legal system. The public interest becomes more

important within the current shift towards market responsibility now the market has to react to their preferences (Alexander, 2002; Mueckenberger & Jastram, 2010). It implies that an optimal result is dependent on the interests of all three stakeholder groups, state, market and society (further fig. 6.3).

## 2.2 Towards (re)development

The current planning context is shifting towards redevelopments. This does especially apply to the Netherlands with a shift from greenfield to brownfield developments (Carmon, 1999; Goksin & Muderrisoglu, 2005; Van der Krabben, 2009). According to some is regeneration becoming the new challenge for planning systems (Scheurwater et al., 2010). The shift towards brownfield development implies developing with more stakeholders and more possible conflicts (Salet, 2008; Van der Krabben, 2009). Planning has to deal with these challenges in the redevelopment process and the integration of all positive and negative effects becomes more important and complicated.

The new planning context of redevelopment / regenerating of urban areas and dealing with new stakeholders is described as 'third generation urban regeneration' with spontaneous processes led by private companies or PPPs (Carmon, 1999). The third generation follows the first era of the bulldozer from the 1930s and the second generation of physical upgrading; urban renewal. The third is urban regeneration which is; "*a comprehensive and integrated vision and action which seeds to bring about a lasting improvement in the economic, physical, social and environmental conditions of an area that has been subject to change*" (Goksin & Muderrisoglu, 2005, p. 5). Different between the second and third era is that renewal is only physical and regeneration is based more on a strategic, lasting approach which stands for a more equal relationship between stakeholders (Carmona, 2010; Goksin & Muderrisoglu, 2005). For this, regeneration requires partnerships or collaborations to cover challenges.

Deakin & Allwinkle (2007) argue that the current approaches are mostly focussed on the physical part of redevelopment. Social factors and sustainability should also be integrated to create a basis for a lasting success (Ache & Anderson, 2008; Allmendinger & Haughton, 2010; Cowell & Owens, 2006; Tewdwr Jones, 2013). Partnerships with the society, based on technologies, skills, innovation and training make it possible for citizens to become involved in regeneration and should be integrated for future successes. This will develop social capital, integrity, equity and democratic renewal (Deakin & Allwinkle, 2007).

## 2.3 Towards strategic planning

In urban planning are currently various upcoming trends, like the shift towards market responsibility and redevelopment as mentioned above. There is also a current shift in planning from 'project development' towards 'area development' while we see a shift in Europe in the approach of planning from 'master planning; towards 'planning through projects' (Carmona, 2010). How this could be stimulated, regulated and structured to ensure the best results is an on-going learning process towards a new style of planning. Carmona describes the new style which planning needs as the following;

*Master planning requires strong state powers of intervention, regulation and control and for most of the 20th century the intervention of the state to stimulate markets and to correct market failure was recognized as legitimate and necessary. In the current period the dominant view has*

*now identified these types of intervention as generating supply-side constraints, distorting factor prices, stifling initiative and encouraging 'rent-seeking'. Under these circumstances a more flexible planning style is needed which requires less regulation and state intervention and which facilitates competition and the development of markets. This planning style is strategic planning (Carmona, 2010, pp. 13-14).*

Strategic planning influences the use of land in an on-going relocation process through spatial adaptations which have social and economic impacts. The most important factor in this process is the ownership of property rights (Needham, 2005a; Webster & Lai, 2003). Rights allow the owner to take action. But owners are restrained to handle to their own preferences in the market through the protection of other people's rights. Planning is being criticized for this (Needham, 2006). It can be said that urbanisation is a co-operative and spontaneous process between public and private stakeholders under influence of the assignment of property rights (Webster & Lai, 2003). This strategic planning style, based on property rights and market preferences, could decrease negative effects of master planning and aims to achieve lasting improvements (Carmona, 2010). Public and private parties play an important role in the process through ascribing property rights. How this could be regulated and structured for the best results is an on-going learning process towards new planning styles which suit a constantly changing context.

## 2.4 Concluding

Planning responsibility for private stakeholders implies the responsibility for the organisation of the city with all required facilities (Van Melik, 2008). Space and facilities have an important role in the city. These influence the city's quality and investments in it are required to be competitive. Urban quality influences the success of the city as it has to attract residents and businesses which is related to socio-economic success (Dowall & Clarke, 1996; Webster & Lai, 2003). The urban quality does reflect itself in real estate values, from which the market can profit (Levine & Inam, 2004).

Sao Paulo invented the UO system to improve the urban quality in the 90's while the Dutch municipalities still used a pro-active approach to fulfil their planning duty. This system proved to be unsuitable for today's context since the intervening market in planning (Van der Krabben & Jacobs, 2013). Private parties made profit without being obliged to invest in public facilities, named the 'free-rider' problem. New tools to capture value for the development of public facilities and long term social capital are needed within planning systems (Deakin & Allwinkle, 2007; Van der Krabben, 2009).

The organisation of urban development and planning tools are important to achieve planning goals within a new system of governance. Current changes, like the shifts mentioned above, imply that the state should find new ways to adapt their planning strategy to ensure integrated (re)development and value capturing over land to finance public facilities. New planning styles should be more flexible to adapt to a changing context and integrate all required facilities (Carmona, 2010). The CEPAC system in Sao Paulo could be a solution for this challenge and is based on property rights to achieve an urban optimum. This approach will be described in chapter six after the property rights theory in chapter three and a comparison between the Dutch and Brazilian planning approach in chapter five.

### 3. Property rights theory and spontaneous allocation

A more flexible approach is required to adapt to the current changes in the planning context, especially in the Netherlands (Van der Krabben, 2009). More flexibility can be based on the distribution of property rights to achieve a financial and social optimum through spontaneous order (Webster & Lai, 2003). The CEPAC system in Sao Paulo could be a useful example for such an approach in the international context. This chapter will introduce the property rights theory and spontaneous order in relation to the current shifts and Sao Paulo's TDR approach in chapter six.

#### 3.1 Property rights and spontaneous order

The theory of spontaneous order is based on property rights theory, more specific, based on the allocation of rights and goods. Webster and Lai (2003) create a foundation for spontaneous order through a spatial interpretation of the property rights theory. Webster and Lai translated (especially) the economic theory from Coase (1960) into planning theory. This to create market structures which, in theory, allow spontaneous allocation (Webster & Lai, 2003). Since the spontaneous order approach is based on private actions does it suit the current movement towards private responsibility. Webster and Lai (2003) describe spontaneous order as the following:

*It is the order that emerges as individuals and organisations are free to exchange rights and liabilities – those over land, labour, capital and other resources and over distinct attributes of these resources (p. 13).*

This research relates the distinction above to the current shift from public to private responsibility and the required ability of stakeholders to adapt to a new system in which they have to operate. Spontaneous markets require responsive governments to create legal environments that support innovation, competition and private wealth accumulation (Webster & Lai, 2003). Rights should be translated into practice to create a legal environment which supports innovation, competition and wealth accumulation, which is described in the next section of this chapter.

##### 3.1.1 The distinction between rights and practice

The property rights system can be divided in economic and legal property rights. *“Economic property rights are the end result, whereas legal rights are the means to achieve the end”* (Van der Krabben, 2009, p. 2872). The property rights approach in planning is based on legal rights which allow a stakeholder to achieve economic property rights. This distinction in rights does create a separation between the official rights / *‘de jure’* which are assigned and the practical outcomes / *‘de facto’*. However, economic objectives are not always assured through *‘de jure’* rights since the transformation from *de jure* to *de facto* could cause changes by insufficient government institutions and time (Alston, Harris and Mueller, 2009). Alston et al. (2009) emphasize the importance of the velocity and transparency of governmental processes since changes in time do have influence on the transformation of rights and so, the outcomes. Changes through new governments or economic growth and decline cause uncertainties about the transfer from *de jure* to *de facto* which are not in the interest of the market. A clear, quick and structured process can limit these risks for the market.

### 3.1.2 A market and total welfare optimum

The market is operating to achieve its objective, profit (Webster & Lai, 2003). So does the real estate market through the development of properties. Referring to figure 3.1 does an unregulated (free) market lead to an equilibrium in which the price is determined through the private marginal cost (PMC) and private marginal benefit (PMB), related to the demand. This will lead to the market optimum  $Q$  with the price  $P$ . Producers and consumers of the product at  $Q$  enjoy the advantages from this structure but the production of  $Q$  generates external positive or negative effects, named externalities. For instance, the development of real estate requires the displacement of former residents, demolition of historical buildings and increases the traffic flow. It implies that the optimum  $Q$  is not the society's optimum since these externalities have not been taken into account. The sum of these marginal external costs (MEC) and the private marginal cost is named the social marginal cost (SMC).

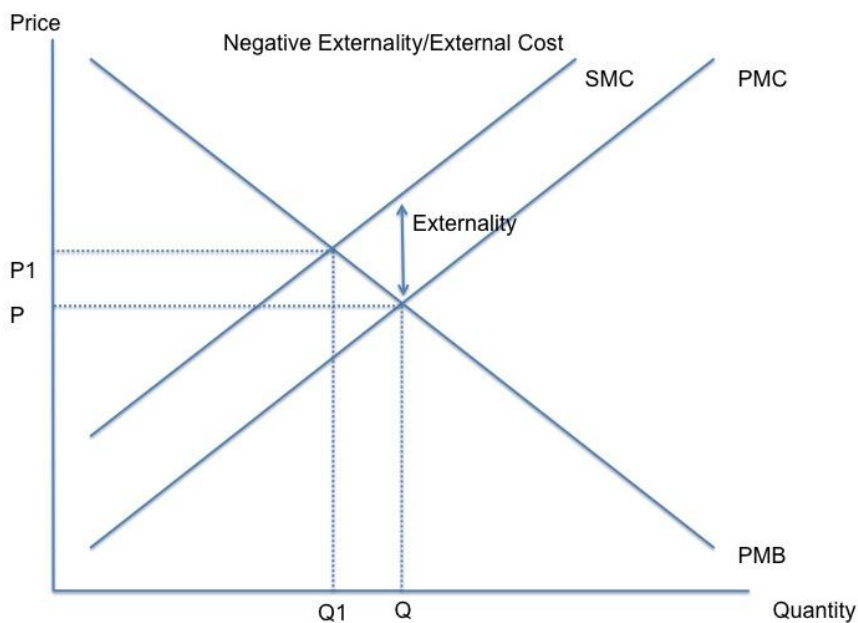


Figure 3.1: Standard negative externality. Source: <http://ansish.files.wordpress.com/2010/02/negative-production-cost-externality2.jpg> on 15/09/2013.

By including the MEC in the SMC could a new optimum be achieved in which the price of a good has been shifted from  $P$  to  $P1$  by taking the externalities into account. This refers to the Pareto Optimum the SMC. The Pareto optimum is the optimum of an action and its full effects when no stakeholder can profit more without hurting another stakeholder more than his own profit for that action. Since all economic activities are the exchange of bundles of goods, like ownership and rights, should these be in the hands of the party who values these most (Webster & Lai, 2003). Eventually will this benefit the total society since all resources are owned by the stakeholder who values these the most and all externalities are included in the SMC. When this process happens spontaneous could this lead to a spontaneous optimum of the allocation of goods in which the market achieves  $Q1$  through internalizing externalities (Galiani & Schargrotsky, 2011). Halleux et al. (2011) describe this as: *“The allocation of resources is such that all the improvements for the parties involved have been exhausted”* (p. 888).

Rights and goods will shift under influence of scarcity, as a consequence of supply and demand, towards private goods. The value of rights increases since the new owner excludes others from using the rights as is illustrated by the arrows in figure 3.2.

	Excludable	Non-excludable
Rival	Private goods	Common pool resource
Non-rival	Club good	Public good

Figure 3.2: Dynamic typology of public goods. Source: Webster & Lai, 2003, p. 136.

Changes in the property rights regime, as in figure 3.2, will happen through a process of rising demand, institutional evolution, property rights reassignment and since pure public goods tend to become congested (Webster & Lai, 2003). These shifts from public good to a common pool resource and towards club goods are seen in Sao Paulo through the pressure on urban facilities. Goods become a rival common pool resource, till the moment private parties derive the property rights to exclude others. At this moment the goods are non-rival and accessible to a specific group, club goods. When this becomes rival can it shift towards private goods. The shifts improve the efficiency of a good, since the stakeholder who values these rights the most will derive the right to exclude others and to utilize this good till his or her requirements (Van der Krabben, 2009).

Relocation of goods contains transaction costs which influence this process. Relocation will occur when the possible profit is higher than the transaction costs through better bundles of goods and rights. Footloose stakeholders have lower costs to relocate and are in a position to encourage or force (local) governments to operate more efficiently (Webster & Lai, 2003). In this case are planning and economy interconnected and is it impossible to exclude the market from this process (Needham, 2006). The market’s preferences have to be included to be effective. But since markets are working for their own (short term) self-interest must these be regulated or structured in planning as Canan (1913) explains;

*“The working of self-interest is generally beneficent, not because some natural coincidence between the self-interest of each and the good of all, but because human institutions are arranged so as to compel self-interest to work in directions in which it will be beneficent”.*  
(Canan, 1913 from Needham, 2006, p.1)

To benefit and utilize a resource optimally is it in the stakeholder’s interest to derive the full set of property rights since it will decrease costs. A full set of property rights exists of five rights, (1) The right to use, (2) The right to exclude, (3) The right to derive income, (4) The right to sell and (5) The right to pass (Alston et al., 2009). But transactions of rights are not costless. There are exclusion costs, transaction costs and organisation costs. Exclusion costs are the costs of surveying and demarcation of resources, inclusion and exclusion. Transaction costs are the cost of coordinating the exchange through contracts or exchange and policing contracts with other parties. Transaction costs can be defined as *“Costs associated with the transfer, capture and protection of rights”* (Van der Krabben, 2009, p. 2872).

Organisation costs are costs of gathering information, making rules and policing these rules (Webster & Lai, 2003, p. 51). Acquiring the full set of property rights does in practice never happen since owners have limits to the use of goods and rights in our society. The exclusion costs in a full set of property rights are too costly for any stakeholder to reach an optimum (Coase, 1960).

The assignment of the same right to more than one owner is complex, especially in a changing context as planning is. According to Needham (2006) it is not just the nature of the rights which influences the affectivity of use, another important factor is the party or parties who owns the rights and their intention. When more parties with different intentions own a fragmented right, the more difficult an optimum will be achieved. Coase named this 'the initial assignment of rights' which is related to the organisation costs. Costs should be taken into account when assigning the property rights over goods and could be included in the ownership of property rights. Questions as '*who owns which percentage of the risk and profit under different circumstances?*' are important, but very complex to answer. PPPs and consortia do risks these problems. Nevertheless, even with the complex struggles of the system, the property rights approach can account for business cases since it recognizes the inefficiencies of the market and tries to reach optimal profit (Halleux et al., 2011).

It is important to understand under which conditions spontaneous order solutions are feasible since the transaction costs are (almost) never zero. This means that optimal allocation cannot happen (Coase, 1960). It implies: "*When the transaction costs are positive, it does matter how we have defined and attributed our property rights*" (Buitelaar, 2007, p. 22). Second, the Q1 optimum from figure 3.1 which includes the society's requirements should be internalized while deriving the rights. Defining and attributing rights over building potential and including externalities to achieve the allocation of goods is what the CEPAC system does. The inclusion of these externalities is covered in the following section.

### 3.2 Externalities and market failure

Assigning property rights over goods while taken the externalities into account is important for lasting results. "*Externalities are resources for which markets, or more generally allocative institutions are underdeveloped, missing or are artificially restrained*" (Webster & Lai, 2003, p. 143). Shared resources (figure 3.2), like public goods, are those resources which are not coordinated through markets and can cause large urban challenges. Webster and Lai (2003) explain this; "*Greater competition for shared resources like roads, open space, rivers, water, air and views means that the physical externalities spun off from production or consumption processes (...) cause greater nuisance*" (p. 142). Problems with externalities are that they (1) are unprized, (2) can lead to wasteful competition costs, (3) solutions impose their own transaction costs and (4) moral arguments, like social exclusion (Webster & Lai, 2003).

#### 3.2.1 Dealing with externalities

To eliminate or reduce negative effects should the system assign property rights over externalities since: "*the outcome for any externality problem will depend on the distribution of property rights*" (Webster & Lai, 2003, p. 104). According to Webster and Lai, externalities should be internalised in the assignment of property rights to move the optimum from Q to Q1 (figure 3.1). This should be taken into account

while distributing the property rights over resources (Coase, 1960). In this case will the residual claimant, the party who derives profit, bear the full effects of his action. This is named the subsidiarity rule and is a solution for the (re)assignment of property rights (Van der Krabben, 2013; Webster & Lai, 2003). Webster and Lai (2003) describe the subsidiarity rule as: *“The owner(s) of the total value of a contract bear the full effects of their actions. This creates an incentive to deploy resources efficiently because they are the residual claimant over the total value, included the externalities”* (p. 11).

Coase (1960) argues that solutions to deal with negative effects must be found in an action which stimulates the market to be innovative and progressive. Only this can lead to a total welfare optimum, the SMC. Old rules and the lack of flexibility make planning time-consuming and cause uncertainties, like the *‘de jure – de facto processes’*, which increase costs. These obstacles occur when regulations do not allow innovative developments. It restricts growth ambitions and prevents further investments. This does not meet the ambition to achieve a total welfare optimum (Schmidtchen, Koboldt, Helstroffer, Will, Haas and Witte, 2009). Van der Krabben (2009) explains the importance of a new approach, which suits the changed planning context as the following;

*The choice for the intervention depends on the total welfare effect. The efficiency rules can be helpful to select the best alternative. If we are able to internalise external effects by assigning property rights over them, spontaneous order solutions may be able to treat the externality more efficiently than planned order solutions would do* (Van der Krabben, 2009, p. 2876).

Economic efficiency refers to a situation in which resources are allocated optimally (Van der Krabben, 2009). Important for the success of land-titling through property rights is the allocation of these resources (Webster & Lai, 2003, Van der Krabben, 2009), but practical success is not (yet) present in inner-city urban areas (Galiani & Schargodsky, 2011). This might be caused by the recent shifts to which the system has to adapt, worsened by the economic crisis. Transferable development rights, based on property rights, could be able to adapt to these shifts, internalise externalities and stimulate the market.

### **3.2.3 Critics; public or private responsibility?**

The property rights approach could, in theory, be a solution for current planning challenges but is criticized too. Except from applying the subsidiarity rule are there more options to deal with externalities of which some criticisms argue to be more effective. This section provides an overview of these critics from opponents and counterarguments from proponents.

Critiques on the property rights approach do argue that the approach supports capitalism which is, according to them, the problem in the economy on which planning is dependent (Harvey, 2009). But according to other scientists market failure exists when the market is not free to allocate resources (Levine & Inam, 2004; Needham, 2006; Webster & Lai, 2003; Van der Krabben, 2009). Levine & Inam (2004) argue that this is a planning failure since the market operates within the rules of planning to gain maximum profit. The inefficient practical outcomes of projects can be explained through the property rights theory and its connections with niche markets and externalities (Kim & Mahoney, 2005). According to Kim & Mahoney (2005) does the property rights theory has a substantial value to explain

and predict market phenomena's which could be applied in strategic management. This can be useful since the market will always look for the allocation to increase their profit in a system where the price coordinates activities.

Second critique is from Pigou who argues that the government should regulate market failure by restricting the market or making the market responsible for public damages through tax, named 'Pigouvian tax' (Schmidtchen et al., 2009 quoting Pigou, 1920). But here is a divergence between a private goal and a social product. The polluter is, according to Pigou, liable for the social cost of his actions. This could be taxed or restricted as Pigou proposes but negative effects can also be integrated in the subsidiarity rule which creates a 'total cost of ownership. Coase argues that this more desirable since it will reach a total welfare optimum (Webster & Lai, 2003 quoting Coase, 1960). Webster and Lai (2003) argue that the market can solve these problems itself if the market can organise this system:

*Regulations may confer advantages upon producers but they are, by nature, less flexible than taxation approaches. Tradable quotas, on the other hand, allow producers to make their own decision within a regulatory regime to the advantage of industry but without compromising the goals of the regulations (Webster & Lai, 2003, p. 170).*

The assignment of property rights through this rule influences the private optimum, which moves towards the total welfare optimum, Q1 (figure 3.1). The party who values a good or right the most should be the owner of the property rights and so, the residual claimant. The residual claimant will value the rights equal to difference the rights can make compared to the next best use, related to his own profit (Schmidtchen et al., 2009).

A third problem are practical costs to operate in the market. These do influence the practical optimum, which is different than the theoretical optimum (Coase, 1960). Transaction costs and externalities will influence the allocation of property rights. This implies that economic success, optimal profit, is an exception, rather than a rule (Kim & Mahoney, 2005 quoting North, 1990). Coase (1960) argues that the total effects of an action should be taken into account before assigning property rights. A new optimum cannot be achieved in this process since the transaction costs must be taken into account. New systems of governance have to reach a more optimal point as where we have been before (Coase, 1960).

Fourth, land use policies are created more efficient by public parties according to welfare economists. But public planning has failures as well (Buitelaar, 2003; Webster & Lai, 2003). According to welfare economists, the state should provide goods which the market cannot. Pigou (Buitelaar, 2003 quoting Pigou, 1920) sees government intervention as an effective way to correct market failure. But according to Buitelaar do we need both. Buitelaar (2003) explains that the market is a coordinating model for goods and the government is an actor. The market has to be facilitated by a government which structures or regulate the system. This implies that the market will never be free to operate. Land-use-planning is used to correct 'market failures' (Halleux et al, 2011). Webster and Lai (2003, p. 1) argue that is not the question whether the state or the market should organize land use but rather the organization

of the land use system is the important factor. The question is if this could be done centralized, via organisations, or spontaneous, by the market.

Last concern about the allocation of property rights is that developments are only available for the upper-class and cause displacement and gentrification (Biderman et al., 2006). This, in some cases, is used as an urban strategy (Smith, 2002). It implies that all externalities are not well included since economics are influenced by social factors as well (Webster & Lai, 2003). This means that there is no question of a social or economic approach, since these are related to each other (Ache, 2011). Social aspects should be taken into account to achieve economic growth and sustainability in the future.

