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The Sale of Development Rights as a Land Value Capture tool in Ecuador: The case of the Metropolitan District of Quito

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Summary

The following research was done around the implementation of the Sale of Development rights as a land value capture instrument in Ecuador, more specifically in the Metropolitan District of Quito. In general terms, the Sale of Development Rights is the concession to a landowner, or developer, of building rights beyond what is established in de zoning plan, as a mechanism to capture increase in value of land by the government.

This tool is fairly new in the country, and its implementation in Quito began on the year 2012; therefore, an assessment on the first years of operation of the instrument seems necessary in order to generate recommendations for a more efficient and effective execution towards the achievement of its objectives.

This research intends to expose how the instrument has been applied in Quito by analyzing it through 4 dimensions: the economic dimension that refers to the land market environment and the factors that affect land values; the legal aspects that enable the instrument to be implemented; the financial outcomes of the instrument as a result of its design; and, the social validity of the instrument in terms of the achievement of the objective of redistribution and infrastructure financing.

The methodology used in this exploratory research is the single-case study, where both, qualitative and quantitative data was collected and analyzed. The data was collected, during fieldwork on the months of June and July of 2013, from primary and secondary sources in the form of field documents, databases provided by the municipality of Quito, interviews with private, and public sector actors, etc. Qualitative semi-structured interviews were conducted as a triangulation strategy in order to ensure the validity of the research.

The results of this study showed that in the Ecuadorian legal context land value capture tools are supported by the principles of the *social and environmental property of property* and *equitable distribution of benefits and costs* of the urbanization process, stated in the Constitution and all its supporting documents at the national and local level. In relation to the land market, although there is a clear increment in land values in Quito over the last decade, the research does not show conclusive results in relation to the impact of the possibility of purchasing additional density, through the payment of a fee, in these values.

In reference to the financial aspects of the instrument's implementation, theoretically, the local government captures the entire increment in land value due to the increment in density; however, this depends on how well cadastral values reflect market values of land, given that cadastral values are the base for the calculation of the fee for the additional density rights. In that respect, the research revealed discrepancies between market values and cadastral ones; where this occurs, this discrepancy allows the private party to retain a portion of the increment in the value of land.

Finally, in relation to the accomplishment of its objectives, the instrument does not have a significant impact on the densification of served areas, given the fact that its design allows the purchase of development rights only up until 2 additional stories beyond what was previously established by zoning. Additionally, not enough cases have occurred in order to achieve real densification.

In terms of raising revenue, the instrument had collected around 6 million USD in one and a half year, which in comparison with the total budget does not have an significant impact; however, considering that the implementation of the instrument does not require additional investments to support the extra density, and considering that the instrument is related to expenditures in infrastructure for services, this amount seems more substantial.

Keywords

Density - Quito - Land value capture - Development rights - Zoning

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Cristina Gomezjurado
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Abbreviations

AIVA	*Área de Intervención Valorativa* Valorative Intervention Areas
BID	*Banco Interamericano de Desarrollo* Interamerican Development Bank
BIESS	*Banco del Instituto Ecuatoriano de Seguridad Social* Ecuadorian Social Security Institute Bank
CAN	*Comunidad Andina de Naciones* Andean Nations Community
CEPAC	*Certificados de Potencial Adicional de Construção* Certificates for Additional Construction Potential
COPyFP	*Código Orgánico de Planificación y Finanzas Públicas* Organic Code of Planning and Public Finances
COOTAD	*Código Orgánico de Organización Territorial y Descentralización* The Organic Code of Spatial Organization and Decentralization
DMQ	*Distrito Metropolitano de Quito* Metropolitan District of Quito
FAR	Floor Area Ratio (COS-Total)
FpAR	Footprint Area Ratio (COS-PB)
ICQ	*Instituto de la Ciudad de Quito* Institute of the City of Quito
IHS	International Institute of Urban Management Studies
INEC	*Instituto Nacional de Estadísticas y Censo* National Institute of Stadistics
OODC	*Outorga Onerosa do Direito de Construir* Development Concession
PMOT	*Plan Metropolitano de Ordenamiento Territorial* Metropolitan Spatial Plan
PUOS	*Plan de Uso y Ocupación del Suelo* Land Use and Emplacement Plan
ROI	Return on Investment
STHV	*Secreatría de Territorio, Hábitat y Vivienda* Secretariat of Territory, Habitat and Dwelling
USD	United States Dollar ($)
UBN	Unsatisfied Basic Needs Index
TDRs	Transfer of Development Rights
ZUAE	*Zona Urbana de Asignación Especial* Urban Zone of Special Assignation

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Chapter 1: Introduction

1.1 Overall Theme

The overall theme of this study the implementation process of the land value capture instrument: Sale of Development Rights in Ecuador. Particularly, the research is focused on the case of the Metropolitan District of Quito. Given that this is a relatively new instrument in the Ecuadorian context, this work takes into consideration, through a literature review, the factors that enabled the instrument to work on other cities, as examples. Later, an evaluation of the implementation process that had been followed so far in Quito, and the way it achieves its objectives, of densification and social justice, is presented.

The chapters and research questions of this thesis are structured around four perspectives or dimensions through which land value capture tools can be understood: economic, legal, financial and social.

1.1.2 Background

Over the last few years, Ecuador had advanced in the definition of a legal framework that allows local governments to develop and implement new land value capture instruments, as well as to continue implementing instruments already in use.

The local government of the Metropolitan District of Quito has historically been more innovative in applying land management instruments than other municipalities in the country[1]. In that context, the municipality, following a density policy that aims to slow down sprawl processes, approved in 2011 the Ordinance No. 106 that authorizes the increment on the number of stories and development rights (beyond those established by the Land Use and Emplacement Plan) through the compensation to the local authority for such increment. Later, in the same year, the instrument was introduced as part of the Ordinance No. 172 that contains the Land Regime, which differs slightly from the instrument presented in the previous Ordinance.

This increment, according to the Land Regime, can happen under the following circumstances: in urban areas specially designated for the application of the instrument; in special large scale projects that contribute to the public space, green areas, or social objectives; in priority projects, designated as such by the City Council; and, in projects that implement environmentally friendly technologies. The increment in land value, due to the grant of additional development rights can be paid by private parties, to the local authority, in cash or in kind, through the provision of infrastructure or land.

Given the fact that the sale of development rights is new in the Ecuadorian context, and with few years of implementation in Quito, the full circle of the implementation of the land value capture instrument has not been closed. That is, the results of the reinvestment of the revenue that the instrument generated cannot yet be pinpointed. However, this study will attempt to understand the potential of the instrument to finance public goods, more specifically, service infrastructure, and if the local government accomplishes its policies of densification and redistribution.

[1] However, not exclusively.

1.1.3 Problem Statement

The Metropolitan District of Quito, the capital city of Ecuador, is located in the Andean highlands, in the province of Pichincha. Politically, the District is divided into 55 parishes, 33 parishes are considered rural and 32 are considered urban. Additionally, the District is divided into 8 Zonal Administrations.

The population of the District, according the last census (November 2010)[2] was of 2'239.191 inhabitants. Around 72% of the population of the District (1'619.146 inhabitants) is located in the urban parishes, while 28% of the population lives in the rural parishes (620.045 inhabitants).

The average density of the urban area of the District is 83 inhabitants/ hectare; however, an analysis by sector shows significant heterogeneity across the city with densities ranging from 27 inhabitants/ hectare to 395 inhabitants/hectare[3]. In general terms, the sectors with higher densities (dwelling density) in the urban parishes are the Historic Center, the south-center and the north areas of the city, which is explained by the fact that the urbanization processes in these areas began earlier than in the rest of the District. The center-north area, in addition to dwelling uses, also concentrates commercial, amenities and services uses. In contrast, the periphery of the city present lower densities since its urbanization process is more recent, and because of its irregular topography[4].

The growth pattern of the city in the last decades has been characterized by the emergence of irregular settlements and slums on areas of environmental protection that border the city, and by the expansion of the city towards the surrounding valleys (former agricultural areas)[5] although the spatial structure of the District concentrates services and amenities in the so-called hyper-center '*hipercentro*' of the urban area, which is formed by the Historic Center, the south-center and the north-center area.

Refer to Annex 1: Concentration of services in the urban area.

In accordance with the expansion pattern mentioned above, the biggest growth rate of the District is seen in the rural area (3,4% annual growth in the period 2001-2011, while the annual growth rate of the urban area is 1,4% for the same period), especially in the parishes that are considered sub-urban, given their proximity to the urban area (The annual growth rate of sub-urban parishes is 4,0%), which demonstrates the sprawl phenomenon of the city towards the valleys that surround the city; phenomenon that began in the decade of the 90 (Municipio del Distrito Metropolitano de Quito, 2012).

In contrast with this urban growth pattern, an analysis on land uses revealed that in within the urban area of the District (urban parishes and urban areas of rural parishes) there are 7.932 hectares of vacant land, divided among 86.448 plots. (Municipio del Distrito Metropolitano de Quito, 2012) Additionally, is worth mentioning that in February of the 2013 the international airport of the city was moved to the rural area, leaving behind 125 hectares for

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[2] *Instituto Nacional de Estadísiticas y Censo*

[3] Based on unpublished information from the Secretaría de Territorio, Hábitat y Vivienda of the Metropolitan Distrcit of Quito. 2012.

[4] Based on unpublished information from the Secretariat of Territory, Habitat and Dwelling of the Metropolitan District of Quito. 2012.

[5] This represents a bigger demand for services and infrastructure in increasingly farther areas.

an urban park, in the north area of the city. It is anticipated that the area surrounding this important land use change that formerly had strict land utilization restrictions (particularly in the height of buildings) will undergo a process of redevelopment.

Given these circumstances, the municipality had adopted a policy of densification in favor of the urban area. First, in 2011 the Ordinance No.106, that allows the sale of development rights, was approved as an incentive for developers to build in vacant plots, and later, through the Metropolitan Spatial Plan of the District *'Plan Metropolitano de Ordenamiento Territorial'* approved in December of 2011, it was established that no more land, beyond what had been already established in previous plans, will be allocated for urban uses until the year 2022 (Municipio del Distrito Metropolitano de Quito, 2012).

As for poverty incidence in the District, it is important to note that the parishes with more incidence of poverty by household, based on the Unsatisfied Basic Needs Index (UBN)[6], are the rural parishes where 86% to 27% of households are considered poor or extremely poor; meanwhile, the urban parishes present an incidence of less than 37,4% of poverty by household (Instituto de la Ciudad de Quito, 2013). It is worth mentioning that, in general terms, the farther from the urban area, the higher incidence of poverty occurs.

Additionally, it is worth mentioning that a big percentage of the municipal budget comes from the National Government assignation, and other external sources such as international cooperation grants, which denotes the challenge that the local government has of accomplishing its density policy and to raise revenue required to finance infrastructure to poorly served areas of the city, without depending on external sources, and to improve the quality of life of its citizens, specially the poorer.

1.1.4 Research Objectives

The objectives of this research are:

- To understand what are land value capture instruments and what are the factors that enable them from different perspectives and dimensions.
- To provide knowledge and understanding on how a land value capture instrument works in the particular conditions of the Metropolitan District of Quito.
- To compare, to a certain extent, the application of the sale of development rights in Quito with other exemplary cases.
- To understand the potential, and limitations, of the instrument to finance urban growth, to accomplish its densification purpose, and to have an impact on the improvement of the quality of life of the citizens, especially of the poorer.
- To provide an assessment of the first years of implementation of the instrument which will allow the proposal of policy recommendations for the Municipality of Quito for a more efficient and effective application of the instrument.

[6] Unsatisfied Basic Needs is and index to measure poverty that has been widely used in Latin America since the decade of 1980. The information presented here is based on that provided by the City Institute of Quito *'Instituto de la Ciudad de Quito'* ICQ, which classifies as a poor person that whose household has 1 basic unsatisfied need, and as extremely poor, a person whose household has 2 (or more) unsatisfied basic needs. The basic needs are related to adequate housing; adequate water and sanitation provision; basic education and minimum income. The criteria used is based on that used by the *'Comunidad Andina de Naciones'* CAN.

1.1.5 Research Question(s)

How is the sale of extra development rights being implemented in Ecuador?

The specific sub-questions that will guide the research into 4 dimensions, legal, economic, financial and social dimensions are:

- Do extra development rights increase the value of land?
- What are the legal factors that incentive or allow redistribution through the sale of extra development rights?
- To what extent is the increment on value of land captured through the sale of extra development rights?
- Are redistributive and social objectives being achieved by the implementation of the sale of extra development rights?

1.1.6 Significance of the Study

Provided that the Constitution of the country yields a legal support for the implementation of land value capture tools in the country, the following research intents to provide a theoretical understanding, as well as a practical one, of the principles behind land value capture, and the social validity behind these instruments. Additionally, the study also tries to determine the real potential of land value capture to raise revenue for the local government for the provision of public goods, which ultimately influences directly on the quality of life of all citizens in the Metropolitan District of Quito.

In that sense, the significance of the study lays on the fact, that it may be able to identify factors which can be altered for a more successful implementation of the instrument, in terms not only of revenue raising and increasing the fiscal autonomy of the local government, but in terms of achieving the social objective of redistribution and social justice, and the urban objective of densification.

This study is being made after only 2 years of the approval of the ordinance, and only one year and a half of implementation which limited the availability of empirical evidence to judge factors and results; on the other hand, this fact means that it is early enough to propose corrective measures, if necessary, for a better and more effective application of the instrument.

1.1.7 Scope and Limitations

The research is focused in the application of the land value capture tool that allows the increment of development rights (beyond those established in the Plan of Land Use) in exchange for compensation to the local authority for such increment, in Ecuador. The scope of the study is the Metropolitan District of Quito, the capital of the country; given that it is the only city that had implemented this instrument. Consequently, the strategy selected for this exploratory research is the Single-Case Study.

As stated before, the research covers four perspectives: the economic, the legal, the financial and the social dimensions related the instrument mentioned above, and the entire document is structure around these dimensions.

The limitations to this research are inherent to its scope and exploratory nature of the case study methodology. In that sense, not all variables are able to be studied in depth, as they are influenced by factors outside of the control of the researcher. Additionally, given the novelty of the instrument in Quito, not many examples have been applied. Given these two factors, generalizations regarding the findings are not possible; but rather, this work will provide a general image of what is happening in the District, regarding this instrument. It is important to mention that, concerning to the capacity of the local government to implement the instruments, factors like political will or corruption will not be considered.

Chapter 2: Literature review

The following literature review explains, in general terms, what land value capture is, its objectives, and the general principles behind the application of the sale of extra development rights.

2.1 Principles of land value capture and sale of development rights

Land value capture refers to "the process by which a portion of or all land value increments attributed to the 'community effort' are recouped by the public sector either through their conversion into public revenues through taxes, fees, exactions and other fiscal means, or more directly in on-site land improvements for the benefit of the community". (Smolka and Amborski, 2000, p.1)

This basic principle of returning to the community the increment of its actions has the objective of raising revenues, regulating land uses and controlling land markets (Furtado, 2000) with the greater objective of social justice through land value redistribution. However, this is not necessarily the rule for the application of the principles behind land value capture. For instance, in the North American context "these instruments are associated with the establishment of an environment that openly promotes business" (Smolka and Amborski, 2000 p.6). Therefore, it can be argued that the principle of value capture had found convergences in both economy traditions: The classic and neoclassic economy. In one hand, the liberal view (neoclassic economy) considers increment on land value to be an unearned rent, while for the classic economy, the payment to the government for increment in value of land can be seen as a payment for exclusive rights retained by landowners (Smolka and Furtado, 2001).

Nevertheless, in the context of the cities of the developing countries, such as the cities in Latin America, the instruments are applied as a way of recouping the 'unearned increments' and great importance is placed not only in the financial objectives of the land value capture, but on the social objective of equitable redistributing of land values and social justice.

The sale of development, or density, rights have been used, applying similar principles, under many names and variations around the world, such as the French '*Plafond Légal de Densité*'[7], However, special attention is given to the Brazilian case, given that density rights are a key factor in their land value capture strategy, and that a substantial amount of theory has been developed around it, which makes it , arguably, an iconic example of application of this instrument in the region, Latin America, and also in the rest of the world.

2.1.1 Sale of Development Rights and the Brazilian Case

In general terms, the Sale of Development Rights is the concession to a landowner, or developer, of building rights beyond what is established in de zoning plan, as a mechanism to capture increase in value of land by the government. This urban concept consists of granting building rights to interested parties under different conditions from those established by the zoning law or use and occupation law in use, that is, granting rights that the interested parties did not have before in exchange for monetary compensation, as a resource to finance further urban development, or to provide a social good (such as infrastructure, social housing, etc.) (Sandroni, 2011). These tools and concepts appeared in response to the accelerated growth of

[7] This instrument will be explained later in this chapter.

the cities, increasing demand of land, lack of accessibility to land and housing for low-income groups and the need to finance urban infrastructure (Sandroni, 2009).

In the Brazilian context the instrument has the name of Development Concession for Additional Building Rights (OODC)[8] and it is regulated on a national level through the City Statue *'Estatuto de la Ciudad'*[9] of the year 2001. However, the instrument is based on the concept of Created Land '*Suelo Creado*'[10] that dates back to the 1970s (Maleronka and Furtado, 2013).

A basic principle for the application of the *OODC* is that of the establishment of a basic FAR[11] through a Master Plan. In the city of Sao Paulo, through the Master Plan of 2001, the basic FAR was established as 1 (that is, the buildable area or building potential of a plot is equal to the surface of the plot), which meant developers and landowners located in an area with higher FARs had to buy extra building rights, even to use the rights they had prior the plan (Sandroni, 2009).

Another principle of the instrument is that the Master Plan, of the municipalities that chose to apply the instrument, should also define a maximum FAR (by areas) considering the availability of infrastructure to support density. Additionally, the Master Plan could also establish the possibility of change of the use of land, (Maleronka and Furtado, 2013) which will also be subject of land value increment capture.

Additionally, it is argued by Sandroni (2009) that the Interlinked Operations '*Operaciones Interligadas*' of Sao Paulo approved in 1987 (before the City Statute) are the first example of land value increment being captured through sale of development rights. The operations, which goal was to solve the problem of a slum located on private land, consisted in the owner of the occupied land obtaining an increment in FAR or a change on land use in exchange for 50% of the increment in value generated by that zoning change. This value would be used exclusively in the provision of social housing.

The example of application of *OODC* in Brazil, specifically in Sao Paul, over the last 10 years (since 2002, after the approval of the City Statute) had demonstrated its capacity to become an important urban policy tool, and its capacity to mobilize relatively big amounts of money.

Other aspects if the instrument and the Brazilian experience are discussed in more detail later in this chapter.

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[8] *Outorga Onerosa do Direito de Construir*, which is roughly translated to Onerous Grant for Development Rights, or Development Concessions.

[9] The Brazilian *Estatuto de la Ciudad* provides the legal and political tools enabling governments to a range of social intervention measures concerned with the free use of private property such as expropriation, easement and administrative limitations, designation of properties for heritage purposes, compulsory parceling, building or utilization and the right of pre-emption; among others. Also, it provides instruments targeted at democratizing urban management and the right to housing. These instruments are intended to ensure fairness in the distribution of the benefits of the urbanization process (Furbino Bretas Barros, A. M., Santos Carvalho, et al., 2010).

[10] *Solo Criado* means the possibility of increasing the Floor Area Ratio (FAR) of the plots or give the owner/developer more rights to build than what they had before. (Sandroni, 2009)

[11] Floor Area Ratio is a measure of intensity of urban use. "The FAR is the ratio between the total floor space area built on a lot and the area of the lot. FAR values vary, typically from 0.2 in suburban areas to 15.0 in downtown areas. Land use regulations usually fix the upper limit of permitted FAR" (Bertaud, 2010, p.47).

In the following paragraphs, the rationale behind the sale of development rights as a land value capture instrument will be explored under four dimensions: that related to the market and economic factors that increase the value of land; that related to the legal principles behind the instrument; that related to the financial and implementation dimension of its application; and finally, that related to the social goods financed by the captured value, that ultimately legitimize the instrument.

2.1.2. Legal Dimension: Property Rights and Building Rights

From the legal point of view, the sale of development rights is enabled by the separation of land property rights from building rights and the profit that these generate.

First, it is worth analyzing the concept of property. Property is a general term for rules governing access to and control of land and other material resources (Waldron, 2012). Property is often associated with the private scope, and so it is that "private property is perceived as an essential institution for economic development and wealth generation" (Ingram and Hong, 2009, p. 4). Private property rights guarantee an owner the exclusive right to use, develop, consume, sell, mortgage, transfer, and exchange possessions with other entities (Bentham, 1978) cited in (Ingram and Hong, 2009). A key point to this right is that assumption that "externalities generated from the individual ownership of property can be internalized at no cost. This assumption is often challenged in the case of land" (Ingram and Hong, 2009, p.4) given its characteristics as a unique, fixed and non-producible good.

It is important to note that the rights associated with property, specifically with private property, have not been stable through time and have been reshaped to "reflect changing technologies and changing social values" (Jacobs, 1999, p. 144).

In this context, Ostrom (2009, p. 28) defines property rights as a system composed by a 'bundle' of rights, rather than as a single right. This system is based on empirical studies and defines the following five as part of the so-called bundle of rights:

- Access—a right to enter a defined physical property.
- Withdrawal—a right to harvest the products of a resource such as timber, water, and food for pastoral animals.
- Management—a right to regulate the use patterns of other harvesters and to transform a resource system by building improvements.
- Exclusion—a right to determine who will have the right of access to a resource, and whether that right can be transferred.
- Alienation—a right to sell or lease any of the above rights.

Although, these rights are applicable to rural, productive land, the capacity of separation of rights has an interesting connotation once applied to urban land. In that sense the right to withdrawal can be applied in the urban context as the right to benefit or profit from land through developing it. In the same way, the right of management can be understood as the right, usually held by the government, to regulate urban uses and occupation patterns of land. And so it is that these rights can be separated in different schemes of ownership that contain different rights inside a 'bundle'. In this context of separation of the right to develop and build improvements on land could be retained by the government from private landowners.

Zoning

As defined by Fischel (1999, p. 406) "zoning is the most important method of land use regulation undertaken by local governments. It divides a jurisdiction into geographically contiguous 'zones'. The local zoning ordinance prescribes what may be done in each zone and what may not be done". Zoning in that sense can be understood like a set of constraints on land. Frequent strands on the regulations established by zoning are minimum area of plots, uses (residential, commercial, industrial or agricultural), maximum height of buildings, minimum setbacks, etc. Changes in these definitions can be changed without the consent of landowners (Fischel, 1999). Therefore, it is argued that this land use control system can be considered as collective property rights (Fischel, 2010) that are defined and controlled by the local authorities, and consequently, are the product of a political process, and it serves the interests of those who control that process (Fischel, 1999). So it is, that any change in land regulations, zoning, e.g., increment or diminishing of amount of building rights, is a collective decision taken by the community as a whole through the local government.

The definitions mentioned above of property rights as being divisible, and zoning as being communal rights lead to the conclusion that local governments can separate development rights from the ownership bundle of rights of private owners, and keep them to itself, in favor of the community.

Benefits and Obligations

Now, referring more specifically to whose is the right to keep the profit which will presumably be generated from extra development rights[12], Alterman (2012) argues that the underlying debate behind this question is: Is real property the epitome of private rights, or is it a social good? For one side, a conservative view argues that landowners are entitled to the full increment in value of land as part of the general rules of the economic game and that capital gains on land property should be treated as any capital investment. This view is supported by arguments on protection of private property rooted in John Locke's arguments, who insisted on the right to ownership as a result of the honest toil of those who worked it (Booth, 2011), and Jeremy Bentham's thinking who argued in favor of the state protection and promotion of private real-property rights, arguing that landowners are more likely to invest in their land and to manage and maintain it much better than public owners (Alterman, 2012).

The opposite more social view, on the other hand, states that landowners are under the obligation of sharing 'unearned increments' on land value with the society as a whole. The term 'unearned increments' refers to the increments caused but actions not attributable to the landowner, specifically to those derived from public actions, such as investments in infrastructure or regulatory decisions on the use of urban land (Smolka and Furtado, 2001).

