



**CRITICAL SUCCESS FACTORS FOR LARGE URBAN REGENERATION PROJECTS
IN WATERFRONT BROWNFIELDS: THE CASE OF CANARY WHARF AND
ABANDOIBARRA**

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Supervisor: Prof. Matthias Finger / Mr. Maxime Audouin

Student: Mr. Ricardo Vives Guerra

Abstract

This study examines the critical success factors in Urban Regeneration Projects and tries to explore what are the challenges and difficulties faced in their development by addressing the cases of Canary Wharf in London and Abandoibarra in Bilbao.

The goal is to contribute to the scientific literature on urban regeneration by presenting a list of critical success factors and provide a tool for city managers, advisors and other practitioners working in this field.

Finally, the objective is to assess the case of the Magdalena River Regeneration Project in Barranquilla using the proposed critical success factors and provide recommendations for policymakers and stakeholders.

Keywords: Urban Regeneration, Brownfields, Underutilized plots, Critical Success Factors.

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1. Introduction and Problem Statement

Fast paced urbanization and sprawl are two main challenges that cities in the world face today. In less developed countries, in particular, these two phenomena cause economic, ecological and social distress that greatly affects societies as whole. Furthermore, the negative effects are noticeably magnified for lower income communities that find themselves with only two options: living in hazard prone areas or undeveloped land far from city core. In both scenarios, usually these sectors of society end up living in substandard conditions. Informal development in unsafe or removed from the city core land is directly linked to poor planning, rapid expansion and lack of adequate governance structures, but it is mainly due to unavailable land for new housing.

The general understanding worldwide nowadays is that in order to stop urban sprawl and all the negative impacts it brings forth, a shift towards more compact urban settlements should be put in place. As described by the New Urban Agenda (UN Habitat 3, 2016) *"We will promote integrated urban and territorial planning, including planned urban extensions based on the principles of equitable, efficient and sustainable use of land and natural resources, compactness, polycentrism, appropriate density and connectivity, and multiple use of space, as well as mixed social and economic uses in built-up areas, in order to prevent urban sprawl, reduce mobility challenges and needs and service delivery costs per capita and harness density and economies of scale and agglomeration, as appropriate."* In this context, ideas such as redevelopment and densification gain relevance.

Growing cities across the globe, that are facing these very challenges and turn to large scale interventions to provide solutions, usually find that if the future sustainability of the project is fundamental in granting the expected outcome. Urban regeneration projects strive for sustainable urban growth and the development of a specific region in a city through physical, environmental, cultural, industrial, and economic regeneration (Jung-Ho & Hae-Rim, 2010).

Across the globe we can identify multiple projects, that attempt to regenerate large portions of land in city cores. Unfortunately, not all the projects succeed. Some of them fail due to poor planning and lack of funds. In other cases, even well thought out interventions with sufficient funding also fail. Considering that large scale urban regeneration is a significant endeavor for any city in the world, securing more sustainable projects that present long term and well-rounded objectives is a relevant issue.

However, large scale urban regeneration is a very complex subject that can become a daunting task. These difficult interventions as sometimes rendered more complicated in some scenarios where the available land is essentially brownfield. Brownfields are essentially, abandoned, derelict or unused plots of land. The difficulty in dealing with brownfields is that most of the times, these were industrial sites that have suffered depravation in general. Also, the challenges regarding large scale urban regeneration are augmented in cases

where the land is available in waterfront locations. Specific complexities are presented in these contexts and the success of the project is put at risk.

Unfortunately, for some urban contexts, like in Barranquilla in Colombia, large scale urban regeneration of waterfront brownfields is the only option the city has a considerable amount of land along the Magdalena River shoreline, that used to be occupied by manufacturing and shipping industry. Fortunately, other cities like London and Bilbao, have managed to complete successful large-scale waterfront brownfield urban regeneration projects and serve as case studies for new proposals. The challenges in completing successful a large-scale waterfront brownfield urban regeneration projects are considerable and that is why this document attempts to pinpoint the specific critical success factors that may provide a positive outcome. Finally, the document will suggest a framework, based on the critical success factors identified, that can become an assessment tool in rendering the initiatives successful.