### 3.4 Concluding:

The current planning context needs economic efficiency in which resources are allocated optimally (Van der Krabben, 2009). Through changes in the context a new, more flexible approach is needed. The property rights approach aims to achieve a total welfare optimum through the inclusion of externalities while assigning the rights. An overview how this in theory works is showed in table 3.1 below.

Objective	How
Free market allocation	Incentives instead of regulation
Market responsibility	Responsible through the inclusion of externalities
The inclusion of externalities	Through the subsidiarity rule
A new, better welfare optimum	Reaching total welfare optimum
The use of property rights	Linking the right and its externalities
Lowering transaction costs	More transparency
'de jure - de facto' problems	Improving and accelerating the process
Is the right utilized the most efficient	Subsidiarity rule

Table 3.1: Using the property rights approach

By using the subsidiarity rule will the owner of the right bear the full effect of its action. This influence the owners' decisions, which lead to another optimum in which externalities are included. In the perfect situation does this lead to a total welfare optimum in which the market makes their own, spontaneous, allocative decisions. The society's institutional structure is important to determine incentives which cause economic behaviour and performance (Alston, Libecap & Schneider, 1996). The assignment of property rights can help to conceptualise the complexity in the fragmentation of rights (Buitelaar & Segeren, 2010). Property rights should be assigned in a way that accumulates wealth till an optimal welfare optimum on a short and long term basis. Long term socio-economic effects should be considered to reach this optimum and an effective governance system for planning is required to prevent market and/or planning failures. Within a TDR system, which the CEPAC system is, are the externalities internalized and in theory should this affect the total welfare optimum through new incentives to the market (Webster & Lai, 2003, p. 166).

## 4. Research Method

This research uses multiple methods to gather data which will support to place the outcomes into a broader context and to search for a relationship between different factors (Saunders, et al., 2008, p 137). It ensures *“that the data are telling you what you think they are telling you”* (Saunders, et al., 2008, p. 146). A qualitative approach is useful to gain more insight in the actual organisation and use of the CEPAC tool (’t Hart et al., 2009, p. 249). The theoretical background and the use of desk research, case studies and interviews will make it possible to crosscheck my findings and to interpret the independent sources (Saunders et al., 2008, p. 154).

This research about the effects of CEPACs on the allocation of the market has been done through comparisons of the market-interest in specific UOs with and without CEPACs. The valuation of the CEPACs in 25 auctions in Sao Paulo and one auction in Rio de Janeiro has been used to study the price development of the CEPACs, which can be related to the popularity of an area. This is used to draw conclusions about the allocative behaviour of the market. The interviews were used to critically analyse and to confirm or reject the outcomes from the cases and secondary data for the validation in chapter eight. Positives and negatives effects of the UOs and CEPAC specific were discussed in these interviews too. This to discuss the practical use of the tool and its effects.

### 4.1 Case studies:

Case study research suites this research question because its objective to test the concept of spontaneous city development. This is based on the property rights theory and performed in the in the Brazilian context. As Yin (1984, p. 23) defines; the case study is a suited approach to investigate a phenomenon in its real life context. Gerring (2004) explains, case studies are most suited for descriptive inferences. With no aim to generalize my findings, but to analyse and learn from the Brazilian planning context would this approach contribute to the research objective and the question. This decision is made because sufficient amounts of quantitative data cannot be collected about this topic yet, since the first UO results are not yet finalized. Second, there are only two UOs in Sao Paulo which use CEPACs, which is very few if the aim of this research would be to generalize the findings. This is not my aim through my conviction that planning is under influence of time and context (Webster & Lai, 2003). Therefore, and through my aim to gain more insight in the use of the tool, does the case study approach suit my objective (’t Hart et al., 2009, p. 249). As Saunders et al. (2008) mentioned; the case study has the ability to generate data to answer ‘how questions’ and as Gerring (2004) argues; *“to peer into the box of causality to the intermediate causes lying between some cause and its purported effect”* (p. 348).

For the preparation of the case studies, have I used the 6 steps of Yin (1984); (1) Determine and define the research questions (2) select the cases and determine data gathering and analysis techniques (3) prepare to collect the data (4) collect data in the field (5) evaluate and analyse the data (6) prepare the report. Desk research has been done to gather secondary data from the case studies. This data has formed a background framework which is used during the semi-structured interviews.

#### 4.1.1 Case selection

The case studies are selected on the use of CEPACs, the availability of the active UOs and comparability of the location, economic possibilities, additional building space, social factors, involved parties and accessibility. These relevant variables give me the possibility to draw conclusions at the end of this research when discussing the effect of the CEPACs (Gerring, 2004).

Sao Paulo has 13 Urban Operations of which most can be seen in figure 4.1. The four yellow UOs, Agua Branca, Centro, Faria Lima and Agua Espraiada, are currently active. Since the nine other UOs only exist on paper yet are these therefore not usable in this study. During the current expansion of the city does the old CBD (Centro) move towards Faria Lima and Agua Espraiada which contain most of the city's businesses today and have been redeveloped under the influence of the UOs and CEPACs. Rio de Janeiro has recently introduced the UO and CEPAC system and has been included in the case studies.

The four yellow UOs have to be comparable in several relevant variables to be able to draw conclusions in this research (Gerring, 2004). Table 4.1 below shows several variables which are very important for this research since the UOs and CEPACs are based on these preconditions. Because the active UO Centro is different compared to the others is this UO not included in this research. Influencing factors are the historical centre of UO Centro which faces many social problems which the other UOs do not. UO Centro requires a different approach (PC, Bernardini & Castro). The relevant and comparable variables in table 4.1 from the other UOs gave me the possibility to draw conclusions through the discovered patterns in this research (Gerring, 2004).



Figure 4.1: Map of the UOs. Source: <http://www.skyscrapercity.com/showthread.php?t=678294> on 03/05/2013

	Agua Branca	Centro	Faria Lima	Agua Espraiada	RJ - Porto Maravilha
1.CEPACs	No	No	Yes	Yes	Yes
2.Additional m2 possible	Yes	No	Yes	Yes	Yes
3.Market interest	Little	No	Yes	Yes	Little
4.Active UO	Yes	Yes	Yes	Yes	Yes
5.Accessible location	Yes	No	Yes	Yes	Yes

Table 4.1: Variables for case selection.

Agua Branca is in some aspects comparable to Faria Lima and Agua Espraiada, but there are no CEPACs used in this UO. For this, Agua Branca suits as a reference case for the possible effects of the CEPACs in the other UOs. An interesting occurrence is the possible introduction of CEPACs in the Agua Branca UO which can be discussed during the interviews, related to the case studies. Porto Maravilha in Rio de Janeiro does suit the objective to study if this tool is usable in a different context too.

The selected UOs are different from the Dutch urban environment but as Needham (2006) argues can generic tools be used to support various outcomes. The chosen UOs are important areas for the city and contain current and future business locations and good residential areas (SP Prefeinture, 2013).

#### 4.2 Interviews:

The information and insights from the case studies will be validated during the interviews with different stakeholders to draw new conclusions, following step 5 from Yin (1984). Four exploring interviews have been done in the Netherlands to get a feeling for the urban context in Sao Paulo but are not used further in this research. Eleven interviews have been taken in Brazil to analyse the CEPAC effects and to achieve a certain level of saturation of information. To answer the last sub-question about TDR possibilities for the Dutch context are five interviews performed in the Netherlands

The interviews are all transcribed and can be found in the attachments to this research. Interviews taken in Brazil are in English and in the Netherlands in Dutch. The transcriptions from the interviews in Brazil and the Netherlands have been coded by hand (I was not in the possession of ATLAS.ti in Brazil) in five main topics and several subtopics, for effective processing and analysis of the interviews in chapter eight. The interviews in Brazil were mainly focused on the effects of CEPACs and the interviews in the Netherlands were focussed on the possible introduction of TDR. The information from the interviews in the Netherlands will be used in chapter ten, which describes the possibilities for the Dutch context. Most interviews took 45 minutes till an hour and were be focused on urban regeneration and the spontaneous use of transferable development rights and its externalities.

#### 4.4 Selection of interviewees

The interviews are done with public and private parties that are active within UOs and CEPAC, or with academics who have done research about this topic. The interviewees in Brazil have been selected on their knowledge about CEPACs and active involvement in UOs. People with different backgrounds have been chosen for the interviews to achieve a valid interpretation of the CEPAC effects. Answers from the interviews are crosschecked to reach an objective overview to answer the research question. The

population who uses the CEPACs in Brazil is little since only the municipality of Sao Paulo and Rio de Janeiro do currently have active UOs and only large development companies are able to buy the expensive CEPACs. Through the inclusion of different developers, public parties and experts on this topic does this research aim to draw reliable conclusion. Interviewees in the Netherlands have been selected on their knowledge about new tools in urban and real estate development, like TDR. To crosscheck findings and peoples vision has this research also chosen for a combination of public and private parties in the Netherlands. An overview of the interviews can be seen in table 4.2 and 4.3.

Interview	Date	Who	Background & Company	Mentioned in thesis as:
1	16/03/2013	Luís Gustavo Sayão de Moraes	Urban planner at Worley Parsons	Sayão de Moraes
2	02/04/2013	Paulo Sandroni	Former municipal secretary and initiator of UOs and CEPACs - FGH economic University	Sandroni
3	03/04/2013	Eugeni Taliberti	Institutional affairs at Tecnisa and former municipal official	Tecnisa
4	03/04/2013	Rubens Taragona and Verena Balas	Development department at Tecnisa	Tecnisa
5	03/04/2013	Luiz Guilherme Castro	Professor at Mackenzie University	Castro
6	10/04/2013	Eder Henke Nornberg and Gabriel Almeida	Development department at CBRE	CBRE
7	11/04/2013	Marcelo de Mendonca Bernardini	Municipal secretary at SMDU	Bernardini
8	18/04/2013	Eliana Barbosa	Former researcher at a real estate developer	Barbosa
9	02/05/2013	Miguel Bahury	Director at ANEFAC financial consultancy	Bahury
10	04/05/2013	Claudio Lima Carlos	Architect and professor	Carlos
11	By mail	José Rafael Zullo	Head of Cyrela business intelligence	Zullo

Table 4.2: Overview interviews in Brazil.

Interview	Date	Who	Background & Company	Mentioned in thesis as:
1	23/05/2013	Marc van Geene & Guido Kuijer	Projectmanagers at Kadaster	Kadaster
2	27/05/2013	Paul Oudeman & Marieke Klein	'Kantorenloods' at Municipal development department Amsterdam (OGA)	OGA
3	03/07/2013	Tom Bleker	Consultant real estate and area development at municipality Amstelveen	Bleker
4	09/07/2013	Anneke Dalhuisen	Project developer and initiator of Heijmans RealExchange at Heijmans real estate	Heijmans
5	22/07/2013	Hilco van der Wal	Urbanisator and Processmanager at APPM management consultants	APPM

Table 4.3: Overview interviews in the Netherlands.

## 5. Comparison between the Brazilian and Dutch planning approach

This research has the objective to study the effects of CEPACs on market allocation and the possibilities are for such a system in the Dutch planning context. To understand the Dutch and Brazilian planning contexts and the (possible) effects of the CEPACs in both contexts does this chapter compare the two different planning approaches before the Brazilian case studies. This chapter is summarized in table 5.1.

As described above, urban development is currently facing important transitions with shifts towards inner-city urban redevelopment, market responsibility and strategic planning. Large urban expansions on greenfield locations do not suit the current planning context anymore while the Dutch model is based on this approach (Van der Krabben, 2009). It could be concluded that the model is outdated for the current situation and that it requires a new approach for (re)development. The Brazilians have developed a model for their UOs which is especially focused on redevelopment. Table 5.1 (Full on next page) gives a general insight in the two different models.

Based on the comparison in table 5.1 are there four important hot topics in the Dutch current context which seem to be solved in the Brazilian model. First, the Brazilian model is based on urban development. Second, the Brazilian model is based on redevelopment of areas. Third, the Brazilian model is based on private actions and fourth, the Brazilian model has a different approach for value capturing. These four topics suit the planning shifts and associating challenges described in chapter two.

Traditionally, Dutch governments used zoning restrictions to achieve spatial goals (Van der Krabben, 2009). The property rights of the owner are affected by these restrictions which do regulate how owners are allowed to use their property (Needham, 2006). This could be considered unfair and inefficient since each owner has different rights through its location (Van der Krabben, 2009). The Brazilian model has equal property rights for all the CEPAC owners and is therefore more flexible. When this model has the desired results is it useful to study its suitability for the Dutch context.

It would be premature to argue that the Dutch model could not be effective. Therefore it is important to understand why the Dutch municipalities use(d) pro-active land development. The main reason for municipalities to be involved in land development is to steer developments and quality and to capture value through involvement in land acquisition (Van der Krabben & Jacobs, 2013). This could be reinvested in the area or elsewhere for public services and facilities which worked very well for decades.

This situation changed when private investors started to acquire land too, an overall decreasing municipal growth and more redevelopment tasks as mentioned above. Another concern is the 'two-hat problem'. This places Dutch municipalities as a profit making stakeholder in the urban development process, which they organize themselves, including all the risks which are related to the land market (Van der Krabben & Jacobs, 2013). This process should be regulated different since the current approach does not suit the changing responsibilities. Besides, there is no guarantee that public parties do a better job than the market does, under the right circumstances (Needham, 2006; Van der Krabben & Jacobs, 2013; Webster & Lai, 2003).

The Brazilian system could be an example to solve the current challenges which are related to the current changes in the planning context and the situation planning has to deal with. Table 5.1 provides a general overview of the Brazilian and Dutch system before further studying the CEPAC system.

	Brazil (UO - based on private market model)	The Netherlands (greenfield & land assembly)
1) Model based on	- Urban re-development.	- Greenfield development.
2) Definition	- <i>“A legal instrument that seeks to provide local governments with the power to undertake interventions related to urbanistic and city planning improvements in an association with the private sector. It identifies a potential area in the city that has the potential to attract private real estate investments to benefit the city as a whole” (Biderman et al., 2006).</i>	- <i>“Public purchase and development of land, in order to guarantee building developments according to public policies, to realize the full cost recovery of all public works via the sale of building plots and to capture a part of the surplus value of the land” (Van der Krabben &amp; Jacobs, 2013).</i>
3) Main purpose	- The re-development of a specific area through the stimulation of the private market by additional building rights. Less relation with city-wide planning objectives.	- To implement a local-authority-driven development program for the whole city, in close reflection to city-wide comprehensive public planning goals.
4) Land assembly	- Private companies acquire their own land to achieve development plans. Process is separated from the building permit and based on market preferences.	- Municipality acquires land which is needed for future developments and transfers these into building plots with a present building permit (zoning). Process based on municipal preferences.
5) Facilities	- Facilities are developed by a consortium which has the ability to spend the money from the CEPACs on urban facilities within the UO perimeter. Facilities are paid by the consortium from the CEPACs revenues. Public infrastructure is developed simultaneously with the private projects.	- Municipality develops all facilities before the private parties start building their plans. Facilities are paid by the municipality who aim to recoup these expenses with the sales of building plots. The municipality takes all the risks and profits on the land.
6) Value capturing	- Cost recovery through the sales of development rights, less public intervention and no risk.	- Cost recovery through the sales of building plots. High public intervention and financial risk.
7) Building permit	- Structured through the CEPAC system.	- Regulated through zoning pre-conditions.

Table 5.1: Comparison between the Brazilian urban operations and the Dutch planning approach.

Sources: Amsler, 2011; Biderman et al., 2006; Van der Krabben, 2009; Van der Krabben & Jacobs, 2013.

## 6. Urban Operations and CEPACs

Transferable development rights, like the CEPACs in Sao Paulo, could be an option to structure new governance in urban planning, related to current changes. The approach is based on incentives to the market and the inclusion of externalities in development projects.

### 6.1 Urban Operations

Sao Paulo, and recently more cities in Brazil, have introduced UOs to regenerate urban areas. These UOs (operações urbana) are officially defined as:

*“... the execution of a plan for urban renewal, promoted in specific portions of municipal territory where development potential is amplified by means of actual or proposed public investments, and where there exists interest on the part of the municipality and the private sector in its promotion. The opportunities afforded by this action are, in general, related to the possibility of public investment intensifying the use of an area, whether by improving infrastructure, or by elimination or control of environmental problems. The economic viability of the project depends upon the interest of private investors in acquiring from the city rights additional to those provided by the normal zoning regulation” (Hewitt, 2001, p.237 quoting PMSP, 2000, p.2)*

Or; *“A legal instrument that seeks to provide local governments with the power to undertake interventions related to urbanistic and city planning improvements in an association with the private sector. It identifies the a potential area in the city that has the potential to attract private real estate investments to benefit the city as a whole” (Biderman et al., 2006, p.1)*

In practice it means that the UOs aim to implement structural improvements (like infrastructure, transport and public space), occupy unused land, preserve historic buildings, minimize public investments, provide social improvements, deal with slum problems and provide other functions to the area (Sandroni, 2010). A short overview of the main interventions is shown in Table 6.1. Projects are performed under UO law which is connected to several sub-laws that serve the UO objective.

What UOs aim to do:	Example	Type of action:
1.Structural improvements	Sewage, roads, parks, bridges	Physical
2.Occupy vacant land	Attract real estate development	Economical
3.Preserve historic buildings	Restore and repurpose	Cultural
4.Minimize public expenses	Value capturing	Financial
5.Social improvements	Social housing	Social

Table 6.1: Overview of main-interventions in Urban Operations.

### 6.2 The CEPAC initiative

The CEPAC introduction started in 1995 and operated fully after 2004, when the CEPACs were approved as an instrument that could be used throughout the country. Sandroni, responsible for the introduction of the UOs in Sao Paulo, has developed the CEPAC tool to capture value and to finance public facilities.

CEPACs are used in two UOs in Sao Paulo and have recently been introduced in Curitiba and Rio de Janeiro. More UOs with CEPACs are being planned while writing this research.

Sao Paulo used Operacoes Interligadas before the UOs. It was related on the Canadian practice of ‘selling density’, based on the collaboration between Sao Paulo and Toronto (Hewitt, 2001). This law was named ‘Outorga Onerosa’ and gave developers the ability to build additional program in exchange of money. The Outorga Onerosa concluded that value had to be captured, but it was not clear how much and how (Sandroni, 2010). Value capturing was time consuming and happened while real estate projects were already started. This led to the situation in which private developments were delayed or abandoned and so, public facilities as well (Sandroni, 2010). Separating the development and payment for sq./m by CEPACs has led to a situation in which municipalities can control process and public developments.

### 6.3 CEPACs

The CEPAC building rights are additional building rights on top of the original zoning plan, used in some UOs to finance municipal investments in public facilities (Amsler, 2011; Sandroni, 2010). CEPAC means ‘Certificado de Potencial Adicional de Construção’, which is in English, certificate for additional construction potential. The CEPACs could be used to build additional square meters or to change the function of a plot through a conversion coefficient integrated in the UO law. Through CEPACs can developers change the floor-area-ratio (FAR) of a land plot and can derive more profit with a FAR from 4 than a FAR from 1 since it influences the allowed development potential (figure 6.1). The rights are issued by the city hall and sold on the Brazilian stock market, the Bovespa (Sandroni, 2010). Revenues from the CEPACs are linked to specific public infrastructure and facilities, adapted to the needs in the specific UO. It can be said that the CEPEC revenues are used to cover the MEC / externalities (Fig. 3.1). The government is also in the position to pay private companies with CEPACs. CEPAC could be used to finance public infrastructure or social housing since they have a market value. They can be used to build additional square meters on profitable locations or sold in the secondary market (Sandroni, 2010).

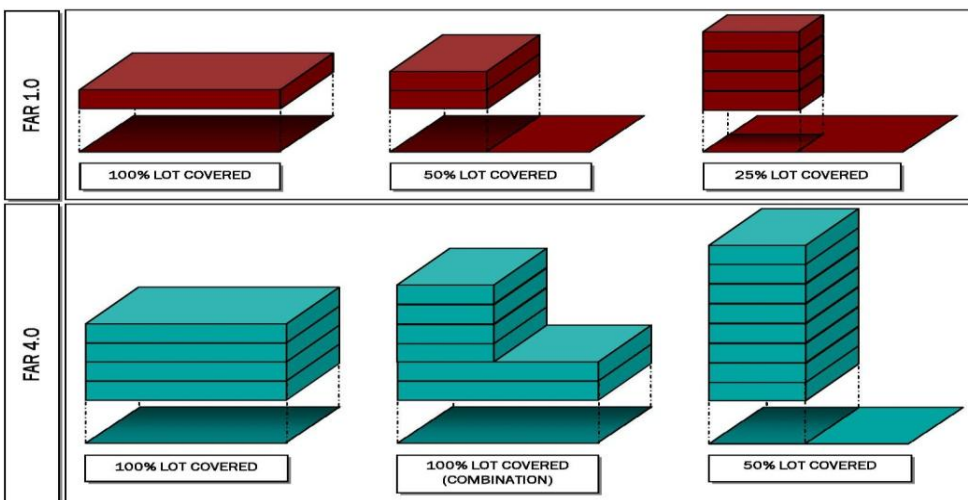


Figure 6.1: FAR example. Source; <http://dcoz.dc.gov/faqs/faq.asp> on 07/08/2013.

Figure 6.2 shows the basic principle of the CEPAC structure. Private parties buy building rights and use them for additional building potential within the UO perimeter. The revenues are used for urban infrastructure and facilities to cover (a part of) the externalities from the developments. This allows developers to make decisions to their advantage while considering the associated costs for the CEPACs (Webster & Lai, 2003). The system uses the above described subsidiarity rule and the CEPAC owner becomes (almost) the residual claimant since the revenues are used to cover (a part of) the externalities. The amount of CEPACs is regulated in the UO specific law. Every distribution of CEPACs has its maximum and is linked to specific urban interventions which are paid from the auctions revenues. The interventions are being carried out by a UO consortium which includes private parties, chosen by the municipality. The division of tasks between stakeholders can be seen in table 6.2.