[12] Whether extra development rights generate an increment on land values will be discussed later in this chapter.

This perspective is supported by the ideas of Rousseau[13] and later on by those of Henry George[14].

The idea that increments on land value should be shared was introduced in the Brazilian context in the decade of 1970s, first in the Embu Charter of 1975[15], which most important concept introduced was that of Created Land '*Solo Criado'*[16], and later in the Federal Constitution of 1988, which set urban development as a matter of federal law, and separated the right to own land from the right to build (Sandroni, 2011). Since then, different variants of the mechanism began to be applied under the name of *Solo Criado* or other names (Furtado, Rezende, et al., 2006). The city of São Paulo introduced in 2002 in the Strategic Master Plan, the Development Concession for Additional Building Rights, or *OODC*[17]. However, these concepts and instruments were applied earlier through the so called Interrelated Operations and Urban Operations (Sandroni, 2011). Later, and after the City Bill or *Estatuto de la Ciudad* was approved in 2001, these instruments could have practical effects in all the Brazilian territory (Sandroni, 2009).

The two opposite views mentioned above, however, find a common ground on the argument of social obligations regarding property of land. This argument state that social obligations should remain "even where there is explicit constitutional protection of property rights" (Alterman, 2012, p.759) and that "private landownership intrinsically carries with it social and environmental obligations derived from a society's overarching ethical norms…" (Alterman, 2012, p.759). These principles have adopted by most countries; therefore, nowadays the debate revolves around not the existence of private property, but on more specific issues regarding the level of governmental interventions on land value increment (Alterman, 2012).

The case of the French Civil Code illustrates this position. This code establishes strong principles towards the protection of the private property, and ownership of land became the 'inviolable and sacred right' under the Declaration of Rights of Man in 1789 and has remained a key provision of the French Constitution ever since (Booth, 2011). However, such principles had not stopped private property from being restricted, and land value capture instruments from being implemented. For instance, in 1975 a legal density celling '*Plafond Légal de Densité*'[18] was instituted, through the Galley Act, limiting the landowners' development rights independent of those attributable from other regulations. This meant that developers, to get a building permit with a Floor Area Ratio (FAR) greater than the legal density ceiling, had to buy the excess of development rights from the authority. The

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[13] Rousseau (France, 1712) argued that private ownership of land is responsible for much of the misery and violence around the world, as he stated that "You are lost if you forget that the fruits of the earth belong to all and that the earth itself belongs to no one!" (Rousseau [1755] 1994, 54, cited in Bromley 1999) in (Alterman, 2012, p. 757)

[14] Henry George (USA, 1839) proposed the "single tax" idea. He argued that land rent alone (without the buildings and other "improvements") paid to the government on an ongoing basis, would suffice to finance the entire set of society's public needs (Andelson 2000, xxii-xxiv) (Alterman, 2012, p. 760)

[15] "The Embu Charter was the document resulting from a seminar held in its namesake city in São Paulo … where lawyers, planners, architects, sociologists and other professionals gathered to discuss the problem of urban issues in Brazil". (Sandroni, 2011, p. 2)

[16] This concept was already explained in this chapter.

[17] Development Concession. This concept that was already mentioned above in this chapter.

[18] Roughly translated as Legal Density Ceiling.

mechanism was revoked in the year 2000 (Renard, 2009), and will be definitely withdrawn in the year 2015. This example shows that, in spite of the strong protection to legal property established in the French Constitution, a mechanism comparable to those applied in the Brazilian case explained before can be applied.

Other instruments

The sale of development rights is a clear application of the principles of the separation of development rights, from the bundle of rights that constitute landownership; however, it is worth mentioning other land instruments that also apply the principles mentioned above.

Land Leasing

In a land leasing system the property of land is kept by the government, and the private individuals are allowed to lease solely the density (or development) rights of land, while the ownership remains held by the public (Hong and Bourassa, 2003).

It is suggested by many scholars that this property system functions as a land value capture instrument as it collect the increment in land value through the collection of rents and other payments (Bourassa, Neutze and Strong 1997; Farvacque and McAuslan 1992; Hong 1998; Tideman et al. 1991) in (Hong and Bourassa, 2003).

Transfer of Development Rights

If development rights can be sold and bought by separating them from the bundle of rights of ownership, by the same principle, they can be transferred from plot to plot. This mechanism is "intended to reduce or eliminate development potential in places that should be preserved by increasing development potential in places where growth is wanted" (Pruetz and Standridge, 2009, p. 78). This instrument is originally conceived as a compensation mechanism for the reduction in land values due to historical, architectural, cultural or environmental preservation ordinances[19] (Smolka and Furtado, 2003).

As applied in the United States of America (Pruetz and Standridge, 2009) through the TDRs mechanism, communities define areas to be preserved from development. Landowners of these "sending sites record a perpetual easement on their land in return for a marketable commodity" (Pruetz and Standridge, 2009, p. 78) in the form of density rights that can be sold to developers in areas that had been assigned as appropriate for growth, called receiving areas (Pruetz and Standridge, 2009). "Receiving area zoning allows some development without TDR obligations, but offers additional development potential when developers buy TDRs (Pruetz and Standridge, 2009, p. 78).

Density Bonus (or Zoning Bonus)

Another instrument that emphasizes the ability of governments to separate and trade development rights is the Density Bonus, which "…measured by FAR, is a trade-off to a developer for a public benefit" (Seyfried, 1991, p. 348). This instrument, used commonly in the United States, consists on providing developers with extra development rights (increase in density) that exceeds the FAR or other zoning regulations in exchange of a payment in kind,

[19] It is noteworthy that the instrument recognizes a right to compensations to landowners for decreases in land values due to change in zoning or other land regulations, (Smolka and Furtado, 2003) which adds up to the debate of weather landowners should be entitled to the increments in values, as well.

that could include a variety of public goods: retail store frontage, public art, pedestrian access to buildings, daycare centers, low income housing, and other public benefits (Getzels et al. 1988) cited in (Seyfried, 1991).

This instrument is also referred to as incentive zoning, and it has been used many cities like Boston, New York, and San Francisco, in the United States, as a way of obtaining different public amenities financed by private developers, without using public subsidies. (Keating, 1986) However, it can be argued the increase in density will require improvements on existing infrastructure, which will eventually represent a burden on the public administration (Sandroni, 2011).

These examples of different instruments, as well as other examples around the world that have not been mentioned, demonstrate that land value capture is possible through the understanding of the separation of building rights from the bundle of property rights.

2.1.3 Economic Dimension: Do additional density rights increase the value of land?

Overview on factors that increase the value of land

Given the accelerated growth of cities, and the non-reproducible nature of land, the market is approaching a state of relative short supply (Sandroni, 2011). The scarcity of land in cities is caused by: concentration of landownership; difficult access to areas not yet occupied due to lack of infrastructure; and, restrictions imposed by zoning (Smolka and Amborski, 2000). This statement is particularly true for cities in the developing world. Complementarily, the pressure over the demand for buildable lands results on increases on the value of urban land in the areas where the existing infrastructure allows greater accessibility and the zoning regulations (or changes thereof) allow increased building density (Sandroni, 2011).

In the following paragraphs the analysis will be focused on the increment of value in land generated by actions more directly attributable to the government.

Increase in value by regulations

It is stated by Jaeger and Plantinga (2007) that economists recognize three kinds of potential effects of land use regulations on land values: restriction effects, amenity effects and scarcity effects. The restriction effect occurs when a regulation prevents the 'highest and best use of land'[20], decreasing the land value. The amenity effect increases the value of land as it keeps certain desirable traits in surrounding areas, and prevents undesirable activities (e.g., industrial uses). The scarcity effect, on the other hand, occurs when a land use regulation changes the supply of land for a particular use in a particular location. "If a regulation allows use A but prohibit use B, the supply of land for use A will increase and the supply of land for use B will decrease… the price of land for use A may decline and the price of land for use B may rise" (Jaeger and Plantinga, 2007, p.2).

Through another perspective, Bertaud (2010) argues that the value of land is created by the spatial concentration of economic activities. Economic activities do not require land per se

[20]The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity. (Appraisal Institute, 2002)

but ‘floor space’ built upon it. In that sense, this spatial concentration of floor space allows the increasing returns to scale cities’ economies. Therefore, land becomes and important input in the creation of floor space. “Where and when land prices are high, land consumption per person will adjust downward, either by consuming less floor space or by substituting capital for land by building multistory buildings or by using air rights” (Bertaud, 2010, p. 6).

It is also argued by Bertaud, (2010)that depending on market conditions, each plot has the ‘best and higher use of land’ depends on the FAR used. This argument is explained as the more buildable square meters a plot has, the cheaper will the price of land will be per square meter of a building unit. However, this exercise of substituting capital for land is constrained by the cost of construction per m^2 of floor space, which follows a U-shaped curve as the number of floors increases. Therefore, the possibility of substituting capital for land depends, therefore, on the relative cost of land and construction. Developers try to maximize the difference between the production costs, that include land and construction costs, with the sale price, which is determined by the demand. The use that provides the biggest difference is considered the ‘best and higher use of land’.

In this sense, the demand of the market combined with zoning regulations, i.e., FAR and Use, play an important role in the determination of this ‘highest and best use of land’, which accordingly has an impact on the price of land where the demand is happening.

Another important concept related to land values, also influenced by regulations, is that of ‘shifting value’. This concept assumes that the demand for any given type of land use in a particular region is finite; therefore, land-use restrictions in an area may cause a decrease in value of land, but an increment in the value of land in another locality will occur where the regulations do permit development (Alterman, 2012).

Based on these concepts, it is safe to state that value of land can increase through government decisions, (changes in regulations that increase density). So it is that, as argued by Sandroni, (2011, p. 2) “changes in the building potential on urban land that is already easily accessible… create great benefits for the properties affected”.

However, it should be noted, as well, that the when this changes in regulation that increase density require an extra fee or payment, like in the case of the sale of development rights, “then the increase might be offset. If these charges outweigh the benefits, then prices are likely to go down” (Borrero Ochoa and Morales-Schechinger, 2007, p. 16).

Density

Other arguments about land value changes are regarding density. For one side it is argued that higher densities increase value of land from the demand point of view. People seek accessible locations, and are willing to pay more for land in such areas. The role of expectations on development is important in this concept, “when expectations about future development potential are high, more land will be withheld from development, land values will be higher, and the densities in developed areas will be higher. More will be done on less land, at higher prices, as the owners wait for still higher expected returns from future development”(Ottensmann, 1977, p. 392).

However, this statement about higher densities increasing the values of land does not hold true in every case, as density is often times associated with poor conditions of living, overcrowding, and other negative characteristics that affect the value of land negatively.

Investment in infrastructure

Another type of government intervention that increases the value of land is investment in infrastructure. According to Medda (2011) the value of land is determined by the accessibility to natural and social resources, and the value of improvements, that is, building in situ, Therefore, land value increases from greater accessibility to natural amenities (urban externalities), social infrastructure (schools, hospitals) and to development infrastructure (sewage collection, piped water, and highway systems). Consequently, and as stated by Walters, (2011) investments in public infrastructure makes communities and neighborhoods more attractive, hence, people are willing to pay more for land in such areas.

However, it is also argued that certain kind of infrastructure can decrease value of land due to negative externalities. This is the case of certain type of transport infrastructure. For instance, although proximity to urban mass transit systems is shown in most studies to have a positive correlation to land values, these systems "may also bring negative impacts to the property value due to an increase in negative externalities such as noise, pollution, unsightliness of the station, and crime. In Atlanta, proximity to the mass transit system has raised property values in economically-depressed areas, but has lowered property values in economically affluent city areas" (Diaz, 1999) in (Medda, 2011, p. 45).

In this context, it is worth mentioning that the focus of the research will be on the unearned increments of value on land due to change in zoning regulations, in the urban context, rather than the increments for other reasons, some of them mentioned above.

2.1.4 Financial Dimension and implementation: How much of the increment in value is captured?

Front the financial point of view, land-based financing have become an important element for urban infrastructure and urban development nowadays; this appears to be true especially in rapidly growing cities (Peterson, 2009).

So it is that, although, as argued before, the objective of capturing land value increments is the redistribution of values, these instruments have the potential of generating revenue for further urban development and to achieve fiscal autonomy of the local governments.

In this context, the implementation aspects become important in order to raise significant revenues. However, in the Latin American context, based on a survey taken from public officials and academics of the region, in general terms, the instruments are not entirely effective in terms of capturing the entire value generated, as amount captured is less than one-third of the estimated total land value increments. The same survey revealed that the likelihood of the contribution exceeding one-third of the total value is higher when the contribution is made in cash rather than in kind (Smolka, 2012).

It is worth mentioning that the sale of development rights, in the region (Latin America) shows a bigger potential of raising revenues, compared to other instruments, such as betterment levies, which revenues "are generally modest and rarely account for more than 1 percent of local own-revenues in most places" (Smolka, 2012, p. 12). However, few countries in Latin America have a legislation that enables the instrument of sale of development rights. It is also stated that arguments for the lack of a successfully raising of enough revenue from applying value capture policies relates to technical difficulties, especially in terms of assessing the increments generated by the public intervention that generate the increments.

From the region, both, Brazil and Colombia are the countries with more experience in land value capture mechanism. In the Colombian participation in plus value '*Participación en Plusvalías*, established under the principle of 'the equitable distribution of costs and benefits of urban development'[21] a percentage between 30% and 50% of the value increments should be shared with the community, percentage that should be defined by every City Council that applies the instrument (Salazar, 2010). In the Brazilian case, on the other hand, each municipality can set the percentage of the increment in value that will be captured by the local government. (Maleronka and Furtado, 2013)

The Brazilian tool of Development Concession[22] provides an example of a successful implementation of the sale of development rights in terms of revenue rising (Maleronka and Furtado, 2013). In the 2002, in the Strategic Master Plan of Sao Paulo, the following formula was established to calculate the financial compensation of the development concession:

Formula 1. Development Concession. Strategic Master Plan of Sao Paulo (2002)

$$Cf = Fp \times Fs \times B \text{ or } Cf = Fp \times Fs \times vt / CAb$$

where:
Cf = financial compensation for each m^2 of additional building area;
Fp = planning factor ranging between 0.25 and 1.4;
Fs = social interest factor, between 0 and 1.0;
B = economic benefit allocated to the property, calculated using the equation:

$$vt / CAb$$

where:
vt = value per $m^2$of land determined in the Property Value Map and,
CAb = basic FAR.

The introduction of the planning factor (Fp) and social interest factor (Fs) in the formula should be highlighted. On one hand, the Fp seeks to encourage or discourage higher densities in certain areas of the city depending on the existing infrastructure, or seeks to obtain greater financial compensation from the sale of building rights for businesses in improved areas of the city. On the other hand, the Fs establishes exemptions or reductions on the compensation depending on the types of activities to be developed. For instance, social housing, educational, health and cultural institutions are subject to incentives through the social interest factor (Sandroni, 2011). "The smaller Fp and Fs are, the smaller the compensations to be paid and the greater the incentive for projects to be developed in these areas" (Sandroni, 2011, p. 6).

However, the intention of these factors seems wrong from a theoretical point of view, since the onerous grant should affect the landowner and not the developers, and according to an evaluation of the instrument the introduction of these factors did not accomplish the

[21] "That is, if a landowner wants to reap the benefits of land being developed, he or she should bear part of the costs of doing so" (Borrero Ochoa and Morales-Schechinger, 2007, p. 15).

[22] OODC. *Outorga Onerosa do Direito de Construir.*

objectives. For example, certain areas, in spite of having high planning factors, presented faster development, which is the opposite of what was desired (Maleronka and Furtado, 2013).

In the period 2002-2011, the city of Sao Paulo raised over 1 billion Reals (over 500'000.000 USD). The revenue raised was managed through a fund: Urban Development Fund (FUNDURB) (Sandroni, 2011) (Maleronka and Furtado, 2013).

Also, from the financial point of view, another interesting instrument implemented in Brazil is the so-called CEPACS[23], which were first implemented in the year 2004 and were included in the Urban Operations of Faria Lima Agua Espraiada, also in Sao Paulo.

A CEPAC is a bond or certificate of potential additional right of construction that "could be employed to capture value or to receive the economic compensation from the projects presented by developers. The CEPACS are issued by the public administration (City Hall) and sold by auctions in the stock market as a financial bond that gives the bearer additional rights of construction in his plot" (Sandroni, 2011, pg. 8). These additional rights represented larger floor area ratios and footprints, and change uses in a plot. It is important to notice that the face value of the bonds increased in each auction, which reflects the high demand for CEPACS. Furthermore, it is argued that one of the advantages of this system of capturing value is that the compensation is received before the construction of the development, which allows the local governments to invest in infrastructure without affecting the government's budget (Sandroni 2010).

As an additional conclusion, and as argued by Smolka and Amborski (2000) that effective implementation of value capture tools requires, at a minimum: adequate updating of cadasters; technical capacity to adequately assess the relevant land value increment to be partially or fully captured, political will and administrative capacity to enforce the application of the value capture tools.

Additionally, an important factor that enables these instruments to work is that the instruments do not interfere with the capacity of developers to profit from the construction and real estate industry. For instance, in the Interlinked Operations of Sao Paulo, landowners and developers perceived the instrument of Development Concessions as favorable, as it was a faster and cheaper way to acquire land that was not always available, even if they had to share part of the profits. In that sense, the instrument can be perceived as a 'win-win' game (Sandroni, 2009) for both, local governments and developers.

Additionally, Maleronka and Furtado (2013) argue that the price of land for the developers is the same whether the land is real or "virtual'[24], that is in the form of development rights. Therefore, the payment of the Onerous Grant does not represent extra costs for developers, (the increment of land value was formerly kept by landowners) and the price real state units should not increment either.

[23] *Certificados de Potencial Adicional de Construção*. Certificates for Additional Construction Potential.

[24] Virtual land refers to the actual land that would be required to construct the same building area. (Maleronka and Furtado, 2013)

2.1.5 Social Dimension: Equitable redistribution and social objectives of the instrument

According to Hong and Bourassa (2003), a major cause of inequity in society is the uneven distribution of the newly created wealth generated by rapid urbanization processes. Additionally, in cities, particularly in those of the developing world, this phenomenon is accentuated by the scarcity of infrastructure and services, which results in unevenly distributed land values. Urban planning decisions such as the norms and regulations on land use and development rights, also affect the distribution of urban land values (Furtado, 2000).

Attempts to redistribute a portion of the wealth accumulated in real property from the hands of private landowners to the community have always been conflict-ridden (Hong and Bourassa, 2003). In this context, land value capture instruments are considered tools to achieve social justice through redistribution of land values (Furtado, 2000) as a less conflictive approach.

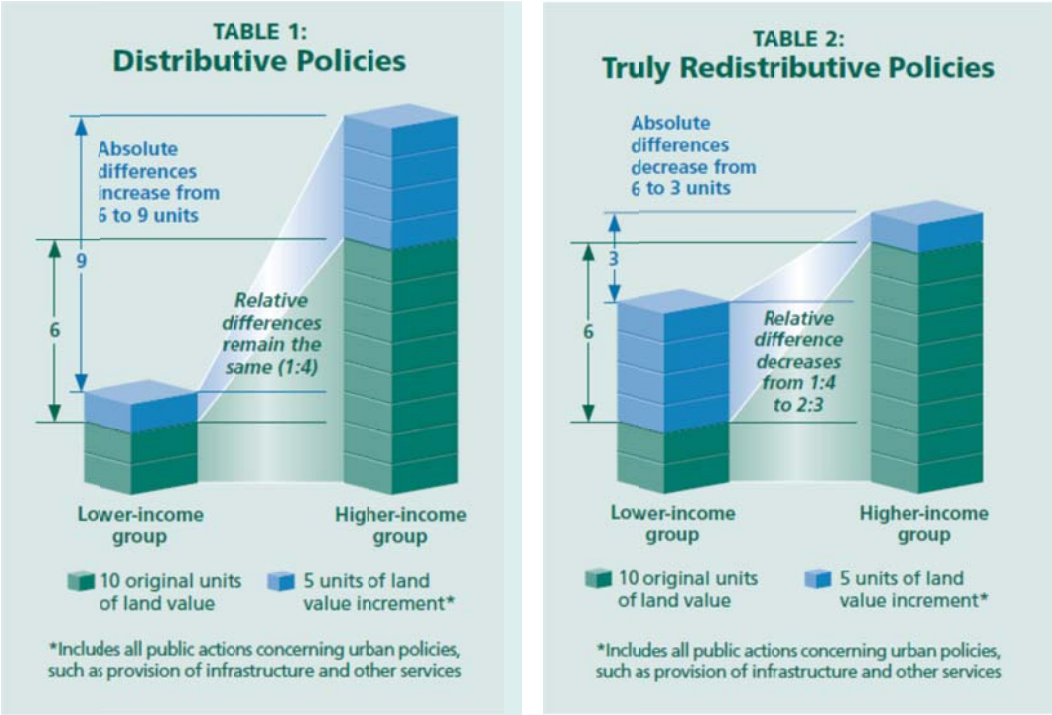
The distributive policy usually associated with land value capture, usually, according to Furtado (2000) aims to restore a previous state of distribution of values, before the increments, as if that previous state was the proper or given one. That is, when land value increments due to public actions in a highly valued area, is captured and reinvested, in the same area, the differences in value in land in between areas (wealthy areas against poor areas) will not only remain the same, but can even increase.

An alternative interpretation on redistribution "is based on the principle stated by Henry George that all land value, irrespective of its origin, is the product of community effort. In this view, only when all the land value is taken into consideration and the goal of altering the current state of land value distribution is introduced can the value capture idea acquire a truly redistributive perspective" (Furtado, 2000, p.8).

In that sense, Furtado (2000) argues that land value capture instruments are justified as they return to the community special benefits that only some receive through a public action, but that lower income groups should be taken in consideration as their basic needs (access to urban infrastructure, for instance) are not yet met, therefore, priority on the allocation of resources should be places on their benefit, at least, until basic needs can be granted.

The following graph illustrates the normal approach of distributive policies, against what is argued to be a truly redistributive approach, where the outcome of the policy is smaller absolute differences in land values between lower-income and higher-income groups.

Graph 1. Distributive and redistributive approach to land value. Source: Furtado, 2000



According to the redistributive principle, basic needs should be defined by the community, and investments on them (prioritizing low-income groups) validate and justify the capture of the increments on value of land. In the following paragraphs, the social goods, usually financed through these instruments, will be explained.

Social goods

The social goods that are financed validate or justify the capture of land value increments. Social housing, infrastructure, and public space are the social goods that seem more important in the examples of land value captures covered in this literature review.

Housing

The Universal Declaration of Human Rights recognized in 1948, in its article 25, the right to adequate living standards, which includes the right to adequate housing, which is defined in terms of security of tenure; availability of services, materials, facilities and infrastructure; affordability; habitability; accessibility, location and cultural adequacy. (United Nations, 2009)

The uneven distribution of wealth and land values, mentioned before, cause, often times, the exclusion of the poor households of the formal housing market, which increments the incidence of slums, illegal developments, and the urban problems associated with them: lack of services, infrastructure, bad quality of life, threat of eviction, threats to environmental protected areas. Additionally, as argue by Smolka and Biderman (2012, p.816), not necessarily at lower location costs for the poorer population, as “informal settlements often cost higher than in formal areas when land rents plus transportation costs are net of outlays for water, lights, drainage, sewerage, and other public equipment and services”. Moreover, it

is also argued that informality is expensive for society by pushing up the price of land in the formal market and by increasing the cost of service infrastructure, when this is built after the settlement had occurred through regularization programs (Smolka and Biderman, 2012).

So it is that housing, especially for the poor-income groups, had become an important part of the policies regarding land value capture. In the Brazilian case, as well, as the Colombian one, the revenue generated by the local government by the sale of development rights had a social purpose established by law, and they both approached social housing, and informality, as one of the public goods to be provided in one way or another.

Infrastructure

As maintained by Jimenez (1995) almost by definition, infrastructure is the basis for development. From an economic point of view, infrastructure is the foundation on which production factors interact in order to produce an output. Therefore, and as argued by Parker, Kirkpatricka, et al. (2008) improved basic infrastructure services are a crucial part of economic development, and that developing basic infrastructure services seems to be a highly effective means of combating poverty.