Methodology

This paper will be a qualitative and exploratory study focusing on identifying critical success factors common to several successful large-scale waterfront brownfield urban regeneration projects. Even if the cultural, social and economic context for each case might be different, these type of projects share similar goals and challenges such as the complex actor composition, the extended timeframe required and collective impact; so, the analysis may become an assessment tool for ongoing or upcoming projects. The case study methodology used may provide a link between theoretical findings and practical examples that should steer the study towards applicable conclusions.

For the research, the document will first review a literature that clarify the importance and the definition of urban regeneration. It will also determine the conditions of successful regeneration projects, considering these are sustainable and consider social, economic, environmental and cultural development. First, we will look into critical success factors for urban projects in general. We will review books, academic journals and online sources to understand what urban regeneration is, how it is achieved and what factors determine its success. Other items of research include critical success factors in general as the term comes from project management sector, and then literature that covers critical success factors for urban regeneration projects in particular. This review will provide a list of the most important critical success factors provided by the literature.

The other main research topic will be dedicated to critical success factors for urban regeneration projects. Special attention will be focused on brownfield and shoreline parcels, as they have a unique set of challenges. Empirical research will provide examples from across the globe by reviewing academic journals, published magazines and data from the archives of international entities such as OECD, UN and WRI. This review will provide the case studies that will be verify the critical success factors established in the initial literature review and

determine specific characteristics for success of large scale waterfront brownfield urban regeneration. Therefore, the first criteria for selection is the status of the project as it must be completed in order for it to be considered successful. Additionally, as the framework aims at providing an assessment tools for urban regeneration projects in waterfront areas, urban characteristics will be analyzed, such as location next to a body of water. Finally, special consideration is given to the selection of urban regeneration projects that were developed in former brownfields, as it is the aim of the paper to provide an assessment tool for similar contexts.

After the two most relevant case studies were selected, Canary Wharf in London and Abandoibarra in Bilbao, evidence of the proposed critical success factors will be reviewed in literature from academic journals and published books. The findings will be cross referenced with the preliminary list of critical success factors, to come up with the five most important elements and determine their role in the success of the project. These cities share similar urban conditions as the Barranquilla case and both have completed urban regeneration projects. The case studies in the research are not reviewed to measure success, instead, they are provided to help clarify the factors that could contribute to success in in the framework proposed. The paper will provide an overview of these case studies through the success factors obtained from the literature review.

2. Literature Review

2.1 Urban Regeneration

The literature review will begin with a broad scope revision of urban regeneration and its key role in the global scenario today. The purpose in this section is to establish an operating definition and the characteristics of these types of interventions. Additionally, the goal is to determine the usefulness of such a concept in comparison to other terms such as urban development, redevelopment and renovation.

2.1.1 Importance of Sustainable Densification

In the world today, as more the half of the population lives in cities and other agglomerations, the need for adequate urban spaces is imperative. Additionally, as we consider this trend will rise and urban population will be 66% by 2050 and these urban areas will face the challenges of a growing population, such as housing, infrastructure, transportation, energy, employment, education and healthcare (UN DESA's Population Division Report, 2014). Therefore, it is evident that the need is not only for better urban areas but for more of them. Furthermore, if we consider the impact of sprawling development on the environment and social equity and their direct link with land use policy, in particular for Latin American cities given the obsolete and restrictive regulatory policies that exist (Lungo, 2001) the need for sustainable urban growth is in demand, as irresponsible fast paced urbanization and sprawl increase the negative impacts on our environment. Also, exurban development is seen as gobbling open land and in need for newer infrastructure (Hersh, 2012).

As describe in the UN DESA's Population Division Report (2014) *"(...) cities offer important opportunities for economic development and for expanding access to basic services, including health care and education, for large numbers of people. Providing public transportation, as well as housing, electricity, water and sanitation for a densely settled urban population is typically cheaper and less environmentally damaging than providing a similar level of services to a dispersed rural population"* (UN DESA's Population Division Report, 2014). According to this statement, densification strategies should be at the top of the list for fast paced growing cities, instead of expanding urban areas over the territory.