Figure 6.2: CEPAC structure. Source: [www.portomaravilha.com](http://www.portomaravilha.com), 07/05/2013.

The CEPACs aim to be an incentive for the private market to invest in the UO areas through the increased development possibilities. Limited available CEPACs result in the increase of prices as it becomes a scarce good (Webster & Lai, 2003). This translates itself in increasing land prices in the areas where the CEPACs can be used (Sandroni, 2011). CEPACs are more transparent than the Outorga Onerosa, and accelerate the process. This is an advantage for developers compared to its predecessor.

#### 6.4 Stakeholders:

UOs aim is to be an integrated urban regeneration projects for a specific part of the city, based on public private partnerships, with all stakeholders involved (Sandroni, 2010). According to the aim should The UOs involve the participation of landowners, residents, the municipality and private parties. Private stakeholders in the UOs are mainly investment companies and real estate developers but (semi-public) banking funds are recently involved in Rio de Janeiro too. Through the separation between public and private developments do municipalities decrease their risks with CEPACs. The involved parties and chronological process has been illustrated in table 6.2 below.

Step	Action / Proceeding	Involved party
1	Idea	Municipality or market
2	UO approval	Municipality
3	Issuing CEPACs	Municipality by Banco de Brazil / BOVESPA
4	Subscribing for a role in UO consortium	Market
5	Selection of consortium	Municipality
6	Buying the issued CEPACs	Developers / investors (or in Rio Public bank)
7	Using CEPAC for additional sq./m	Developers
8	CEPAC revenues	To the UO consortium
9	Performing interventions	Consortium
10	End users	The market and future user / residents

Table 6.2: Involved parties in UO & CEPAC process.

The UOs are being criticized for little involvement of the society. Alexander (2002) argues that a total optimum in urban development not possible without the societies involvement. Alexander describes the collaboration between state, market and society as a precondition for a strong governance structure which is supported by all stakeholders and has an overlap in their shared interests (figure 6.3, left). Sao Paulo (figure 6.3, right) has a different structure in which the state and the market have most of the influences in the UO processes. The society is not directly presented but only through their market preferences and the political elections. This is critical according to Needham (2006) since state does not always act in the interest of the society. The overlap in shared interests between state, market and society seems not to be present in the UOs. The two UO definitions (Chapter 6.1) are both based actions of the public and the private parties without mentioning the society. The state is influenced by, and dependent on, the markets interest. The role of the society is only present through indirect political elections and by their market preferences (Biderman et al., 2010).

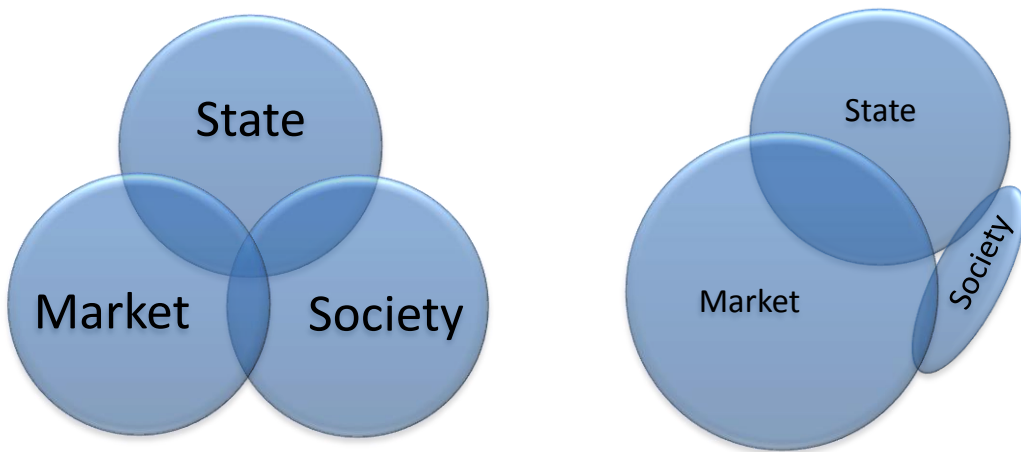


Figure 6.3: Optimal governance structure (left) and the structure in Sao Paulo (right).

### 6.5 CEPACs linked to other regulations

The CEPACs are linked to other urban regulations to ensure the desired urban outcomes. Several criticized effects of the CEPACs (Chapter 6.6) are linked to several regulations which are important to mention before deepening into the critics.

CEPACs are related to property taxes in two different ways. Since the UOs are criticized for social displacement do original residents from the UO areas receive discounts to prevent gentrification. Second is tax reduction for CEPAC owners to attract investments. Investors could receive a temporary tax discount up to 30%. Owners receive a discount on new developments but since the new properties are, in general, valued higher than old properties, does the municipal tax income increase. It is an incentive to replace or redevelop decayed buildings (Sandroni, 2010). Eventually will the municipality and property owners both profit from the tax regulation.

To obtain a building permission and to use CEPACs do developers have to present their ideas to the municipality (SP Prefeitura, 2013). In practice does this mean that the pre-set requirements for developments must be met to obtain a quick approval (PC, Barbosa). CEPACs can, through the pre-set requirements, accelerate the development pace in an UO area. Municipalities can pay developers with CEPACs instead of money, to decrease municipal investments since CEPACs have their own market value (Sandroni, 2011). Developers receive CEPACs for the development of social housing or infrastructure. With a growing demand and limited amount available CEPACs can these constructions be lucrative for public and private stakeholders.

The ZEIS law exists to offer social housing within the UO perimeter in areas which contain slums or dilapidated houses. ZEIS stands for 'Zone of special interest for social housing' which aims to offer housing solutions for low-income residents. The explanation from the UO of Biderman et al. (2006) describes how an UO attracts investments to areas with market interest and offers incentives for urban renewal in public private partnerships for a specific urban region. These incentives are attractive for the market. However, they put pressure on the social objectives, like social housing through the ZEIS (Carlos, 2010). The market would like to buyout former residents which are protected by the ZEIS law to use the land. Practical outcomes are further studied in the case studies.

### 6.6 Urban Operation and CEPAC advantages & disadvantages

The CEPAC structure has changed the Brazilian market, which has advantages and disadvantages which are mentioned below.

CEPACs are used by the municipalities to capture value. All public costs and risks will be covered by private parties who profit from the CEPACs. A neighbourhood will never be charged for developments which only profit a region elsewhere (Biderman et al., 2006). The use of CEPACs in urban regeneration could be a step towards making urban redevelopment more economically, socially and environmentally equal in Brazil. But the UO perimeter does restrict the developments to have positive spill-overs to other areas since interventions are only allowed to profit the UO area itself (Alvim et al., 2011). In practice do

the UOs improve 30% of the city where the interest from the market is already present (Ferreira, 2000). It seems that the market has influence in the public projects which are being developed from the CEPAC revenues (Biderman et al., 2006). This since the UOs are dependent on the interest from the market to acquire revenues (Sandroni, 2011).

The separation between the payment for CEPACs and the moment private parties use them has led to a situation in which the municipality generates revenues upfront (Amsler, 2011). According to Sandroni (PC) is this a great advantage for municipal developments. Municipalities can control public developments through value for public facilities which has already been captured, if the market is interested. When the market does not buy the CEPACs, developments will not start. But Nobre criticizes:

*Land speculation should be tackled by the use of the transfer of development rights mechanism that would take speculative pressures off inner city neighbourhoods. This would avoid displacement of the poorest sector of the population by a redevelopment process. The transferable development potential should be transferred to areas capable to attract investments, with under-utilized infrastructure which permitted densities are still low (Nobre, 1998, p. 89).*

Sandroni (2011) argues that through the separation of land and building rights the social functions of urban renewal is ratified. Sandroni (PC) explains that since residents are free to sell their land against any price the market is willing to pay and that residents in illegal slums are protected by the ZEIS law which should ensure the development of social housing for them.

The CEPAC building rights are an advantage for developers, since they can build more real estate. This does influence their profit. The downside is that land becomes more expensive in the UO perimeter through increasing market interest. This could make developments without CEPACs in some cases unprofitable. Therefore do some companies prefer payments in CEPACs for public projects since it gives them more development opportunities in scarce UO areas (PC, Sandroni).

Projects within UOs are approved when suiting the pre-set requirements. This accelerates the developments (Sandroni, 2011). On the other hand, the quality of building design is in many cases poor since private parties develop the cheapest option which fits the requirements and are still able to sell this through market pressure (PC, Barbosa). The urban development process does not always results in the desired outcomes since properties were built without the presence of the necessary facilities (Alvim et al., 2011). This because the private sector develops real estate quicker than the public sector can develop the required infrastructure and integrated planning is missing.

The CEPAC building rights are a tool to develop a more transparent market in Brazil (Amsler, 2011). The amount of CEPACs for an UO area is officially pre-defined but in practice do these amounts change through modifications and politics (SP prefeitura, 2013). These changes do not improve the transparency of the system since it causes price fluctuations, increases transaction costs and decreases

market trust. Sandroni mentioned this as a possible problem when the CEPACs were introduced (Sandroni, 2010). Brazil needs to develop a professional and transparent market to keep up with global economy since transparency is related to risks, trust, transaction costs, and private profit on which the market calculates its allocation (Webster & Lai, 2003).

The CEPACs allow developers to use these when the real estate market is at an optimal point (Sandroni, 2010). This can be seen as an allocation of goods in time (Webster & Lai, 2003). But postponing the use till an optimal moment could, in theory, hold further development of an area through speculation (Bernardini, 2005). In practice has this speculation not been present on a large scale. In Sao Paulo has only 3% been sold in the secondary market (SP prefeitura, 2013) and interviews point out that there is no intention from private parties to do this (PC, Sandroni, Tecnisa, Zullo). The situation in Rio de Janeiro is different since the law has been changed which and makes speculation possible.

The impacts of large projects, like UOs, raise question marks for further city development (Biderman et al., 2006). Alvim et al. (2011) argue that although the objective encourages the development of obsolete areas, these will mainly attract private investments without coordination. The UOs could result in separations since the market has the power to exclude the poor. In the organisation of space, which is regulated or structured through property rights, patterns of social differentiation and separation could become visible (Caldeira, 1996). These displacement happens through market pressure and poor governance which is currently criticized by protests in relation to politics and mega-events throughout Brazil. Caldeira (1996) argues that social and spatial differentiation in the extreme ways, like in Brazil, does not influence the city positively.

## 6.7 Conclusion

Urban Operations are urban projects which have the objective to regenerate a specific urban area through structural improvements (Amsler, 2011; Sandroni, 2010). The improvements and building potential are predefined and the selection of areas happens by the municipality in concert with the market (Hewitt, 2001). CEPACs are introduced in the UOs to capture value and the revenues will be reinvested in the area by the UO consortium in specific interventions (Sandroni, 2011). CEPACs allow developers to change the FAR or destination of land plots and are issued to the highest bidder, following the subsidiarity rule. Some argue that UO projects have limited effect on building activities and require large public effort (Ferreira, 2003). Amsler (2011) argues that, even when the CEPACs are not the only factor that influences the land market, these building rights do increase the efficiency of use. The approach is criticized since it does not solve 'real urban problems'. Social displacement and the loss of public control are mentioned critics (Alvim et al., 2011) but are a public planning concern since it is the municipality who has designed a system which the market has to use (Needham, 2006). The system has been used for eight years now and if the system is able to achieve a total welfare optimum in which all externalities are included will be studied further in the case studies and interviews.

## 7. Case studies

The case studies in this research are performed to peer into the effects of the CEPACs on spontaneous developments. This chapter contains several case studies in Sao Paulo followed by one case study on Rio de Janeiro. Rio de Janeiro has been studied to gather more information about the use of CEPACs in a different urban context which is helpful when studying the possibilities for TDR in the Netherlands. It can also be used to draw broader conclusions about the effects of CEPACs.

### 7.1 Introduction

The municipality of Sao Paulo aims to solve urban challenges in the near future through the use of UOs which aim to solve the urban problems in specific urban areas. These UOs are expected to affect 30 to 40% of the city of Sao Paulo in the near future (Biderman et al., 2006). What the effects of CEPACs are in this process, especially on spontaneous order, and if the critics from the previous described literature are well-grounded have been studied in the following case studies and the valuation of the studies in chapter eight. The cases (Table 7.1) consist of one case in Sao Paulo without CEPAC, two in Sao Paulo which use CEPAC and one case in Rio de Janeiro which uses CEPAC.

Case study	CEPACs
Agua Branca	No
Faria Lima	Yes
Agua Espraiada	Yes
Porto Marhaviha (RJ)	Yes

Table 7.1: Case studies

The broader aim of the UOs is to upgrade urban areas to a higher level, of which figure 7.1 is an illustration. How this has been done and how these projects turn out in practice has been studied in the case studies, starting on the next page.



Figure 7.1: Urban illustration. Source: <http://audi-urban-future-initiative.com/tagged/social-infrastructure> on 09/08/2011.

## 7.2 Agua Branca

The UO Agua Branca is known under law 11.774 from 1995. The UO is situated in the Northwest from the historical city centre (figure 4.1). Agua Branca is an old industrial area which is developing slowly into an urbanized residential expansion of the city.

An advantage and disadvantage of this region is its road accessibility and the Barra Funda transport terminal. The accessibility of the area is guaranteed through road, rail and river but causes a separation between different sub-areas as well. The transport lines were seen as an obstacle for decades but recently started to work as an incubator for the urban renewal (Magalhães Junior, 2005). The railroad, river and buildings refer to the previous use of this area as an industrial site with factories, distribution sites and warehouses, of which many are obsolete today (Magalhães Junior, 2005). The Tietê River is crossing the area and heavy rainfall causes natural floods since the river cannot handle problems caused by deforestation and soil sealing in the area and its surroundings (SP Urbanismo, 2013). An impression of the (future) UO Agua Branca can be seen in figure 7.2 below.



Figure 7.2: UO Agua Branca. Source: [www.vitruvius.com.br](http://www.vitruvius.com.br) on 12/07/2013

### 7.2.1 The Urban Operation

The dealing with the flood problems is one of the major tasks for UO Agua Branca. This combined with road improvements, public space and community interests (SP Urbanismo, 2013). Flood problems are aimed to resolve through large empty green spaces which are planned to temporarily capture excessive amounts of rain. Acquiring green spaces becomes possible through the Outorga Onerosa law which provides additional building potential to the developers in exchange for 45% of their land. This will be used for green space and to prevent future floods. The cleaning of the polluted river through municipal initiatives and the floodplain approach in the area should develop the riverfront into a public leisure area. But since this area is not popular for residential developments yet has this only be an ambition so far (Magalhães Junior, 2005). The market currently allocates their developments to other areas where more profit is to achieve (PC, Sayão de Moraes). But the markets preferences could change soon now Faria Lima and Agua Espraiada are becoming too expensive for developments and run out of CEPACs. According to Tecnisa (PC) are companies slowly starting to focus on Agua Branca.

The transformation of Agua Branca goes slowly. Five years after the UO start were only four residential towers build (Magalhães Junior, 2005). The developer went bankrupt through missing market interest (PC, Sandroni; Sayão de Moraes) which caused the area a bad reputation for investments (PC, Bernardini). Developments in the UO do not accelerate yet since new opportunities for developers and the society are missing while new facilities are necessary to regenerate the area (Alvim et al., 2011).

Re-urbanization of the area is the municipal goal but, despite the advantages of the region, is market interest missing (Hewitt, 2001; Magalhães Junior, 2005). Apart from the reputation does Tecnisa (PC) explain the lack of transparency in the UO. The original plan to re-urbanize the area into a high quality residential area might change now there is a new mayor, who has a new vision on this area. Tecnisa, who planned one of the city's largest high end real estate projects in this area, argues that these uncertainties cause large (financial) risks for them. Tecnisa invested money and land to be able to use the Outorga Onerosa law but now the UO might change to a middle-income area and a possible introduction of CEPACs will cause an unfair and un-transparent disadvantage to the company.

### 7.2.2 Value capturing in Agua Branca

Value capturing in Agua Branca happens through the Outorga Onerosa law for additional building potential. The total captured value in the Agua Branca was at 01/2013 R\$ 363.041.453,10 (SP Urbanismo, 2013). This is 6 times less than Faria Lima and 9 times less than Agua Espraiada which both use the CEPAC system. The introduction of CEPACs, which is currently being discussed, could improve the market interest in Agua Branca through the increasing potential profit. When these are bought by the market, further urban improvements are financially possible as is seen in Faria Lima which adopted the CEPAC system halfway the UO process. The introduction of CEPAC might increase market interest and captured value which could finance more public facilities.

### 7.2.4 Conclusion

Referring to table 3.1 in chapter three (theory) can be concluded that Agua Branca does not attract the market to the area through an incentive of increasing potential profit. Other areas in the city do offer better opportunities and the market is free to react to these. The changing majors and visions in the urban operation show the practical problems existing during the '*de jure- de facto*' process. This is causing un-transparency in the UO and increases transaction costs and the investment risks. The value of rights is related to the potential economic value and this is being threatened in this UO.

Agua Branca is an UO which has the aim to redevelop the area and does exist for many years but large urban improvements are not present yet. The main obstacle for the development of the UO is the missing interest from the market since the projects provides no incentives to invest in the area. It does suit the allocation theory that private stakeholders are in general not interested in the area since other areas do offer better financial incentives. Agua Branca suffering under missing market interest and therefore not able to use the subsidiarity rule to achieve an optimum. Uncertainties and the lack of transparency do not profit further development of the area. An introduction of CEPACs in Agua Branca makes the development process might work as an incubator for the area by increasing the potential profit but is unfair to early investors. This should increase the markets' interest, especially when

development possibilities in other areas are almost utilized. Ague Branca shows that the allocation theory does suit to the area since the market chooses for maximum profit.

### 7.3 Faria Lima

The UO Faria Lima is known under law 11.732 which has been approved in 1995. The UO consists of 650 hectares of land, southwest of Sao Paulo's inner-city (figure 4.1 and 7.3). The area has recently been redeveloped as the new economic centre of Sao Paulo, simultaneously with Berrini which is situated in the Agua Espraiada UO. The Faria Lima UO contains an Avenue, slum upgrading project, bus transport terminal and other infrastructural interventions (Neto & Moreira, 2012). Recently the Faria Lima metro station has been added and build within the UO perimeter and budget (SP Urbanismo, 2013).

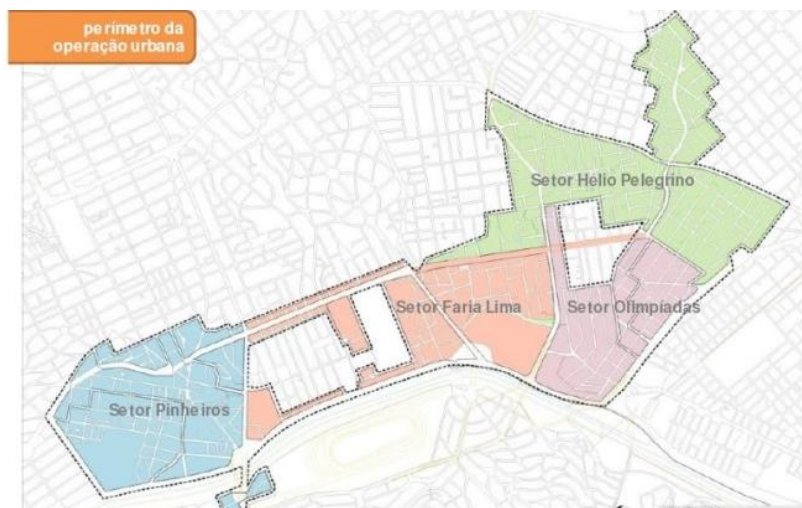


Figure 7.3: UO Faria Lima. Source: [www.skyscrapercity.com](http://www.skyscrapercity.com), on 17/05/2013

#### 7.3.1 The Urban Operation

The basis for the operation was to start with the expansion of the 'Avenida Brigadeiro Faria Lima', shortly Faria Lima Avenue, which created conditions for new development potential (CBRE, 2013). Within businesses, the UO Faria Lima has created a central location for business and trade. The growth axis southwest of the city, along the river is an expansion and relocation of the original business locations in the city centre (Ferreira, 2000) and does attract many large (financial) companies, such as the 9 of the 10 biggest banks in Brazil (CBRE, 2013). The establishment of the Faria Lima avenue has worked as an incubator for the UO project (Hewitt, 2001). The urban density grew in some areas of the UO more than 90% during the operational phase of UO Faria Lima (CBRE, 2013).

#### 7.3.2 Value capturing in Faria Lima

The pre-set requirements in Faria Lima accelerated the process to derive development permits. Verena Arantes Balas, director development affairs of Tecnisa (PC), argues that the quicker process is one of the main reasons for their company to be active with CEPACs. The CEPACs accelerate the process in Faria Lima which, through the *de jure* – *de facto* process, works as an incentive for private parties. The

accelerated process is financially attractive and through changing mayors, who have the power to change projects, very important too (PC, Bernardini; CBRE; Sayão de Moraes; Tecnisa).

CEPACs were introduced in 1995 in the Faria Lima UO law but finally approved nine years later in 2004 (Biderman et al., 2006). The Faria Lima UO consortium (OUCFL) used the Outorga Onerosa law before the CEPACs which has been translated into a full operating CEPAC system. The CEPACs in the first auction were sold for 1100 R\$ each. The value of the CEPACs raised to almost 4 times the original price in the public auctions till 4000 R\$ at the last auction (SP Prefeitura, 2013). CEPAC prices of the three CEPAC distributions can be seen in table 7.2 below. In total have 650.000 CEPACs been available till the beginning of 2013 (Financial summary at SP Prefeitura, 2013).

year	Minimum price	Price sold	Distribution
2004	1100	1100	First distribution
2006	1100	1100	
2007	1225	1240	
2008	1300	1538	Second distribution
2009	1700	1700	Third distribution
2009	1715	1715	
2009	1850	2100	
2010	2170	4000	Last Auction

Table 7.2: CEPAC prices Faria Lima. Source: SP Urbanismo 28/02/2013, visited on 04/04/2013.