As stated before, in cities of the developing world, one of the most important problems, along with the lack of access to housing for growing population, is the lack of basic urban infrastructure necessary to support urban growth, which directly affects the quality of living of the poorer, preventing them from fulfilling their basic needs (water, sanitation, etc.), and preventing them from accessing to other social goods such as transport, and consequently job sources, health and education services, etc.

In this context, land value capture instruments have as one of its motivations the financing of infrastructure (Smolka and Amborski, 2000). For instance, the betterment charges tool[25] that has been incorporated in the legislation in most Latin American countries "aims at capturing a portion of special benefits (land valorization) that arise from public investments in infrastructure and services, to finance such investments" (Furtado, 2000, p.8).

Additionally, it is important to emphasize that densification processes (for instance, those generated by the sale of development rights) will impose additional pressure over the existing infrastructure which represents a burden on the public administration (Sandroni, 2011).

Public Space

According to Borja (2011) the city is above all the public space, and the public space is the city.

Modern public space appears from the legal separation between private urban property (express through a cadaster, and linked to the right to develop) from y public property (of public domain) which serves for social uses such as mobility, amusement, collective gatherings, cultural activities, commercial activities, etc. In that sense, public space is a legal concept: a space that has a specific regulation given by the public administration, which "owns" this space, guarantees the access to it to all citizens and defines conditions for its use (Borja, 1998).

However, public space also has a socio-cultural dimension, as it is here where social contact and community expression takes place (Borja, 1998).Therefore, public space is, like stated by

[25] Known also by the name of Contribución de Valorización/Mejoras or Valorization Charges in English.

Velibeyoglu and Gencel (2006) of great importance for the urban culture and city life, as it has two major social functions: instrumental and expressive. [26] "The former role ensures a physical link between buildings and land uses and sustains the marketing, manufacturing, administrative, and transportation activities of the cities. The latter facilitates a link among people, facilities, communication and interaction, thus serving to bind together the social order of local community by creating a locus for randomize social interaction, including recreation, conservation and entertainment" (Velibeyoglu and Gencel, 2006 p. 1). In this sense, the value of public space is based on the contribution to "people's attachment to their locality and opportunities for mixing with others, and in people's memory of places" (Dines and Cattell, 2006, p. ix), and it provides opportunities for social interaction, mixing and social inclusion.

Additionally, it is argued that public space is the location where democracy is possible as it is the place where "political movements can be seen, and organizations can represent themselves to a larger population" (Mitchell p. 115). A democratic space, according to Borja, (2011) is expressive, significant, polyvalent, accessible and evolutionary. This space not only organizes buildings but also links people. The decadence of public space is an obstacle to the "right to the city"[27].

In this context, it can be understood that the provision of quality public space, that fulfills its instrumental and expressive functions becomes important to the construction of strong communities and the strengthening of democracy. So it is that the access to public space (understood as an urban space as well as a political one) had become part of exercise the right to the city (Borja, 2011). Additionally, it is worth mentioning that, the right to the city, "broadens the traditional focus on quality of life based on housing and the neighborhood, to encompass quality of life at the scale of the city and its rural surroundings" (Various, 2005, p.1). In this sense, the rural territory is taken on account, and also includes the right to a healthy environment and the enjoyment and preservation of natural resources, and therefore its conservation as an important component (Various, 2005).

[26] This refers to traditional urban public spaces (streets, squares, and parks).

[27] The Right to the City is a concept coined by Henri Lefebvre (France 1901 –1991) is about the rights of all urban dwellers, regardless of citizenship, ethnicity, gender, etc., particularly those marginalised, to participate in the shaping process of the city. (Various, 2005)

2.2 Conceptual Framework

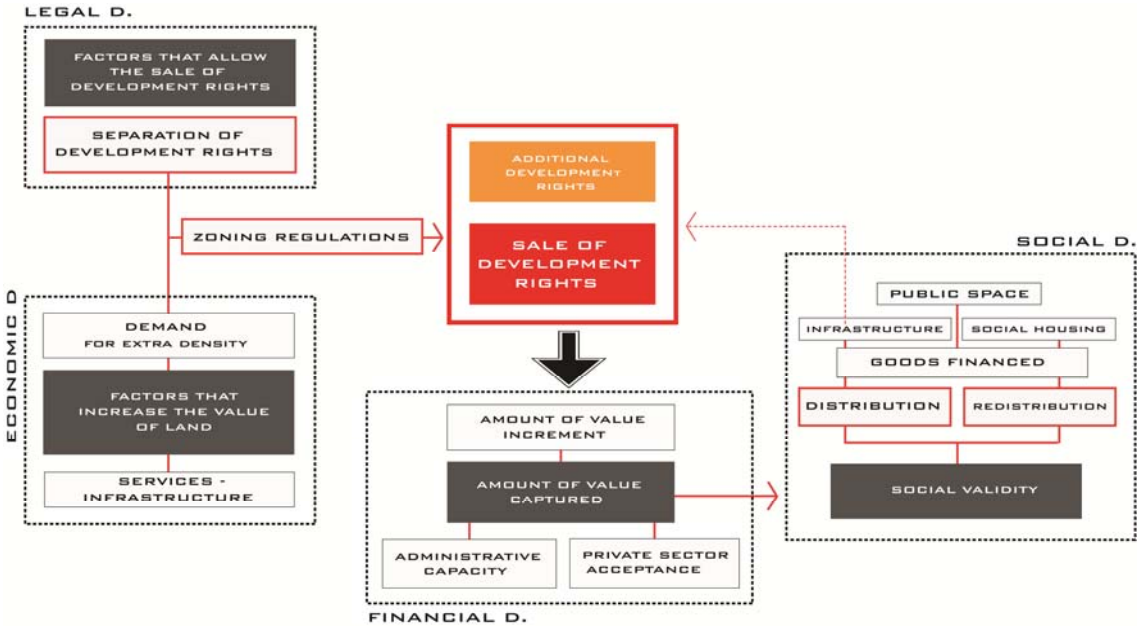
The following diagram explains the line of thought on the concepts that allow the sale of development rights to be implemented, and the factors that will be taken in consideration in this study, for the evaluation of the instrument.

So it is that, the sale of development rights is enabled, from a legal point of view, by separation of development rights from the bundle of property rights, and from an economic perspective by the demand for extra density. Both these factors are closely related to zoning regulations.

The amount of revenue raised by the government, through the sale of development rights, will depend, not only on the interest of the private sector to acquire extra density rights, but also in the administrative capacity to design and implement the instrument and effectively capturing the increment in land value.

Finally, the social validity behind this land value capture tool is reflected on the investments of the government on social goods. Among the main goods financed in exemplary cases of the sale of development rights are social housing, public space and service infrastructure. It is noteworthy that service infrastructure is also a factor that increments the value of land, as it is linked with the demand for extra density in already served areas. For this reason, this social good is studied in more detail.

Graph 2. Conceptual framework



Chapter 3: Research Design and Methods

The next chapter describes the methodology that was used in order to answer the research question and sub-questions raised as guidelines for the research.

3.1 Introduction

The following research had two objectives: exploratory and explanatory. Given that the aim of this research is to explore a current situation and operation, in a very specific context the objective of the research is mainly exploratory. This is justified as there is still little research or analysis made on the application of the sale of development rights in Ecuador, given to the novelty of the instrument. However, the research also intends to answer how the sale of development rights are working, and tries to reveal why the outcomes obtained so far have been either positive or negative, which will follow an explanatory approach.

The Case Study is a comprehensive type of research that has been chosen as the strategy for this research, as it is preferred in situations where the question to be answered is "how" or "why". Additionally, the Case Study is preferred "when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (Yin, 2003). Furthermore, the case study more than a method, is a research strategy, as the context is deliberately part of the design of the research (Hartley, 2004) and the phenomenon being studied cannot and will not be isolated from its context, which is the case of this thesis.

This study is focused on the application of a land value capture instrument solely inside the scope of the Metropolitan District of Quito, the capital of Ecuador; given that it is the only city that had implemented the sale of development rights in the country. Therefore, more specifically, the strategy selected is the Single-Case Study.

The structure of the research maintains the four dimensions approach of the literature review: Economic, Legal, Financial, and Social. The same structure is followed in the definition of the guiding sub-questions.

3.1.1 Revised Research Question(s)

The literature review showed that are a variety of ways in which value capture instruments can be applied and many different factors that allow the instrument to generate positive results. As contexts are different and markets conditions vary from example to example, there is great difficulty in determining particular factors that will ensure positive outcomes and the accomplishment of social objectives.

In that sense, the guiding question and sub questions were revised to reflect the focus of the research on understanding how the instrument is being applied into the specific context Ecuador, precisely that of Quito, and if there is social validity to the implementation of such instrument. Even though the research question seems very broad, the 4 sub-questions limit the scope of the research into the analysis of more specific factors.

The overall research question that will guide this research is:

How is the sale of extra development rights being implemented in Ecuador?

The specific sub-questions are:

Economic dimension:

- Do extra development rights increase the value of land in Quito?

Legal dimension:

- What are the legal factors that incentive or allow redistribution through the sale of extra development rights?

Financial dimension:

- To what extent is the increment on value of land captured through the sale of extra development rights?

Social dimension:

- Are redistributive and social objectives being achieved by the implementation of the sale of extra development rights?

3.1.2 Operationalization: Variables, Indicators

The following table presents the operationalization of the concepts and factors studied in the literature review and theoretical framework in terms of variables and proxies[28] that can be measured to answer the questions mentioned above.

Additionally, the table includes indicators, type of data collected, research methods used, the definition of the sample, data sources, the triangulation method that were used for each variable, and the list of the people interviewed.

[28] A proxy is a measurable variable that is used in place of a variable that cannot be measured. (Upton and Cook, 2008)

Table 1: Operationalization and methodology for research

	SUBQUESTIONS	VARIABLES		PROXY	INDICATORS	TYPE	RESEARCH METHOD & ANALYSIS	SAMPLE	DATASORUCE	INTERVIEW SAMPLE	TRIANGULATION	INTERVIEEWS
ECONOMIC (MARKET) DIMENSION	Do extra development rights increase the value of land?	1. Increment on the value of land due to the implementation of instrument		changes on price of vacant land	USD/m2 12 last years	QUANTITATIVE	Market prices comparison	Cluster sample.5 neighborhoods where the instrument has been applied in more cases.	market prices consultant. INTELIGENTARIUM with base on the work of GRIDCOM	n/a	Land Market Expert Interview (Semi-structured)	Land market consultant - **Francisco Salazar**
		2. Increment on value of land due to zoning regulations		changes on price of vacant land	USD/m2 12 last years	QUANTITATIVE	Market prices comparison	Purposive Sample: La Floresta	market prices consultant. INTELIGENTARIUM with base on the work of GRIDCOM			
LEGAL DIMENSION	What are the legal factors that incentive or allow redistribution through the sale of development rights?	National Level	3. Definition of property	How is property defined	Description	QUALITATIVE	Field Documents Analysis	n/a	Constitution / COOTAD / COPyFP/ Civil Code	n/a	National level expert Interview (Semi-structured)	(former) Sub-Secretary of Habitat and Human Settlements (Ministry of Urban Development and Dwelling) - **José Morales**
			4. Separation of development rights	Is there a separation of building rights defined by law?	YES/NO Description	QUALITATIVE			Constitution / COOTAD / COPyFP/ Civil Code			
			5. Obligations of land ownership	Is equitable share of cost and benefits defined?	Description	QUALITATIVE			Constitution / COOTAD / COPyFP/ Civil Code			
			6. Other Instruments	What other similar instruments are defined?	Description	QUALITATIVE			Constitution / COOTAD / COPyFP/ Civil Code			
		Local Level	7. Zoning	How is zoning and density rights defined?	Description	QUALITATIVE	Field Documents Analysis		Land Regime / PMOT / PUOS / Other documents		Local level Expert Interview (Semi-structured)	Director of Land Policy and Planning of the Secretary of Territory, Habitat and Dwelling . **Fernando Puente**
			8. Separation of development rights	Is there a separation of building rights defined by law?	YES/NO	QUALITATIVE			Land Regime / PMOT / Other documents			
			9. Obligations of land ownership	Is equitable share of cost and benefits defined?	YES/NO Description	QUALITATIVE			Land Regime / PMOT / Other documents			
			10. Other Instruments	What other similar instruments are defined?	Description	QUALITATIVE			Land Regime / PMOT / Other documents			
		Instrument	11. Definition of instrument by law	Is the instrument defined by law? How? Cases?	YES/NO Description. Map of Areas of application	QUALITATIVE	Field Documents Analysis		Land Regime / Ordinance No. 106. Geographic Information of the STHV		Local level Expert Interview (Semi-structured)	Director of Land Management of the Secretary of Territory, Habitat and Dwelling - **Patricio Montalvo**
			12. Procedures	How is the procedure for the application defined by law?	Description	QUALITATIVE			Land Regime / Ordinance No. 106 / Resolution No. STHV-RT-NO 001			
FINANCIAL DIMENSION	To what extent is the increment on value of land captured through the sale of extra development rights?	13. Increment on land values to be captured		Percentage of increment collectred by formula application	USD / additional m2	QUANTITATIVE	Data Base and formula Analysis	Theoretical example	Based on the formula: Ordinance No. 106 / Resolution No. STHV-RT- NO 001	n/a		
		14. Revenue generated by local government by the instrument		USD earned by instrument	% in the municipal budget, and comparison with land related sources	QUANTITATIVE	Data Base Analysis	Total of revenue raised	Municipality of Quito - STHV			
		15. Administrative Capacity		Adequate updating of cadasters; assessment of land value increment; and monitoring of land markets	YES/NO Description	QUALITATIVE	Analysis from Expert Interviews	Purposive Sample: Municipal Experts	Local government experts	2 municpal experts: Municipal Advisor and Metroplitan Director of Cadaster	Data base and market values comparison (Geografic information of Cadastral Values)	Municipal Advisor- **Barbara Scholz** Metropolitan Director of Cadaster - **Daniel Hidalgo**
		16.Private sector acceptability		Percentage of projects that incoroporate the instrument	% of building permits issued with application of the instrument / without instrument	QUANTITATIVE	Data Base Analysis. Comparison	Entire District	Municipality of Quito - STHV	n/a	Private sector Expert Interview (Semi-structured)	President of the Chamber of Construction of Quito - **Hermel Flores**
				Factors that make the instrument more attractive.	Developers' opinions on the design of the instrument. Description. Location of cases.	QUALITATIVE	Semi-structured Interviews with developers. Geographic Information Analysis.	Stratified (by cases) sampling.	Developers	7 cases: 4 cases inside ZUAEs, 2 cases of application of environmental technologies. 1 case where development rights were considered, but not bought.		
		17. Developers' profitability		Increment in profit	% on increment in profit in comparison to same project withouth extra development rights	QUANTITATIVE	Comparison of scenarios	Stratified (by cases) sampling.	Developer's information			
SOCIAL DIMENSION	Are redistributive and social objectives being achieved by the implementation of the sale of extra development rights?	18. Redistribution		Expenditures by area	% of expenditures urban / rural areas	QUANTITATIVE	Expenditures Data Base Analysis	District	Secretariat of Territorial Coordination and Citizen Participation	n/a	Planning Expert Interview (Semi-structured)	Planning expert form the Secretariat of Territorial Coordination and Citizen Participation - **Verónica Villavicencio**
				Expenditures by type of investment	% of expenditures in infrastructure	QUANTITATIVE						

3.1.3 Data Collection Methods

Economic dimension:

In the economic dimension the data was collected from a land market database provided by Inteligentarium S.A., based on the data generated by GRIDCON. Both of these are consultancy companies specialized in the real estate market of Quito. The data collected is based on real transactions of vacant land for the last 12 years.

No other sources of information were consulted, (offering prices on the press, real estate magazines, etc.) due to the short timeframe of the fieldwork; therefore, this information was triangulated with primary data from an expert on land markets obtained through a semi-structured interview.

Legal dimension:

The data collection of the legal dimension was done mainly through secondary data in the form of field documents, that is, the Constitution of the Republic of Ecuador; the Civil Code; the Organic Code of Territorial Organization, Autonomy and Decentralization (COOTAD); and the Organic Code of Planning and Public Finance (COPyFP) for the National level. For the local level, the documents analyzed were the Land Regime '*Régimen del Suelo'*; the Plan of Land Uses and Emplacement (PUOS); the Metropolitan Spatial Plan (PMOT); and all the documents related to the Ordinance No. 106 and its procedures. The geographic information relevant for this study was collected from the Secretariat of Territory, Habitat and Dwelling (STHV).

The triangulation process was done mainly through the collection of primary data from experts, at the local and national level, done through semi-structured interviews.

Financial dimension:

For the financial dimension, the data collected was that from the database of the projects that had implemented the instrument in the city, and the revenue they had generated. The source of the data is the Secretariat of Territory, Habitat and Dwelling (STHV) which is in charge of administering the instrument. Also, the Ordinance No. 169: Operation Annual Plan 2012 and Pluriannual plan 2012-2014, that includes the budget sources and allocation, was consulted. The geographic information was also provided by the STHV. Additionally, in this dimension, the input of private developers that had benefitted from the instrument was collected through semi-structured interviews.

The triangulation process, regarding the profitability of the private sector, was done through an expert semi-structured interview with a representative from the Construction Chamber of Quito '*Cámara de la Construcción de Quito'*. For this dimension, validation of the data was provided, although not for all the cases analyzed, by the private developers themselves.

The data for the last variable of this dimension: Administrative Capacity was collected through semi-structured interviews with experts from the municipality. One of them is the Director of Cadaster. The official cadaster values from the Direction of Cadaster were used for the triangulation process. The official geographic information and data base regarding cadastral values was provided by the Metropolitan Direction of Cadaster.

Social dimension:

Finally, the data for the social dimension was collected from the database of expenditures on public works for the last 4 years, which was provided by the Secretariat of Territorial Coordination and Citizenship Participation. Again, the triangulation process was done through a semi-structured interview with an expert from the planning department of this Secretariat.

3.1.4 Sample Size and Selection

The research comprises the entire universe of the cases (92) for the application of the instrument in the District, in the last 18 months, since the beginning of its implementation. For the analysis of the specific projects, of the financial dimension, a stratified (by case) sample of 7 projects (by 5 developers[29]) was selected from new projects directed for the real estate market, that is, projects with the intention of generating profit in through the development of land and the sale of dwelling or office units.

Refer to Annex 2: Questionnaire for developers' interviews

For the economic dimension, changes in land values in clusters are analyzed. The clusters are defined in territorial units: neighborhoods or '*barrios*' where more than 3 cases of purchase of development rights had occurred. This resulted in a sample of 7 *'barrios'*. From this sample, a subset of 5 '*barrios*' was selected as information for the year defined as 1 (2001) and the year 12 (2012) was available. This same sample was selected to compare market and cadastral values, in the financial dimension, however, for this comparison a subset of 6 '*barrios*' was selected, as information on market values for the year 2011 was available for all them.

Table 2: Neighborhoods where most cases of sale of development rights have occurred. Source: Database provided by the Secretariat of Territory, Habitat and Dwelling.

Zonal Administration North (Eugenio Espejo)	
La Paz	9 cases
Bellavista	7 cases
Jardines del Batán*	3 cases
Estadio Atahualpa	6 cases
Las Bromelias*	7 cases
San Miguel Amagasí	3 cases
Zonal Administration: La Delicia	
Collalolama 9 de junio	3 cases

Refer to Annex 3. Map: Location of neighbourhoods selected as sample

The sample for second variable of the economic dimension is purposive, and it based on the singularity of the neighborhood. This singularity is based in the historical character of the *'barrio'*, and the existence of a Special Plan for it. The neighborhood selected is La Floresta.

As for the expert interviews, the respondents were selected through a purposive sample based on their experience in the field, their knowledge on land value capture tools and their position in the different organizations.

[29] All the developers interviewed requested explicitly to remain anonymous.

Table 3. Sample of experts consulted. (This list, related to the variables, is also found in the Table 1 that contains the operationalization and methodology for research).

POSITION	NAME
Land market consultant	Francisco Salazar
(former) Sub-Secretary of Habitat and Human Settlements (Ministry of Urban Development and Dwelling) -	José Morales
Director of Land Policy and Planning of the Secretary of Territory, Habitat and Dwelling	Fernando Puente
Director of Land Management of the Secretary of Territory, Habitat and Dwelling -	Patricio Montalvo
Municipal Advisor for the Secretary of Territory, Habitat and Dwelling	Barbara Scholz
Metropolitan Director of Cadaster	Daniel Hidalgo
President of the Chamber of Construction of Quito	Hermel Flores
Planning expert form the Secretariat of Territorial Coordination and Citizen Participation -	Verónica Villavicencio

Refer to Annex 2: Questionnaire for expert validations interviews

3.1.5 Validity and Reliability

"Validity, in qualitative research, refers to whether the findings of a study are true and certain—'true' in the sense that research findings accurately reflect the situation, and 'certain' in the sense that research findings are supported by the evidence" (Guion, 2002). So it is that to ensure validity triangulation methods were employed in research. Triangulation means that variables were analyzed through different approaches or perspectives.

In the case of this study, the data obtained from document analysis, secondary data information, and others was triangulated with primary data collected through semi-structured interviews to experts in the field of the different variables.

The reliability will be reinforced through the interviews in the way the questionnaires are designed and conducted. In some cases, questions will be repeated throughout the interview, and some questions will be asked to more than one expert, depending on its relevance. Additionally, the questionnaires will be pre-tested, to ensure their effectiveness.

It is necessary to highlight that, in most cases; this validation process has a qualitative approach, which is useful to counterweight the numerical data that will be collected.

3.1.6 Data Analysis Methods

The data analysis methods are directly related to the type of data that is being analyzed: qualitative or quantitative.

The analysis was made on the entire universe of cases of the application of the instrument, or on a much smaller purposive and convenience sample of 7 cases (for the analysis of the private sector profitability). For these reasons statistics analysis was not used in this study.

The territorial aspects of the variables related to the design and acceptance of the instrument, were analyzed through Geographic Information Systems and observation.

The analysis of the interviews acquired a large degree of importance, as validation mostly relies of these interviews which are of a qualitative nature. However, given time constraints, a transcript of interviews was not possible. In that sense, summaries from hearing and notes on site will be made and compared. Later on, this information was systematized through qualitative data analysis software. For the legal dimension, analysis from field documents and policy documents are important. As these are mostly in a digital version, qualitative data analysis software was used to label and organize relevant information.

For the definition on the market profitability, a static model of the residual price on land was intended but not used, as the information provided by the developers did not separate the costs of land from the other costs of the projects. However, a comparison, using basic operations from Excel software, was made to compare profitability in 3 situations or scenarios. This analysis will allow the understanding of the capabilities of the private market to profit and to the local government to create a win-win situation through the sale of development rights.

For all the other variables not explicitly mentioned in this section, basic Excel software operations were used to make the different comparisons and analysis.

3.1.7 Limitations

The limitations to this research are inherent to its scope and exploratory nature of the case study methodology. In that sense, not all variables are able to be studied in depth, as they are influenced by factors outside the control of the researcher. Additionally, given the novelty of the instrument in Quito, not many examples of application of the instrument had occurred yet. Also, the timeframe for the analysis of the information, comparison with budget, expenditures, etc., correspond to the period during which the instrument has been applied, that is only a 18-months period (from 2012 until June of 2013 when the data was collected). Given these factors, generalizations regarding the findings are not possible.

More practical limitations refer to the availability of the data and information, and the ability of the researcher to procure the information given the short time of fieldwork (4 weeks). For instance, for the land market values of land, transactions on vacant land did not occur every year, in all the researched neighborhoods. Another clear limitation of the study was the unwillingness of developers to provide detailed financial information on their projects, for example, the price of land was not disclosed in any of the consulted cases.

Another limitation to take on account is the sampling methods as the samples were biased by the availability, disposition, and previous contact with the interviewees; or availability of information.

Finally, it is worth mentioning that the data collection and fieldwork were carried out personally by the researcher, therefore, no extra budget was necessary.

Chapter 4: Research Findings

The following chapter comprises the analysis, results and interpretation of the data collected for each variable, in the attempt to answer the four guiding questions proposed before. This Chapter is presented following strictly the structure provided in the Table 1, shown in the Chapter 3, which includes the operationalization and methodology for this research.