2.1.2 Definition of Urban Regeneration

As mentioned before, cities today, specially those facing urban sprawl are urged to be considering densification strategies. However, not all densification is desirable or sustainable. Terms such as urban renewal, redevelopment and revitalization, present a limited definition regarding the sustainability of these interventions. For example, for Couch, urban renewal is "a process of essentially physical change" (Couch, 1990). Also, as Sykes, Roberts and Granger describe them, urban redevelopment has a general mission and urban revitalization proposes change but not a specific approach. Taking into account the impact of

these types of urban interventions, it is suggested that a more holistic definition, that includes future sustainability, is considered. As described by Jung-Ho & Hae-Rim *“An urban regeneration project significantly differs from an urban redevelopment project, which aims at the physical improvement of facilities and merely pursues development benefits. In general, the goal of an urban regeneration project is sustainable urban growth and the development of a specific region in a city through physical, environmental, cultural, industrial, and economic regeneration”* (Jung-Ho & Hae-Rim, 2010).

From the previous statement, it is evident that long term planning and sustainability factors are implicit in the definition of urban regeneration. Roberts, Sykes and Granger also describe urban regeneration as: *“(…) comprehensive and integrated vision and action which seeks to resolve urban problems, and bring about a lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change or offers opportunities for improvement”* (Sykes, Roberts and Granger, 2017, p. 18). This means, that while there is an obvious urban component (development, redevelopment or renewal depending on the case), the main focus of urban regeneration lies on the future and sustainability of the project. This is particularly relevant for the study proposed in this document, because the success of an urban regeneration project is intrinsically linked to the ongoing development process, rather than just a unique construction phase. Therefore, the success factors proposed as a framework for assessment will be related to a holistic approach proposed and the overall outcome will be focused on sustainable development of the project itself and its lasting impact on the cityscape.

2.1.3 Characteristics of Urban Regeneration Projects

As we have seen before, urban regeneration projects imply sustainable economic, social, cultural and environmental improvements in a specific urban context. Even if every urban setting in the world is different, regeneration projects have similar challenges across the globe, dealing mainly with the idea of proposing long term sustainable changes involving multidisciplinary approaches. According to Jung-Ho and Hae-Rim, the characteristics of urban regeneration projects are: simultaneous pursuit of public and private benefits, long period of time for the project, various stakeholders and their complex relationships, strong involvement of public sector organizations and various types of project promoters (Jung-Ho & Hae-Rim, 2010). This initial statement proposes, that successful urban regeneration projects will only be those that achieve the aforementioned virtues, which are applicable to all contexts.

It is particularly interesting to recognize that in the first characteristic mentioned, the simultaneous pursuit of public and private benefits, the role of the private sector is key, as the statement calls for an equal gain for both sides. This involvement of the private sector will come up in other literature review as a fundamental aspect for urban regeneration projects. The second characteristic, long period of time for the project, is mentioned and confirms one of the central

elements of urban regeneration definitions reviewed previously: long term sustainability. This idea becomes essential for this paper, as case studies selected will be those that extend over a period of time that truly demonstrates the success of the intervention in the long run. Also, as we will read in further sections of this document, this extended period of time represents a real challenge for these projects, as they require continuity over that period of time. The third characteristic mentioned by Jung-Ho and Hae-Rim, various stakeholders and their complex relationships, demonstrates the need for a key element that has to address the governance of the project in order to secure the participation and support from all sectors of society. The final two ideas proposed in this literature, strong involvement of public sector organizations and various types of project promoters, make room for an interesting consideration regarding the people involved in the project and the role of project champions in the overall success of urban regeneration projects.

From the literature on characteristics of urban regeneration projects we conclude that the concept itself is directly related to the involvement of the private sector in securing economic urban sustainability. Also, we can see that urban regeneration and its long-term effects in the city require expanded periods of time, and securing the continuity of the project itself is a major challenge. Also, it is clear that the success of urban regeneration is linked to the support of all the sectors of society. Finally, this literature proposes the relationship between success of the projects and project champions.

From the readings on the importance of densification strategies it can be concluded that redevelopment of city portions is a key element in fronting the challenges of cities today, as opposed to development of more land or simple renewal. Furthermore, from the texts addressing the definition of urban regeneration, it can be concluded that redevelopment projects should have an additional component and be multidisciplinary, in order to operate on many fields and it have effects on individuals, communities and entire urban settings. Finally, the key in urban regeneration, lies in the sustainability side of the project as they can even have an impact on a city's attractiveness in the long term.