The total value captured on 01/2013 was R\$ 1.935.547.391,52 (SP Urbanismo, 2013). The land prices in Faria Lima increased during the development of the UO and through the announcement of the CEPAC additional building rights. Biderman et al. (2006) show that square meter prices in the UO perimeter have increased by 14% while other areas in the city decreased by 12% in 1991-1996. By 2001, the square meter prices in Faria Lime were 81% higher compared than Sao Paulo's average. This process of rising prices started before the CEPACs were available, but the introduction announcement was made at that time. The nearly sold out CEPACs, rising CEPAC prices and risen real estate prices have showed a clear reaction from the market which can be explained through potential extra profit (Webster & Lai, 2003).

The new CEPAC system, as a part of the UO law, made it possible to capture more land increment value. The system uses the market interest in the area to capture money for the required public facilities (Sandroni, 2011). The UO generates a long term fiscal surplus for the municipality through higher property tax revenues. The property taxes have been multiplied by 2,7 till 4.4 times with a maximum from R\$179.90 sq/m to R\$802,50 sq/m in 2005 (Biderman et al., 2006). Original residents receive tax discounts to avoid massive gentrification and since new landowners bear more benefits of their relocation (Biderman et al., 2006). While the construction of commercial real estate developed exponential and the building density of the total UO area increased, the residential density decreased from 27 to 22 residents per hectare during 1985-2001 (Biderman et al., 2006). This correspondents to the new function of the area, which is mainly focussed on commercial activities.

In 2011 97.7% of the CEPACs were sold, 625.059 of the 650.000, but in December 2011 the municipality mentioned to issue an additional 500.000 CEPACs for this area in the near future (Neto & Moreira, 2012). This is one of the risks for companies who have bought expensive CEPACs in the last distribution (Sandroni, 2010). These new trends especially happen in times of changing mayors (PC, Sayão de Moraes; Tecnisa). Webster and Lai (2003) argue that such processes should be transparent to successfully apply the theory practice, which is not happening through new, uncertain, CEPAC distributions. Another concern which Sandroni (PC) mentions is the capacity of infrastructure which might not be able to handle the extra building potential and no space to develop more. The relation between infrastructure capacity and building potential gets lost.

According to Hewitt (2001) does the UO Faria Lima has two types of benefit, direct benefit for the UO perimeter and indirect benefits for the surrounding area. Castro (2006) does not share this opinion and criticizes the UO Faria Lima for being mainly focussed on the development of an avenue for high-end real estate without integrating the surrounding neighbourhoods. Castro argues that the UOs and the CEPACs for additional building rights lead to an overvaluation of land and properties. This process led to high profits for developers, who argue that the CEPACs are being very successful (CBRE, 2013; Hewitt, 2001). Neto & Moreira (2012) argue that the operation failed to create the avenue now a large proportion of the building rights were used in the indirect benefit area through the high land prices on the avenue. These developments do not match with the urban vision. However, this shows the free allocation of real estate developments within the UO perimeter. Undesirable developments could not be stopped by the city hall as they fitted all the pre-set requirements and developers have the freedom to use the rights where these realize maximum profit within in the UO (PC, Barbosa; Tecnisa). The lack of public control could in some cases result in undesired outcomes.

The regeneration of Faria Lima as an integrated UO with real estate, housing, transport and public space raises questions about unfair competition and prioritising several, more profitable, developments above others (Antonucci & Takimoto, 2011). Castro and Bernardini (PC) explain that the most profitable public developments for the private sector will happen in the start of the UO. Less profitable developments are scheduled on the long term and are not on the priority list of the (private) consortium. Rivaben (2005) argues that the 'rules of the game' are based on market preferences instead of total urban development. Alvim et al. (2011) are critical towards UO consortia as they should ensure social developments too. This will indirectly profit future real estate values since it is related to the future GDP.

Social implications in Faria Lima are seen as well. The higher middle class has been displaced by the richest 5% of the metropolitan between 1991-2000, while the CEPAC implication was in 1996 (Biderman et al., 2006). This process started in 1991 prior the CEPAC implementation, but the implemented urban operation and the CEPAC introduction did accelerate this process. Since the UO area changed from a residential area towards the urban CBD did the middleclass also left the area to other areas in the city.

### 7.3.4 Concluding

Antonucci & Takimoto, (2011) describe Faria Lima as very successful regarding real estate development and valuation. The UO offers the right incentives to the market which influences the allocation of developments. The captured value has increased in Faria Lima since the market has valued this right to the difference this can make on the potential profit. The UO consortium uses the CEPAC revenues to cover a part of the externalities which occur when the rights are being used. The quick development of necessary infrastructure did accelerated developments in Faria Lima (Hewitt, 2001) and is a missing factor in other, less active, UOs (Alvim et al., 2011).

However, referring to the transparency and socio-economic growth is the UO less successful. Through the UO mechanism is the market responsible for long term socio-economic developments, but these are postponed as other developments are more profitable. In this case does the consortium not completely use the subsidiarity rule. The missing public interest and the long term economic vision in this project are critical conditions which have not been included in the approach. Sandroni (PC) admitted that while the early UOs established to improve areas, the consequences were not taken into account through the pressure to do ‘something’ in the 1980-2000 period. Times have changed and through the current revolt against the political course should the municipality consider to include the missing links between quick revenues and future requirements. To perform this kind of operations fair to the society, should there come significant changes in the approach (Antonucci & Takimoto, 2011).

The CEPAC system has worked as an incentive to physically redevelop the Faria Lima UO area to the most developed part of Sao Paulo. This is done through effective and transparent market incentives till 2011. The mentioned new CEPAC distribution does disturb the original market mechanism and transparency of the system which turns CEPACs and real estate development into an un-transparent market system with high financial risks. It does not suit the original aim of the system and is not in line with the property rights approach since the new CEPAC distribution does increase externalities. It is not transparent and does not cover the (financial) injuries to former CEPAC buyers.

### 7.4 Agua Espraiada

UO Agua Espraiada was created under the law 13.260 in 2001. The UO area is located south of the city centre which can be seen in figure 4.1 and 7.4. The area faces problems with slums, infrastructure and the environment. The area is situated along one of Sao Paulo’s main open water sources for drainage and waste and stretches into the city along an avenue towards the Congonhas airport.



Figure 7.4: UO Agua Espraiada.  
Source: SP Urbanismo, 2013.

### 7.4.1 The Urban Operation

The main objective of the UO is to revitalize the region through investments in infrastructure, social housing, public transport and public space. The UO area does contain six neighbourhoods which are; Brooklin, Berrini, Marginal Pinheiros, Chucri Zaidan, Jabalpur and Americanopolis. In all neighbourhoods were additional developments rights (CEPACs) available with a total of 3.750.000 CEPACs till the beginning of 2013 (SP Urbanismo, 2013). This is more than 5 times the amount of CEPACs in Faria Lima. Many of the interventions within the UO are related to infrastructure and the prospect is to complete all interventions by 2019.

Most of the projects are infrastructural and based on tunnels, avenues, and a large bridge. About 10 thousand families will be removed to create a park with a tunnel below and related infrastructure. This for a 2,4km tunnel through the city and space for rainwater. Parks will be located along the waterfront of the Agua Espraiada river to serve as large pools for abundant rainfall. Affordable housing for the removed families will be provided through the ZEIS law (SP Urbanismo, 2013). A large infrastructure project in the UO was the construction of the X-shaped bridge of 353 meters high, and 900 meters of length which created an landmark for the city. The bridge can be seen on the front page of this research. The bridge aims to improve the accessibility of the area and city centre. The construction costs of the tunnel and the bridge are covered by the CEPAC revenues. The revenues were sufficient for these developments because the CEPACs are highly valued now the area is seen as an expansion of the existing business district (SP Urbanismo, 2013).

### 7.4.2 Value captureing in Agua Espraiada

The CEPACs were used from the start in Agua Espraiada but sold with a slower pace and to a lower price than in Faria Lima. This since the location of Faria Lima suited the expansion of the business district more (Biderman et al., 2006; Nobre, 1998). Possibilities for commercial expansion towards Agua Espraiada are recently discovered now the additional development rights in Faria Lima are almost utilized (PC, CBRE). Developers concentrate their current investments along the Berrini avenue in Agua Espraiada which contains even more income concentration than Faria Lima (Biderman et al., 2006).

The first CEPAC auction for UO Agua Espraiada was in 2004 and the first CEPACs were sold for 300R\$, which is only 27% of the Faria Lima CEPAC price at the same time. Table 7.3 gives an overview of the CEPAC auctions from Agua Espraiada. Overall are prices of the CEPACs rising in Agua Espraiada. The decreased price in 2008 can be explained through the new distribution of CEPACs during that year. Before the distribution, CEPACs were a scarce good. This suits the theory, which argues that prices will rise when a good, the CEPAC right, becomes scarce to the market (Webster & Lai, 2003). The total value captured 01/2013 R\$ 3.282.368.164,30 (Financial summary at SP Urbanismo, 2013).

year	Minimum price	Price sold	Distribution
2004	300	300	First distribution
2004	310	310	
2005	370	371	
2006	370	370	
2007	400	411	Second distribution

2007	411	411	
2007	411	411	
2008	460	1110	Third distribution
2008	535	535	Fourth distribution
2009	611	615,50	
2009	700	700	
2010	715	715	
2010	721,50	721,50	
2010	735	735	
2010	750	750	
2012	900	1261	Fifth Distribution
2012	1282	1282	

Table 7.3: CEPAC prices Agua Espraiada. Source: SP Urbanismo 28/02/2013, visited on 04/04/2013.

In most sectors of the UOs Faria Lima and in Berrini, Agua Espraiada, have all additional building rights been sold. This means that it is not possible for developers to increase their building potential in those areas. Tecnisa (PC) aims that this will be the moment that developers are starting to search for new locations since there are no development possibilities left for them. This process can be seen as an on-going prolongation of the allocation of real estate through the city in a system where the market is searching for the most profitable option (Sandroni, 2010).

Critical arguments which are mentioned against the Faria Lima UO are used against Agua Espraiada as well. The UOs are neighbouring areas and try to attract the same businesses, face many of the same challenges and have a comparable urban approach. The prioritization of projects with commercial interest and the limited spill-overs to other areas from the UO is criticized. The new built bridge does have its spill-over effects to other parts of the city since it connects the neighbourhoods Berrini and Murumbi (PC, CBRE). Critics say that this bridge is there to connect two rich neighbourhoods, which Berrini and Murumbi are (PC, Castro). Another similar development is the planned light rail from Berrini to the Congonhas airport which goes from the Berrini business centre through a high-income area to the airport and does profit these higher income neighbourhoods. These concerns about strategic externalities to high-income neighbourhoods are semi-based on the morel considerations which Webster and Lai (2003) mention in the theory. When the CEPAC revenues will be used for projects which are less profitable on the short term could it happen that the CEPACs will be valued lower. This as the CEPACs are valued so high because of positive effect on real estate values of the interventions. The interventions have to profit developers property values to give them the right incentive to buy the CEPACs (Levine & Inam, 2004; McKibben, 2006; Polli, 2009).

The relocation of the lower income residents for green space causes protests but is in full process. The families within the ZEIS areas will be replaced in social housing in the UO area (SP Urbanismo, 2013). Eugênio Taliberti, institutional affairs at Tecnisa, explains (PC) that social developments do not always turn out as they should on paper and that many of these people are displaced to the city's edge. Social displacement happens in these UOs under market and municipal pressure. ZEIS areas for social housing

are under pressure by the market. Sandroni (PC) argues that the ZEIS law offers some protection but that displacement in practice does happen. Despite the lack of transparency in the whole process, does the city-hall argue that civil participation is important. In practice this turns out in a different way. The mobilization, especially of the affected low-income population, is critical for resistance to demand their rights in these UOs. The ZEIS law has been proven effective in some cases since it determines that these residents will be resettled at the former slum location in new provided social housing. But, despite this determination, works in many the ZEIS areas are not started yet and relocation of the lower-classes does frequently occur (Cidades possiveis, 2013).

#### **7.4.4 Concluding**

Agua Espraiada is facing a similar urban transition as Faria Lima did before. There is clearly an expansion of the urban developments and an on-going prolongation of real estate development towards this area. Agua Espraiada is facing many of the same critics as Faria Lima too. Especially the (forced) relocation of the lower income groups is widely discussed. Since Agua Espraiada is the successor of Faria Lima in this process of urban and financial expansion can the same price development be seen in this UO, but less drastic. Agua Espraiada has captured almost 40% more value than Faria Lima but with 5 times more CEPACs. This implies that the CEPACs in Faria Lima are valued higher by the market through allocation and scarcity, which suits the theory.

The prolongation and expansion of real estate developments show allocation by a free market. The market has an indirect influence on public interventions through the valuation of the CEPACs during the auctions. This implies that allocation of the market influences the developments by the urban consortium which cannot always cover all externalities. The market is looking for the most profitable location and is taking other options into account before making decisions. Still, the performed interventions do profit the UO area and bring the area closer to a welfare optimum, the SMC (figure 3.1). But in the, by the government designed, system cannot all externalities be included. The market is allowed to utilize the rights to gain maximum profit in the system without all externalities internalized.

#### **7.5 Porto Maravilha, Rio de Janeiro**

The CEPAC system from Sao Paulo has drawn attention in other cities too. Curitiba and, as studied below, Rio de Janeiro have introduced Urban Operations and adopted the CEPACs system. Since the CEPAC system in Curitiba, in contrast to Rio de Janeiro, is not very active yet, has this city not been included in this research. Below, the case study from UO Porto Maravilha in Rio de Janeiro which could help to explore possibilities to translate the CEPAC system to another context.

Rio de Janeiro started in 2009 with its first UO, named 'Porto Maravilha' / Port of wonder. The historical port is located directly North from the city centre and is the first UO outside Sao Paulo. A map of the area is illustrated below in figure 7.5. The main idea of the UO is to create a new centrality in Rio de Janeiro for businesses and services through the development of high, modern, commercial towers, the upgrading of the waterfront and infrastructure in the area (Schwambach, 2011).



Figure 7.5: Porto Maravilha. Source: <http://www.portomaravilha.com.br/web/direito/conhecaRegiao.aspx/> on 26/04/13

### 7.5.1 The Urban Operation

With an expected growth of the real estate market, Rio de Janeiro adopted the UO and CEPAC system from Sao Paulo to redevelop the historical ‘Porto Maravilha’. The project is the biggest UO Brazil has seen so far (Amsler, 2009). The main purpose of the UO is the upgrading of the urban waterfront in the area. This in line with the following translated quote about the UO Porto Maravilha: “A set of interventions and measures undertaken by a city with the goal of bringing urban structure transformation and social improvements within a designated area of the city.” (<http://portomaravilha.com.br/> on 12/06/2013)

The accessibility of the area aims to be ensured through the development of two avenues along which most of the issued CEPACs can be used. The highest densities and profits are possible along these avenues. But the chosen locations for commercial real estate are criticized by some since these avenues are far away from the current CBD and are not connected to it (Amsler, 2011). Main interventions in the UO are related to the redevelopment of infrastructure in the area. The express highways will be demolished and replaced by underground tunnels for cars. The area will become more friendly for pedestrians and public transport will be integrated along the waterfront. But since the new solution does not increase capacity or offers smarter solutions does it hide traffic problems if public transport is not well included in the project (Schwambach, 2011).

The urban context in Rio de Janeiro is different from Sao Paulo, and this must be considered. The port is a historical area in the city which contains many historical buildings with cultural value. These buildings will be revived with the revenues from additional building rights (PC, Bahury). But in Sao Paulo, the municipality chose not to implement CEPACs in UO Centro with historical buildings since there is no vacant land. In Porto Maravilha this is (limited) available so the CEPAC structure suits the mentioned preconditions. Figure 7.6 shows the sites for additional potential in the area.



Figure 7.6: Additional building potential Porto Maravilha. Source:

<http://fernandonogueiracosta.wordpress.com/2011/06/19/plano-de-revitalizacao-do-porto-da-cidade-maravilhosa-rio-de-janeiro/> on 14/07/2013.

Historical buildings will be preserved in the UO and extra cultural buildings are added to the program, like a Guggenheim museum. The municipality of Rio de Janeiro gives developers tax incentives to stimulate the redevelopment of old buildings. The expectation is that these developments will have an effect on the valuation of the area. This is profitable since the competitiveness in Rio de Janeiro's real estate market is hard and developers will only choose the best places, which the UO aims to create (Amsler, 2009). Most important issue in the choice for allocation of developers is the possibility to make profit. The CEPACs in the UO can increase the potential profit.

### 7.5.2 Value capturing in Porto Maravilha

Value is captured through a CEPAC system in Rio de Janeiro which is comparable to the system in Sao Paulo. The only, and major, difference is that public real estate funds, like CEF (CAIXA Economica Federal) are able to buy CEPACs as well. This instead of the system in Sao Paulo where only developers can buy the CEPACs. For the UO in Rio de Janeiro is another, new, law adopted. Law 472, which allows a (semi-public) real estate funds to buy all CEPACs and sell them on the secondary market. With all CEPACs sold to CEF, the public interventions are assured since there are no financial burdens to construct these and there is no municipal risk (PC, Bahury). But the new law and financial constructions are still a high financial risk since a public real estate fund bought all CEPACs. The interventions might be ensured through the new law but the risk has shifted from one public party, the municipality, to another public party, CEF. This does not suit the UO objective to decrease public risk. The municipality of Rio de Janeiro argues that this is positive since the infrastructural interventions are assured (Prefeitura Rio de Janeiro, 2013). Nevertheless do BM & BOVESPA (2013) argue that the investments in the UOs are secured by the influence on real estate allocation by the municipality of Rio de Janeiro. The UO and CEPAC system is further based on Sao Paulo since this could be applied generic.

The new possibility had the consequence that CEF, as a public savings bank, bought all the CEPACs. Sandroni (PC) argued that this was something for which the developers and institutions in Sao Paulo were scared of when the CEPACs were introduced. While Sandroni was optimistic about the outcomes in Sao Paulo, where all CEPACs were bought by different commercial developers, are all CEPACs in Rio de

Janeiro acquired by CEF. CEF has to sell the CEPACs in Rio de Janeiro in the secondary market. This implies that CEF has the power over the additional square meters in the area and the outcomes of real estate developments since they are in a position to sell CEPACs to developers with projects they prefer. Whether this system works has to prove itself in the next years during the redevelopment of the area.

The first auction of CEPACs was in 2011 and all the CEPACs in this auction were bought by the federal savings bank, CEF. CEF argues that their purchase will ensure the revitalization of this area because all the money for the planned interventions is directly available (Porto Maravilha, 2013). But in fact this is just the money which is necessary in the current first phase and not for the total 15 year project (Prefeitura Rio de Janeiro, 2013). This is a critical point since the CEPACs have yielded 3,5 billion Brazilian Reals and the expenses in the UO are calculated 11.5 billion Reals (Jorgenson jr., 2011). This implies that not all the money for the urban works is available yet and that there is a missing gap of 8 billion dollars in the UO. This could be filled by the sales of CEPACs by CEF who must raise the price of the CEPACs to R\$ 1.787 per CEPAC sold when they invest all the money back into the UO consortium without making profit. This could happen since CEF, as a public bank in the UO consortium, has interest in the development of the area. Jorgenson jr. (2011) aims that if CEF wants to make some profit (15%) the CEPACs will be sold for 2.055 R\$ each which is almost 4 times the original price of R\$ 545 each. Real estate developers who will buy these rights for 2.055 R\$ each must build expensive buildings with high rents to make any profit. This does not suit the social objectives of the UO and could cause the same gentrification effects for which the UOs in Sao Paulo are criticized. Another option to fill the 8 billion gap is to come with a second, and maybe third, CEPAC distribution which will increase the density in the UO area and will face the same obstacles as unexpected CEPAC distributions in Sao Paulo.

Jorgenson jr. (2011) criticizes the UO for a hidden aim in the un-transparent CEPAC structure which does not meet the given objective of this UO. Castro argues (PC) that the CEPACs in Rio de Janeiro are working in a system of public money since the rights are bought by a semi-public bank. The CEPACs are offered by the municipality and bought with public money. This is not in line with the original idea and aim of the CEPACs to take away risks and investments from public institutions, since CEF is a public bank.

Second criticized point is the option to receive tax reductions for the investors in the UO. This with the aim to develop Rio de Janeiro as an global city through communication services for global economics and the attraction of multinational headquarters (Schwambach, 2011). Schwambach (2011) criticizes this as a double profit for the market, additional construction potential and tax reduction. However, despite these incentives are the CEPACs not yet bought by developers in large numbers in the secondary market. Raymundo (2006) criticizes this since the municipal vision does not meet the market interest. The lack of interest from the private sector and failure of commitment from the higher levels of government will cause delays which are a risk for the invested public money (Raymundo, 2006).

The UO is not only criticized for its financial transparency. Gentrification and loss of cultural heritage is a mentioned critic in Rio de Janeiro too (Carlos, 2010). The port area is treated as an almost empty region of Rio de Janeiro, but has around 30.000 residents. Most of these residents are from the lower classes

and will face a possible displacement from this area. Even with the possibility for social housing and services, the area will become more expensive and could cause gentrification. This could result in loss of socio-cultural heritage through the attraction of 'new people' to the port (Carlos, 2010; Cidades possíveis, 2013; Schwambach, 2011). Lima (2010) criticizes the beautiful images and promises of the UO which is named 'port of wonder' in English. Beautiful stories about the UO are hiding the social consequences, as displacement, according to Lima (2010). Lima (2010) argues that the city offers itself to the private capital through this project which is even worsened by the upcoming world cup and Olympics. The city uses these events to justify the public expenses, social displacement and quick developments since the facilities must be present when the tourists arrive (Carlos, 2010; Cidades possíveis, 2013; Schwambach, 2011). According to Carlos (2010) will the UO cause more negative, than positive consequences in the long term. Schwambach (2011) argues that these mega events can be successful for the redevelopment of a city but that the strategy of Rio de Janeiro does not matches the city's requirements. Schwambach considers these mega events as a way to circulate public and private capital. This matches the critics on the large CEPAC purchase by CEF (Castro, 2006; Jorgensen, 2011).