4.1 Economic Dimension

As mentioned in the literature review, there are several factors that affect the value of land. However, these different factors cannot be isolated, in this research work, in order to determine in which degree each factor influences the change in land values. Having said that, the following analysis will show changes in market prices of land overtime in the urban area of the city, in the territorial units neighborhoods *'barrios'* where development rights had been purchased in at least 3 cases, in an attempt to determine if the implementation of this instrument that allows extra density, but in exchange of a monetary compensation, has had any effect on land values.

It is worth mentioning that, particularly in the case of Quito, the macroeconomic environment might have a big impact in changes in land values over the last decade. In the end of the decade of the 90s Ecuador was affected by a banking crisis which resulted in the dollarization of the economy in the year 2000. In that year, and because of this process, the inflation on consumer prices reached 96,1%, figure that dropped slowly for the next years. For the last years, Ecuador had experiences a relative economic stability with an average annual inflation of 4,3%, between 2005 and 2012.[30]

Other factor, worth keeping in mind, that affects the price of land and that does not relate to the changes in zoning regulations, but rather in the macro-economic environment, is the incorporation of a public bank (*'Banco del Instituto Ecuatoriano de Seguridad Social'* BIESS) in the housing credit market, and the sustained growth of employment on the public sector. These factors have a clear impact on the value of land, as more people are able to access and bid higher prices in the real estate property in the formal market[31]. However, this phenomenon occurs only in the middle and upper income level, for which the supply of housing is higher compared to the supply for other segments (Gallo, I., 2012).

Variable 1: Variation on value of land due to the implementation of the instrument.

The following table compares prices of land in selected neighborhoods in the urban area of Quito. The sample, as explained in Chapter 3, corresponds to the 7 neighborhoods where more than three cases of sale of development rights have occurred since the implementation of the instrument in 2012. From these, a subset of 5 was selected since information for the year 1 (2001) and year 12 (2012) was available for all of them.

[30] Average generated with official figures published by the INEC, available at: http://www.ecuadorencifras.com/cifras-inec/main.html

[31] Interview: Barbara Scholz, municipal advisor.

Table 4: Subset of 5 neighborhoods selected as sample, based on availability of information on market land values.

Zonal Administration North (Eugenio Espejo)	
La Paz	9 cases
Bellavista	7 cases
Estadio Atahualpa	6 cases
San Miguel Amagasí	3 cases
Zonal Administration: La Delicia	
Collalolama 9 de junio	3 cases

Refer to Annex 3. Map: Location of neighborhoods selected for the sample

The information below represents the average of price[32] per m^2 of vacant land based on actual commercial transactions for each year since 2001. The information was provided by Inteligentarium S.A., based on the data generated by GRIDCON. Both of these are consultancy companies specialized in the real estate market of Quito. The values provided (in USD) have been adjusted to reflect the value to the year 2012 using deflators generated through building prices indexes for each year. Due to time constraints, no other source of information was consulted; therefore, this information has not been triangulated with other quantitative sources.

As the information is based on transactions of vacant land, and these transactions did not necessarily happen every year for every neighborhood. The missing data will not be filled; however, the graphs show a linear trend between known values. Data for the year 2013 was not available.

Table 5. Average price of vacant land per m^2 in USD for the period 2001-2012. Source: Inteligentarium S.A.

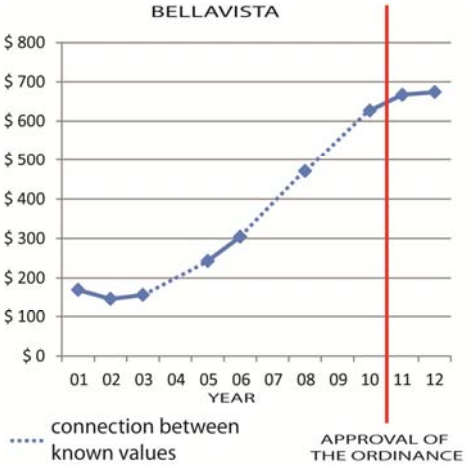
'BARRIO'	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	INCREMENT 12-YEAR PERIOD
BELLAVISTA	170	147	157		243	304		471		627	667	674	396,5%
COLLALOMA 9 DE JUNIO	34	50	61		56		70				127	196	576,5%
ESTADIO ATAHUALPA	203			269	*[1]			560				467	230,0%
LA PAZ	201	97	179	*[2]	87						886	813	404,5%
S.MIGUEL AMAGASI	29	26	37	28	51	52	116	128			167	207	713,8%

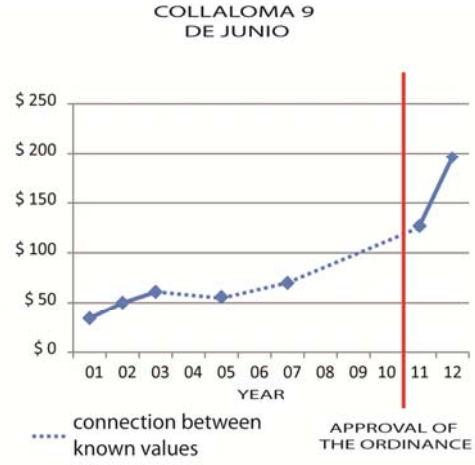
*Outliers were removed. *[1]= 22; *[2]=872

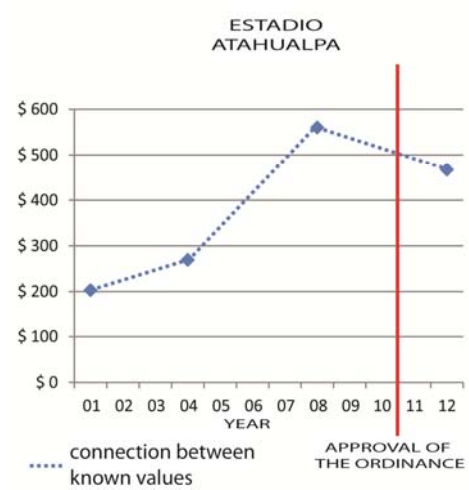
The following graphs describe the behavior of the market value of land according to the data presented in the table.

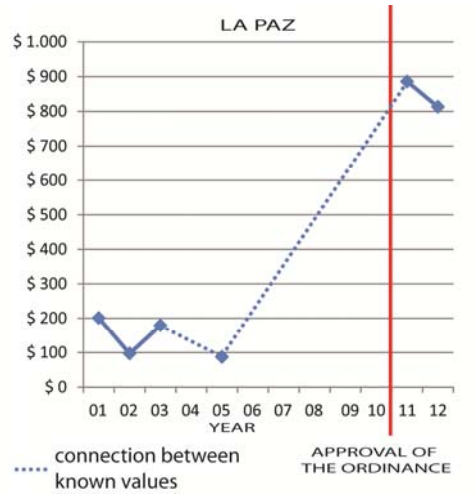
[32] Adjusted to date.

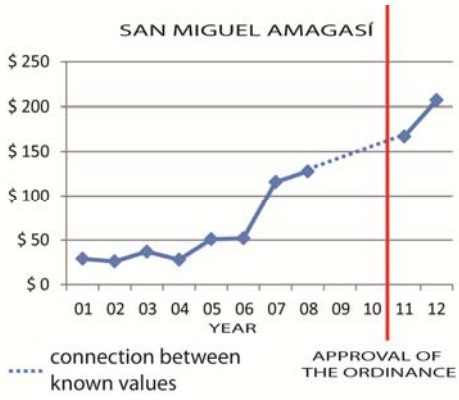
Graph 3. Behavior of the market value of land over time (12 years) for the selected sample. Source: Inteligentarium S.A.











In all cases the market prices overall had dramatically increased in the period analyzed (12 years). However, the biggest increases occurred in the neighborhoods outside the prime areas

and outside the so called hyper-center *'hipercentro'*[33]. That is San Miguel de Amagasí, y Collaloma 9 de Junio that show increments in value of land of 714% and 576% respectively. The smallest increment was seen in the neighborhood Estadio Atahualpa, which is one of the best served areas of the city, and presents higher values of land.

The overall increment in land values on this period of time is not explained by changes in zoning regulations[34], but they could be explained by the macroeconomic environment of the country. Particularly, for the last 5 years, this increment can also be explained, as mentioned before, by the incorporation of a public bank *(*BIESS) in the housing credit market, and the sustained growth of employment on the public sector, which allows more people enter the real estate market.

However, taking into account the variation on value of land in the last two years of the sample (2011-2012) which corresponds to the year where the instrument was approved, the change on value of land is not positive for all the cases. The two neighborhoods outside the prime area, San Miguel de Amagasí, y Collaloma 9 de Junio, present a steeped increment in the market value of land, which might be an indication that the approval and implementation of the instrument did affect these values. For the other cases in the sample, conclusions cannot be made as changes are not consistent, and '*barrios'* such as Estadio Atahualpa and La Paz, show decreases in land values. However, this might be explained by the fact that extra density does not come free of charge, but requires the payment of a fee.

Nevertheless, 5 out of 5 developers in the private sector interviewed reported accentuated increments in the asking prices of land (vacant or buildable land) in the neighborhoods on the prime areas of the city, linked to the expectation on a possible increment on density. This reflects a speculative process related to the instrument. However, 4 out of 5 developers reported that, for the specific project they were consulted on, the land was acquired before the implementation of the instrument. One of the developers reported having paid an increment in land value for acquiring the land for the project he was consulted on.

Given the limitations of the information mentioned above, results on whether the instrument had influenced the value of land are not conclusive.

Variable 2: Variation on value of land due to other zoning regulations changes

For the analysis or this variable the sample chosen was the neighborhood La Floresta, located in the north part of the urban area of the District. This neighborhood, built around the decade of 1940s following the principles of the Garden-City, is characterized by single family houses, of 1 or 2 stories, built with traditional techniques.

Through a participatory process, the residents of La Floresta requested a Special Land Use Plan that would limit the density of the area by restricting high raise buildings, which was already allowed by planning for the plots bordering main streets and avenues, with the aim to preserve the historical characteristics and scale of the area. The formulation of the Plan began in the year 2008, and the Ordinance was finally approved on 2011,

[33] The central area of the city that concentrates amenities and services.

[34] As there have not been a major change in the Land Use and Emplacement Plan (PUOS) for the urban area. Interview with local level authority, Patricio Montalvo.

As in the case of the variable 1, the information below represents the average of price[35] per m^2 of vacant land based on actual commercial transactions for each year since 2001. The information was provided by Inteligentarium S.A., based on the data generated by GRIDCON. Both of these are consultancy companies specialized in the real estate market of Quito. The values provided (in USD) have been adjusted to reflect the value to the year 2012 using deflators generated through building prices indexes for each year. Due to time constraints, no other source of information was consulted; therefore, this information has not been triangulated with other quantitative sources.

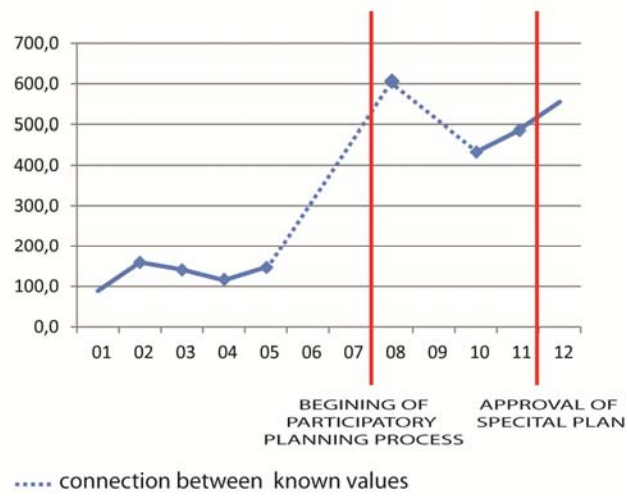
As the information is based on transactions of vacant land, and these transactions did not necessarily happen every year for every neighborhood. The missing data will not be filled; however, the graphs show a linear trend between known values. Data for the year 2013 was not available.

Table 6. Average price of vacant land per m^2 in USD in La Floresta. Source: Inteligentarium S.A.

BARRIO	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	INCREMENT 12-YEAR PERIOD
LA FLORESTA	88,6	158,9	141,3	114,7	146,7			606,3		432,7	484,9	555,3	626,7%

The following graphs describe the behavior of the market value of land according to the data presented in the table.

Graph 4. Behavior of the market value of land over time in La Floresta. Source: Inteligentarium S.A.



The information for the land prices in La Floresta shows an increment, over a 12-year period, of 626, 7%. When analyzing the behavior of the land market over time, there is evidence of a continuous increment in land values up to the year 2008, year in which the formulation of the Special Plan began. The following years land values decreased, which can be explained by

[35] Adjusted to date.

the expectative of new regulations constraints, which would decrease density rights that were already granted by zoning, in the area due to the formulation of the plan. It is worth mentioning that the sector had become an area of upper class restaurants and cultural activities, which might explain the increment on land values that began in the year 2010 after the approval of the Special Plan. It is worth mentioning that this Special Plan also included a plan of investments on public space, patrimony conservation, community services, etc.

4.2 Legal Dimension

Variables 3-6: National Level

In the year 2008, the National Assembly issued a new political framework for the country, The Constitution of the Republic of Ecuador. In relation to land and urban management, the Constitution guarantees the right to a safe and healthy habitat, to adequate housing and to the right to the city, that is according to the Constitution, the right to the full enjoyment of the city, and its public spaces under the principles of sustainability, social justice, respect for urban cultures, and the balance between the urban and the rural environment. (Constitución de la República del Ecuador, 2008)

Additionally, two complementary codes, related to the role of local governments and management of land, were issued in the year 2010: The Organic Code of Spatial Organization and Decentralization '*Código Orgánico de Organización Territorial y Descentralización* (COOTAD) and the Organic Code of Planning and Public Finances '*Código Orgánico de Planificación y Finanzas Pública'*(COPyFP).

The COOTAD establishes the political-administrative structure of the State on the territory defining roles and competences for every government level. Moreover, it establishes specific guidelines for spatial planning, budget management, equity indicators, property taxes, etc. It is important to mention that this code introduces the notion of plus value as the basis for redistribution of revenues on the territory (Gallo, I., 2012, Asamblea Nacional del Ecuador, 2010, 2010a).

On the other hand, the COPyFP has the objective of regulating and linking the National Planning System with the Public Financing System. This code, in relation to land management, defines the objective of promoting spatial balance recognizing the social and environment function of property, and the equitable distribution of costs and benefits of the public (and private) interventions[36]. The COPyFP also defines a series of planning instruments for development on a national scale. (Gallo, I., 2012, Asamblea Nacional del Ecuador, 2010b)

Property

The right to property is stated in the Constitution for the Republic as part of the Rights of Liberty (Art. 66). So it is that the State guarantees the right to property in all its forms, but acknowledging that it serves a social and environmental function.

There are 7 types of property recognized in the Constitution (Art. 321): public, private, communitarian, associative, cooperative, and mixed. The rights and obligations related to these types of property should be defined by other national regulations.

Furthermore, the Civil Code (Art. 747) states that property (or domain), in general terms, is the right to use and dispose of a corporal good, according to the dispositions of the law and being respectful of the right of others (other individuals or society as a whole). In the same article, it is also stated that property can be separated from the use of it.

[36] This concept, introduced by the Spanish urban legislation, has been applied in other legislations in Latin America such as the Colombian. (Gallo, I., 2012). As stated before, in Chapter 2, the principle establishes that "if a landowner wants to reap the benefits of land being developed, he or she should bear part of the costs of doing so" (Borrero Ochoa and Morales-Schechinger, 2007, p. 15).

The Civil Code also specifies the rights over immovable property, hence, the rights over land. In that sense, it is stated that landowners have the right to use, to usufruct, and to inhabit (in case of improvements on land). The usufruct is the faculty of enjoyment of a thing, as long as the property is not damaged or destroyed. The right of usufruct supposes two coexistent rights (Art. 779); that of the property owner separated from its enjoyment and that of the individual that enjoys it.

It is worth mentioning that the Civil Code has not been updated to incorporate the notion of the social and environmental role of property.

Separation of Building Rights

Although development rights (building rights) and property rights are no explicitly separated in any of the legal documents analyzed, the establishment of the principle of the social and environmental function of property, applied to the property of land, can be understood as a limitation to the rights associated with property, based on the supremacy of public interest over the private interest. Additionally, the Civil Code establishes the capacity of separating the right to use and usufruct, from the ownership. These two statements represent a strong legal support to the separation of property rights, from development rights, and consequently, to the application of land value capture instruments.

Obligations of landownership

As stated before, the social and environmental function of property strongly conditions property rights, and establishes clear obligations for landowners. In this context, the (former) Sub-Secretary of Habitat and Human Settlements, José Morales stated that: “These obligations are linked to planning, that is, by following what it is stated in the plans (supposedly approved for the society as a whole) these obligations are being met”.

Related to this, both, the *COOTAD* (Art.296) and the *COPyFP* (Art. 2) also establish the principle of the equitable distribution of costs and benefits of the public (and private) interventions as guideline for development and spatial planning. This means that local governments ought to establish mechanisms to ensure this equitable distribution and to fulfill the social and environmental function of property, although neither document cares to specify how. However, under this principle local governments have the legal support to impose obligations on landowners related to the benefits generated by urbanization process.

Other instruments

The following instrument, regulated at the national level, is a clear application of the principle of the social and environmental function of property; given that a limitation on property rights is imposed by the government, in the name of the public interest.

Expropiation

The Constitution of the Republic (Art. 323) grants to all public institutions the ability to expropriate by reason of social or national interest. The *COOTAD* (Art. 446) establishes that the purpose of expropriation is to execute social development plans, social housing programs, and environmental management actions, and other actions for the collective welfare. However, the specific meaning of these is not clearly stated.

The procedure for expropriation includes fair compensation on the basis of commercial value of land, excluding the plus values generated by public actions on the last five years. If landowners do not agree on the sum of the compensation, the case is taken into a judicial

process where negotiation can occur. The payment of compensation is, ordinarily, done in cash, through agreements of barter with other properties, or other methods.

In the case of land strips for right of ways, or services (not more that 5% of the plot) the value of the compensation can be crossed with the obligation of payment of betterment charges for the same intervention. If after a year of the expropriation, construction works have not started, or compensation has not been paid, the expropriation process can be revoked.

As there is a monetary compensation in expropriation it can be argued that property rights are not taken from the landowners, although there is a restriction on what they can do with the property, in the name of the public interest, and that is only selling it to the level of government that had required the expropriation

Variables 7-10: Local Level

At the local level, the documents that structure the planning system are the Ordinance No. 172 that contains the Land Regime '*Régimen del Suelo*'[37]; and the Ordinance No. 171 that includes the Metropolitan Spatial Plan 2012-2022 '*Plan Metropolitano de Ordenamiento Territorial*' (PMOT), and its operational instrument, the Land Use and Emplacement Plan '*Plan de Usos y Ocupación del Suelo* (PUOS). The last and current versions of these documents were approved in December of 2011. The dispositions inside these instruments are established according to the principles of the national level regulations, which regarding land includes the social and environmental function of property, and the equitable distribution of costs and benefits of the urbanization process. These documents are accompanied by complementary planning instruments and technical regulations for building and urban land qualification.

Graph 5. Structure of planning instruments of the Metropolitan District of Quito. Source: Gallo, I., 2012

[37] This document, and its dispositions, have the objective of regulate the spatial organization, emplacement, qualification of land, transformation and control over the use of land, buildings, underground space and aerial space (up until the limits defined by zoning) in the Metropolitan District of Quito. (Art. 1) (Municipio Metropolitano de Quito, 2011b)

Zoning

The zoning system for the District is established through the Land Use and Emplacement Plan which is the operational instrument of the Metropolitan Spatial Plan 2012-2022 (PMOT). This Plan has the purpose of structuring the admissibility of uses, building potential and emplacement by defining specific regulations for these.

The PUOS defines zones, and for each zone it establishes the compatibility of uses, maximum volume and height of the building, regulations for the qualification of urban land *'habilitación del suelo'*, right-of-way, easements, and special areas for protection. As stated by the local level expert, Fernando Puente: "These features are applicable to all the lots in a zone", but these can be very diverse from zone to zone.

For the qualification of urban land the plan defines: minimum plot size, and frontage. For the building emplacement the plan defines: setbacks; Footprint Area Ratio FpAR *'COS-PB'*[38]; Floor Area Ratio FAR *'COS-Total'*[39], and height of the construction.

Separation of Development Rights

According to the Land Regime (Art. 9), in urban land, landowners have the right to use and built. However, the building capacity of the lot is conditioned to the specific regulations established in the Land Use and Emplacement Plan. Additionally, it is stated that (Art. 14) planning regulations do not affect the ownership right (or domain), and that these planning regulations do not confer to landowners the right of compensation in case of modification on the plans. In that sense, the rights the development rights can be understood as separated from the property rights, as these are conditioned and defined by the local government, through planning, and can also be modified, without consultation. However, this separation is not explicitly stated.

It is worth mentioning that only an administrative procedure, in the form or a license (building license) grants property owners the right to develop what is established in the law. This was emphasised during the interviews by the national level expert, José Morales, and by the local level authority, Fernando Puente.

It is also worth mentioning that in this zoning system not all landowners have the same rights (or potential rights) as each zone has specific characteristics that are defined according to the desired urban model, to characteristics of the area, and other reasons. However, in within a zone the building rights are homogeneous.

Obligations of landownership

As for the obligations of landowners, the Land Regimen (Art. 10) establishes the following obligations: The payment of betterment charges; to develop land and execute the construction of improvements according to the urban licenses in the established timeframe; to abide to the use of the plot and building established in the plan; to abide to all planning instruments and technical regulations for the building and use of property; etc.

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[38] Footprint Area Ratio refers to the percentage of the land where a building can be emplaced in a plot. That is, how much of the plot can be covered but a construction. In the Quitean Law, this is referred to as COS-PB, *'Coeficiente de Ocuapación del Suelo - Planta Baja'* and it is expressed in the percentage of the plot that can be occupied on the ground floor.

[39] Floor Area Ratio refers to the total building potential of the plot. In the Quitean Law, this is referred to as COS-Total *'Coeficiente de Ocuapación Total del Suelo'* and it is expressed in percentage of the total of the buildable area (considering all stories) allowed by zoning in relation to the lot.

It is also worth mentioning that landowners are also obliged to the annual payment of property taxes. According to the COOTAD, (Art. 492) the collection and calculations of this tax (and other levies) are competence of the local governments.

The Land Regime (Art. 15 and 17) emphasizes on the equitable distribution of benefits and costs generated by the public action, and mentions that the local government is entitled to participate in the increment in value generated by the spatial planning, and that specific instruments for this purpose should be designed and implemented.

Other instruments

The following instruments exemplify the application of the principle of 'the equitable distribution of costs and benefits of the urbanization process'. So it is that in the two instruments explained below, the local government imposes obligations to the benefits that landowners obtain through different urban interventions. Benefits, in the examples that follow, are in the form urbanization and subdivision permits, or in public infrastructure investments.

Exactions

Exactions refer to the public space[40] granted to the city, free of compensation, as contribution of green areas, communal space or amenity space as part of the obligations or costs for subdividing urban land and rural land; and in urbanization developments.

In the case of the division of land, 10% of the usable area resulting from the subdivision will be granted to the community. In the case of the urbanization development, additional to the 10% mentioned, 3% of the usable area will be granted for communal areas, public services or amenities.

The granted land for public space and amenities should comply with the technical regulations of architecture and urbanism that are part of the Land Regime, for instance, the area should not have a slope above 30 degrees. Other easements (such as conservation land, or strips next to rivers or gorges) will not be considered for these purposes.

If the 10% of the usable land resulting from the subdivision or urbanization development is smaller than the minimum lot size established by zoning, the landowner is required to pay in cash 5% of the value of the plot. This contribution is earmarked to be invested in public space and communal services. (Régimen Administrativo del Suelo, 2011)

In this case, the right of landowners to subdivide land has a limitation or cost, in the form of a requirement of granting, without compensation, part of this private land, for the public interest.