2.2 Critical Success Factors for Urban Regeneration Projects

The term Critical Success Factor was first used in data analysis and business analysis is defined as an element that must go well to guarantee success for management and are therefore the areas that must receive special attention to produce high performance (Dixon, Otsuka and Abe, 2010)

In this section of the literature review, the goal is to identify what those Critical Success Factors associated with successful urban projects are. First of all, it is understood that, as defined by Dixon, Otsuka and Abe (2010): "...`successful' urban regeneration is characterized by its `integration' and `comprehensiveness' and its use of `strategy' to effect change." Therefore, for the purpose of this document and according to Frantal, Kunc, Klusacek & Marina (2015): *"In the context of brownfields regeneration, the 'success factors' are considered facts*

(conditions, circumstances, actors, agencies) that are determinants and contributors to successful regeneration of brownfields.” This paper will focus on this practical definition of success factor in order to identify social, economic, cultural and/or environmental conditions, circumstances, actors and/or agencies that positively influence the outcome of an urban project.

In this respect, it is general understood from other literature, that most success factors are generally legislative, political and economic, such as regeneration costs, return rates for investors, government incentives, appropriate urban policy, project leadership, strong branding and multi sector involvement. However, other factors such as spatial and chronological context need to be considered (Frantal, Kunc, Klusacek & Marina, 2015). In the following pages of this paper, the focus will be on the general factors that can be applied to all contexts in the purpose of constructing a general assessment tool for urban regeneration projects.

In defining the success factors, this paper relies on the methodology proposed by Dixon, Otsuka and Abe (2010). The factors discovered by their work in studying Osaka and Manchester, provide insight on the interaction between the pushes and pulls on opposite ends of the public/private spectrum. In addition, this friction, combined with the challenges for success, determined the outcome of their study.

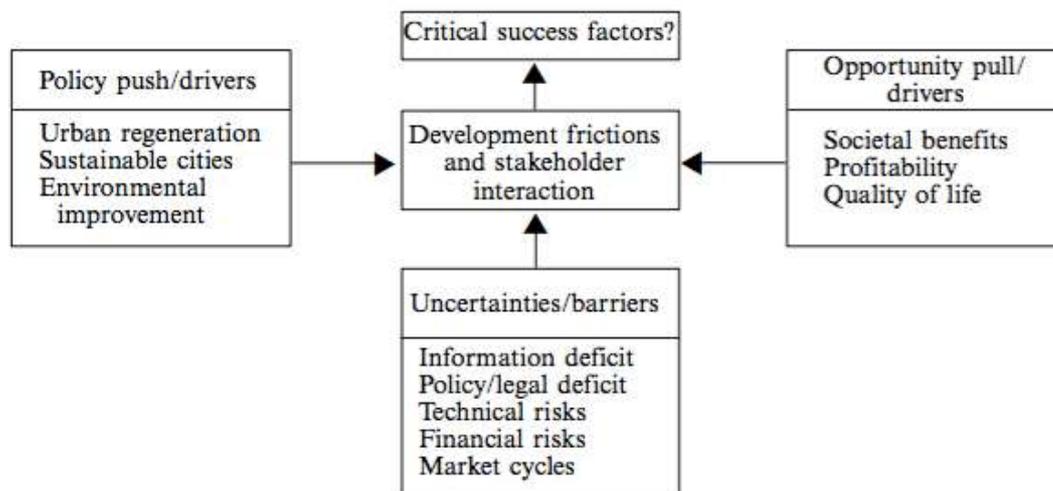


Figure No. 01 Methodology framework for determining success factors in brownfield regeneration by Dixon, Otsuka and Abe, (2010)

Furthermore, using this methodology, Dixon, Otsuka and Abe (2010) propose the following success factors:

- 1) Strong market for the product offered over a long period of time (avoid unrealistic expectations)
- 2) Long term vision for the project despite fluctuations in the market

- 3) Strong brand with flagship projects
- 4) Strong public-private partnerships
- 5) Prioritization of infrastructure and bringing improved urban spaces to people
- 6) Recession as an opportunity as land prices go down.
- 7) Large scale instead of loose interventions (no partial efforts)

For the purpose of this paper we are going to consider only the first five factors and procure additional evidence that might provide a new framework for assessing large scale urban regeneration project in shoreline brownfields. The two other success factors are dismissed in the context of this research, as recession was a very specific contextual result for that study and large-scale projects is a constant in our case studies.