### *7.5.3 Concluding*

The UO and CEPAC system in Rio de Janeiro have, in general, the same objective as the UOs in Sao Paulo. Rio de Janeiro aims to upgrade the port area for its residents, the upcoming world cup and Olympics. However, the project displaces whole neighbourhoods for the development of traffic corridors and new buildings. According to Schwambach (2011) are the Olympics used as an excuse to execute these developments. This process is criticized for displacement, short term vision and other related issues which are mentioned in Sao Paulo's UOs too. Further development of the city, which is under influence of GDP growth under influence of the development of people, seems to put on hold for the physical development (Carlos, 2010; Cidades possíveis, 2013; Schwambach, 2011).

The financial CEPAC system in Rio de Janeiro is different compared to Sao Paulo. Through a new law system are public funds able to buy the CEPACs and sell the rights on the secondary market. This while the CEPAC system has been developed for the private market in Sao Paulo a decennia ago with the risks and possible profits for the market instead of for public parties. The new regulation does not match the objective to decrease public risks in these projects (Lima, 2010). Focussing on the different CEPAC structure in relation to the theory could be argued that the intervention of law 472 is a disturbance for the free allocation of the market since the government prioritizes the port area. Laws have been changed to allow semi-public funds to invest in the area which disturbs the market for developers.

Now public parties, like CEF, intervene in the development process has a new market been created. Areas with no market interest could be prioritized through public parties who ensure interventions with public capital. This withdraws the responsibility and risk from the market. Possible profit and risk are to the public which has not been the intention from the CEPAC law. Externalities have to be covered by the public parties again instead of making use of the subsidiarity rule. Even if CEF is able to sell all the obtained CEPACs to the private market does this not suit the aim of the property rights approach. The intervention from CEF in the process decreases the transparency and increases the length of the

development process and transaction costs. It can be concluded that the rights are being used less efficient and constrain spontaneous allocation towards a welfare optimum. A possible, but not proven, advantage from the system could be that the interventions from the revenues are less dependent on market interest which could profit further socio-economic developments with the revenues.

The planned projects for mega events, like Porto Maravilha, do not match the real necessities of the city (Schwambach, 2011). The project upgrades public transport and public areas but especially in the higher income areas. Other necessities like social housing, education, employment and health are not included in the UOs and might be more necessary for the further development of the city. Despite that the public interventions are assured through the CEPACs revenues is it not to the (semi-) public banks to destroy this system of competitiveness in strategic planning and to take the risks and profit of these multibillion redevelopment projects. Intervening in the incentives to the market does not profit the free allocation of the market and if the current interventions have desired effects has to be proven in practice.

### 7.6 Conclusion case studies:

The success of the case studies shows a clear dependency on market interest. The CEPACs influence the allocation of developments if these are used in areas where the market could achieve profit. CEPACs seem to influence a part of this allocation process, and the market values these up to the difference the rights can make on their profit. However, despite all incentives to the market are economics conditions the most important factor for the UOs since the system is based on dynamics in the financial and real estate market (SP Prefeitura, 2013).

The developments in Sao Paulo show a prolongation from area to area in the time. The CEPACs, and their effect on acceleration of public interventions and private developments, support this prolongation. This, comparing Faria Lima and Agua Espraiada, has an effect on the CEPAC valuation but can be disturbed by un-transparent new distributions. The CEPAC system in Rio de Janeiro, which is under pressure of upcoming mega-events, has been changed. The system allows public capital to intervene in the market which transfers the risks back to the public. This does not suit the UO objective and the current shift towards private responsibility. The allocation process has been influenced and externalities have to be covered by the public until the market purchases these rights in the secondary market.

Notwithstanding the UO aim to regenerate areas, are the UOs criticized for offering nothing but physical redevelopment (Alvim et al., 2011; Carlos, 2010). This happens since the market is able to steer the interventions indirectly by purchasing and valuing CEPACs related to specific interventions. The CEPAC system tries to include the subsidiarity rule but does that not always effective and does not yet reaches an total welfare optimum. According to Webster and Lai, externalities should be internalised in the assignment of property rights as is seen in the shifting optimum from Q to Q1 in figure 3.1. But in the, by the government designed, system cannot all externalities be included. The market is allowed to utilize the rights to gain maximum profit in the system without all externalities internalized.

## 8. Validation of the findings

Above in this research has been discussed how the CEPAC tool in theory could reach a social welfare optimum and how this in practice occurs through the case studies. The information from the interviews is used in this chapter to crosscheck and validate the data from the literature and case studies. Topics which gave conflicting answers are checked again in the data to make sure the conclusion drawn in chapter 11 is based on actual facts. All information, opinions and answers the interviewees gave me during the interviews are their own opinion, based on their experiences with CEPACs. This does imply that their answers and opinions do not necessary match the company's vision and may not be used for any other purpose than this thesis without the authors' and their permission. The list and selection of interviewees can be found in chapter 4, table 4.2 and 4.3.

The CEPAC tool is according to some interviewees very positive but criticized by other interviewees. About the critics Sandroni said: *'The critics produced texts which were very silly and comments and critics about CEPACs that are.... You have to forget everything these people said'*. Whether Sandroni is right has been valuated through the case studies and interviews till a level of saturation. Through the coded transcriptions is the information from all the interviews used for each topic separately. This chapter will describe the following topics from the UOs and CEPACs; (8.1) preconditions, (8.2) involved stakeholders, (8.3) allocation and spontaneous order, (8.4) Value capturing, (8.5) CEPAC speculation (8.6) Urban development, (8.7) social displacement and gentrification, (8.8) governmental changes, (8.9) design, and (8.10) the use in a different context.

### 8.1 Preconditions

CEPACs can be effective but there are some preconditions which must be met to work optimal with the tool. The success of value capturing through CEPACs depends on two important factors; (1) The markets interest and (2) available vacant land to build the additional square meters (PC, Sandroni). Another factor is the amount of land owners in the area and a dynamic real estate market. Competition must be possible to reach the best solution and an optimum (PC, Sandroni). But the success of the private market is related to a growing GDP which must be considered for long term success (PC, CBRE).

The definition of the area's perimeter is important for the markets interest. Uncertainties about where and how the additional building rights could be used and the type of urban interventions play a role, especially when the area is very large or heterogeneous (PC, Zullo). There are preconditions to the captured value. This must be spent in the UO perimeter and every CEPAC auction has to be linked to particular urban interventions. The revenues must be spent on structural improvements, like infrastructure (PC, Sandroni) and is based on Sao Paulo's urban strategy (PC, Tecnisa).

### 8.2 Stakeholders

There are many stakeholders involved in Urban Operations. These can be divided in three groups, state, market and society. In Sao Paulo does the municipality determine the UO regions but the market has a strong direct and indirect influence in this process (PC, Bernardini; Carlos; CBRE; Tecnisa). The market can propose areas to develop, which is happened in Faria Lima as an expansion and prolongation of the

old CBD (PC, Bernardini; CBRE). Since private parties have to be interested in buying land and CEPACs do they have the ability to influence the outcomes too (PC, Bernardini; CBRE; Sandroni; Tecnisa; Zullo). The municipality is able to steer the developments partially through issuing amounts of commercial and residential CEPACs, the proposed infrastructural works and the UO perimeter (PC, Bernardini; CBRE). It must be noticed that this perimeter does not always matches the preferences of the market since the market sees development possibilities in other areas too (PC, Tecnisa).

The UOs are criticized for the lack of public influence and are, according to Carlos (PC), based on corporative interests. The current relation in redevelopment is under state and market and does not include the society (Alvim et al., 2011; PC, Bernardini; Carlos). Bernardini and Bahury (PC), both worked on UOs for municipalities, argue that there is no need for public influence because UOs should profit all of the society. Bernardini (PC) argues that Sao Paulo started to work with a public survey but that the society does not have the knowledge to decide over these developments. Tecnisa (PC) confirms this and argues that, in some cases, companies and institutions have to do one bad thing to be able to do ten good things. However, the society does not understand this. The municipality has the responsibility to guarantee the society's interest in the projects as it is to the market to focus on developing the most profitable real estate (PC, CBRE; Sandroni; Sayão de Moraes; Tecnisa; Zullo). Unfortunately does it seem that the municipality does not always have this objective or is not able to represent the society.

### 8.3 Allocation of the market

The main objective of this research is to study if the CEPACs lead to a spontaneous allocation of developments in an urban environment. The CEPAC system creates a basis to adapt to changing economics in a capitalist society (PC, Bernardini; CBRE). The amount of captured value depends on the interest of the market in the CEPACs, through a system of market demand and allocation of rights (PC, Sandroni). CEPACs attract investments to an area through market incentives (PC, Bahury; Sandroni).

The UOs and CEPACs create new possibilities which support the objectives of private developers to make more profit through flexible zoning laws (PC, CBRE; Tecnisa; Zullo). The CEPACs do also accelerate the process (PC, Barbosa; CBRE; Sandroni; Tecnisa; Zullo). Through these possibilities can the CEPACs cause an agglomeration of real estate development since developers are able to make more profit in certain UO areas (PC, Bernardini; Barbosa; Castro; CBRE; Sandroni; Sayão de Moraes; Tecnisa; Zullo). Bernardini and Castro do even mention a possible 'real estate bubble' through overvaluation. All interviewees indicate that the CEPACs do influence the decisions of private companies since it increases the building potential and related profit.

The influence on investment behaviour causes an agglomeration of expensive real estate developments at these locations (Biderman et al., 2006; PC, Bernardini, CBRE; Sandroni; Tecnisa; Zullo). The CEPAC changes priority by the right incentives (PC, Bahury; CBRE; Tecnisa; Zullo). CEPACs simplify the process and thereby, accelerate the developments (PC, Bernardini). This process follows the theory but has its own negative side-effects. The CEPAC and land prices rise exponential in the UOs through scarcity, which increases the pre-investments and risks (PC, CBRE; Tecnisa). Especially when areas become more attractive for the market (PC, Tecnisa). According to Tecnisa do, in some cases, prices rise so much that;

*‘It is not a decision to have more or less profit. It is; ‘Can we do business without CEPAC or not?’.* Table 7.3 and 7.3 and fig. 8.1 show this process. However, in this case does the market structure of valuation always work since companies are willing to pay a price related to the difference CEPACs make to their maximum profit. The CEPACs create a competition between developers (PC, Sandroni). The party who values the CEPACs the most will obtain the right in the auctions and possible secondary market (PC, Bahury; Bernardini; Sandroni).

According to some can only strong financial and related services afford locations developed with CEPACs which causes further inequality in the city (PC, Bernardini; Castro). The information from CBRE (2013) and the tenants of the developed properties along the main avenues in the UOs Agua Espraiada and Faria Lima confirm this. The infrastructure will improve the UO area and adjacent real estate will be valued higher (McKibben, 2005; PC, Bahury). *‘Urban operations create new clusters of good urban development with all the benefits that come from that’* (PC, Zullo). The CEPAC revenues finance the developments and this attracts new users. These clusters can have positive and negative externalities to neighbouring areas (PC, Bernardini). Other influencing factors on developments are the geographical demand of market, land, building and labour prices (PC, Zullo). All these factors influence the allocation of money and are related to CEPAC, land and property values (PC, Sandroni).

With the expansion of Sao Paulo, Faria Lima and Agua Espraiada became new centralities (PC, Bernardini; Sandroni; Sayão de Moraes). The general urban expansion is slowly reaching Agua Branca now Faria Lima’s and Agua Espraiada’s building potential has been utilized and the areas became too expensive through scarcity in land and building rights (Biderman et al., 2006; PC, Bernardini; Sayão de Moraes). Sandroni expects that the possible introduction of CEPACs in Agua Branca, and all potential utilized elsewhere, will change developers position towards Agua Branca and attract new investments through spontaneous allocation of the market.

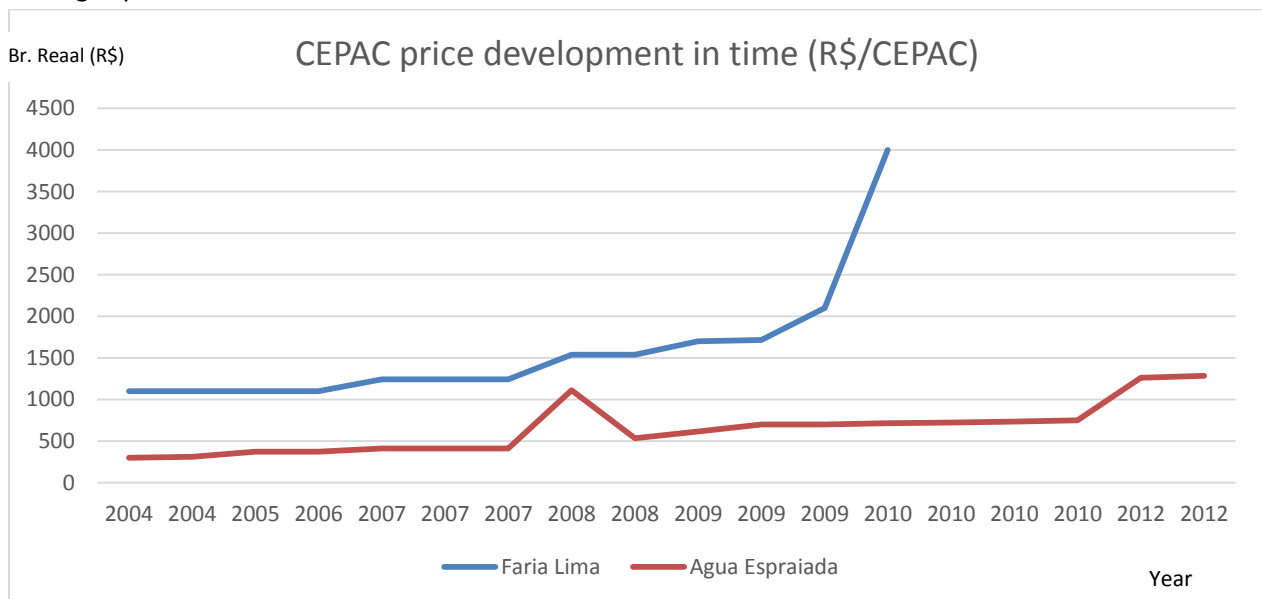


Figure 8.1: Price development CEPACs Faria Lima & Agua Espraiada. Source: SP Urbanismo, 2013

### 8.4 Value Capturing

CEPACs are introduced in the UOs to capture increment value. Sandroni argues: ‘CEPAC is the most sophisticated and efficient instrument to capture value’. But this is only true when the above mentioned preconditions are met. Figure 8.2 shows that the CEPACs definitely have an influence on the captured value in the case studies.

Faria Lima where the CEPACs are introduced halfway, captured five times more value than Agua Branca without CEPACs. Agua Espraiada almost ten times more. Important to mention is that Faria Lima and Agua Espraiada gain the interest from the market whereas Agua Branca does not, which is a precondition to use the CEPACs. Tecnisa (PC) confirms Sandroni’s statement since they pay roughly 10% of the CEPAC price in Agua Branca with the former Outorga Onerosa Law. Porto Maravilha has captured more value than the other three UOs but has issued more CEPACs than the other UOs which have been sold against a lower price. As the interviewees and the CEPAC valuation showed, are the CEPACs valued the highest in Faria Lima through market interest in the area and the additional development possibilities through the CEPACs. An overview of the CEPAC valuation can be seen in figure 8.1 and table 8.1.

UO	Captured Value	Amount of issued CEPACs	Highest price per CEPAC
Agua Branca	R\$ 363.041.453,10	-	-
Faria Lima	R\$ 1.935.547.391,52	650.000	R\$ 4000,-
Agua Espraiada	R\$ 3.282.368.164,30	3.750.000	R\$ 1282,-
Porto Maravilha	R\$ 3.500.000.000,00	6.400.000	R\$ 545,-

Table 8.1: CEPACs issued, revenues and valuation on 01/01/2013. Source: SP Urbanismo, 2013

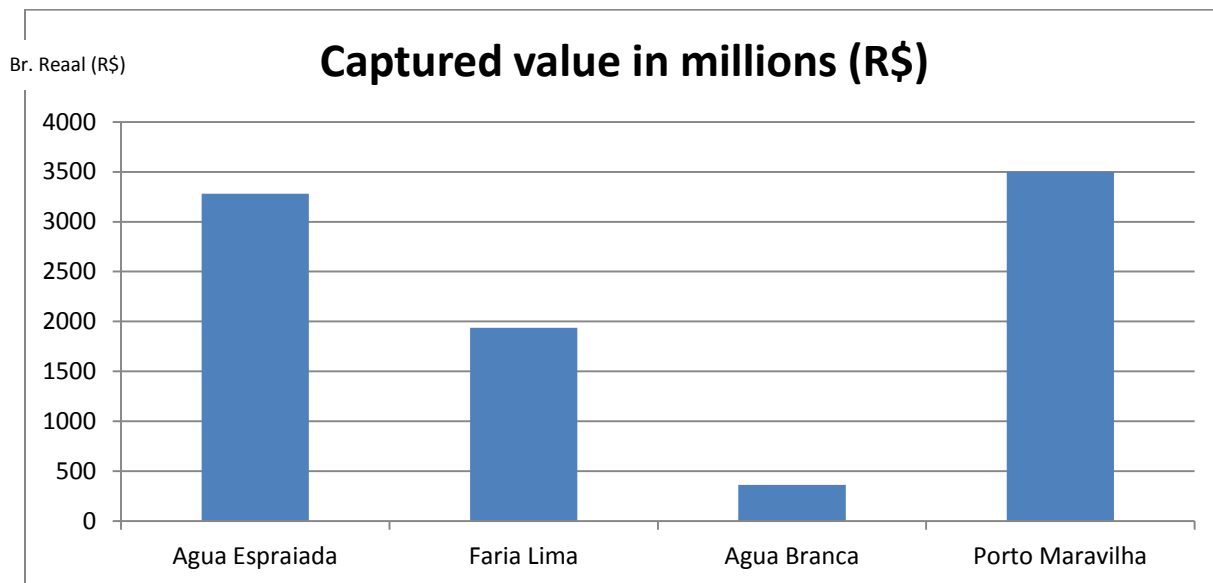


Figure 8.2: Captured value UOs on 01/01/2013. Source: SP Urbanismo, 2013 & Prefeitura Rio de Janeiro, 2013.

Value capturing through CEPACs can increase the revenues, which is illustrated above, and municipal officials do mention value capturing before the real estate developments start as a great advantage too (PC, Bahury; Bernardini; Sandroni). Municipal financial risk will decrease since the new owners pay in

advance for municipal investments. If the project fails, the municipality will not lose public money. In case of Rio de Janeiro does CEF take all the risk instead of the municipality.

All interviewees argued that the CEPAC system works very effective for value capturing. The money comes in faster than it could be spent and municipalities make the profit twice through interest (PC, Bernardini; Sandroni). Bernardini says: *'The CEPACs are producing money. The problem is how to use this money'*, and critics from literature and interviewees confirm this. Now successes with CEPACs are made in Sao Paulo, more cities want to adopt the CEPAC system to increase their captured value for public investments (PC, Sandroni). Analysing how the revenues will be used is important before implementing.

### 8.5 CEPAC speculation

Nobre (1998) and Amsler (2011) have argued in the literature that speculation with CEPACs could be dangerous since it could hold developments and increase risk and prices. Sandroni (2011) admits that this could happen in theory but won't happen in practice. He says; *'They say some silly things about CEPAC. They were completely overruled by life itself. They say somebody will capture all the CEPACs and will become the owner of all the land'* (PC, Sandroni) . This while Bernardini and Castro (PC) argue that this is happening. Castro even mentions the CEPACs as a financial project instead of an urban tool.

Data from all the secondary market auctions shows that only 3% of CEPACs in Sao Paulo are sold in the secondary market again and that Bernardini and Castro are wrong at this point (SP Urbanismo, 2013). Developers confirm this since they buy the CEPACs for their own proposed projects since CEPACs are too expensive to speculate with (PC, CBRE; Tecnisa; Zullo). However, the changes in the UO law have changed this situation for Porto Maravilha in Rio de Janeiro, which is discussed in chapter 8.10.

### 8.6 Urban development

The effects of the private capital are clearly visible in the UOs with CEPACs and do physically improve the UO areas (PC, CBRE; Sandroni). These projects are important to create a more sustainable and accessible city (PC, Sandroni) and the interventions should profit the society (PC, Bahury; Bernardini; CBRE; Sandroni; Sayão de Moraes; Tecnisa; Zullo). Sandroni (PC) explains that the UO perimeter is an extra incentive for the market to invest in the area. According to some (PC, Bahury; CBRE) is this desired, but others argue that the money should be spent in other areas as well to ensure integral development of the city (Biderman et al., 2006; PC, Tecnisa; Sandroni). Tecnisa (PC) argues that developments could have more spill-over effects but must be mainly focussed on the redevelopment of the UO region itself. This to attract private capital into the region to make redevelopment possible which for further (socio-economic) development (PC, Bahury). Developments with more spill-overs can be executed in a second stage. This causes a clear prioritization of projects in the area (PC, Bahury; Carlos; Castro; Sandroni; Tecnisa). Sandroni and Castro (PC) clarify that the CEPAC revenues in Faria Lima were too high for the planned interventions and that the UO consortium decided to build a metro station which has its spill-over effects to other parts of the city. But this happened after other works were finished (PC, Sandroni; Castro).

Zullo (PC) argues that the UOs must be well thought to profit the city in the future. Spending the money within the perimeter is an advantage according to some since it attracts the required private investments, but is criticized by others because it does not solve the urban problems (Alvim et al., 2011; PC, Carlos; Castro; Sandroni; Tecnisa). All interviewees say that in general UOs are good for the city but that it cannot satisfy the requirements of all residents.