Betterment Charges

In the Metropolitan District of Quito, a betterment charge is a mandatory tax that results from the real or presumptive benefit generated to the private property inside the Metropolitan District of Quito, due the construction and implementation of any public work. The base of the tax is the total cost of the public work prorated by all owners of properties who benefit from the public work (Régimen Administrativo del Suelo, 2011).

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[40] Public space is defined as the system in which areas, zones, and amenities are interlinked in the District. Public space is also defined as the urban, architectonic or landscape elements (public or private) that are the scenario of social interactions, and where citizens exercise the right to the city. (Régimen Administrativo del Suelo, 2011).

It is important to mention that the COOTAD also defines the instrument, and this is used in other local governments in the country, however, 74% of the contributions collected are generated in the three biggest cities of the country: Quito, Cuenca and Guayaquil. (Rodriguez and Aulestia, 2013, cited in Smolka, 2013)

A betterment charge more than limiting the right of landowners over their property can be understood as an obligation to share the costs of public works as a beneficiary of them. However, it can be argued that the contribution is made on the basis of the increment of the value of land that the infrastructure generates on the property, and not solely on financing an investment.

Variable 11-12: Definition of the instrument

As stated by municipal advisor, Barbara Scholz, and by local level authority, Patricio Montalvo, a similar instrument of sale of development rights was implemented for a short period of time in the decade of the 90s. The aim of this instrument was to disincentive land division by granting higher building rights to larger plots. However, this instrument proved to be very conflictive, and neighbors of high buildings did not appreciate view blockings and considered that the increment on height created negative impacts on land values of neighboring properties. The instrument was abolished short after its approval.

The current instrument was first regulated in the Ordinance No. 106 approved in July of 2011, as an instrument of recapturing value generated by Created Land '*Suelo Creado'*. Corrections were included and approved in September of the same year. Later, the contents of this ordinance were incorporated as part of the Land Regime in the articles 94 to103, with small differences. However, the Ordinance No.106 was never derogated; therefore, it is still in force[41]. For this research document, the version included in the Land Regime will be mainly considered.

The Land Regimen (Art. 94) states that landowners can request an increment on the number of stories (up to the equivalent in m^2 of 2 stories) in a plot, above the number established in the Land Use and Emplacement Plan, always abiding the technical regulations for building and construction. '*Normas Técnicas de Arquitectura y Urbanismo*'.

This increment will be authorized under the following circumstances:

- In Urban Zones of Special Assignation. *'Zonas Urbanas de Asignación Especial-ZUAEs'*. (It also applies for existing buildings).
- In especial urban-architecture projects [42] when they generate improvements in the urban quality, contribution on green areas, public spaces, urban image, natural areas' conservation, or social inclusion.
- In priority projects: large scale (metropolitan) projects, approved as such by the City Council.

[41] Interview with Patricio Montalvo, local level authority.

[42] Before the approval of the instrument, changes in FAR and other zoning regulations were possible for this category of projects; however, only after the implementation of the sale of development rights, additional rights required a payment, according to Patricio Montalvo, local level authority.

This category of projects can be private or public, and can be implemented if their area is higher than 10.000 m^2, the use of the project is allowed by zoning. Their implementation has to be approved by the STHV.

- For buildings that incorporate environmentally friendly technologies or landscape inputs to the city.

This last case of application was not included in the Ordinance No. 106, but appeared, through influence of the City Council, in the Land Regime.

The number of stories can be incremented also by redistribution the FAR without increasing it. That is, increasing the height (and number of stories) but decreasing the Footprint Area Ratio. A condition for this case of application is for the ground floor to be used as communal and public space.

For this research work the cases that will be considered are those implemented in In Zones of Special Urban Assignation 'ZUAEs' for new buildings and those where environmentally friendly technologies were incorporated. The reason for this selection is that these cases are prone to be used by developers for the purpose of incrementing profits. Additionally, for the cases of redistributing FAR (2 reported cases) no payments have been made, therefore, they are not considered in the database provided, and are not taken into account in this study.

Objectives of the instrument:

The objective of the instrument, as stated in the annex document of the Ordinance No. 106 is to densify the urban area of the city and to intensify the use of urban served land.

However, there is a limitation of two stories to the amount of development rights that can be acquired, which limits the ability of the instrument to densify to a major extent. This limitation was set to avoid conflicts among landowners[43]. This limitation was set also, so that additional infrastructure will not be required; that is, the municipality will not have to engage in further investments. Fernando Puente, local government authority, stated that, in that sense, one of the objectives is to generate revenue from a planning decision, but on the basis that the infrastructure of the city can support the extra density.

For other part Barbara Scholz, municipal advisor, specified that another objective of the instrument is to distribute real estate activities more evenly on the territory, that have been highly concentrated in certain areas of the city (those in the hyper-center, with the highest land values located in the center-north area).

Refer to Annex 1: Concentration of services in the urban area.

ZUAEs:

The Zones of Special Urban Assignation. *'Zonas Urbanas de Asignación Especial'* (ZUAEs) are the zones defined in the urban area where landowners can acquire development rights, for the first type of application of the instrument.

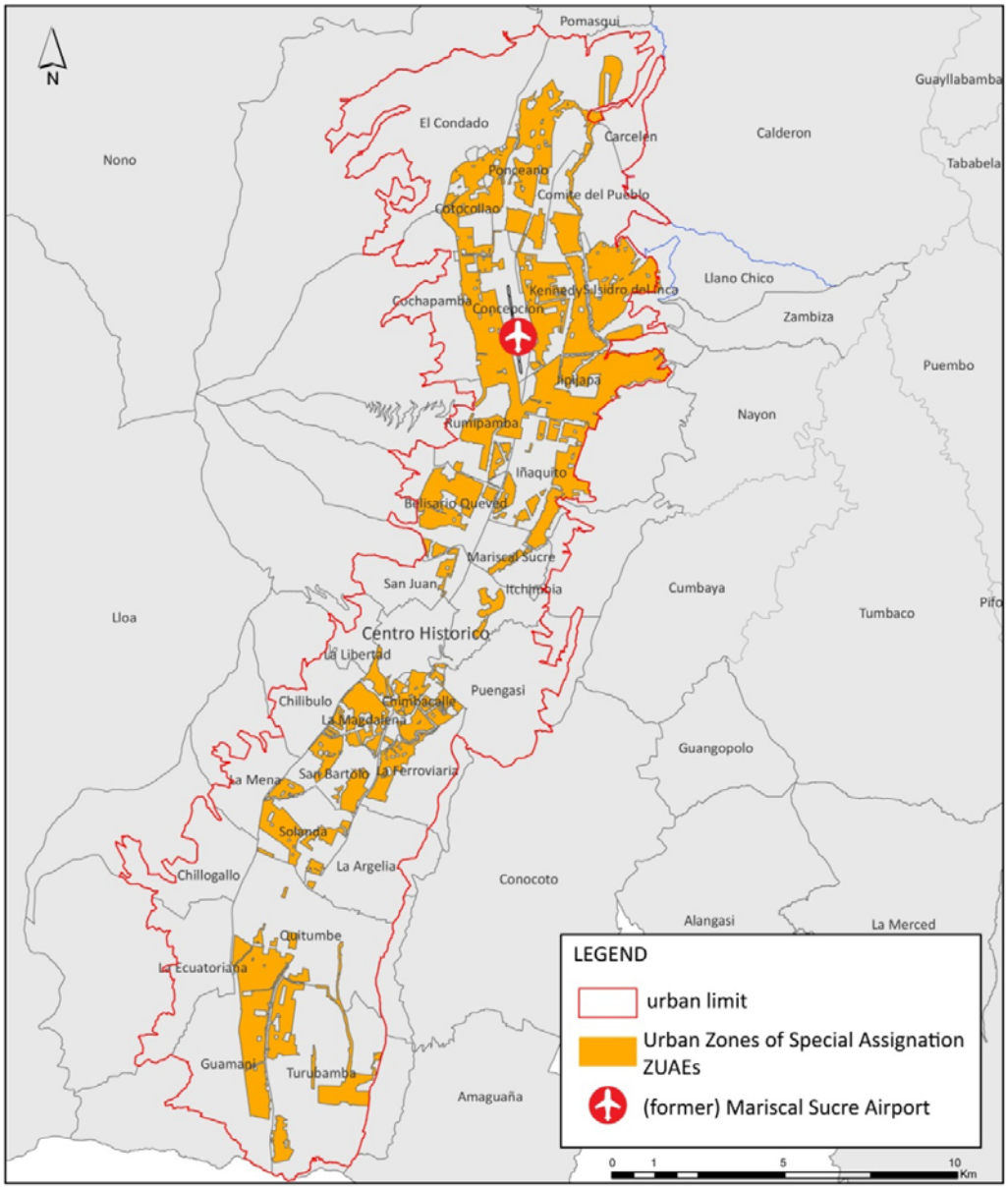
Only zones where the Land Use and Emplacement Plan specifies as zones of detached emplacement or footprint *'ocupación aislada'*[44] were taken into account. Plots that are part of the ZUAEs must have a minimum area of 400m^2, and have their frontage to a street of a minimum width of 12 m. According to Patricio Montalvo, local government expert, capacity of service infrastructure was also considered for the definition of the ZUAEs.

[43] This refers to the conflicts that arose to the similar instrument mentioned above that was implemented for a short period in the decade of 1990.

[44] That is, an area which by zoning, buildings must have setbacks from all the property lines.

Areas that have special zoning plans (partial or master plans) such as the Historic Centre, or other historic neighbourhoods (La Floresta, La Mariscal, Guápulo, etc.), the approach area '*cono de aproximación*'[45] of the International Mariscal Sucre Airport[46], and areas that were considered to already have high density rights by zoning or other considerations regarding the urban form, were not included in the ZUAEs[47].

Map 1. Zones of Special Urban Assignation. '*Zonas Urbanas de Asignación Especial- ZUAEs*'. Source: Secretariat of Territory, Habitat and Dwelling.



[45] The ground within the cone shaped area preceding the landing threshold.

[46] The international airport of the city of Quito Mariscal Sucre was located in the north of the urban area. On February of 2013, this airport stop functioning as such, and operation were moved to the urban parish of Tababela.

[47] According to Fernando Puente, local government expert.

Procedures

The instrument was designed to be applied automatically, that is that development rights can be purchased outside special plans, partial plans or special procedures if there the requirements are being complied: to pay the special contribution and that the plot is defined as ZUAE. Information on whether a plot is part or not of the ZUAEs is available to landowners.

For the other case studied in this research, where development rights are purchased anywhere in the city, the application is not automatic as it has to be approved by the Secretariat of Territory, Habitat and Dwelling. It is vaguely defined as environmentally friendly technologies waste water reuse and the use of alternative energy; however, there is no definition on benchmarks regarding these or other similar technologies. Until the moment of the data collection, only 4 of these cases occurred, and one extra was being processed. The value of the extra development rights is calculated with the same formula as in the other cases.

About the payment, the Land Regime establishes it can be made through a cash payment at once or in installments, in a 2 year or less term; through compensation in infrastructure (approved by the local government); or through contribution of land. The compensation in kind (land or infrastructure) should be equivalent to the price calculated through the formula. The guidelines for the payments in kinds are not yet in place, therefore, the exact type of investments that can be used as payment are not defined.

By the time of the data collection, and as stated by Patricio Montalvo, local level authority, all the contributions were paid on cash, either at once or through a payment covenant. However, one of the developers consulted reported a case where the payment through infrastructure was in process of approval. In the case, the Zonal Administration, corresponding to the project, defined what investment should be made and the location of it (inside the same Zonal Administration).

4.3 Financial Dimension

Variable 13: Formula application

The formula used to calculate the price of the additional development rights in the Metropolitan District of Quito is:

$$CE = \frac{S(t) \quad x \quad V\,(AIVA)}{AUT} \quad x \quad AB\,(p)$$

Where

CE	"Special Contribution" or the price of the extra development rights.
S(t)	Surface of the plot in m^2
V (AIVA)	Cadastral value of the plot (per m^2)
AUT	The total buildable area for the plot, according to the zoning plan.
AB(p)	Area, in m^2, to be incremented

Formula 2: Formula that calculates the price of extra development rights. Source: Ordinance No. 106.

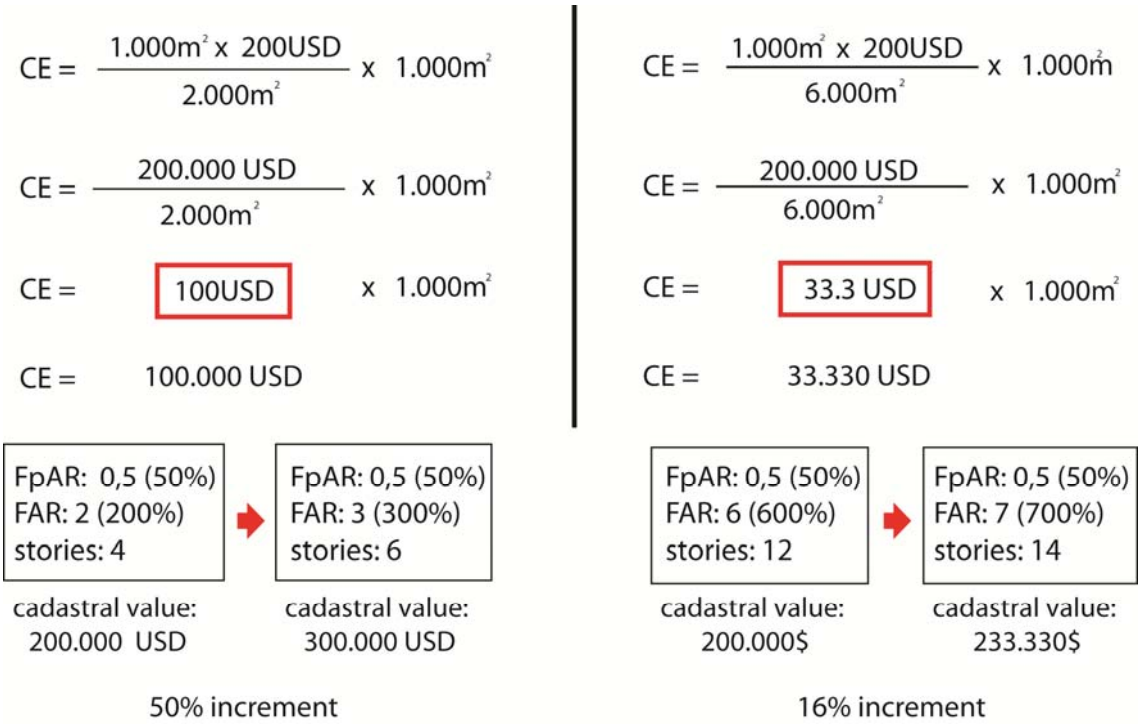
The formula calculates a value per m^2 of potential built space (which depends on the FAR) in relation to the value of the land, based on its cadastral value. That is, the formula calculates the incidence of the value of land for each potential m^2 of 'floor space' built upon land. This value is then multiplied by the additional square meters that will be purchased.

In that sense, the value of each additional square meter differs from case to case, and it changes according not only to the cadastral value of each plot but also to the buildable area (FAR) permitted in the zoning plan.

The following stylized example of the formula application compares 2 hypotetical cases where different amount of money is paid for the same amount of developing rights. So it is that the example shows how the contribution to be paid by the landowners depends to a great extent on FAR allowed by the Land Use Plan. In both cases the size of the plot is $1.000m^2$, the Footprint Area Ratio (FpAR) is 50%[48]. The cadastral value, in this example, is also constant (200 USD).

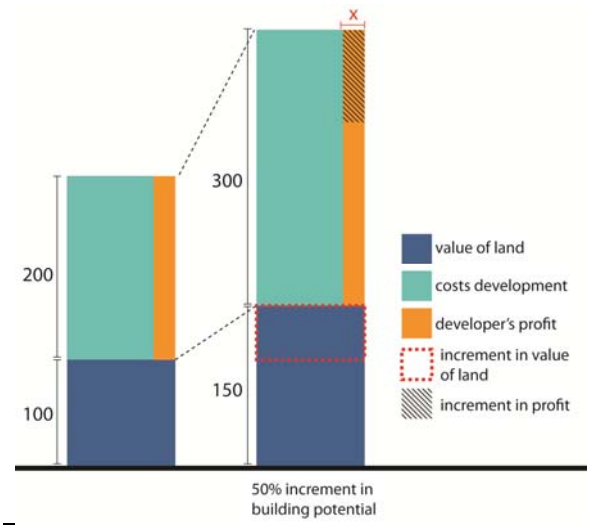
[48] A 50% in a $1.000m^2$ plot means that on the ground floor $500m^2$ can be occupied by construction. This is reflected on the upper floors, as they have an area up to $500m^2$ each.

Table 7. Stylized example of calculation of price of extra development rights.



The example shows that, theoretically, an increment on building potential of 50% represents an increment on the value of land of 50%. The totality of this increment would be captured by the local government, which would limit the potential of profiting for the developers to the profit made by the added volume in the development, but not from land itself. So it is that, theoretically, the incidence of the cost of land for each m^2 of 'floor space' does not change. In practice, however, the totality of the increment in land value is captured by the government if the cadastral values would reflect the market values[49].

Graph 6. Theoretical scheme of the proportion of increment on value of land and the proportion of the increment in costs and profit.



[49] It is assumed that the market values are linked to the 'highest and best use of land'.

This diagram shows again, in a graphic way, how the increment on density rights, in theory, do not reduce the incidence of land value on costs of the development; therefore, the proportion of profit in relation to the costs is constant (the value of 'x' is constant), but in increases in proportion to the increase in 'floor space' units or building units.

Variable 14: Revenue Generated

Bellow, a summary of the main facts regarding the application of the instrument so far is presented.

Table 8: Summary of the number of cases and revenue generated by the instrument. Source: Database provided by the Secretariat of Territory, Habitat and Dwelling.

PERIOD	NUMBER OF CASES	PLOTS
01/02/2012	92	87
23/06/2013		
REVENUE GENERATED		
2012	2013	TOTAL
USD 4.184.892,67	USD 1.986.315,16	**USD 6.171.207,83**

In order to know whether the revenue generated by the implementation of the instrument is significant, this value is compared to the different components of the budget of the municipality. Given that the information was collected in the month of June of 2013, the comparison will be made taking in account only the year 2012. It is necessary to mention that the instrument began its implementation in the month of February, therefore, only 11 months of the year are considered, which limits the results of the comparison. It is important to note that, like stated above, no payments in kind were made until the time of the data collection, and therefore, no analysis is required in this respect.

Table 9: Summary of the annual municipal budget and sources in USD. Source: Ordinance No. 169. Operation Annual Plan 2012 and Pluriannual plan 2012-2014. The source for 'Credits' (loans), has been removed for the analysis, although it appears in the Ordinance No. 169.

SOURCE	2012 in USD	PERCENTAGE	2013 in USD	PERCENTAGE
SELF GENERATED RESOURCES	302.474.953	48,9%	273.333.450	47,5%
TRANSFERS	276.752.302	44,7%	269.752.302	46,9%
COVENANTS*	39.885.953	6,4%	31.875.451	5,5%
TOTAL	**619.115.220,0**	100,0%	**574.961.203**	100,0%

*This are earmarked transfers.

For the year 2012, approximately, 49% of the municipal budget (not including credits or loans) came from self-generated sources. These sources include taxes, fees and contributions, sale of goods and services, income from investments and fines, sale of assets, account receivable and bank balances.

The budget that corresponds to fees and contributions[50] is 60.553.796 USD for the year 2012, represents around the 20% of the self-generated sources. The income generated by the sale of development rights, in the same year, represents around 7% of the amount of fees and

[50] There are over 12 items considered in this category.

contributions. It should be mention that for the year 2012, as it was the first year of implementation of the instrument, the resources for fees and contributions, taken on account for in the operational planning, did not include the revenue generated by the instrument.

It is worth mentioning that the revenue generated by betterment charges for that year is around 20 million USD, which accounts for approximately 1/3 of the amount considered in fees and contributions.

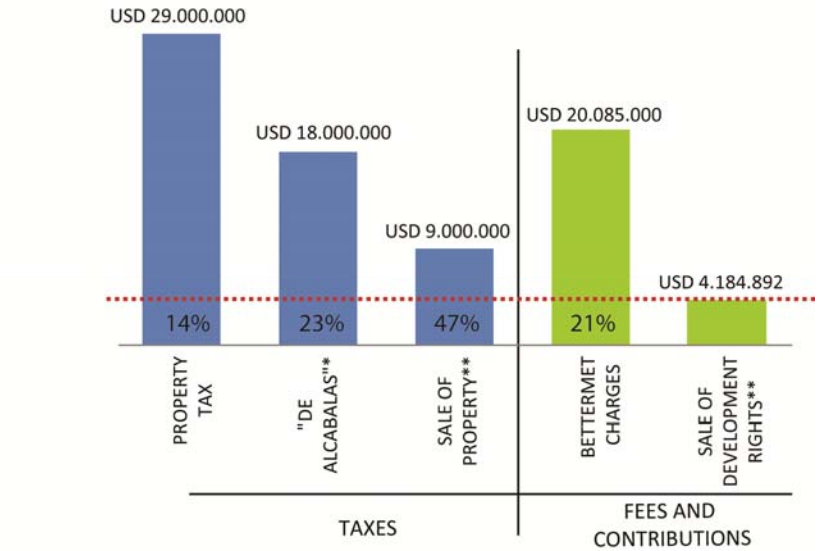
Below, a comparison between the sources of revenue of the local government that are related to land is presented.

Table 10. Land related sources of income of the local government for the year 2012. Source: Ordinance No. 169. Operation Annual Plan 2012 and Pluriannual plan 2012-2014; and, database provided by the Secretariat of Territory, Habitat and Dwelling.

LAND RELATED SOURCES OF INCOME		
TAXES	On property (includes improvements)	USD 29.000.000
	"De Alcabalas" *	USD 18.000.000
	On the sale of plots**	USD 9.000.000
FEES AND CONTRIBUTIONS	Betterment Charges	USD 20.085.000
	Sale of Development Rights***	USD 4.184.892

*Tax over on real estate property on the moment of change on domain. The base of the tax is the commercial value of the property.
** Tax over the plus value of property. The base of this tax is the difference between the buying price and the posterior selling price of a property (assuming that the selling prices is higher than the buying one).
***This item was not explicitly considered in the budget for 2012. This figure reflects the exact amount of revenue raised by the instrument on that year.

Graph 7. Land related sources of income of the local government for the year 2012. Source: Ordinance No. 169. Operation Annual Plan 2012 and Pluriannual plan 2012-2014; and, database provided by the Secretariat of Territory, Habitat and Dwelling.



*Tax over on real estate property on the moment of change on domain. The base of the tax is the commercial value of the property.
** Tax over the plus value of property. The base of this tax is the difference between the buying price and the posterior selling price of a property (assuming that the selling prices is higher than the buying one).
***This item was not explicitly considered in the budget for 2012. This figure reflects the exact amount of revenue raised by the instrument on that year.

The previous table and graph shows that, when compared the other land related sources, the income generated by the Sale of Development Rights is still lower than all other items. When compared with the income from property tax (the biggest source of land related income), the sale of development rights represents only 14% of this figure. In contrast, when compared to the income generated by betterment charges, part of fees and contributions, the revenue generated by the sale of development rights represents up to 21%.

Variable 15: Administrative Capacity

Administrative Capabilities

As stated before, when applied in plots that are part of the ZUAEs, the instrument was designed to be of 'universal' (or automatic) application[51]. That is, if a one complies with the requirements, no further authorizations are needed. This information has been uploaded to the information system of the District and does not require further action. In the same way, the cadastral land values are linked to the information on each plot, and the system automatically provides the value of the additional development rights. In this sense, in this stage, no further administrative capacity is required. However, it is worth mentioning that the developers consulted (5 out of 5) reported that the municipality processes are lengthy and bothersome in all its aspects; the procedure for the sale of development rights is not the exception.

For the case of development rights being purchased outside of the ZUAEs through the incorporation of environmentally friendly technologies in the buildings, as it was mentioned earlier, there are not specific benchmarks regarding these technologies. Parameters have not been defined and the few cases that had been implemented through this option have gone through a process of discretional decision by the municipality in terms of what environmental systems and technologies are enough in order to grant the landowners the possibility of purchasing development rights,[52] process that requires administrative capacity that is not yet in place.