Another interesting approach to Critical Success Factors in urban regeneration projects is proposed by Jung-Ho & Hae-Rim (2010). The paper offers conclusions from research done from the perspective of specialists consulted. The most interesting findings by the paper are those that overlapped the two consultation methods. In that sense, relevant success factors from the study are:

- 1) Reasonability of project master and implementation plan due to the long duration and various types of stakeholders' interests.
- 2) Establishment of appropriate organizational structure at the proper time is important.
- 3) Good communication and information sharing; because a project involves various stakeholders and organizations.
- 4) Performance management at each phase to monitor the progresses and goal achievements and to control them appropriately.
- 5) Suitability of project management system as a strong tool for the project management functions.
- 6) Balanced adjustment between the public and the private interests.
- 7) Cooperativeness of stakeholders on project.
- 8) Standardization of decision making process.
- 9) Optimization of legal and administrative services.
- 10) Minimization of conflict between stakeholders.

The most remarkable feature of the results is that the relationship amongst stakeholders is evident in four out of the ten critical success factors (numbers 2, 3, 7 and 10). Also, the conclusion of this study calls for a *"balanced adjustment between public and private interests"*, inferring the need of the private sector participation.

From these two studies and their conclusions, other literature was reviewed in an attempt to construct the framework for the assessment tool. The findings of

that research are procured ahead.

2.2.1 Project Financing

One of the biggest challenges in any urban project is related to financing issues and the need for funding. It is obvious, that no matter how good a proposed project or solution is, it won't have any effect if it is not executed. Hence, funding for execution and construction is vital for a project to have the desired impact. As many urban projects are very ambitious, governments usually lack the required funding, other schemes must be sought. As explained by Della Croce and Gatti (2014): *"The problem of public financing of infrastructure is a topic on top of policymakers' agendas worldwide. Budget constraints, past experiments of poor public spending and inefficiencies in managing infrastructure on the public side have led to a reconsideration of the need to shift the investment effort to the private sector and to the development of Public Private Partnerships (PPPs)."* Even the city of New York, which is globally recognized as being a leader in urban regeneration, states in the PlaNYC (2011), in reference to project finance that: *"We must also recognize that we can't meet this goal on our own. A majority of the new units will be built by private developers."* (PlaNYC, 2011. Pg. 21)

However, securing the money from the private sector is a challenge in itself given the amount of money is generally considerable and investors only procure the funds if the market conditions are beneficial for their interests (Della Croce & Gatti, 2014). Understanding who the investors are and what they're are looking for, can generally speed up the funding process and guarantee the financial closure for the project. Also, governments are required to propose amicable conditions for these funds to come forth and guarantee the success of the project.

The downside of private investment in public infrastructure is the delicate balance that is required, taking into account that the private sector is driven by profit opportunity and allocate funds in projects that have "secured" return on investment. According to Frantal, Kunc, Klusacek & Marina (2015): *"the primary reason why the private sector invests in some regeneration areas is the perception of achieving some target rates of return. Conversely, the principal reasons for non-investment include the negative image of the locality or neighboring environments, lack of capital (funding), and the perceptions of bureaucratic grant regimes"*. As it has occurred in several cases worldwide, governments incur in far too lenient conditions for the private sector which in turn makes the project not sustainable in the long run. Also, sometimes governments propose all the right financial conditions, but overlook other "risk" factors that halt the investment from the private sector.

Additionally, as explained by Adair, Berry, McGreal, Deddis and Hirst (1999), an integral part of the urban regeneration process is the role performed by the private sector in terms of stimulating property development and investment. From the private sector perspective, there is a perception that urban regeneration projects are risky with a lack of information about the value of assets which, given the need for financial prudence, can lead to the by-passing of

potential opportunities. The paper's conclusions regarding the most effective mechanisms for attracting private sector finance into urban regeneration are the mechanisms for the alleviation of risk. Ultimately the financial markets will invest, if there is a balance between the security of capital invested, the time frame continuity for the return, the rate of return on the investment and an acceptable spread of risks involved. All of the new "financing vehicles suggested by the Urban Task Force are based on the premise that the most effective use of public money in urban regeneration is to access greater investment from the private sector.