### 8.7 Social displacement and gentrification

The attractive UO areas with CEPACs cause rising prices through the market interest. This does not only cause problems for developers as mentioned by developers (PC), but is criticized for the socio-cultural consequences too. Carlos (PC) argues that the UOs cause social displacement as 'the big money' does not meet the social interests and loss of socio-cultural heritage is not considered in these projects. 'ZEIS / Social housing is a great lie' according to Carlos (PC) since the original residents are not able to afford the neighbourhood after the performed interventions. CBRE (PC) is more positive about the social housing projects since poor people might have to leave a slum for urban interventions but get housing near their jobs. Tecnisa (PC) confirms that clearing the inner-city slums is required but is more sceptical about the relocation of the residents. Sandroni (PC) explains the ZEIS law further; *'ZEIS is a lucrative instrument, it is not enough to declare a zone as ZEIS because you have to fight a lot to transform this really into houses for the people who lived there in the slums'*. This through market pressure on areas where developments could gain high profits (PC, Bernardini; Sandroni). Social displacement is a problem but the ZEIS law offers some protection instead of nothing (PC, Sandroni).

Sandroni (PC) explains that there are two types of exclusion, voluntary and forced. He says that the people in the ZEIS areas are (semi-)protected by the law and can live in social housing projects in the area. For low income residents outside the ZEIS area are their two possibilities; (1) If they own the land they can sell it and become 'rich' and (2) if they live there illegal, do they have to leave and are forced to find a home somewhere else (PC, Sandroni). In most cases is Carlos right, the original residents will leave, forced or not, if they are not protected by the ZEIS. But even if social housing has been constructed, is there still the maintaining risk of gentrification in the area (PC, Carlos).

### 8.8 Governmental changes

Every four years does Sao Paulo get a new mayor who has the power to decide about Sao Paulo's planning system and UOs. Large projects and Urban Operations can be cancelled by the new mayor. These governmental changes are a large risk for all stakeholders (PC, Bernardini; CBRE; Tecnisa; Zullo). Quoting Bernardini (PC) about the new plans of the mayor; *'We pray that he will change his vision'*. Bernardini has been working on the implementation of a new UO which might be cancelled now a new mayor has arrived. It seems that profitable developments are prioritized since the municipality can make money on these (PC, Bernardini; Tecnisa). Bernardini (PC) argues: *'In Sao Paulo the mayors(...) they think they are the boss of a bank'*. Tecnisa explains that most politicians use UOs as a 'cash-cow', not as urban plan with the objective to revitalize the city. This makes that development strategies from private companies must be based on a short term since everything can change when a new mayor arrives (PC, CBRE; Tecnisa). Possible changes and risks in the UOs system, which aims to offer lasting improvements, hold long term urban strategies.

### 8.9 Design

The flexibility in UO law is highly appreciated by developers (PC, CBRE; Tecnisa; Zullo) but criticized by others for the outcomes (Alvim et al., 2011; PC, Barbosa; Bernardini; Carlos; Castro; Sandroni; Sayão de Moraes). Alvim et al. (2011) argue that although the objective encourages the development of obsolete areas and introduces new patterns of land-use, these will mainly attract uncoordinated private investments. The lack of urban design and public control is an important missing tool (PC, Barbosa; Carlos; Castro; Sayão de Moraes). Sayão de Moraes (PC) explains that investment decisions are based on (short-term) profit and that: *'the money talks more than the companies do'*. Most profitable locations will be developed without considering long term effects and design (PC, Barbosa; Sayão de Moraes).

The freedom in land-use according to the preferences of the private market creates a mismatch between the required public improvements and the private outcomes (Alvim et al., 2011). Sandroni (PC), who introduced the UOs and CEPACs, confirms these deficiencies but explained that this was not a municipal concern when Sao Paulo started with UOs. By then, the municipality needed money to reinvest in public facilities and the tool worked perfectly for that purpose. The uncontrolled outcomes were an unfortunate externality which had to be solved in the future, but which is not yet done.

The UO perimeter impedes the relation of a UO area with its surrounding. This since spill-over effects are prohibit by UO law to increase market interest. The market will benefit interventions financed by the CEPAC revenues (PC, Sandroni; Sayão de Moraes). This causes urban disconnections because of the objectives of different stakeholders in planning, design, implementation and investments do not always match. The complexity of the urban problems and changing responsibilities and visions constrain integrated developments in this model.

In the current situation are developers able to commence construction quickly within the UOs. Municipalities have to grant permits without arguing about quality and urban impact. It accelerated developments in the UOs but hinders integrated urban development and design requirements (PC, Barbosa; Bernardini; Sayão de Moraes). Sandroni (PC) argues that slightly more regulation could be desired since developers do not built a 'good city'. Developers do things which are good for their own profit, but not for the society. They build the cheapest and most profitable option which fits the requirements and can sell this through scarcity on the market. This holds innovation through the missing incentive to innovate (PC, Barbosa; Bernardini). According to Barbosa (PC) should this be regulated with forced regulation since current incentives do not have the desired results.

### 8.10 Different context

The comments from the interviews above are from interviewees about the UOs in general or about Sao Paulo while UOs are active in Rio de Janeiro and Curitiba too. To draw conclusions about the use of TDR systems in another context has Rio de Janeiro been studied which can be useful while exploring the possibilities for the system to the Dutch market.

Carlos (PC) argues that using the CEPACs as a generic tool in more cities simplifies urban problems. He is sceptical about the projects since project specific socio-economic and cultural consequences are not considered. He admits that the area has to be regenerated and that infrastructure will improve the area but that only rich people will profit from UO Porto Maravilha through gentrification effects. Carlos (PC) also argues that the redevelopment of the port is prioritized above more important matters through the upcoming mega events like the Olympic Games and World Cup. The original dockworker families and their relation with the port will be demolished by the arrival of a new population in the area (PC, Carlos). The interpretation of Bahury (PC) confirms this since the objective is to establish a new and trendy port area. But the port has already changed in function since the original dock has been relocated to a more suitable location for the industry which implies that the original relation has disappeared (Porto Maravilha, 2013; PC, Bahury).

Just as is been criticized in Sao Paulo, Carlos (PC) criticizes the urban design in Rio de Janeiro. He argues that the new buildings will block the view from the waterfront to the historical dock area and vice versa. The blue line (fig 7.6) on the waterfront are old warehouses which will be renovated and maintain the relation with the waterfront as the area behind will be blocked through high-rise developments. The relation from the old historical buildings with the waterfront will be destroyed. Verticalisation through new developments will create 'a concrete wall' on the waterfront. Looking at figure 7.6 and 8.3 can it be concluded that this is happening along most of the waterfront. But it cannot be concluded that this is a poor development for the area. The area is heavily decayed and requires interventions. The interventions are financed by 'the concrete wall' of additional square meters, without it would these interventions financially not be feasible (PC, Bahury).

Critical for this research are the preconditions for the CEPACs, referring to chapter 8.1. Since the market shows no interest in the CEPACs of Porto Maravilha yet and through the public pre-investments of CEF are two UO objectives not met. The freedom to the market to influence developments and interventions of an UO, by deciding whether they are interested or not, has been disturbed. Public parties take over responsibility and risks while starting developments without present market interest since properties and rights are currently not scarce to the market in this area (Amsler, 2011). Market responsibility is being disturbed by prioritization and public parties intervene by taking financial risks.



Figure 8.3: Porto Maravilha. Source: <http://guiadeimoveisriodejaneiro.blogspot.nl/2013/01/porto-atlantico-lancamento-porto.html> on 14/07/2013.

The changes in law, chapter 7.5, ensure the development of Porto Maravilha into a new urban centrality. The redevelopment is criticized for lack of social influence and design but improves accessibility and development possibilities. This research cannot prove that laws have been changed to ensure the development of the port area related to upcoming mega-events but it could mention that this suits the situation strikingly convenient. The risks, taken by the public parties and the disturbance of the original CEPAC structure ensure the urban interventions but do intervene in the original market-led approach of redeveloping through TDR, inclusion of externalities and market allocation.

## 8.6 Conclusion

The interviews in this study were used to crosscheck the answers from the case studies, to clarify secondary data and to obtain more knowledge about the effects of CEPACs and the possible relation to the theory. As the case studies mention do all interviewees confirm that the CEPAC system works effective for value capturing, under specific conditions. The system (physically) improves urban regions and attracts investments to these UO areas. The property rights theory is included in the CEPAC practice and the subsidiarity rule is applied in this system. The interviewees confirm that not all externalities can be included in the right.

The cases discussed the lack of integrated urban design and public control which was mentioned as an important missing tool in these projects (PC, Barbosa; Sayão de Moraes; Castro). But, referring to chapter 3, must be concluded that it is the government who cedes her responsibility. Sandroni explains the situation in which the government in the 90's was as the following: *'We were putting down a fire with dirty water. (...) it created some problems, but the fire was over'*. Sandroni (PC), who introduced the UOs and CEPACs, confirms the deficiencies and argues that the approach should be redesigned and that there must be invested in a more integrated approach.

The attraction of private investments is also criticized for its social consequences by some of the interviewees (PC, Carlos, Castro). Consequences from the private capital for the lower-income residents and gentrification are widely mentioned in the literature, case studies and interviews. But redevelopment in this system would not occur without the attracted market interest which is a precondition for the developments (PC, Sandroni, Bahury). The interviews pointed out that the social interest is lost through the accumulation of wealth, or that the CEPACs have a negative impact through exponential price increases (figure 8.1). Especially the transparency through new CEPAC distribution and shifting UO laws by new mayors is highly criticized by public and private parties. Studying Rio de Janeiro showed that the CEPAC system is applicable in another context but that the effects may vary from Sao Paulo. The CEPAC system in Rio de Janeiro is criticized for the circulation of public money in urban projects to revitalize the port area (PC, Carlos, Castro). Risking the public money in urban projects has not been the objective when the CEPACs were introduced and is criticized in the interviews and the international planning context (Lindau, Senna, Strambi and Martins, 2009, Van der Krabben & Jacobs, 2013). According to many of the interviewees is the process and the situation improving but will the performance be a learning process since the UO and CEPAC tools are implemented very recently in the urban redevelopment approach (PC, Bahury; CBRE; Sandroni; Sayão de Moraes; Tecnisa).

## 9. Interim conclusion

This Interim conclusion does focus on the effects of the Brazilian approach with UOs and CEPACs on spatial development before discussing the possibilities in the Netherlands. Answering the research question in relation to the property rights approach has been discussed in chapter 11 while this chapter is focussed on the more practical issues related to the urban operations and CEPACs. An overview of the effects is given in Table 9.1 below and further explained from the next page.

URBAN OPERATIONS & CEPACS		
	Positive	Negative
1.Spontaneous allocation	- Stimulates the UO area.	- Prioritizes the area above others & UO perimeter prevents spontaneity.
2.Developments	- Are stimulated.	- Forced agglomeration of expensive real estate.
3.Value capturing	- Captured value increases.	- The use of the captured value is uncontrolled and criticized.
4.Use of the revenues	- Development of infrastructure.	- Infrastructure does not connect with other areas. No socio-economic investments which is important for the city's future.
5.Social developments	- ZEIS areas.	- Market pressure and prioritization (profit).
6.Urban challenges	- Solves urban problems within perimeter.	- Does not connect to the real urban problems / relocation of problems.
7.Private investments	- Works well in some UOs in SP.	- Market disturbance through governmental changes and in Rio through CEF (law 472).
8.Use of the tool	- Effective for value capturing.	- Only suited for areas with current market interest and free land occupation. Captured revenues must be linked to projects.
9.Preservation	- Preservation of old buildings.	- Only buildings on the list are protected.
10.Main improvements	- Transportation through the development of avenues.	- Total focus on avenues instead of an integrated regional vision.
11.Interest of state, market and society	- CEPACs meet municipal and market short term goals. Municipal influence which should represents the society.	- Does not meet the needs of the total society. Second, changing mayors cause changes in projects and act more as a private party than a societal representative.
12.Market freedom	- Quicker development process.	- Loss of control on the developments.
13.Regional economic development	- Good, in the short term.	- No spill-overs and is based on short term.
14.Transparency	-System is more transparent than its successor.	-System does change regularly and laws have been changed in Rio de Janeiro.

Table 9.1; Overview of positive and negative effects of CEPACs.

Referring back to *'rebuilding cities vs. the sacking of cities'* (Jacobs, 1961) do the UOs aim to redevelop areas into vital urban neighbourhoods for business and society. However, land and buildings are an essential part of the city but these are not vital in their possibilities to adapt to a changing context in which spatial planning is embedded. Integrated development between different disciplines and professions is necessary to tackle urban challenges and to attract businesses and residents to a city, which is important for urban success.

The CEPACs are introduced as an incentive to the market and a tool to capture value for urban interventions which cover a part of the associated externalities. Internationally has the TDR system been used in several countries but through several adaptations, like quotas and perimeters, is the Brazilian system able to guide developments a little. This is different as in Valencia where many public works and neighbourhoods were developed within a land-readjustment system (Munez-Gielen, 2012). Compared to the U.S. system with sending areas, which sell their FAR rights, and receiving areas, which buy FAR rights, does the Brazilian system stimulate specific areas through applying the right in specific urban regions instead of an overall system.

Positive about the UO system and the use of CEPACs is the decreasing dependence on (often smaller) municipal budgets (Lindau et al., 2009). But this only works if there are enough incentives to the market (Webster & Lai, 2003). This is seen in the strategic allocation of UOs with CEPACs by the municipality of Sao Paulo in areas which already gain interest before the UOs started (Ferreira, 2000), and by the disturbance of the market through public interventions. This prioritizes areas through new laws, like in in UO Porto Maravilha. Urban Operations and CEPACs offer a more flexible approach and the market gratefully uses this. The market is able to use development rights to their own preferences within the UO perimeter, instead of zoning plan.

The more flexible approach, based on market incentives, is criticized. The approach will hold back integrated development and innovation in urban and real estate development (Alvim et al., 2011). It happens since 'good' developments are in many cases not the most profitable developments. The pre-investments are high, which private parties do not want to risk on innovation. This is not yet stimulated by municipalities and the market. Integrated development is also constrained by the municipality since the public system does not consider the relation an area has with its surrounding. Notwithstanding, this is important for the redevelopment of the neighbouring areas in the future (Magalhães Junior, 2005) and does indirect profit the real estate values in the UO area too (Huisman, 2006). The current approach is not synchronized and causes disconnections between the aim of different stakeholders in planning, design, implementation, decisions and investments. Exceptions to this are the light-rail which is planned in Agua Espraiada and the metro station in Faria Lima. However, these projects are criticized for being developed through market pressure instead of a social position towards the interventions. Biderman et al. (2006) argue that it would be more effective to invest the CEPAC revenues in projects with more spill-over effects. This will prevent disconnections and will profit the area and the city in the future.

The current redevelopment approach with CEPACs is based on market interest which does not always include the socio-economic externalities. An important missing factor is the public voice since the

society is not presented in the UOs. Example is the current regulations with the ZEIS areas and tax discounts for original residents which do have the best intentions, but do not prevent the gentrification process. It has been proven that lower income people had to leave the UO areas, but not only as a consequence of the CEPACs since other, non-UO areas, faced the same (Biderman et al., 2006). Lower income areas in all UOs are officially protected by the ZEIS law to prevent massive gentrification. However, in practice is this law under high pressure by private parties since ZEIS areas are highly valued by the market. It has been proven that the law does not always ensure the protection of the area's residents, which it should since it is made for this. The on-going relocation of these residents will not profit the city since it moves the problem instead of solving this. More socio-economic developments are required to create socio-economic stability in Brazilian cities. The current unrest emphasizes the importance for the integration of the lower-income residents in the future development of cities to build a stable economy and urban climate that is able to compete with other cities or countries.

Looking at the stakeholders in the UOs (figure 6.3), is there little influence from the society. The society's interest is present through the municipalities who face the 'two hat dilemma' and through their market preferences, if they can afford the market. The imperfections of this system are visible through the resistance against the political course which invests public money in mega events while other problems require more attention. Part of the investments are present in UOs which, in theory, should cover the externalities through the subsidiarity rule but case studies and interviews clarify that this does not happens in practice. Municipalities and other public institutions do work as a private company in the UOs. Ferreira (2000) argues that the UOs are a formalization of market speculation since an UO with CEPAC will never take place in an area without market interest. This does not match Alexander (2002) who stated that the public interest is important to legitimize planning decisions. It implies that a municipality should be working for the public interest instead of the private market, but municipalities face the 'two hat dilemma' between market and society. To make the redevelopment of cities just and fair, there must come significant changes in the approach (Antonucci & Takimoto, 2011). According to the theory, the solution should be found in the subsidiarity rule.

Porto Maravilha in Rio de Janeiro changed the CEPAC system to allow public money to value and buy CEPACs. This does disturb the market and the systems objective, since areas of municipal interest can be prioritized above others, while the system is based on market interest. The UO structure does already prioritize areas, which can be seen in Sao Paulo. New public stakeholders insinuate their preferences to a market for which the CEPAC system has not been developed. Sandroni (2010) mentioned that the allocation of the market is ensured by the separation between project and process through the CEPAC system. Now public parties are allowed to participate, they do interfere in this process.

The CEPAC system improves the transparency in the market since the building rights have to be bought at open auctions, but is criticized for being a municipal 'cashcow'. Exponential rising CEPAC prices do, in many cases, not profit the market and society. Uncertainties about the UO future causes high financial risks. This transparency problem is mentioned many times during the interviews. UOs are under the influence of changing mayors, who have new visions and interests. Many of the UOs were introduced after a new mayor arrived (SP Prefeitura, 2013). These mayors can change laws, zoning and UO visions,

which results in a higher risk for private investors and in wasteful public planning by municipal officials. Alston et al. (2009) emphasize the importance of quick and transparent government processes since changes in time and context have their influence on the transformation of rights and the spontaneous outcomes, which Sao Paulo shows in practice. Other explanations for reorganizing UOs could be the possibility to make more profit, the society's preferences or missing market interest. But, these changes can harm other stakeholders. The missing assurance is a great disadvantage for urban planning since the risk to invest in Sao Paulo could hold investments.

Competitive markets could arise between cities if the CEPAC system gains more interest from other cities. This is currently happening as Sao Paulo has lost the exclusive right as the city with 'the CEPAC advantage' now Rio de Janeiro adopted the system. It could happen that real estate, companies and residents move to other cities which do provide more integrated developments to ensure the urban quality. Second, when other cities adopt the CEPAC system as well, could this result in an overproduction of real estate since each city wants to utilize the maximum amount of rights related to the profit.

A more socio-economic approach is necessary to provide a social basis for a further growing economy and to provide urban quality to be competitive as a city. Effective redevelopment of the urban environment is required, but this is not present yet (Grisa & Rodrigues, 2010). Strategic planning is for many cities a bridge too far through the lack of planning, laws and social problems (Grisa & Rodrigues, 2010) which practices in Brazil show. The current system does stimulate the redevelopment of specific urban areas but all externalities are not yet included. The governance system has to fulfil its planning duty to create a suited system to the situation.

## 10. TDR in the Netherlands

Since this research is also performed to obtain information about the possible implementation for a TDR system in the Netherlands does this explore the TDR possibilities for the Dutch context. Chapter 5 gave an overview of the current Dutch planning approach and this chapter will deep into the current Dutch planning situation and the possibilities to use TDR through the following question:

*'In which way can we learn from the use of transferable development rights in Sao Paulo and how is this tool suited for Dutch urban regeneration projects?'*

Nobre (1998) describes that many of the challenges Sao Paulo is facing are problems which does exist in the Western world too. Problems with urban renewal, inner-city redevelopment, unprofitable development, shift to the market, value capturing, empty office buildings, providing public goods, gentrification, impoverishment of prospect-less neighbourhoods, traffic congestion, environmental issues and a changing set of rules are hot topics in the Dutch context of area development. Many of the Dutch problems described above match the problems in Sao Paulo. A practical example that was visible in the case studies is the urban renewal challenges related to the closure of inner-city industrial areas and the reallocation of office buildings which is seen in the Netherlands too (Kantorenloods, 2011). Van der Krabben (2013) emphasises the importance for new planning tools in the Netherlands since the current tools are not suited for its context. The current planning law in the Netherlands has new instruments for cost recovery since 2008 but processes are slow, not yet very effective and increment value is not captured (Samsura & Van der Krabben, 2013). Brazil tries to deal with many of these issues through UOs with TDRs. The TDR example could be a future solution to deal with urban problems in the Netherlands (Dieperink, 2009).

A TDR system could be useful for other cities than Sao Paulo too. Examples in Brazil, Spain, Japan, Canada and the United States have shown that such a system could improve developments and processes. But this must be applied with necessary care. The case study in Rio de Janeiro showed that the tool is applicable generic but that the context has to suit the preconditions. A TDR system in combination with land-readjustment, which is mentioned a few times in this research, is applied in Valencia. According to Munez Gielen (2012) is this system able to finance more public works and to obtain the directing development power at the municipality which is, according to him, positive. The interviewees confirmed the public works and the municipal power but were critical about the outcomes since the law of Acton (1834-1902) states: *'Power tends to corrupt, and absolute power corrupts absolutely'*. In the case of Valencia did this power resulted in an overproduction of real estate and development rights which, through oversupply, resulted indirect in abandoned neighbourhoods and bankruptcies (PC, APPM; Kadaster; OGA).

The problems and successes of TDR in the international context do not indicate that the idea is right or wrong. The tool has to be suited for the context and adaptations have to be made where necessary (Needham, 2006). If the development of public goods does profit private parties are they willing to contribute to this process (Huisman, 2006; Samsura & Van der Krabben, 2013). In theory could this

result in a total welfare optimum (Van der Krabben, 2009). How TDR could be applied in the Netherlands to lead to this optimum will be studied further in this chapter after an introduction to the current Dutch planning situation in the continuation of chapter 5.

## 10.1 The Dutch situation

The current Dutch approach is based on greenfield development which is discussed in chapter 5. This system is based on development by the municipality and has its advantages and limitations. The system is made for expansion and for new developments while the current planning situation is the opposite (PC, Heijmans; OGA). Municipalities were in the situation to direct land-use and to gain money for public facilities through land assembly in this system (table 5.1). Now this system is not applicable in the current context anymore does the municipality have search for new opportunities to finance public interventions. TDR might offer option for this as is be described in chapter 10.2.