Adequate Updating of the Cadaster:

The COOTAD determines that it is an exclusive[53] competence of the local government to generate and manage the urban and rural cadasters of property (Art. 55). It is required by law (Art. 494) for all municipalities and districts of the country to update the cadaster of their urban and rural plots including the value of the property. The property should be valuated considering the land and also its improvements. This process should be done every two years.

In this respect, the municipality of Quito is carrying the project of the Multipurpose Cadaster, financed by the Interamerican Development Bank (BID). This project has the objective of updating the cadaster of the city and to link it with an information system. The last update of the cadaster of the city or this scale has not occurred, according to the Director of Cadaster of the District, Daniel Hidalgo, since the decade of the 80s.

The purpose of the project is to have accurate georeferenced information to serve many purposes: fiscal, spatial and strategic planning, policy making, etc. This information is to be consolidated in system information that will link databases from various public entities. The

[51] Interview: Barbara Scholz, municipal advisor.

[52] Interview: Patricio Montalvo, local level authority.

[53] The COOTAD establishes exclusive and concurrent competences between levels of government.

project includes an aerial photography of the District; the update of the urban cadaster of the District; and the development of the Metropolitan Information System of the District. The budget for the project is 12.073.800 USD. By June of 2013, 98,73% of the budget was executed [54].

Updating of Valorative Intervention Areas '*Areas de Intervención Valorativa*' (AIVAS): Cadastral values

In terms of administrative capacity, for an effective application of the instrument, and for the special contribution to reflect commercial land values, the adequate valuation of land is critical.

The Municipal Valuation Norm (Municipio del Distrito Metropolitano de Quito – Dirección Metropolitana de Castastro, 2012) establishes that the land values will be obtained using as reference the market value through a comparative method. Where there is no market information, other methods can be applied such as replacement cost, etc. The market value is obtained through a) direct method, which consists in obtaining information of real market transactions, and b) indirect method, which consists in using as information source real estate offers. The asking price will be discounted 10%-15%[55]. Additionally, the particular features of the plots will be acknowledged by the application of adjustment factors. The norm defines adjustment factors in detail for features like size, frontage (proportion in relation to other sides of the plot); topography, risk area, protection areas, historic areas, accessibility to services, etc.

All the cadastral land values in the District were updated for the last time in the year 2011. Updates of smaller areas are done constantly. According to the Director of Cadaster the valuation process (for the year 2011 and for the smaller areas that had been updated since then) has been done following the norm, that is, to reflect as accurately as possible the market values of land. However, it is acknowledged that the areas where the real estate market is more dynamic, market values change faster than cadastral values.

According the expert on land markets, Francisco Salazar, the AIVA values reflect market values up to a 70%, value that changes depending on the area. However, the following comparison between the AIVAs' value by neighborhood *'barrio'* show that for the sample selected, market values are reflected in the AIVA value in different proportions.

The sample for this analysis is taken from the 7 neighborhoods considered in the Economic Dimension of this chapter. A subset of 6 neighborhoods, for which information for the year 2011 was available were selected. The year 2011 was selected as on that year the last general update of AIVA values occurred. The sample is not big enough to run a statistical analysis on land values on the entire city.

Refer to Annex 3. Map: Location of neighbourhoods selected as sample

[54] http://www.epmduq.gob.ec/index.php?option=com_content&view=article&id=19

[55] As it is assumed that closing prices are lower than asking prices.

Table 11. Comparison between AIVA values and commercial values for the year 2011. Source: Market values: Inteligentarium S.A; Cadastral (AIVA) values: Metropolitan Direction of Cadaster

BARRIO NEIGHBORHOOD	AVERAGE MARKET VALUE YEAR 2011 (USD)	AVERAGE CADASTRIAL VALUE 2011 (USD)	HIGHEST VALUE IN AREA (USD)	PERCENTAGE OF MARKET VALUES IN AIVA (AVERAGE VALUE)	PERCENTAGE OF MARKET VALUES IN AIVA (HIGHEST VALUE)	LOWEST VALUE IN AREA (USD)	PERCENTAGE OF MARKET VALUES IN AIVA (LOWEST VALUE)
	A	B	C	B/A	C/A	D	D/A
BELLAVISTA	667	353	410	53%	61%	285	43%
COLLALOMA 9 DE JUNIO	127	101	190	80%	150%	75	59%
JARDINES DEL BATAN	472	258	285	55%	60%	200	42%
LA PAZ	886	349	450	39%	51%	285	32%
LAS BROMELIAS	292	162	225	56%	77%	120	41%
SAN MIGUEL AMAGASÍ	167	118	210	71%	126%	40	24%

The average value of land indicates a central tendency; the highest and lowest values were included to indicate, to a certain extent, dispersion.

The comparison between commercial values and average AIVA values for each neighborhood shows that cadastral values reflect only a portion of the commercial values. In La Paz, this proportion is as low as 39%. In the case of Collaloma 9 de Junio, the average AIVA value reflects up to 80% of the commercial value.

If the same commercial value is compared to the highest AIVA in the neighborhood, the proportion of the commercial value reflected in the AIVA values is higher in all cases. In the case of the Collaloma 9 de Junio and San Miguel Amagasí, this figure is higher than 100%.

Although these percentages are not conclusive, it gives a clear indication that market values are not being reflected in the AIVAs value, particularly in the areas that present higher values in general (in both, commercial and cadastral values). The neighborhood with the highest land values, La Paz, also presents the biggest discrepancies between the AIVA value and the commercial one.

Monitoring system

In the year 2011, a monitoring land prices system was conceptualized, however it has not been implemented yet. The system, in the way it has been designed, will process the data that is being generated on a daily basis through the permits that are issued in the District. This information will be linked to that of the cadaster and the information generated in the Land and Property Registry.

The design of the system has not yet been known or approved by all the competent municipal authorities. Furthermore, the design has to be adapted to a new system of issuing permits in which external entities (like the Architects Association '*Colegio de Arquitectos del Ecuador CAE'*) will have a role.[56]

[56] Interview: Barbara Scholz, municipal advisor.

Variable 16: Acceptability

The municipality, for the whole District, in the period from the year 2012 until the month of June of 2013 had issued 3.076 building licenses. If only new construction and uses of dwelling and offices are considered, the number of licenses issued is 1.501, which means that only 6% of the licenses issued for this sort of project applied the instrument.

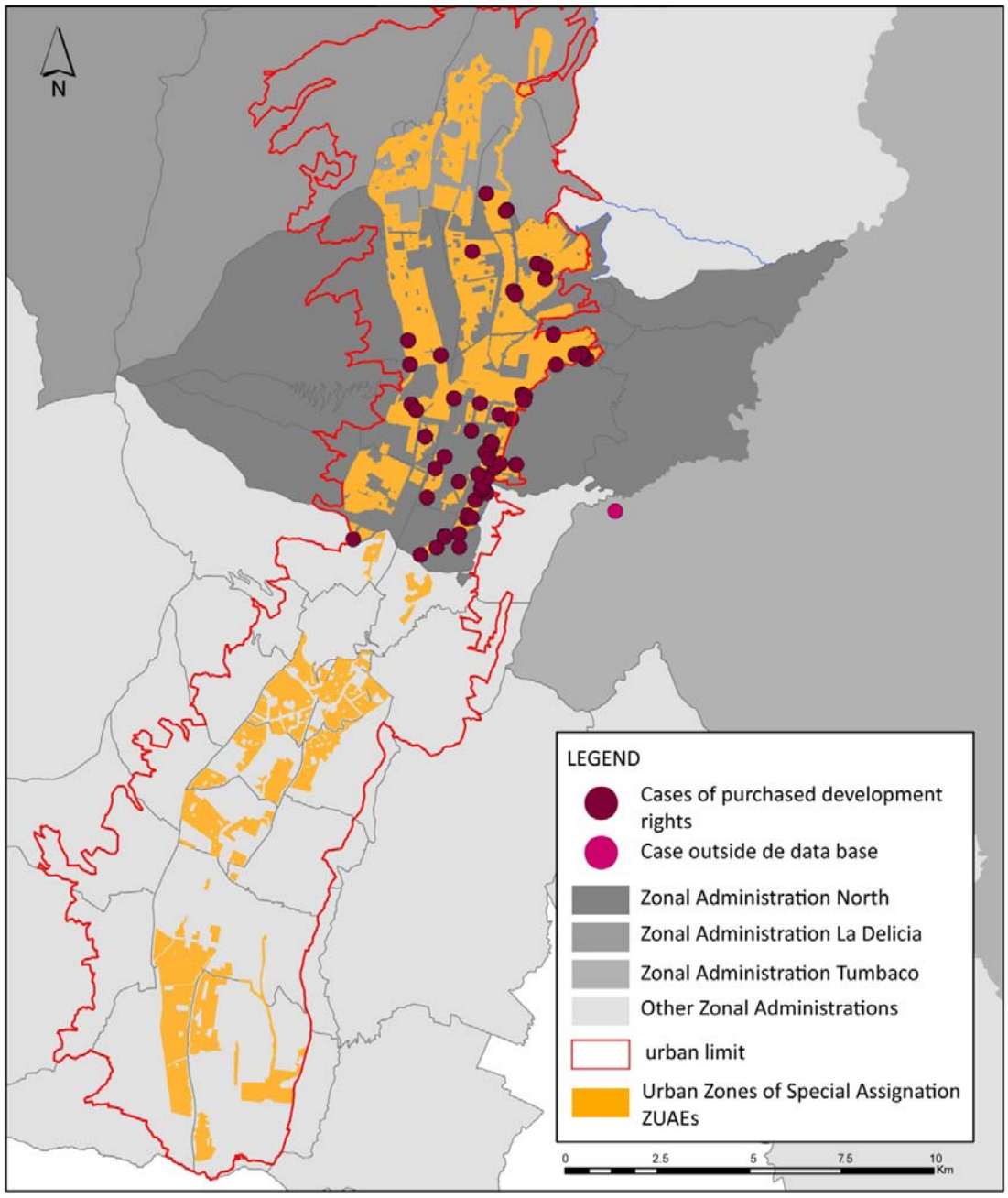
Graphic 1. Comparison between building licenses issued in the District and cases of sale of development rights for the period (2012 – June 2013). Source: Secretariat of Territory, Habitat and Dwelling

However, information on how many licenses were issued inside the ZUAEs, and did not use the instrument was not possible to obtain. Also, the cases where development rights that were purchased for an existing building are not excluded from the sample of 92 cases. However, these cases are the minority (around 2 or 3 according to Patricio Montalvo, local level authority).

As for the location of the cases where development rights have been purchased, the following map shows that most of the cases occurred in the Zonal Administration North, although the ZUAEs are also defined in an important area of the south of the city (Zonal Administration Eloy Alfaro, and Zonal Administration Quitumbe). Out of 92 cases reported, only 9 were purchased in the Zonal Administration La Delicia, which is the 9% of the cases. In within the Zonal Administration North, the parishes where 60 cases had occurred (that is, 65% of the cases) coincide with those that are considered to be located in the hyper-center[57].

[57] Parishes: Iñaquito, Rumipamba, Mariscal Sucre, Jipijapa and San Isidro del Inca.

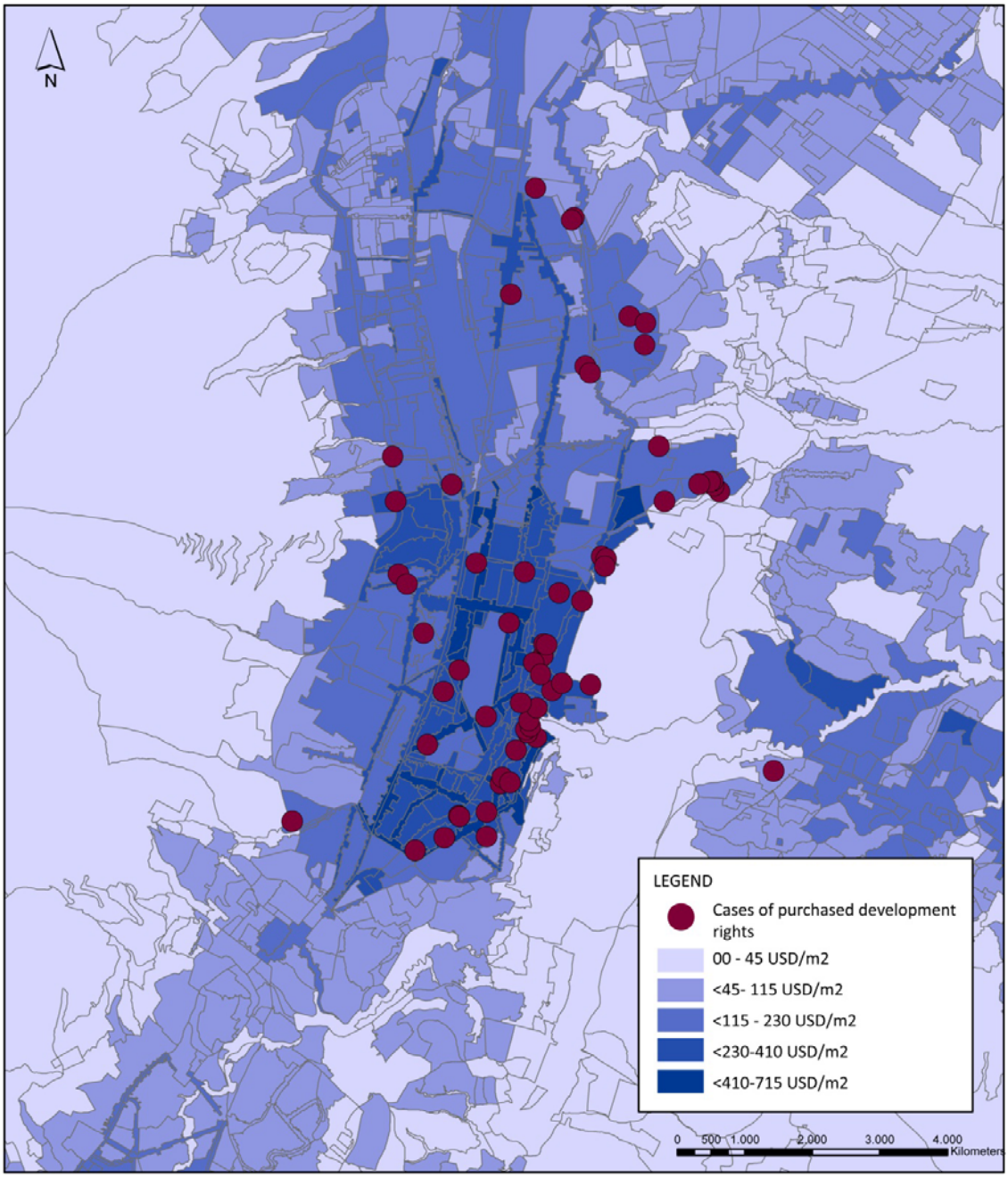
Map 2. Cases of purchased development rights. Period: February, 2012 – June, 2013. In the map, only 70% of the cases are shown, due to a mismatch between the database and the territorial information provided. The map includes a case that is not registered in the database, which is the first example of development rights purchased in a rural (suburban) parish. Source: Secretariat of Territory, Habitat and Dwelling.



Additionally, as shown in the Map 3, the zones where more cases of application of the instrument occurred are those, where land values are higher, and where, according to Barbara Scholz, municipal advisor, the real estate market is becoming saturated with middle to high income housing, and office space. Market values for the entire city were not available;

therefore, cadastral values are used[58] in this map, as they show an approximation on where land values are higher.

Map 3. Cases of purchased development rights. Period: February, 2012 – June, 2013 and cadastral value of land. In the map, only 70% of the cases are shown, due to a mismatch between the database and the territorial information provided. The map includes a case that is not registered in the database, which is the first example of development rights purchased in a rural (suburban) parish. Source: Secretariat of Territory, Habitat and Dwelling. Metropolitan Direction of Cadastre.



[58] Earlier in this chapter it was concluded that market values are not entirely reflected in cadastral values of land.

Other factors that condition acceptability

All 5 developers interviewed considered that the local government does not have the right to charge for additional development rights. "The private part is the one making the investment, taking the risks and doing the work, the local government should not be entitled to any of that money" was stated by one of the developers consulted. In like manner, all the interviewed developers agreed on that the price for extra density is too high, and in some cases, this extra density did not generate a significant benefit for the projects profitability; as it represented an extra fee. They all agreed that the real benefit comes from the additional developed area ('floor space'); but that the profit margins were the same as it no extra rights would have been purchased. A more thorough analysis on the profit made by the developers follows in the next variable.

As for the method of payment, 2, out of the 5 developers consulted, stated that they payment is cash is preferred as it is faster and more convenient. Other 2 manifested that they would prefer payments in kind, but that the guidelines for this kind of procedure are not yet ready, so, their payment was done in cash. One of the developers of this sample was in the process of making a payment in kind through infrastructure[59]. This is the first case reported with this kind of payment.

Land value capture tools have more acceptability when the income is earmarked to be invested in the same area where it was generated. However, 4 out of 5 developers interviewed expressed that they wish for their contribution to be invested in any area of the city, as long as it follows coherent investment plans. Only one developer manifested that public works in the same area of the project that generated the income increases its value, and therefore was preferred.

Summing up, all the developers of the sample manifested that they would use the instrument again, if there are benefits regarding the profit. However, it should be kept in mind that there the sample is not big enough, and that there is a sampling error, given that the interviewed developers have all used (and benefited from) the instrument already. Consequently, not generalizations are possible.

Variable 17: Developer's profitability

The following analysis of the developer's profitability is based on a sample of 7 projects (by 5 different developers) directed to the real estate market, that is, projects with the intention of generating profit through the development of land and the sale of dwelling or office units. Two (2) cases where development rights were purchased outside the ZUAEs by incorporating environmentally friendly technologies in the buildings were included in this sample. One example where the purchase of development rights was considered and not used is included in the sample, however, this case, being a special case, will be considered outside the general analysis and description.

The developers interviewed provided rough information regarding the projects. Therefore, the results here exposed are not as accurate as it is desirable. However, they show, in general terms, the profitability of the projects with and without the additional development rights. The information was double checked with the database provided by the Secretariat of

[59] The kind of infrastructure used as payment was not specified.

Territory, Habitat and Dwelling (STHV). Not in all cases a validation of the information, by the same developers, was possible.

The method of the residual value of land could not be applied, as the information provided by the developers did not have the value of land separated from the total costs of the development; therefore, the analysis was made comparing profitability and other indicators in 3 different situations or scenarios:

1. Where no additional development rights were used and no contribution to the government was made.
2. Where the additional development rights were used, but no contribution to the government was made. For this scenario the amount of additional development rights is the same that in scenario 3. Also, it was assumed that the income generated per m^2 was the same as in scenario 2.
3. Where development rights were used, and the contribution was paid to the local government.

Table 12. Summary of analysis of profitability of projects.

CASE	DESCRIPTION	SCENARIO	INCREMENT IN FAR	RETURN OF INVESTMENT ROI	PROFIT / m^2 OF LAND	COMPARISON 1 -3**	
						NET INCREMENT IN PROFIT (USD)	PERCENTUAL INCREMENT IN PROFIT
A	from 6 to 8 stories office space	1	-	18,2%	600	124.341	15%
		2	33,3%	18,2%	800		
		3		15,3%	688		
B	from 8 to 9 stories middle-upper class dwelling	1	-	14,8%	661	250.000	63%
		2	13,0%	23,8%	1.123		
		3		22,6%	1.074		
C	from 4 to 6 stories middle-upper class dwelling	1	-	2,7%	77	271.000	212%***
		2	49,1%	15,6%	625		
		3		10,3%	240		
D	from 8 to 10 stories middle-upper class dwelling	1	-	29,5%	519	174.000	24%
		2	32,0%	29,0%	684		
		3		27,2%	643		
E*	from 4 to 6 stories middle-upper class dwelling	1	-	23,7%	300	600.000	67%
		2	42,2%	28,8%	527		
		3		27,3%	500		
F*	from 16 to 17 middle-upper class dwelling /office space	1	-	24,1%	2.353	156.000	4%
		2	5,9%	24,1%	2.493		
		3		23,7%	2.456		

* Projects outside ZUAEs that included environmentally friendly technologies.

** This is the actual comparison that developers must have done. Scenario 2 (extra density without payment) is not possible; therefore, it is not considered in this comparison.

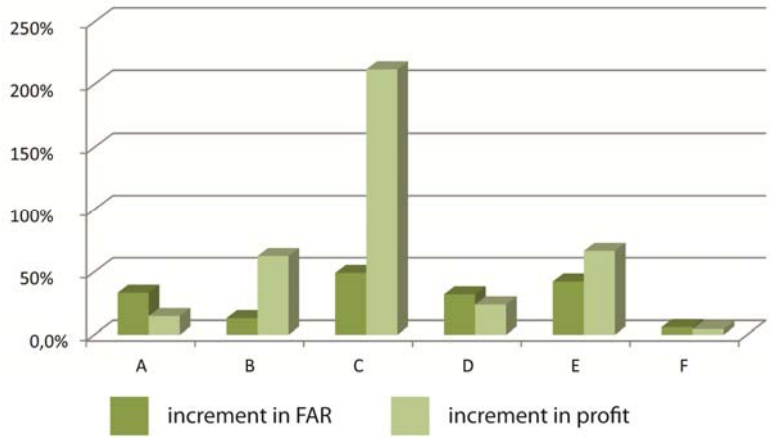
*** outlier

Refer to Annex 4: Analysis of developers 'profitability

In 3 of the 6 cases where the development rights were purchased, the Return of Investment (ROI)[60] is the same in scenario 1 and 2. Comparing the Return on Investment (ROI) between scenario 2 and 3, that is, with the additional rights, without and with payment, the difference is relatively small, and, as expected, in all cases the ROI is smaller when the contribution was paid. Refer to Table 11, and Annex 4.

When comparing only scenario 1 and 3[61], in all cases the there is a net increment of profit when extra development rights are purchased. The percentage of increment varies from case to case, however, in the cases where the bigger increment in FAR occurred, the bigger increment in the profit, both, in absolute terms and in percentage of increment in relation to the profit that would be obtained in the scenario 1. This refers, specifically, to cases C and E.

Graph 8. Increment in FAR compared to increment in profit (in percentages) of the 6 cases analysed.



In the 7th case analyzed development rights were considered but not purchased. The developer reported that an increment in dwelling units represented and increment in the parking spaces required by regulations. This increment in parking space represented the construction of an extra underground floor, which increased the costs to the point where profit decreased. Refer to Table 9.

In the following table a comparison between scenario 1 and 2 is presented, although this comparison was not done for the previous analysis, as it was not relevant; in this case it is necessary, in order to determine if the payment for the additional development was a factor than influenced the decrement in profitability

[60] Profits in relation to the invested capital.

[61] This is the actual comparison that developers must have done. Scenario 2 (extra density without payment) is not possible; therefore, it is not considered in this comparison.

Table 13. Summary of analysis of profitability of project where development rights were not purchased.

CASE	DESCRIPTION	SCENARIO	INCREMENT IN FAR	RETURN OF INVESTMENT	PROFIT / m^2 OF LAND in USD
G	N/A	1	-	29,5%	704
	N/A	2	11,1%	20,4%	588
		3		18,8%	542

COMPARISON 1 -3		COMPARISON 1 -2*	
NET INCREMENT IN PROFIT	INCREMENT IN PROFIT	NET INCREMENT IN PROFIT	INCREMENT IN PROFIT
-488.000	-23%	-348.000	-17%

* Although scenario 2 is not possible in reality, this comparison was made in order to determine if the contribution for extra development rights made a difference in the variation of the profit from negative to positive.

Refer to Annex 4: Analysis of developers 'profitability

In this project a paid increment of 11%[62] of FAR would result in a lower profit in both, absolute and relative terms in comparison with the scenario 1 without the extra rights. A second comparison, but between scenario1 and 2 shows that even without the special contribution for extra development rights, the project would have been less profitable than without having the additional rights at all.