2.2.2 Actor Involvement

As evidenced in the research process, another major concern in urban regeneration projects lies in the apparent easiness for the development. Usually, projects with a lot of opposition, tend to be less attractive for investors and governments. On the other hand, "easy to execute" projects have higher success rates and they can attract private sector investment and politician attention for policy procedural issues. As state by the OECD (2003) in their summary for best practices from project in the United States, Canada, United Kingdom and Europe, one of the major recommendations is: *"Work with all affected stakeholders – government, private investors, not-for-profit organizations, local residents, and businesses – in identifying both scope and need."* As evidenced by Frantal, Kunc, Klusacek & Marina (2015), the involvement and collaboration of stakeholders in the planning process, is crucial in securing the success of urban regeneration projects.

It is especially important to pay attention to the private sector, given what was previously explained in the project financing section. In this context, it is essential to involve the private sector at an early stage in the urban regeneration process. There was agreement that money will follow money and where pockets of value exist the rippling out effects should be facilitated as widely as possible (Adair, Berry, McGreal, Deddis & Hirst, 1999).

An interesting perspective is provided by the city of New York in their PlaNYC (2011), as they not only call for the participation of other sector of society, but for the stimulation of this involvement for the success of the projects: *"... we must empower communities to develop and implement neighborhood-specific solutions to the challenges they face. By providing local partners with technical, financial, and regulatory assistance, we can foster greener, greater communities. In doing so, we will create a healthier, more equitable city, block by block, neighborhood by neighborhood."* (PlaNYC 2011. Pg. 21). This document is also very clear on stating that even if the public sector has a clear plan, in order to achieve the goals, there needs to be an engagement of all the citizens. In this respect, the plan also recognizes that it is the duty of the government to encourage and support this participation in order to secure citizen collaboration (PlaNYC, 2011)

2.2.3 Strong Leadership

Urban regeneration projects don't just occur spontaneously. Besides the initial idea or necessity to be fulfilled, there is always an individual or a group of people behind it. It doesn't really matter who comes up with the idea in the first place, as the success of the project is usually not related to this. On the other hand, successful urban projects always have a project champion that can push/pull the project, can see the big picture and knows how to compromise without losing sight of the final goal. As confirmed by the OECD (2003): *"Projects seem to benefit from a champion or lead body who is supported by both the public and private sectors."*

The leadership required for the success of urban projects is not defined. The OECD even calls for a strong identifiable leadership, regardless if it is from the federal, state, local, community or business level (OECD, 2003). Furthermore, as explained by Hersh (2012): "Developers are most often that key leader in taking on these complex projects, but mayors, planners and community leaders may also be that long-term champion." The key for strong successful leadership is usually associated with the ability of the individual or group of individuals to gather all involved stake holders. Even if the partnerships are informal and not constituted, the leadership has to be able to work with everybody and get parties to agree.

2.2.4 Public Sector Commitment

Another element that appears in the literature repeatedly is the investment and commitment by the public sector. This can be tied into the critical success factor proposed by Dixon, Otsuka and Abe (2010), Prioritization of infrastructure and bringing improved urban spaces to people, as the government usually needs to make the "first move". A strong show of political will, commitment and vision will definitely seduce more private investors and get people convinced the project is becoming a reality. As explained by the OECD: *"...in order to get the private sector to invest, the public sector must make a substantial investment commitment. It goes back to the old adage: "you've got to spend money to make money." In other words, to leverage "other people's money" it is vitally necessary for the public sector to use its own resources quite strategically. If governments invest wisely they will save substantial costs by effectively leveraging private funds and by producing improved economic circumstances that reduce other costs and expand public revenues. Yet all of this can only be accomplished if governments are willing to make their own investments."* (OECD, 2003).

Also, urban regeneration projects need to demonstrate a positive re-turn on private sector investment and with the use of public resources pump-prime much larger sums of investment (Adair, Berry, McGreal, Deddis & Hirst, 1999). It is important to consider that projects build momentum, political support and market awareness; slowing down is almost always a negative (Hersh 2012).