The development of a compact and sustainable city is important for the success of the city, but the Dutch planning system is not suited to achieve this objective. The current context shows shifts towards private responsibility, redevelopment and the attraction of the city (PC, OGA). Regulations, like zoning, are not suited for the current planning situation anymore and the trust in municipalities from the society has resulted in an inattentive society towards planning (Needham, 2005b). New laws are currently being prepared which have to be more flexible to suit the markets preferences and the current context (PC, Kadaster). This is necessary since it has to be possible for the market to fulfil the society's requirements. If the market, though restrictive laws, is not able to facilitate the society's needs, other negative side-effects will emerge, like long distance traveling to find the desired requirements, which are not in line with a lasting sustainable approach (PC, Bleker). The current municipal approach is to plan everything and 'who pays can decide', which was the municipality. Dutch municipalities are not in that situation anymore, which emphasizes the need to stop with master planning (PC, OGA). Developments must take place in agreement with the market on places where the market prefers and where the municipality is able to allow this or where the externalities can be covered (PC, OGA).

The allocation of commercial real estate left many empty buildings behind in the Netherlands and there is a current debate about how to demolish or repurpose these buildings. The overproduction occurred since municipalities were too optimistic by developing for their own profit. It implied that they kept issuing new building rights. As long as municipalities keep issuing these rights against an attractive price will redevelopment be more expensive since there no (financial) incentive for redevelopment or demolition of vacant buildings (PC, Heijmans; OGA).

Vacant buildings cause social problems since these buildings will, in many cases, not be used again for their purpose and pollute the area (PC, Kadaster). Through the current market mechanism, social and economic consequences has this become a national problem. Higher taxes for vacant buildings could be an incentive to take action but when owners are facing financial problems, through the absence of tenants, could the situation worsen, which is in none of the stakeholders interest (PC, Bleker; Heijmans). Collective action, to tackle the situation which we all caused, is required (PC; Bleker).

The current market faces problems through oversupply, conjectural problems and a financial problems (PC, Kadastrer). The international competitive position of Amsterdam will be jeopardized if new rules are not implemented in the planning system soon. Especially the real estate market requires a system investors can trust (PC, Bleker). For the urban areas can be concluded that; *“we currently have enough concrete”* (PC, OGA). This has been caused by the *“tsunami of money”* to finance real estate (PC, OGA) and has caused exaggerated real estate values (PC, Bleker). Currently the ‘tsunami of money’ is not present and banks are not allowed to take risks. It causes an unhealthy market situation and politics have to influence this (PC, Bleker). We face an overproduction of buildings while we need less space through the trend of multiple use and innovations. For this, new creativity from the market and government has to be stimulated and for small, organic (re)developments. DBFMO and PFI fit in this current context in which more responsibility shifts towards the private sector while the quality in has to be ensured on the long term. The use of TDR fits these trends and there are options for the Dutch market to tackle the current problems, discussed in the following section.

## 10.2 Possibility to use TDR

TDR programs have the ability to adapt to changes and to be applied in different situations based on the idea of the TDR causing allocation (Been & Infranca, 2012). The case study in Rio de Janeiro showed that TDR systems are not dependent on the locations but on other factors to be effective. This adaptive power of the TDR tool could be useable for the Dutch planning system in a changing planning context. Through the studies in the Brazilian context does this chapter sketch a possible model for TDR implementation in the Netherlands. Dieperink (2009) has studied the TDR system and the possible implementation for the Netherlands and concluded that the establishment of a fund would be the most suitable option for the Dutch context. The fund could finance unprofitable required developments and is comparable with the Brazilian approach.

Since the market, in many cases, uses scarce goods more efficient and with better distributed externalities should the system be based on market structuring instead of regulation according to Needham (2005b). Reflecting on the Brazilian experiences is this what CEPAC does. The current Dutch situation and planning approach have discussed the possibilities for TDR during the interviews in the Netherlands. Based on desk study and the opinions, arguments and reactions of the interviewees could be concluded that the most positive about the TDR possibility is to use a tradable quota which could be acquired in various ways. The possible option with a quota, based on the experiences with CEPAC is further explained below.

### 10.2.1 Building rights quota

The current Dutch commercial real estate market has to deal with high vacancy rates and millions of square meter which will never be used again (Kantorenloods, 2011). New tenants on the market are in a position to only accept very low rents or the best buildings which results in a situation that new buildings are being built while the current supply is larger than the demand. However, a current problem is that the offered supply does not have the quality or location tenants are looking for (PC, APPM; Bleker; OGA). New properties are being developed since the location of old offices does not match the demand and redevelopment of old buildings is in many cases more expensive.

An ‘office-for-office-model’ is mentioned to stimulate the demolition of old offices (Jansen-Jansen, 2008; Kantorenloods, 2011; Spaans et al. 2010). It implies old buildings have to be demolished before new buildings can be built. A second option is to buy the development rights from the municipality. The municipality could use the revenues at its discretion, for instance demolition of old offices (Wesselink, 2007). A third option is to stimulate demolition by lowering the leasehold for developers on other locations when they demolish old buildings (PC, OGA). All options stimulate demolition of old buildings when the location or quality does not match the current demand.

A maximum quota on the square meters commercial real estate could prevent a quantitative overproduction of real estate when the demand for new offices rises (PC, Kadaster). A maximum quota, related to the demand, could rebalance the market again. Developers are able to obtain the scarce rights through the demolition of old buildings. While development rights have to be obtained for the development of new real estate could redevelopment of old buildings or innovation be subsidized with the rights of from the revenues. This from the philosophy that you have to pay for causing more externalities and to be subsidized for limiting the externalities by redeveloping old real estate (PC, Heijmans). The revenues from the development rights can be used for public developments or to cover externalities. The government is able to steer developments through prioritizing areas on a strategic level through public investments. The market will search for maximum profit and they remove the cheapest and most deprived buildings from the market (PC, OGA). In this case do private parties look for areas with the lowest demand and worst dilapidation since these are the cheapest buildings to take from the market to derive building rights on areas with the highest demand. This could work as a reversed allocation as is illustrated in figure 10.1.

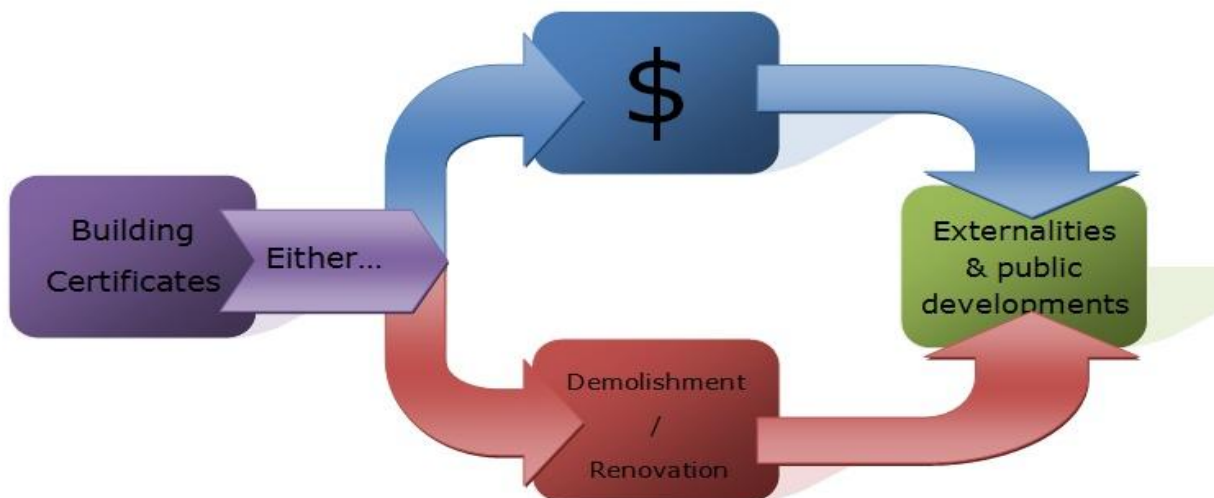


Figure 10.1: TDR option for the Dutch context.

Figure 10.1 illustrates a possible TDR approach for the Dutch market. As mentioned above, the current supply offers does not meet the quality or locative requirements of the market. Since new or refurbished buildings will be always required can the development rights be derived either through buying these (blue line) or through the demolition of old buildings (red line). Both options will decrease the externalities since the revenues from the blue line can be used to subsidize required

developments and facilities while the red line will rebalance the market through a reverse allocation. This approach integrates the life cycle of a building or area now the demolition or refurbishment has been approached as externality to cover as well. When the obtained development rights for demolition will be always less than one for each demolished square meter, for example two to three, should there, in total, always be invested in new rights when the demand remains equal, is growing or is slowly decreasing. This quota can financially ensure the development of public facilities and balance the market. This suits current trends in PPP towards a more life cycle approach which is based on the total costs of ownership instead of the development price.

It is the best option when the market organizes this instead of the state, since they have more knowledge about the real estate market (PC, Bleker; OGA) and since *'the municipality is in most cases not the most efficient party'* (PC, OGA). The market will always look for the cheapest option to achieve maximum profit. The decision to take the red or blue line in figure 10.1 will be based on the PMC. Since (a part of) the externalise can be included through this structure will the practical situation shift more towards SMC, the total welfare optimum, through the use of the subsidiarity rule. The demolished areas can be used as public space or be returned to the nature. If there are no buildings to demolish, or these are too expensive, the market is in balance and it will become more attractive to redevelop buildings or to buy the rights from the municipalities if these issue rights too. The acquired rights can be used as the market values these rights the most, either for building potential or for changes in zoning plans.

Since the development rights are valued, can the rights be added to the financial balance of investors. This can help to solve vacancy problems now buildings are currently not being demolished since these are not devaluated yet. If investors could obtain rights which are valued by the market, can this be an incentive for demolition (PC, OGA). This will prevent a long term devaluation of commercial real estate and vacancy related problems. In concert with municipalities could the empty plots receive a new destination or stakeholders can exchange plots in a land consolidation model. The obtained development rights by the old owners could be used anywhere in the market or be sold to other parties since these are transferable. A precondition for a balanced market is that the amount of issued development rights for demolition should be subtracted from the total available rights in the market.

### 10.3 Advantages and disadvantages

Issuing development rights could work as an incubator for high-potential areas (PC, Bleker). The performed studies on the Brazilian and Dutch context show some advantages and disadvantages. Related to a possible Dutch TDR approach are these discussed below.

#### *Flexible vs. control*

A more flexible approach with transferable development rights gives developers the freedom to allocate their developments to the society's preferences (PC, Heijmans). It results in less transaction costs and less costs for policy preparations and control (Needham, 2005b). This new approach could also accelerate developments which are desirable (Zwalve-Erades & Zebel-Vaudo, 2013). The counter-side is that there is less public control on developments (PC, Bleker; Heijmans; Kadaster; OGA). While the freedom benefits developers does this indirect harm them too through uncertainty about developments

from other stakeholders (PC, Bleker; Heijmans; Kadaster; OGA). Private parties want to be flexible themselves but want to know exactly what others do to estimate their risks (PC, Bleker; Heijmans; OGA). The building right quota could be useful to determine the maximum amount of buildings, square meters and their functions in order to include some externalities and to solve a part of this problem.

When the revenues are used within the area's perimeter could this be attractive for the market since investors can profit from it (PC, OGA). But unfair competition could exist if this done by the Brazilian structure, through prioritizing areas, which can result in a situation where other areas cannot compete with the improved UOs (PC, APPM). Equal financial distribution related to the requirements can prevent this. This process could be left to the market but with a kind of public control to ensure quality when the demand changes (PC, Bleker). Paul Oudeman (PC, OGA) mentions that public control is regulated since the Dutch municipality is responsible by law for proper land-use planning (Wro, 2008). It is questionable how much responsibility the municipality can give to the market and if they agree to possible excesses. Secondly, not all areas have to focus themselves on the allocative behaviour of commercial real estate. The city is important for its unique business and leisure facilities but other environments are desirable too. People do value the countryside for its nature and other functions it has to offer. In this case serves the countryside the city and vice versa which implies that an integrated approach is needed between those two environments (L. Tewdwr-Jones personal communication, 14/01/2013).

#### *Speculation vs. user freedom*

The freedom to transfer development rights to another owner has its advantages. It ensures that all private parties are able to buy these rights, which implies that they end up at the (private) party which values the right the most. Secondly, since the government is issuing these rights could they buy empty buildings to demolish for social purposes with the revenues from these rights. Third, the freedom to transfer these rights could also attract new, niche markets, into real estate development.

Some argue that a TDR approach risks to be a temporary problem solver since the rights are an onetime transfer (Walls, 2012). This happened in Valencia where the municipality kept issuing development rights while the demand was not present anymore. Municipalities issued more rights for projects while the demand was decreasing. It resulted in more than 50.000 empty buildings, abandoned neighbourhoods and residents who obtained building rights which lost their value. These problems could be prevented when a TDR system is properly related to the demand of the market, inflation and population growth. To prevent public speculation does this system eliminate the need for municipalities to speculate with land acquisition. Speculation by private parties could have other negative effects like postponing the use of the rights while these are introduced to stimulate the use. Excessive speculation must be prevented since it is questionable if a building product should become a financial product, as is happened with offices before 2008 (PC, OGA). Through a timeslot on the validity of these rights could this be prevented (PC, Bleker). The advantage from a tradable quota is that the approach is based on the interest of the market (PC, OGA) which should represent the interest of their customers, the society (Alexander, 2002). When the market represents its customers, the prices will be indirectly influenced by the valuation of its customers and the outcomes can be secured through the limited freedom which the state indicates to the market (Needham, 2006).

### *Governance structure*

The Kadaster mentions that it is difficult to develop a law which does fit all situations and that implementing half a structure would not work. There must be a municipal trans-boundary system to regulate to serve all possible owners and stakeholders since agreements between municipalities do not always reflect in the same actions (PC, APPM; Kadaster).

Current building fees in the Netherlands are related to permits which could be replaced by a TDR system in which the market can take its own responsibility. Under the right circumstances can TDR ensure the incomes but without the municipal risk. If land is in ownership of the municipality, could it even be issued in a leasehold system which gives them annual incomes for public interventions. APPM (PC) mentioned the Valencian model to be enviable effective for the development of public facilities but that the overproduction of real estate reveals the downsides and risks in the current economic situation. The municipality of Valencia did issue too many rights to ensure an on-going development of public facilities (PC, APPM; Kadaster). Walls (2012) explains that the current application of TDR is not yet resistant to economic adversities. The maximum quota in the system improves this, since it will balance supply and demand through the prevention of overproduction, but has to be led by a strong governance system.

## **10.4 Implementation**

Sandroni (2010, p. 235) argues that the use of CEPACs has been a success in Sao Paulo for value capturing and that the implementation on other places should be considered, but with care. Simply implementing the same mechanism would not function in another context, as is seen in Rio de Janeiro with different market conditions. It is important to have a total overview of the integral needs. A format, how a TDR system could be implemented in the Netherlands, is provided below.

### **10.4.1 Preconditions**

There are some preconditions before tools can be implemented. Like in all situations are stakeholders in the best position to make decisions when they have, and are able to use, all necessary information about a topic (Dieperink, 2009). Courage and long term commitment are important to make decisions about new law and market structures are too (Kantorenloods, 2011). Clear political choices and a long term vision would help to achieve the desired results (PC, Bleker). And as Walls (2012) cited: *“Functioning markets are a necessary condition for achieving land preservation goals through TDR”* (p. 18). To stimulate the effect of the tool should the transaction costs be as low as possible (Dieperink, 2009) and should long term speculation be prevented through regulations (PC, Bleker).

Also, the application of TDR should not be tied to municipal boundaries. Kadaster and APPM mentioned that the current market faces trans-boundary problems and for this should the policy be centralized. The application of TDR in Brazil has revealed that problems are not limited to areal boundaries too.

### **10.4.2 Process**

According to Dieperink (2009) does the TDR tool serve the democratic constitutional state. Through favouring the private interest should this favour the society's interest too and could the government structure this system. This fits the current situation in which the old approach does not suit the current

situation. Possibilities lie in the private law system, on which TDR is based, which should not limit the market but restructure the approach (Needham, 2005b).

A centralized policy with a maximum quota on a regional or national level will prevent overproduction and unfair competition between municipalities (PC, Kadaster). Smaller projects with little risk suit the organic growth approach and could ensure allocation (Ministerie van Infrastructuur en Milieu, 2012). Within this approach and the related TDR fund should it be clear which spatial developments are supported and which are punished (PC, Bleker; Heijmans; OGA). This influence is important for future real estate values and gives certainty to the market (PC, Heijmans).

Urban and real estate development means collaborations between different stakeholders. The position of stakeholders has been changed in the last years and stakeholders have to build an understanding for each-others new situation (OGA). This could be difficult, but eventually do all stakeholders want to achieve the best result for which knowing, understanding and collaborating are necessary (PC, APPM). Through a TDR policy will stakeholders actively start looking for each other to collaborate (Laverman, 2007). Within this structure could the market allocate their actions and can the government direct this integral process. Lindblom (2001) explains this with the suited metaphor: *“If the market is the dance, then the state provides the orchestra and the dance floor”* (p. 102). The state does facilitate the market with the TDR structure, the orchestra and dance floor, and the market, in their turn, decides the allocation, the dance (PC, APPM; Bleker; OGA). It is a process of balancing between market operation and government influences.

The TDR structure simplifies the rules and shortens the chain of involved stakeholders which will result in cheaper developments (PC, Kadaster). The idea of the retraction of municipal regulation in land acquisition but structuring this through rights, does suit the preferences of supporters from the ‘public choice theory’ who distrust the government for acting more in their own profit instead of the societies interests. It does also stimulate possibilities for public entrepreneurship in projects through (collective) private commissioning in developments which is on the Dutch political agenda (Van Belzen, 2011).

#### **10.4.3 Law implementation**

The spatial law system in the Netherlands is currently being adapted to the new planning context and the updated environmental code (Ow) will be introduced at its earliest in 2018 (Zwalve-Erades & Zebel-Vaudo, 2013). In this new law system is the current value of zoning being discussed and is flexibility becoming more important (PC, Kadaster). It suits the current planning trends and the above mentioned possibility for TDR in the Netherlands.

The current Dutch law system is based on regulations which hold many good (re)development possibilities, is inflexible and does not suit the current context (Backus, Bruil, Bavel, Luijt and van der Hamsvoort, 2005; Zwalve-Erades & Zebel-Vaudo, 2013). The problem is that many laws are unnecessary strict and current procedures are time-consuming (Zwalve-Erades & Zebel-Vaudo, 2013). Current laws are based on new developments and the system is not yet adjusted to a redevelopment approach. More flexibility and less time-consuming procedures are currently integrated in the ‘crisis and recovery law’

(Chw) but if the new Ow will further improve the situation remains to be seen. Backus, et al. (2005) mention that TDR in rural areas is currently applicable in the Netherlands as is seen in the experiment 'rood voor groen' in Limburg. The prospective municipal jurisdiction leaves more flexibility in urban areas (PC, Kadaster). If TDR will be implemented should it adjusted to the environmental code (Ow), the municipal preferential law (Wvg) and department 6.4 of the land use planning law (Wro). OGA expects that radical changes in these laws will not be necessary to implement the system.

The Kadaster has discussed the implementation of TDR in the Netherlands and concluded that there are five options to implement TDR; (1) a loose arrangement, (2) embedding TDR in the Ow, (3) in the expropriation law, (4) in the law relating to rural development (Wilg), or (5) a new law. They argue that a new law would not be preferable in the current trend of less regulation. According to Kadaster (PC) are the first or second option suited the best for the Dutch situation. The third possibility, in the expropriation law, might sound illogical but has to do with the possible degradation of the ownership through some TDR applications in which building rights seem to have more rights than ownership. This is through the European Convention on Human Rights (EVRM) and the Dutch constitution protected and not preferable (Dieperink, 2009). An possible option to solve this could be the option for the current owners to be the first to who the right is offered and the right to self-realization (PC, Heijmans; Kadaster). Besides the EVRM and the Dutch convention are there more rights which must be taken into account and do disturb the free allocation since these laws are based on European laws and cannot be exceeded in the Netherlands (PC, Kadaster). Some examples are Natura 2000 areas, the ecological main structure, planned (international) infrastructure, safety issues and the European procurement law.

Since the problems in the Dutch real estate have to be tackled fast are quick interventions necessary (Kantorenloods, 2011; PC, Bleker), but a transition period has to be taken in account. A possibility to make quick use of the new tool could be an experimental law which can be implemented quicker and could test possible outcomes (PC, OGA). If the law seems to be successful after several years could it be fully implemented. An integral exploration of possibilities is important before the implementation of new laws, like the Ow, and future growth (Zwalve-Erades & Zebel-Vaudo, 2013).

## 10.5 Conclusion

This chapter has explored how the Dutch context could learn from the TDR approach in Brazil and how a TDR system could work in the Netherlands. Studies on the international context have shown that the TDR approach is very effective under certain circumstances. However, these circumstances are not present in the Netherlands and therefore are adaptations to the TDR system required. By using the philosophy of stimulating the market for good, desirable developments and punishing the market for causing negative effects have the objectives of table 3.1 been included. This could be done with the introduction of a maximum quota, increasing the perimeter and combine the development stimulation with a reverse demolition allocation to include more externalities in the system. This approach could offer a long-lasting solution for the planning system. Through this structure, based on free allocation of a responsible market through the subsidiarity rule, is the market able to find its own allocation in a public framework which stimulates the market and is adapted to the context.

## 11. Discussion and conclusion:

This research aims to contribute to new planning approaches in an international context, and to answer a social constructed market problem. The aim is to provide international studies with new insights in the use of TDR systems within the current planning context and the possible effects of these approaches. It studies if transferable development rights influence spontaneous urban regeneration, the effects of this approach and if such a system is possible to use in the Netherlands. Through this does the research test theory in the urban context. The following chapter provides answers to these questions, a reflection on the performed research, recommendations and possibilities for further research.