[62] As this project was not executed with the additional development rights, and no information regarding the size of the plot, or the AIVA value was provided, the percentage of the increment in FAR was chosen randomly (within logic), as well as the size of the plot: 3.000m^2.

4.4 Social Dimension

Variable 18: Redistribution

The income generated by the instrument is not earmarked to be invested in a particular good or services in the city. Fernando Puente, municipal authority, expressed the income cannot be earmarked as it is not generated by a specific physical investment (like as in the case of betterment charges).However, the following analysis will be done around the expenditures of the municipality in works and infrastructure. These investments are divided into 5 groups: water and sanitation; housing (referring to social housing); public space (that includes sidewalks, squares, parks, etc); transport and mobility (that includes works such as road up keeping, pedestrian paths, infrastructure for BRT systems, new street and avenues, etc.); and communitary infrastructure (that includes a wide range of works such as retaining walls, physical works for schools, communal centers, health centers, etc.).

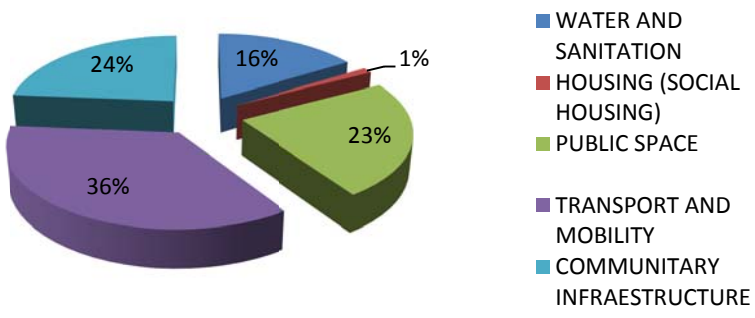
The investment for the year 2012 was 204.672.759 USD. The year 2012 was chosen for this comparison as it is the most recent year with complete information. Mobility and transport is the group that receives the biggest amount of resources: 35,7%

It is important to keep in mind that the objective of the instrument is to densify the central area of the city, and to optimize the utilization of the existing infrastructure without requiring additional investment in this item, avoiding these expenditures in increasing the service coverage to farther areas of the city; therefore, the instrument is linked to the public good of services, and consequently, the income generated by it will be compared to the expenditures in this item, later in this chapter.

Table 14. Expenditures in works and infrastructure for the year 2012. Only completed works are taken into account. Source: Secretariat of Spatial Coordination, and Citizenship Participation.

TYPE OF INVESTMENT	2012 in USD	%
WATER AND SANITATION	32.991.595	16,1 %
HOUSING (SOCIAL HOUSING)	2.313.591	1,1 %
PUBLIC SPACE	47.822.563	23,4 %
TRANSPORT AND MOBILITY	73.025.409	35,7 %
COMMUNITARY INFRASTRUCTURE	48.519.598	23,7 %
TOTAL	**204.672.759**	100 %

Graph 9. Percentages of expenditures in works and infrastructure for the year 2012. Only completed works are taken into account. Source: Secretariat of Territorial Coordination, and Citizenship Participation.



According to planning expert, Veronica Villavicencio, the location of the investments are planned and decided on the basis of the number of inhabitants (of the parish or neighborhood) and poverty indexes. However, political reasons area also taken into account.

Like stated before, the highest poverty incidence of the District occurs in the rural area, here 72%-24% of households are considered poor according to the Unsatisfied Basic Needs (UBN) Index[63]. However, the spatial distribution of the investments show 57% of the expenditures were located in the urban area; 25% of the investments have a metropolitan character, and benefit both rural and urban areas; while only 18% of the expenditures were located on the rural area. Nevertheless, if the number of inhabitants in each area is considered, the investments still favor the urban area. While there is an investment of 70 USD per person in the urban area, there is an investment of 55 USD in the rural area, figure that still favors urban inhabitants, but in a smaller proportion. (For each USD invested in an urban inhabitant, 78 cents are invested in a rural inhabitant).

It is important to mention that inside the urban area, the parishes considered urban-periphery, also present, high incidence of poverty, for instance, in Guamaní, the incidence of poverty by household up to 37,4 %[64].

Table 15. Expenditures of the municipality for the year 2012 by sector and area of investment. Source: Secretariat of Territorial Coordination, and Citizenship Participation.

TYPE OF INVESTMENT	2012 (USD)	RURAL (USD)	%	URBAN (USD)	%	DISTRICT (USD)	%
WATER AND SANITATION	32.991.595	15.252.929	46,2%	11.747.919	35,6%	5.990.747	18,2%
HOUSING (SOCIAL HOUSING)	2.313.592	-	-	2.313.592	100,0%	-	-
PUBLIC SPACE	47.822.563	7.271.594	15,2%	40.550.969	84,8%	-	-
TRANSPORT AND MOBILITY	73.025.410	8.494.112	11,6%	25.900.731	35,5%	38.630.567	52,9%
COMMUNITARY INFRASTRUCTURE	48.519.599	5.671.882	11,7%	36.188.292	74,6%	6.659.425	13,7%
TOTAL	**204.672.759**	36.690.517	17,9%	116.701.503	57,0%	51.280.739	25,1%
INHABITANTS *		662.925		1.664.799		2.327.724	
EXPENDITURE PER PERSON		USD 55,35		USD 70,10		USD 87,93**	

*This figure was calculated based on the census of 2010 census, considering the growth rates for each area: rural and urban.

** This figure considers the totality of expenditures (including urban and rural area).

Below, the comparison of the revenue generated with the expenditures in service infrastructure is presented. As it was stated before, this comparison is done, taking into consideration the objective of the instrument is related to this item.

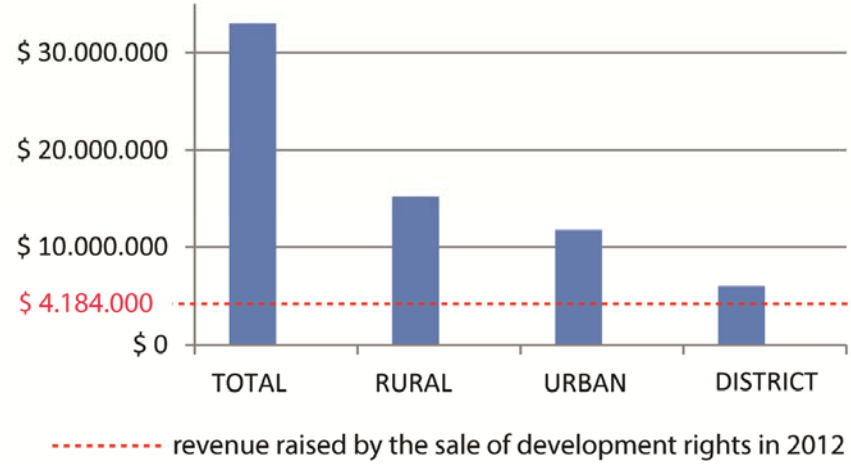
[63] As it was already mention in Chapter 1, Unsatisfied Basic Needs (UBN) is and index to measure poverty that has been widely used in Latin America since the decade of 1980. The basic needs are related to adequate housing; adequate water and sanitation provision; basic education and minimum income. The criteria used is based on that used by the '*Comunidad Andina de Naciones'* CAN.

[64] Instituto de la Ciudad de Quito, 2013.

Table 16. Revenue raised by sale of development rights and expenditures in infrastructure of water and sanitation for the year 2012.

	TOTAL (USD)	RURAL (USD)	URBAN (USD)	DISTRICT (USD)
WATER AND SANITATION	32.991.595	15.252.929	11.747.919	5.990.747
SALE OF DEVELOPMENT RIGHTS	USD 4.184.893			
PERCENTAGE	12,7%	27,4%	35,6%	69,9%

Graph 10. Revenue raised by sale of development rights and expenditures in infrastructure of water and sanitation for the year 2012.



In this comparison is shown that the revenue generated by the instrument accounts for around 13% of the total expenditure for infrastructure in 2012; 27% of the expenditure on the rural area; 36% of the expenditure in the urban area; and 70% of the expenditure on water and sanitation infrastructure that benefits the District as a whole.

Chapter 5: Conclusions and recommendations

Land value capture tools are not only instruments to finance further urban growth, but also tools with the capacity of regulating land uses and controlling land markets (Furtado, 2000), That is, they can encourage or discourage private actions in order to achieve urban objectives. In that sense, this study intends to determine the real potential of the sale of development rights to accomplish the urban and financial objectives for which the instrument was designed.

The sale of development rights is a fairly new instrument in the Metropolitan District of Quito, which implementation began on the year 2012[65]. An assessment on the first years of operation of the instrument seems necessary in order to generate recommendations for a more efficient and effective execution of the instrument; in order to do so, it is also essential to provide an understanding on the conditions in which this land value capture instrument works in the particular conditions of Quito.

The objectives of the instrument, from the financial point of view, are to avoid expenditures of increasing the coverage of services[66], and to generate revenue from a planning decision that does not represent extra investments to the local government. From an urban perspective, the instrument also has the objective of distributing real estate activities on the territory, which have been highly concentrated in certain areas of the city (those in the hyper-center, with the highest land values located in the center-north area), while, in other areas, land is sub-utilized.

Whether the implementation of the instrument had accomplished its objectives or not, will be discussed as conclusions regarding the four dimensions used for the analysis are exposed.

5.1 Economic Dimension: Changes in land values.

Without any doubt land market prices in the District, especially in the urban area, had incremented over the last decade. Although zoning regulations are one of the factors that affect the value of land, there are other factors that also have an impact on land values, such as investment on infrastructure. Furthermore, the macroeconomic environment, and the country's relative economic stability, of the last decade are other aspects that, although out of the scope of this research, might explain the dramatic increment on land values over the last 12 years, seen in the analysis on market values in Chapter 4, specially the last 5 before the approval and implementation of the instrument.

As for changes in land values due to zoning regulation. It is expected that land values increase, as "changes in the building potential on urban land that is already easily accessible… create great benefits for the properties affected" Sandroni, (2011, p. 2). However, the analysis on land market variations over time in Quito, do not conclusively show an increment of values in all the neighborhoods researched after the year of implementation of the instrument. This might be explained but the fact that when a density increment requires an extra fee or payment, "then the increase on land values might be offset".(Borrero Ochoa and Morales-Schechinger, 2007, p. 16).

[65] Although, a previous attempt to implement it occurred in the decade of 1990.

[66] Through optimizing the utilization of existing infrastructure, by densifying already served areas.

Nevertheless, developers had argued that a speculation process had begun around the possibility of incrementing the FAR of the plots classified as ZUAE. Still, it is too early into the process to determine an exact impact on the increment, (or decrease) of land values, especially in the areas that present higher land values and better provision of services and amenities, where the real estate dynamics are influenced by many more factors.

Additionally, this possibility of in incrementing FAR might not have an impact on areas where the real estate market is not as dynamic as in the north, and north-center of the city. For instance, there are areas classified as ZUAE in the south of the city, however, until the date of the data collection, not a single case occurred there. In most areas of the city, the building potential granted by the land use plan has not been fully utilized[67]; therefore, there is not a market for extra development rights, and most likely, the price of land is not influenced by this potential change on zoning regulations.

La Floresta, the neighborhood analyzed for variable 2, have a very particular dynamic for its historical character and because it is the area that concentrates high-end restaurants and cultural activities, and has become very attractive for the real estate market. Judging by the market prices of land over time, changes in expectations (on how much could be built) that is, changes in zoning regulations, did have an impact on the highest and best use of land, therefore in the price of land. When expectations were lowered, prices also decreased. However, the other factors mentioned above (the historical, cultural and entertainment character of the area) and the benefits related to them, later influenced prices in and upward direction. According to theory, this responds to the amenity effect[68].

As a conclusion, it can be said that zoning regulations have a clearer impact on land values where there is a market (demand) for extra rights, or other uses. That is, where the real estate dynamics are attractive, and where the full building potential granted by zoning has been fully utilized, and zoning regulations restrict the highest and best use of the land (restriction effect[69]). This happens, in the case of Quito, in the areas with higher concentration of services and amenities, where land values are already high and where the demand is high, especially for higher income population.

Specifically related to the impact of the instrument in land values, it can also be concluded that, given the additional costs that the extra density represents, the implementation of the sale of development rights might not has a positive impact on land values, but it might even be neutral, and depend on other factors.

5.2 Legal Dimension: Factors that enable land vale capture

The implementation of the instrument is possible from a legal perspective as it is supported in the national level legislation, although not through an explicit separation of development rights from the bundle of property rights[70], through the introduction in the Constitution, and

[67] That is, constructions have a lower FAR than that allowed in the Land Use Plan.

[68] The amenity effect increases the value of land as it keeps certain desirable traits in surrounding areas (Jaeger and Plantinga, 2007).

[69] As stated in chapter 2, the restriction effect of land use regulations on land values occurs when a regulation prevents the highest and best use of land. (Jaeger and Plantinga, 2007)

[70] From the legal point of view, as stated in the literature review of this study, the sale of development rights is enabled by the separation of land property rights from building rights and the profit that these generate.

all the instruments and documents derived from it, of the **social and environmental function of property**. This concept establishes that the public interest is above the private one, and, therefore, grants the government, and its different levels, as representative of the collectivity, rights over private property. This can be seen in the application of the instrument of expropriation. In the same line, the establishment of the concept of the **equitable distribution of costs and benefits** of the public (and private) interventions opens the door to the design and application of tools to capture the plus value of land as a way of imposing burdens or costs on property owners, for the benefits that normally, and before the establishment of land value capture tools, were granted without any burden. In that sense, the principle supports the more social view on whose is the right to profit from benefits on zoning regulation changes discussed in chapter 2, that states that landowners are under the obligation of sharing 'unearned increments'.

At a local level, the municipality of the District holds the competence of establishing zoning plans and regulations. This enables it to make changes in these regulations, and charge for such changes under the premise that extra density utilizes extra services. Also, the introduction of the concept of created land '*suelo creado'* strengths the notion that the local government has rights over the air rights. Additionally, the local level also enforces the principles established by the national level. This can be seen through the analysis of the instruments of Exaction and Betterment Charges that are a clear imposition of a cost or burden, in exchange for the benefits of the urbanization process.

5.3 Financial Dimension: effective capture of land value increments

The formula used in the Quitean case of sale of development rights is simple to understand and apply, and it is designed to capture theoretically the entire increment in land value as it establishes a direct relationship between price of land and its building potential (that is the incidence of land in each m^2 than can be built) to determine the price of each additional m^2. Furthermore, the formula is straightforward, in the sense that it does not include, like in the Brazilian case, discount factors[71].

However, how effectively the formula calculates the real increment in land values depends on how well the AIVAs (cadastral values) reflect commercial ones. It appears that, in spite of the efforts of the local government to update these values as often as needed (and as required by law) and as accurate as the norm dictates, the AIVAs are still below market prices. This appears to be truer, in the case of Quito, based in the analysis in Chapter 4, in the areas where the market is more dynamic and land values are higher, that is, in the so-called hyper-center. So, in practice, the developers that work in these areas are keeping a bigger amount of land value increment, which confirms that, as stated by Smolka and Ambroski (2000), technical difficulties, especially in terms of assessing land values, affect successful application of land value capture tools.

In 18 months of implementation, the instrument had generated around 6 million USD. This figure does not seem to make a big impact in the municipal budget, which for the same years was around 600 million USD, each year[72]. However, considering that this revenue does not represent additional expenditures to the local government, as the intention is to optimize the

[71] The Master Plan of Sao Paolo incorporates a planning factor (Fp) and social interest factor (Fs). Refer to Chapter 2.

[72] This figure is an approximate round number, and does not consider credits.

utilization for the existing infrastructure that is able to support extra density, this figure seems more significant.

Although Smolka (2012).argues that that the sale of development rights, in the region (Latin America) shows a bigger potential of raising revenues compared to other instruments (such as betterment levies); this study showed that in the case of Quito, the revenue raised by the instrument is still smaller than what is produced by other land related, fees and contributions.

As for the acceptability of the instrument by the private sector, the fact that only 6% of the licenses issued for new buildings (for the use of dwelling and office space) account for projects using the sale of development rights reflects, a somewhat, poor acceptability of the instrument. Moreover, a cartographic observation, shows that, although the ZUAEs cover a big part of the urban area of the city, the cases of utilization of the instrument are concentrated on specific areas of the city (those where services, amenities, and higher land values are concentrated).

As stated in Chapter 2, the acceptability of the instrument depends greatly on the market's demand for additional dwelling units, and ultimately in the profitability that additional building rights might represent. In that sense, as proven by the cases analyzed, the instrument does create a real opportunity for developers to generate additional profit, but not in the magnitude expected by them (i.e., with a lower incidence of the price on land per built unit). However, it should be kept in mind that, as stated before, when there are discrepancies between market values and cadastral values of land, the private party has a bigger opportunity to increase profits.

In that sense, six out of seven projects analyzed generated a bigger net profit when development rights were purchased. Although, the developers consulted argue that the price for the extra development rights was too high (and its payment could even jeopardized the profitability of the project), the analysis demonstrates, that if the extra rights would have been granted for free, the profitability of the project, although improved, was not as significant as the improvement generated by the extra development rights (in spite of the fee).

It is worth mentioning that, as stated in chapter 2, the increment in profitability generate by additional development rights is, sometimes, constrained by the cost of construction, that is, as the number of floor increases, the proportion of the increment on residual value of land declines (hence, profitability). However, this point is not reached in the cases studied, as building heights are below 20 stories.

However, in the case of Quito, it was demonstrated that other regulations can have in incidence on the profitability of projects. For instance, in the seventh case analyzed, the profitability was affected by additional development rights, not but construction costs, or by the payment of the fee, but due to regulation on the number of parking spaces required by dwelling unit, which meant an increment on an underground floor. In this case, even if development rights would have been granted without a fee, the net profit of the project would have been reduced.

5.4 Social Dimension: Redistribution

The concept of redistribution "is based on the principle … that all land value, irrespective of its origin, is the product of community effort" (Furtado, 2000, p.8), and that that land value

capture instruments are justified as they return to the community special benefits that only some receive through a public action; and that lower income groups should be prioritize regarding the allocation of resources generated.

Additionally, it is worth mentioning that the local government on Quito has determined equity and solidarity as guiding principles for the planning processes (Municipio del Distrito Metropolitano de Quito, 2011a). The principle of solidarity refers to the distribution and allocation of resources in favor or the citizens with bigger needs, in order to guarantee the same quality of life to every citizen.

In that sense, the application of the instrument in Quito, that does not represent additional investments for the local government, has the potential of achieving redistribution as the revenue is generated mostly in higher income areas, and it is not earmarked to be invested in the same area where it was generated[73]. However, at the moment, it is difficult to assess if the instrument has an actual impact on expenditures on the poorest areas of the city.

An analysis of expenditures shows that, in Quito, the bigger expenditures of the local government are directed to the urban areas, which, in general terms present lower poverty incidence than the rural parishes However, it should be taken into account that inside the urban areas there are parishes with a high incidence of poverty, and poor quality of life, this refers particularly to parishes where slums have appeared. Therefore, a more detailed study is needed in this respect, in order to determine whether redistributive objectives are being accomplished.

From another perspective, and keeping in mind that one of the objectives of the instrument is to optimize the utilization of the existing infrastructure and to avoid expenditures in increasing the service coverage to farther areas, the amount of money raised by the instrument, compared to the expenditures in services infrastructure, seems significative as it accounts for nearly 13% of the total expenditures on water and sanitation, although, and as stated before, the revenue raised by the instrument compared to the global budget seems to have very little impact.

5.5 Final considerations and recommendations

Although the sale of development rights, as a land value capture instrument, in theory, is directed to capture increment in land values from landowners, the reality appears to be that landowners are not being affected, but on the contrary, as reported by developers, it has become a reason to speculate with the price of land in prime locations. Developers also report that the price of the increment in price affects the price of sales; therefore, the increment in land value generated by the instrument (and not only by the instrument) is being paid by the final consumer. In that sense, and given that the Metropolitan Spatial Plan has established a policy of interfering with speculation on land, a review on the design of the instrument will be necessary.

Regarding the accomplishment urban objectives, the instrument is very weak in terms of densification. This is a consequence of the contradictory design of the instrument itself where only two additional stories can be purchased. In terms of redistributing real estate activities

[73] Except for the payments that are made in kind, where, judging by the only case where this had applied this kind of payment, investments should be executed in the same Zonal Administration where it was generated.

over the territory, the instrument seems to do the opposite, as other areas of the city, different from the already attractive sectors, are not becoming more attractive for this industry.

It can be concluded, therefore, that the instrument could have a bigger impact in accomplishing these two objectives, if it was introduced in the context of a special plan in specific areas, where much higher density roofs established and the impact area can be planned to support this extra density, and not around a lot by lot application. All these factors would make selected areas (outside the hyper-center) more attractive for the real estate industry.

Other recommendations related to operative aspects of the application of the instrument are listed below:

- For the last years, the national government has been in the process of approval of the Land Law, which has the intention of regulating urban and land management at a national level. The Metropolitan District of Quito, which has high level of autonomy given its status as District, has already begun developing instruments of land value capture and land management (or has done it for many years). However, it has done it lacking the specific guidelines from the national government, but supported by the two principles mentioned above. These instruments, most likely will be contained in the land law, which means, that once the national law is approved, the District will have to adjust its instruments to the specific regulations contained in the national law.

- The local government ought to define the policies and procedures to be followed for payments in kind for additional building rights. The public works required as payment should follow clear policies, so they do not become just a series of unarticulated interventions; or should clearly respond to redistributive policies. If the policy defined for the payment in kinds is for the investments to be made in the same area where the revenue was generates, these should respond to the externalities that extra density represents (particularly those related to public space, amenities and social services).

- The areas defined for the purpose of selling development rights ZUAEs have characteristics that allow them to support extra density. There is a gap in the design of the instrument that allows additional density outside these areas (through the implementation of environmentally friendly technologies). This gap represents a problem, as it admits extra density in areas that were left out of the ZUAEs for a variety of reasons. For instance, increasing building rights in a plot located in a historic area might affect the urban configuration. Each project implemented under this figure has to be analyzed on a case by case basis, not only regarding the technologies it implements, but also regarding the urban impact it generated in zones that were already defined as not suitable for extra density. In this respect, the local government should define clearly the objectives and policies of the instrument and reevaluate this option of application of the instrument.

- The need for a land market monitoring system seems imperative, not only for the effective application of this instrument, but for the application of many other land value capture instruments. A monitoring system has been designed; however, further steps for its implementation had not been taken. It's worth mentioning that a factor that can work in favor of this system is that the Land and Property Registry, entity that was managed as a private institution, in recent years became a competence of the local authority, providing access to more accurate information on transactions regarding property. On the other hand, the introduction of external institutions to the

permits issuing system has to be managed carefully and the information generated must be timely integrated to the monitoring system.

5.5.1. Recommendations for further studies

- Further studies related to the profitability of the private sector when applying the instrument is required, as all the developers consulted in this study target in their business middle-high and high income markets. Cases where land values are lower, and that are farther away from the hyper-center, might be targeted to a middle income market. A bigger sample that includes the analysis of the cases located farther from the hyper-center should be considered in the future to determine profitability in project targeted to a different population group.

- The scope of the macro-economic environment was briefly mentioned in this research; however, as it might have a big impact on the value on land, further studies in this respect are needed, specially, in the attempt of redesigning the instrument in order to address the policy of interfering in land speculation.

- To evaluate in more detail the application of the municipal redistributive policy, a more detail analysis on expenditures, and poverty incidence, by parish is required.

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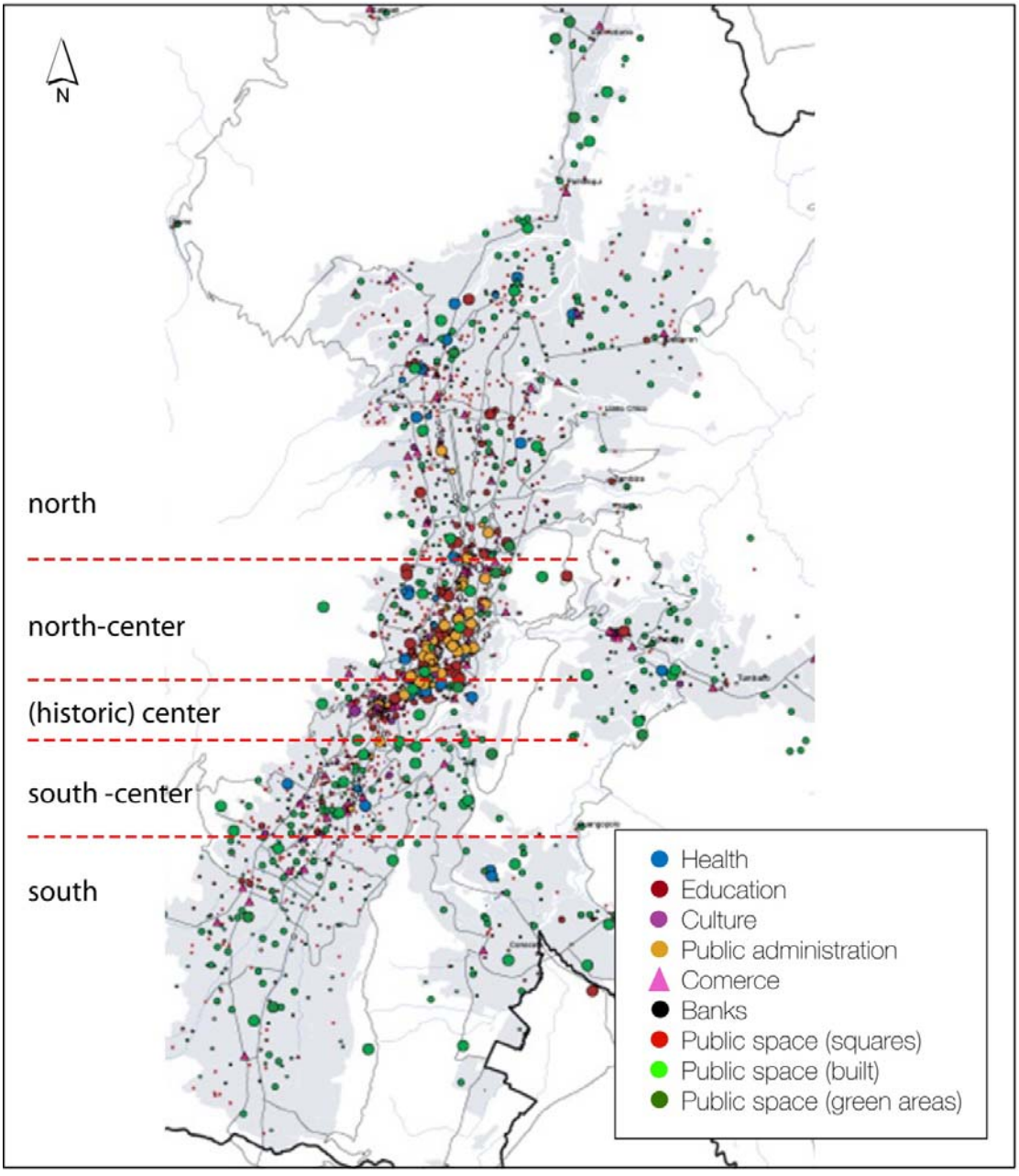
Annexure

Annex 1

Map 4. Concentration of services in the urban area. Source: Municipio del Distrito Metropolitano de Quito, 2012



The map shows the colloquial division of the city. The areas defined as center, south center and north center are where the services and amenities are concentrated. The delimitation of the sectors is referential, respond to a logical perception given the longitudinal configuration of the city, and in no way represent and official limit.

Annex 2

Introduction:

The following interview will serve the purposes of gathering information for the research work that I'm developing as thesis of the master program Urban Management and Development that I follow in the Institute of Housing Studies, in Rotterdam-The Netherlands. The topic of my research is the sale of development rights in the Metropolitan District of Quito. The information provided, especially that related to the financial aspects or the projects will be kept confidential. Your answers are very important for this research, and the information provided will be used strictly inside an academic framework.

I thank you in advance for your time and help.

Questionnaire for developers interviews

Variables 16-17

TOPIC/ VARIABLES	*QUESTIONS*
Profitability	1. Is there demand for potential increase in density in the city? 2. If yes, in what areas? 3. What is the main use for this demand? 4. Did this potential increase of development rights increase the price of land? 5. If yes, did you pay for this increment? 6. Did your profit (or will your profit) increment because of the extra rights you purchased? 7. If yes, in what proportion? 8. What are the factors applied in the formula to calculate the price of the extra development rights?
Acceptance	9. In terms of fairness, do you think the price for the extra rights is adequate? 10. Why? 11. Do you believe that the government has the right to sell and charge for extra development rights? 12. Why? 13. How was the administrative procedure to purchase extra density? 14. How did you pay? Cash or kind? 15. Did you encounter any problems? 16. What kind of payment do you prefer, cash or kind? 17. Why? 18. What kind of investment would you prefer that the local government do with the revenue from the instrument? Social Housing, infrastructure or public space, or other? 19. Is the location of these investments important? 20. Why? 21. Are you likely to make use of the instrument again?

	22. Why?
Other	23. How did you first hear about the possibility of acquiring extra density? 24. Do the areas where there is demand for more density coincide with the areas that the instrument had selected (ZUAE)? 25. Any additional comments you would like to make?

Questionnaire for expert validations interviews

Variables 1-2: Land market expert: Francisco Salazar

TOPIC/ VARIABLES	*QUESTIONS*
Increment of value of land due to the instrument	1. Is there demand in the city for extra density? 2. In what areas is there demand for extra density? 3. What is the main use for this demand? 4. Has the possibility of the increment of density rights, to your knowledge, affected the land market? 5. If so, Positively or Negatively? 6. If no, why?
Increment of value of land due to zoning regulations	7. Do zoning regulations affect the prices or land? 8. If yes, How? (What are the reasons for this variation in values?) 9. If yes, can you think of a specific example of this?
Other	10. What other factors affect the prices of land in the city? 11. Until what extent are land market prices reflected in the cadastral value of land? 12. Do the defined ZUAEs reflect the areas where there is demand for extra density? 13. Any additional comments you would like to make?

Variables 3-6: National Level Expert - (former) Sub-Secretary of Habitat and Human Settlements (Ministry of Urban Development and Dwelling): José Morales

TOPIC/ VARIABLES	*QUESTIONS*
Property	1. What are the property rights of landowners? 2. What documents sustain that statement?
Building Rights	3. About the right to develop or build? Until what extend do property owners have this right? 4. Can the government take or modify these rights? 5. If so, which government, local or national? 6. What do national laws regarding separation of building rights say?

	7. To your opinion, how is it in practice the application of this separation?
Obligations of Landowners	8. Do landowners hold any obligations regarding property? If so, which are these obligations
Instruments	9. Are there mechanisms or instruments where the government can limit the rights of landowners? Can you mention them? 10. Have the application of these mechanisms or instruments created conflicts between the government and landowners? 11. Is there another municipality in the country, besides Quito, that has applied land value capture instruments?
Other	12. Any additional comments you would like to make?

Variables 7-10. Local level authority: Director of Land Policy and Planning of the Secretariat of Territory, Habitat and Dwelling - Fernando Puente

TOPIC/ VARIABLES	*QUESTIONS*
Property	1. What are the property rights of landowners? 2. What documents sustain that statement?
Building Rights and zoning	3. About the right to develop or build? Until what extend do property owners have this right? 4. What defines these rights? Where is stated? (Zoning Plan) 5. Do all landowners have the same rights? 6. If not, why not? What is the criteria that defines who gets more or less rights? 7. Can the government take or modify these rights? 8. What do the municipality regarding separation of building rights say?
Obligations of Landowners	9. Do landowners hold any obligations regarding property? If so, which are these obligations
Instruments	10. Are there mechanisms or instruments where the local government can limit the rights of landowners? 11. Can you mention them? 12. Have the application of these mechanisms or instruments created conflicts between the local government and landowners? 13. Can you give me examples of these?
Other	14. Since when and how has the sale of development rights began being applied in the District? 15. How has the response from the public / developers been? 16. What are the objectives of the instrument? 17. Any additional comments you would like to make?

Variables 11-14. Local level authority - Director of Land Management of the Secretariat of Territory, Habitat and Dwelling - Patricio Montalvo

TOPIC/ VARIABLES	*QUESTIONS*
Definitions of the instrument	1. How is the instrument defined in the Ordinance No. 106? (Summary of the characteristics of the instrument, as stated in the legal document) 2. When was the instrument approved? 3. What are the objectives of the instrument? 4. What areas were chosen for the application of the instrument? 5. How are these areas defined? 6. Why? 7. Is there enough infrastructure to support extra development? 8. If not, is the municipality planning on increasing that infrastructure? 9. To your knowledge, at the political level, how was it perceived? (Did it have a lot of support?)
Procedures	10. What are the cases for which the instrument can be applied? 11. To your knowledge, are the procedures easy to understand and apply by landowners? 12. Of the different cases (5) that can be used, which one is the one that had had the bigger acceptability by developers? 13. Why?
Amount to be captured	14. How is the price of the extra development rights calculated? 15. Does this price reflect the real (market) increment on the value of land? 16. If not, why? 17. What is the benefit for the landowners?
Revenue for the local government	18. Is the revenue generated by the instrument a significant part of the municipal budget? 19. If not, does it have potential to become one? 20. Do developers prefer payment in cash or kind? 21. How the equivalency of payments is in kind calculated?
Other	22. Is there demand for extra density? 23. In what areas is there demand for extra density? 24. What is the main use for this demand? 25. ¿Hay más requerimientos para aumentar construcciones existentes o para construcciones nuevas? 26. Is the revenue generated by the instrument is earmarked to be used in certain goods? 27. Is it used on specific areas of the city? 28. Any additional comments you would like to make?

Variable 15. Municipal Advisor: Barbara Scholz

TOPIC/ VARIABLES	*QUESTIONS*
Administrative capacity	1. In your opinion, what are the capacities needed to appropriately implementation the instrument? 2. Is there enough administrative capacity to implement the instrument? 3. How is the price of the extra development rights calculated? 4. Does this price reflect the real (market) increment on the value of land? 5. If not, why? 6. Is the cadaster of the city up to date? 7. Are the land markets prices being monitored? 8. Why? Or why not? 9. Is the revenue generated by the instrument a significant part of the municipal budget? 10. If not, does it have potential to become one?
Other	11. What are the objectives of the instrument? 12. What areas were chosen for the application of the instrument 13. Is the revenue generated by the instrument earmarked to be used in certain goods? 14. Is it used on specific areas of the city? 15. Is there demand for extra density? 16. In what areas is there demand for extra density? 17. Do you think corruption plays a role in the appropriate implementation of the instrument? 18. Any additional comments you would like to make?

Variable 15. Local level authority - Metropolitan Director of Cadaster: Daniel Hidalgo

TOPIC/ VARIABLES	*QUESTIONS*
Cadaster updating	1. What is the multipurpose cadaster project of the District? 2. Which entity is in charge of this project? 3. What is the progress of the project? 4. How often the cadaster is updated, or is it a continuous process? 5. What are the Value Intervention Areas (AIVAS)? 6. How are these established? 7. How often are these values updated? 8. Nowadays, how well do these values reflect the real market value of land? 9. Does the District has a land market monitoring system?

Other	10. Any additional comments you would like to make?

Variable 16 -17. Private Sector expert - President of the Construction Chamber of Quito: Hermel Flores

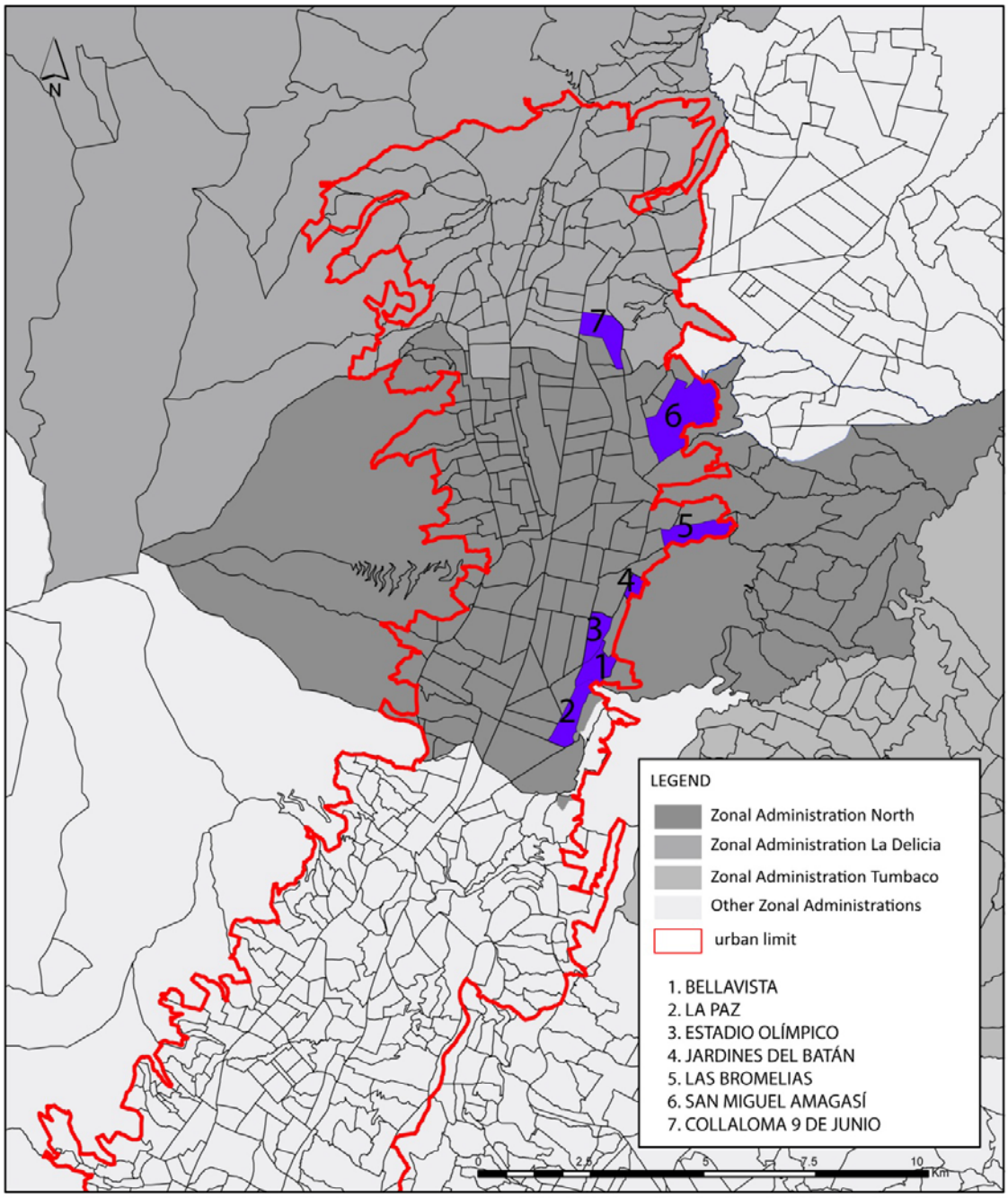
TOPIC/ VARIABLES	*QUESTIONS*
Acceptability	1. How is the price of the extra development rights calculate 2. With this formula, are developers able to profit from the instrument? 3. What are the cases of application that have more acceptability? 4. The financing of which good is more important for developers? 5. Is the place for these investments important?
Profitability	6. Is the benefit for developers significant? 7. Are payments in cash equal to those made in kind?
Others	8. Any additional comments you would like to make?

Variable 18. Local level expert- Planning expert of the Secretariat of Territory Coordination and Participation: Verónica Villavicencio

TOPIC/ VARIABLES	*QUESTIONS*
Budget allocation	11. What is the main source of financing for the local government? 12. What are the priorities of investment for the public administration? 13. Out of the following, which are the biggest expenditures for the local government: Social Housing, infrastructure or public space? 14. What are the priority areas for these investments? 15. Is the revenue generated by the instrument a significant part of the municipal budget? 16. If not, does it have potential to become one?
Other	17. Any additional comments you would like to make?

Annex 3

Map 5. Location of neighbourhoods selected as sample (neighbourhoods where more than 3 cases of sale of development rights had occurred).



Annex 4

In this annex, the full analysis of the developers' profitability is shown and compared in 3 scenarios, described in chapter 4. The developers interviewed provided rough information regarding the projects; therefore, the results here exposed are not as accurate as it is desirable. The limitations of the information provided should be kept in mind at all times.

- The data was rounded up.
- In some cases the information regarding total costs or total income was generated from an average on m^2 (for sale) of the project. In the case of costs, this amount includes the costs of the area that is not for sale, but has an impact on the costs (common areas, walls, elevators, etc.). In all cases, the cost and income per m^2 for sale was included.
- In 2 cases, the data did not correspond exactly to that in the databases. In those cases, the data from the database was favored and the rest of the figures were deducted from the information provided during the interview.
- It is assumed that scenario 2 and 3 generate the same income.

A	FROM 6 TO 8 STORIES					PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR							
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	office space	285	1408,2	33,3%	-	4.224	4.646.400	5.491.200	844.800	18,2%	600
	2					-	5.632	6.195.200	7.321.600	1.126.400	18,2%	800
	3					157.259	5.632	6.352.459	7.321.600	969.141	15,3%	688

SCENARIO	COMPARISON SCENARIO 1 - 3 *		EXTRA RIGHTS CONSIDERED SEPARATELY							COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	Y	A	B	B-A=C	C/B	C1 -C3 = D	D/C1	A/Y	B/Y
1	124.341	14,7%	1.408	-	-	-	-	-39.424	-14,0%	1.100	1.300
2				1.548.800	1.830.400	281.600	18,2%			1.100	1.300
3				1.588.224	1.830.400	242.176	15,2%			1.128	1.300

*This is the actual comparison that developers must have done. Scenario 2 is not possible; therefore, it is not considered in this comparison.

B	FROM 8 TO 9 STORIES					PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR							
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	middle-upper class dwelling	285	605,0	13,0%	-	2.230	2.700.200	3.100.000	399.800	14,8%	661
	2					-	2.519	2.850.467	3.530.000	679.533	23,8%	1.123
	3					29.533	2.519	2.880.000	3.530.000	650.000	22,6%	1.074

SCENARIO	COMPARISON SCENARIO 1 - 3 *		EXTRA RIGHTS CONSIDERED SEPARATELY							COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	Y	A	B	B-A=C	C/B	C1 -C3 = D	D/C1	A/Y	B/Y
1	250.200	62,6%	289	-	-	-	-	-3.388	-4,3%	1.211	1.390,1
2				327.029	404.990	77.961	23,8%			1.131,6	1.401,3
3				330.417	404.990	74.573	22,6%			1.143,3	1.401,3

*This is the actual comparison that developers must have done. Scenario 2 is not possible; therefore, it is not considered in this comparison.

C	FROM 4 TO 6 STORIES											
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR	PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	middle-upper class dwelling	390	1665,8	49,1%	-	3.354	4.672.000	4.800.000	128.000	2,7%	77
	2					-	5.000	7.000.000	7.720.000	720.000	10,3%	432
	3					321.000	5.000	7.321.000	7.720.000	399.000	5,5%	240

SCENARIO	COMPARISON SCENARIO 1 - 3 *		EXTRA RIGHTS CONSIDERED SEPARATELY**							COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	Y	A	B	B-A=C	C/B	C1 -C3 = D	D/C1	A/Y	B/Y
1	271.000	211,7%	1.646	-	-	-	-	-105.673	-44,6%	1.393	1.431,1
2				2.304.400	2.541.424	237.024	10,3%			1.400	1.544,0
3				2.410.073	2.541.424	131.351	5,5%			1.464	1.544,0

*This is the actual comparison that developers must have done. Scenario 2 is not possible; therefore, it is not considered in this comparison.

D	FROM 8 TO 10 STORIES											
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR	PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	middle-upper class dwelling office space	320	1.408	32,0%	-	2.250	2.475.000	3.206.250	731.250	29,5%	519
	2					-	2.970	3.268.800	4.232.250	963.450	29,0%	684
	3					57.600	2.970	3.326.400	4.232.250	905.850	27,2%	643

SCENARIO	COMPARISON SCENARIO 1 - 3 *		EXTRA RIGHTS CONSIDERED SEPARATELY**							COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	Y	A	B	B-A=C	C/B	C1 -C3 = D	D/C1	A/Y	B/Y
1	174.600	23,9%	720	-	-	-	-	-13.964	-6,0%	1.100	1.425
2				792.436	1.026.000	233.564	29,5%			1.101	1.425
3				806.400	1.026.000	219.600	27,2%			1.120	1.425

*This is the actual comparison that developers must have done. Scenario 2 is not possible; therefore, it is not considered in this comparison.

E*	FROM 3 TO 5 STORIES											
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR	PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	middle-upper class dwelling	55	3000,0	42,2%	-	3.400	3.800.000	4.700.000	900.000	23,7%	300
	2					-	4.836	5.418.343	7.000.000	1.581.657	28,8%	527
	3					81.657	4.836	5.500.000	7.000.000	1.500.000	27,3%	500

SCENARIO	COMPARISON SCENARIO 1 - 3 *		EXTRA RIGHTS CONSIDERED SEPARATELY**							COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	Y	A	B	B-A=C	C/B	C1 -C3 = D	D/C1	A/Y	B/Y
1	600.000	66,7%	1.436	-	-	-	-	-24.247	-5,2%	1.118	1.382,4
2				1.608.921	2.078.577	469.657	29,2%			1.120	1.447,5
3				1.633.168	2.078.577	445.409	27,3%			1.137	1.447,5

* Project outside ZUAEs that included environmentally friendly technologies.
**This is the actual comparison that developers must have done. Scenario 2 is not possible; therefore, it is not considered in this comparison.

F*	FROM 16 TO 17 STORIES											
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR	PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	middle-upper class dwelling, office space	590	1.517	5,9%	-	10.200	14.790.000	18.360.000	3.570.000	24,1%	2.353
	2					-	10.806	15.668.700	19.450.800	3.782.100	24,1%	2.493
	3					55.939	10.806	15.724.639	19.450.800	3.726.161	23,7%	2.456

SCENARIO	COMPARISON SCENARIO 1 - 3 *		EXTRA RIGHTS CONSIDERED SEPARATELY**							COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	Y	A	B	B-A=C	C/B	C1 -C3 = D	D/C1	A/Y	B/Y
1	156.161	4,4%	606	-	-	-	-	-3.137	-1,5%	1.450	1.800
2				878.700	1.090.800	212.100	24,1%			1.450	1.800
3				881.837	1.090.800	208.963	23,7%			1.455	1.800

* Project outside ZUAEs that included environmentally friendly technologies.
**This is the actual comparison that developers must have done. Scenario 2 is not possible; therefore, it is not considered in this comparison.

G	N/A											
	SCENARIO	USE	AIVA	AREA OF PLOT m2	INCREMENT IN FAR	PRICE OF EXTRA DEVELOPMENT RIGHTS USD	AREA FOR SALE (m2)	TOTAL COSTS (INCLUDING LAND)	TOTAL INCOME	PROFIT	RETURN OF INVESTEMENT	PROFIT / m2 OF LAND
				X	Y2/Y1		Y	A	B	B-A = C	C/B	C/X
	1	N/A	N/A	3.000*	11,1%*	-	6.500	7.150.000	9.262.500	2.112.500	29,5%	704
	2					-	7.220*	8.524.000	10.288.500	1.764.500	20,4%	588
	3					140.000	7.220*	8.664.000	10.288.500	1.624.500	18,8%	542

SCENARIO	COMPARISON SCENARIO 1 - 3		COMPARISON SCENARIO 1 - 2		COSTS / m2	INCOME / m2
	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT	INCREMENT IN NET PROFIT	PERCENTAGE OF INCREMENT IN PROFIT		
	C1 -C3 = D	D/C1	C1 -C3 = D	D/C1	A/Y	B/Y
1	-488.000	-23,1%	-348.000	-16,5%	1.100	1.425***
2					1.181	1.425***
3					1.200	1.425***

For this project development rights were not purchased.

*The plot size and the amount of development rights considered were selected at random (in within logic) as this information was not avalilable.

*** This figures were taken from other project by the same developer (Project D)