This research has shown that TDR systems could influence urban development and public value capturing. The CEPAC / TDR system does suit current changes in the context but the socio-economic and long term influence can be questionable. The approach does also offer possibilities for the Dutch context which will be discussed below.

### 11.1 Value capturing

Looking at figure 8.2, can it be concluded that the captured value from the UOs with CEPACs is remarkably higher than the UO without CEPACs. This implies a possible relationship between the captured value and the CEPACs, but there could be other influences which influence the market interests, and indirect the captured value too (Amsler, 2011). Positive about the UOs and the use of CEPACs is the decreased dependence on often smaller and derived from taxpayers, municipal budgets (Lindau et al., 2009). Suiting the allocation theory, one area will be valued more than another through a system of supply and demand. This can be seen in figure 8.1, which shows that the CEPACs are valued higher when these become scarce to the market. Other factors than CEPACs which could have influenced the captured value are urban expansion and political influences.

It has been shown that this system only works if there are enough incentives to the market (Webster & Lai, 2003) since the tool is dependent on market interest. Some criticize the CEPAC system for being a strategic allocation by municipalities in areas which already gain interest from the market to increase municipal incomes (Bernardini, 2005; Ferreira, 2000). This possible, forced allocation by municipalities is beyond the scope of this research but it refers to the prioritized areas which do disturb the spontaneous allocation as mentioned above.

If the CEPACs have a significant relationship with the captured value could be proven or rejected when more UOs with CEPACs are available to gain more information. For this study, it can be concluded that UOs with CEPACs do capture more value than UOs without CEPACs and that the use of CEPAC rights follow the expectations from the property rights theory.

### 11.2 Public developments

Webster and Lai (2003) argue that spatial planning is embedded in a socio-economic, political and cultural context. The organisation of space is important to solve socio-economic challenges (Lungo & Baires, 2001). Sao Paulo mentions uses UOs to solve the urban challenges, which according to the

description of Goksin & Muderrisoglu (2005) should include economic, physical, social and environmental lasting improvements. This stands opposite to the critics to the UOs, which are criticized for the demolition of heritage, gentrification, social exclusion, uncoordinated private actions and a municipal focus on the development of the private market. This does not suit the planning aim to be an expression of the society. In theory, municipalities should be able to control public developments through the separation between project and process with the CEPACs (Sandroni, 2010). But the market has the indirect power to choose the projects financed by the CEPAC revenues, through their decision whether they buy the CEPACs in a distribution linked to specific public interventions or not.

The ignored socio-economic development and the replacement of poor people could eventually reflect itself in a decreasing GDP growth, which is not in the interest of the market (Webster & Lai, 2003). An important missing factor is the public voice, which is not presented in the UOs. Only when this will be included can planning become an expression from different fundamental values of the society, like Nadin & Stead (2008) describe spatial planning, and become a lasting improvement as Goksin & Muderrisoglu (2005) mention. More factors should be included in the UO approach when Sao Paulo truly wants to regenerate (areas in) the city instead of physically redevelop areas. If this will not be included soon will it reflect in a future loss of welfare since companies and residents have the choice relocate themselves to cities with a better quality of life (Webster & Lai, 2003). According to the theory, the solution should be found in the subsidiarity rule, but if the market would be interested today in such an approach has to be proven in practice.

### 11.3 Integrated development

An urban plan should be based on a few factors which cause an agglomeration of positive factors to be successful (Goksin & Muderrisoglu, 2005). The UOs are based on several specific factors which do create a pattern of (planned) integrated developments in UO areas but are not connected to the other parts of the city. It causes an agglomeration of possibilities within the UO perimeter, but does not integrate with the development of the total urban environment. As the case studies showed did problems moved to neighbouring areas since the money cannot be spend on an integrated approach. This is caused by the UO perimeter which states to regenerate a specific area in the city. A strong municipality and system of governance would be required to convince the market about the importance of developments with more spill-over effects for their own and the city's future profit.

### 11.4 Flexibility

Van der Krabben (2009) argues that regulatory planning is not always the best option for planning because it does not lead to a total welfare optimum. Solutions, in line with the property rights approach, could be possible in planning to prevent these problems (Schmidtchen et al., 2009). The market is able to adapt faster to changes in the context if they have the freedom to innovate (Needham, 2006). This suits the current context with more footloose industries, which requires cities that can quickly adapt to their preferences and a governance system to fulfil this duty (Goksin & Muderrisoglu, 2005).

Tradable quotas allow the market to make their own decisions and allow more flexibility without necessarily compromising on the goals of regulation (Webster & Lai, 2003). Each context is different and the planning structure has to be able to adapt to this (Nadin & Stead, 2008). This does not mean that a generic approach with a generic tool is not suited for planning. When this is well applied does the context related application of the system influences the outcomes (Needham, 2006). This suits the shift towards new stakeholders and a more flexible, strategic approach since master planning holds innovation and does not always serves the societies interest (Carmona, 2010). The development process accelerates and possible profits increase (Needham, 2005b).

The more flexible CEPAC approach does give the market, within its limits, the power to decide over urban outcomes. This spontaneous approach requires responsive governments to create legal environments that support innovation, competition and accumulation of private wealth (Webster & Lai, 2003). The market will be free to achieve maximum profit and covers the externalities in this process. When this is done well, does it have advantages to the society and suits the changing context, but this system could lock itself when the incentives and externalities are not well included in the approach.

### 11.5 Transparency of the governance system

Although BM & BOVESPA (2013) argue that the financial insurance through the CEPACs will improve the urban environment through development allocation is the transparency missing. The missing influence of the society, the role of stakeholders and the (non)collaboration between different stakeholders are a large threat for the UO results. Salet (2008) argues that such interventions in the planning system take time and require a long term vision by strong governments. Practice has shown that difficulties in the system have to be solved and that threats to the system are lurking. It takes time for all stakeholders to adapt to a new system but the system itself has to stay up-to-date as well now is shown that CEPACs can improve the transparency. However the practical approach of the UO system has to be improved further.

### 11.6 Influence on allocation

This research started with the question: *'How do the transferable development rights in Sao Paulo's UOs influence spontaneous urban regeneration?'* and has the objective to study the effect of CEPACs on allocation. This in a context which is under influence of the in chapter 2 described planning shifts and does respond to new economics and globalization (Ferreira, 2000). The UO and CEPAC tools are a combined approach which suites the current shifts and have been studied in this research.

Through the available data from the 25 CEPAC auctions in Sao Paulo, case studies and the interviews this research could be concluded that the market mechanism shows a clear pattern of allocation of rights (the CEPAC right) towards the owner who values these rights the most. This suits Carmona's description of strategic planning which *"facilitates competition and the development of markets"* (Carmona, 2010, p. 14). This research proves that through competition and scarcity, rights and goods will be valued higher in the shift from public to club or private goods, as Webster & Lai (2003) argue. Since the market is working for its own objective, which is profit, will the CEPACs be valued maximum equal to difference the rights makes compared to the next best use, related to their own profit (Schmidtchen et al., 2009).

The tool is based on the subsidiarity rule and the owner of the CEPAC comes closer to being the residual claimant through the inclusion of externalities (Van der Krabben, 2009; Webster & Lai, 2003).

This research clarifies that not all externalities are included in the CEPACs. Like figure 11.1 illustrates, does the CEPAC approach brings the situation closer to the total welfare optimum (SMC) in which all externalities are included, but it has not reached this optimum yet. The CEPAC owner comes closer to being the residual claimant, but not there since some externalities are left in the public domain. This research shows the following explanations for this; (1) Externalities are, just like planning under influence of time and context through which all externalities cannot be included. The UOs are based on a laws, which are made on a specific point in time, while the context continues to change; (2) The proposed interventions from the CEPAC revenues have to be attractive for the future CEPAC owners since their interest is a precondition for the execution of UOs; (3) There is a missing integral vision causing urban problems to move from one place within the UO perimeter to another place outside the UO perimeter; (4) through political power, market pressure and a missing public voice are not all externalities included in the approach and (5) tradable quota's allow the market to make their own decisions but this does contain transaction costs which disturb the allocation. Van der Krabben (2009) mentions: *“If we are able to internalise external effects by assigning property rights over them, spontaneous order solutions may be able to treat the externality more efficiently than planned order solutions would do”* (p. 2876). This research shows that the CEPAC system is more effective than the previous system, but that a total welfare optimum is not yet reached since there are still externalities left in the public domain.

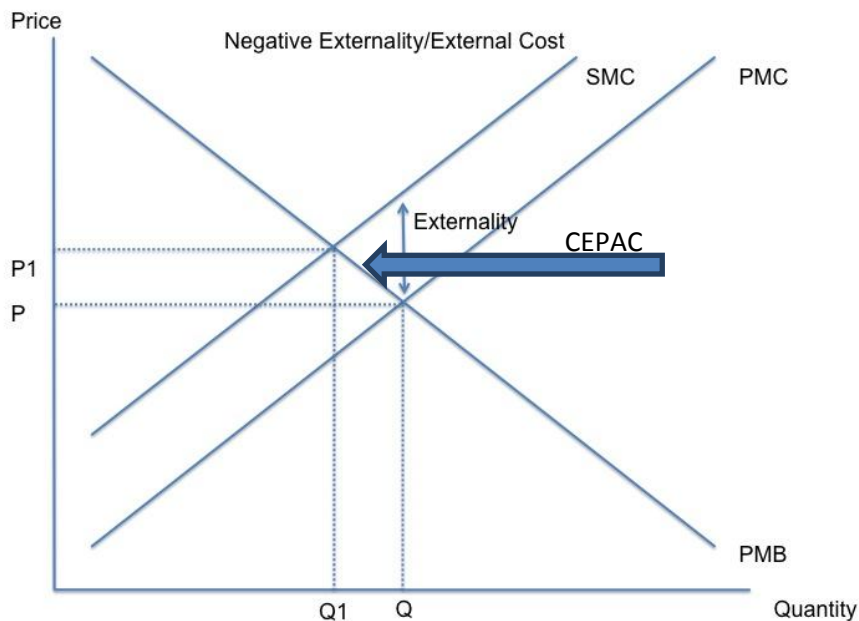


Figure 11.1: CEPAC externality. Source: <http://ansish.files.wordpress.com/2010/02/negative-production-cost-externality2.jpg> on 15/09/2013. (Edited by author)

Another concern is the geographical use of the CEPACs. This research shows that the allocation of rights happens through valuing the rights at auctions, but these rights have restrictions through an UO perimeter and the conditions of the UO area. Webster and Lai (2003) describe spontaneous allocation of rights as rights which are free to use where the owner values these the most and are able to adapt to changes without central planning. It is possible to spontaneously allocate the rights within the perimeter of the UO. However, through missing central planning, can the rights not be used outside the UO perimeter. This prevents spontaneous allocation of the CEPACs and does constrain the market. Another, financial influence that could prevent the allocation of the market is the cost of relocation. Coase (1960) mentioned that transactions costs do matter. This implies that when the costs of relocation decrease, a company would be able to adapt quicker to changes in time and context. A third explanation could be political and market agreements which influence how and where the rights are used without concerning all externalities. It also happens regularly that the market and municipality have other preferences through different interests in this process. It has been shown that UOs work with the right incentive to allocate private capital but that the UO perimeter constrains spontaneous allocation of rights.

This research studied the use of CEPACs in Rio de Janeiro as well, and mentioned a few other international examples. The study in Rio de Janeiro has not shown the same pattern of valuation and allocation of the rights as happened in Sao Paulo. The changes in the UO law made it possible for (semi-public) real estate funds to acquire the CEPACs, which happened too. All the available rights were bought by the CEF, in order to sell these in the secondary market. It does not suit the objective to decrease public risks when they sell the CEPACs to a public fund. A possible explanation for this can be the pressure from national, state and municipal powers on this project. This is contradictory to the allocation theory. Another, but not mentioned explanation could also be that the market interest was not available or that the CEF did value the rights the highest.

Experiences in Valencia have shown us that a TDR system could cause an overproduction of real estate through the reckless aim to develop. This has caused physical, economic and social problems through vacant neighbourhoods which are built as an investment for residents that do not exist, or as a second home which people cannot afford in the current economic crisis. The overproduction of real estate caused problems for stakeholders who obtained TDRs. These stakeholders are now in the possession of a right which has lost its value by the disturbed system of supply and demand. Walls (2012) argues that the current recession did make it complicated for TDR programs to be successful. The recession has showed the risks of such a system to the state, market and society. This situation could possibly improve when the economy recovers, but the system requires adaptations now it has showed the risks and disadvantages to all involved stakeholders.

It could be concluded that the CEPACs, through their impact on profit, do influence the decisions private companies make. The party who values these rights the most acquires the rights. The restrictions of the UOs and CEPACs prevent spontaneous allocation of the market. The UO perimeter is an important factor for this. The effects in Rio de Janeiro seem to be different through the adapted law system which allows CEF to interfere in the market. The Valencian model and the experiences in America have shown that

the pressure on the real estate market is an important pre-condition to use the CEPACs as these rights are applied in Brazil and Valencia and the United States (Walls, 2012). The CEPACs make use of the allocation theory to achieve a total welfare optimum but through several above mentioned factors has this optimum not yet been reached.

### 10.7 Possibilities for the Dutch context

As discussed above, the CEPAC system is very suited to (physically) upgrade a specific area when the markets' interest is present. Webster & Lai (2003) argue that systems only work if there are enough incentives to the market. This research has studied if the implication of a TDR model could be applied in the Dutch planning context, since the Dutch planning approach has to adapt to a changing planning context (Van der Krabben, 2013). By studying the Dutch planning challenges can be concluded that the quantitative demand in the Dutch market is different than in Sao Paulo since there is no scarcity. A TDR system requires adaptations but could be used to give more responsibility to the market and in the context of redevelopment and strategic planning.

The theory, applying the subsidiarity rule through the inclusion of externalities, does suit the philosophy: *'pay for negative externalities and stimulate desired initiatives'* (PC, Heijmans). Through applying this on a TDR system could the system be used in the Dutch context with a retrospective allocation model to balance the real estate market (figure 10.1). This does include more of the externalities than the original TDR system from Sao Paulo and brings the owner of the right closer to being the residual claimant. Through including demolition or refurbishment of a building in this mechanism does the approach include the life cycle of a building or area. By a maximum quota and increasing the perimeter in which the rights can be used could an overproduction of real estate be prevented. This application of the TDR system could bring the Dutch society closer to a total welfare optimum.

### 10.8 Conclusion

This research has been performed in the scope of an international changing planning context with the city as a central place in the society, responsibility for planning that shifts towards the market, greenfield development which is traded in for inner-city redevelopment while shifting towards strategic planning approaches, which offer lasting improvements. Sao Paulo has introduced the CEPAC system to adapt to these changes and to capture value from real estate developments since these profit from public interventions. CEPACs are additional (transferable) development rights which are sold in auctions and the revenues are used to finance public infrastructure. Through applying CEPAC transferable development rights, in line with the property rights approach, should the owner of the CEPAC right become the residual claimant through the inclusion of externalities in the subsidiarity rule to achieve a total welfare optimum.

The success of land-titling through property rights is dependent on effective allocation of resources and the dealing with the related externalities (Van der Krabben, 2009; Webster & Lai, 2003). This has not happened in the UO areas yet (Galiani & Schargodsky, 2011). However, looking at the physical conditions of the UOs with CEPACs can be concluded that these areas have more facilities and have a better urban environment than other areas in the Sao Paulo. The areas Faria Lima and Agua Espraiada

have physically been improved. But since these UOs are mainly focussed on the physical improvement of an area cannot be concluded that these areas have been regenerated. The critical expression 'UOs as a municipal cashcow' instead of urban improvements suit these critics (PC, Tecnisa). Referring to Jacobs (1961) can be questioned if the UOs are 'sacking the city' since the buoyancy and vitality of the city is only accessible through the vulgarity of the exaggerated developments. The existing vital society in the area is not included in the approach and the areas are redeveloped for a commercial real estate and new kind of users, who do not have a relation to the former function and residents which threatens cultural heritage. Therefore do the UOs not offer a strategic, lasting improvement to urban planning but act as an outdated physical redevelopment approach.

Influences of the CEPAC transferable development rights are clearly visible in the UO areas and do improve the urban environment within the UO perimeter. The UO perimeter does disturb spontaneous allocation of the market, but ensures that the CEPAC revenues will be reinvested in the area, which is in the markets interest. Other factors like market preferences, politics, geographical and ecological conditions of areas influence this process too. The perimeter suits the UO aim to regenerate a specific urban area (Biderman et al., 2006) but works simultaneously as a constraint and incentive to the market.

Considering the possibilities for a TDR approach in the Dutch context can be concluded that the current (municipal) perimeter has caused many problems in the commercial real estate market through overproduction by each municipality. There is a missing organisation to control supply and demand in the market. A retrospective TDR approach (figure 10.1), which causes allocation of new developments on the best places and a reverse allocation through demolition on the most dilapidated places, could be a useful learning from this study. The retrospective approach can also solve problems which have been seen in an international context, like the described example of Valencia. It concludes that the TDR approach could offer a new planning tool to the Dutch planning system, which is currently under pressure.

Internationally have CEPAC / TDR systems shown that the problem is not 'how to capture the money' but that the threats lie in 'how to spend this money' and to prevent overproduction. To achieve a strategic planning approach with lasting improvements should more externalities be included. The implementation in other countries should be considered, but with necessary adaptations (Sandroni, 2010). Through studying the possibilities in the Netherlands and the discussed CEPAC approach in Sao Paulo could Brazil rethink its approach.

The in theory described allocative market behaviour does happen in practice with the CEPAC tool referring to figure 8.1. The CEPACs are valued through a system of supply and demand and are obtained by the party who values these rights the most. Concluding this study with answering the research question; '*How do the transferable development rights in Sao Paulo's UOs influence spontaneous urban regeneration?*' can it be concluded that the CEPAC system in Sao Paulo does affect allocation by influencing the markets behaviour. The CEPAC system is an innovative and well-functioning market approach, related to planning system, and aims to make smart use of the subsidiarity rule. However, 'all

decisions come with some kind of balance or sacrifice' (Simon O. Sinak). The most important precondition for the CEPAC system, a growing market, is critical. This precondition cannot be ensured on the long term when socio-economic aspects are not part of the urban strategy. This since a further growing economy is related to the GDP and socio-economic conditions of the society. Many externalities can be covered by the CEPAC revenues, but despite the fact that the CEPAC system does influence the allocation of the market, should more externalities be included in the system to come closer to a total welfare optimum, or be ensured through other ways of governance. However, this research showed planning cannot be left to the market since it is not possible to include all externalities in the approach, through changing time and context. Therefore will some kind of (public) framework always be needed in which the market has to operate.

### 10.9 Critical reflection and recommendations for further research

This performed research provides several conclusions and new insights in TDR systems. It is not possible, and not the objective from this research, to generalize the findings. This for several reasons; (1) I believe that planning is under influence of time and context; (2) The first UOs are not yet finished, which makes generalizing the outcomes impossible; (3) Since the UOs are relative new is it not possible to contain all necessary quantitative data in the field and; (4) There are few active UOs yet which makes generalizing the findings hard. However, as Kim and Mahony (2005) mention does the property rights theory has a substantial value to explain and predict market phenomena's, as is done with the CEPACs in this research. The available UOs and stakeholders, familiar with the CEPACs, have limited this research. Further research to this topic could be useful for a more specific conclusion when more UO projects, with and without CEPACs are available, are issued and new stakeholders will be included in the process.

This research contributes to the debate about the use and effects of transferable development rights in planning and contains information about the practical use of the CEPAC system and the effects of this planning tool. The research does also provide a critical view towards state planning and planning by the market. The case studies in this research are suited to gather information about the tool and theory in its real life context (Yin, 1984). Through the use of case studies, secondary data and interviews with experts in this field can this research be placed in a broader context and could critics be confirmed or rejected (Saunders et al., 2008). This research peers into the 'box of causality' to answer the research question, how this tool influences planning, instead generalizing a relation. Qualitative research is suited for this aim (Gerring, 2004) and further quantitative research is needed if the objective is to study a relation. But generalization will be difficult since the planning context is constantly under influence of a broader changing context (Webster & Lai, 2003). This does not mean that the studied tools cannot be applied generic since these can flourish in another situation when these are properly adapted to it (Needham, 2006; Sandroni, 2010).

To gain a more reliable answer could more interviews be performed in the future. The statements from the interviewees and their company's or institutions opinion could have been interoperated wrong, which could have impact on the validity. For this reason all statements are analysed carefully, linked to secondary data and theory crosschecked a second time to prevent misunderstandings. More information about the effects of other TDR systems in other sectors might be useful to compare market reactions as well but this felt out of the scope of this research.

Unfortunately are not all stakeholders included in the UO approach, and so in this research, which is a missing factor. The society is not able to represent them in the UO process and is not allowed to do this since they do not have the knowledge about the UOs and CEPACs. But the society is influenced by this. This study aimed to integrate the society's interest best as possible through the literature and interviews with other stakeholders who could explain the society's situation but these do not give the society's opinion. Currently has the situation been changed in many Brazilian cities through the protests which emphasise the importance of the public voice for an effective long term system (NRC online, 2013). The final consumers of the UOs have not been included in this research too, since the UOs areas are still under construction are these yet unknown. Critical factor is that the current and future residents are not included in these projects. When (more) projects have been finished could information from the end-users be useful to draw conclusions about the success of the urban projects.

Through the use of multiple methods and interviews with proponents and opponents from the CEPACs has this study been able to crosscheck the findings to reach an objective conclusion and has been able to study the research question. Further questions about the UOs and CEPACs, as mentioned above could be topics for further research. For the Dutch context has several literature about TDR been used. The literature had to be analysed critically before using this, since some papers were written before the global economic crisis of 2008. The more positive attitude towards TDR approaches is clearly visible in these papers since many of the externalities this research has shown were not seen as limitations before the economic crisis. An example is Backus et al., 2005, who call TDR 'a very promising tool which will promote further developments of commercial real estate', which is the opposite from what we currently need. This made me decide exclude some papers since these were not suited for the context anymore. Further research on TDR in the Netherlands is needed before implementation and this research provides an outline for this.

## 11 References

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## Figures

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