2.2.5 Long-term planning

From the list of critical success factors, proposed by Dixon, Otsuka and Abe (2010), two of the elements call for long' term planning:

- 1) Strong market for the product offered over a long period of time (avoid unrealistic expectations)
- 2) Long term vision for the project despite fluctuations in the market

With this in mind, one can consider the fact that large scale urban regeneration projects need time to mature and develop. This is especially relevant if the project is to be sustainable in the future. As per the OECD (2003) recommendations: *"City building efforts should ensure long-term economic, environmental and community sustainability, and not just fulfil social needs."*

It is important for the public sector to keep in mind two things: 1) major changes and projects require time and 2) that long term planning needs to be revised and adjusted, but most importantly not redirected. The reassurance of a long-term framework is key in generating confidence in all the stakeholders. As mentioned in the PlaNYC document: *"While our long- term goals will not be met for many years, we are on schedule... When PlaNYC was first launched we recognized that we didn't have all the solutions to the challenges we faced. We also knew that the city would face additional challenges in the years ahead. That's why we're updating PlaNYC now, four years after its initial launch. This update is a reaffirmation, not a redirection, that includes modifications and additions that do not significantly alter our overall trajectory."* (PlaNYC 2011. Pg. 12-13)

Also, for the most part, private investors perceive Local governments as being continuously engaged in the bidding process focusing on raising finances for the city, rather than implementing regeneration. Therefore, continuity of key public-sector personnel, in the long run, and the formation of a pro-active teams with a vision shared by the private sector are deemed critical. A time-scale of between 7 and 15 years is required as it can take two to three years alone to resolve land issues with arguably a much longer time- scale to achieve community benefits. The private sector must be assured that the continuity of the regeneration program is established for an appropriate time frame (Adair, Berry, McGreal, Deddis & Hirst, 1999)

2.3 Brownfields

Understanding that urban regeneration calls for the systematic improvement of an urban area with a long-term sustainability approach, most cities face a similar challenge across the globe: land availability. As mentioned earlier on, urban sprawl is triggered in part by the availability of inexpensive land far from the city core that is attractive for developers and investors. In addition, this remote land, becomes the only option in the market as buyers and occupants can only afford

these dwellings, even if it is far from the city core. In this context, brownfields are becoming more important as vacant agricultural land or natural developable land is becoming more and more scarce, more expensive and more protected around urban areas (Frantal, Kunc, Klusacek & Marinat, 2015).

As globalization and technology have moved the world into modern times, industries and manufacturing processes have evolved drastically. Many cities across the globe are facing the same challenge as the infrastructure built to allocate this production has become obsolete. In addition, science and environmental studies have discovered harmful contaminants in some of the industrial processes used in previous times. Despite the reason (changing global economy, automatization or cheaper production elsewhere), the fact is that modern cityscapes across the globe are facing challenges due to industrial abandonment (Loures & Vas, 2016). Furthermore, working in brownfields provides a win-win for cities as they can also tackle the issue of environmental remediation. According to the PlaNYC document: *“Brownfields represent one of our greatest opportunities to secure new land for development. Brownfield cleanup and development will improve our economy and our environment, especially in poor and disadvantaged communities that suffer the greatest burden of brownfield sites.”* (PlaNYC, 2011. Pg. 50)

In this section of the literature review, the idea of brownfields as an alternative for urban regeneration projects will be examined, taking into account they propose a scenario for large scale impact that can be driven towards sustainability in the available land. In order to better understand what underutilized land refers to, the following literature review will provide an overview of the different typologies.

2.3.1 Definition of Brownfield

Even though the term brownfield, is used widely nowadays in the context of Urban Studies, there is no universal definition. The term is very loosely employed and therefore applied to a great number of contexts. According to the PlaNYC document, a Brownfield is vacant or underutilized land often thought to be unusable due to environmental contamination. (PlaNYC, 2011. Pg. 50)

According to Loures and Vas: *“The term brownfield is generally used to describe both spatially and formalistically everything from polluted industrial landscapes to former factory buildings, including vacant or abandoned properties usually found in older, declining sections of a city.”* (Loures & Vas, 2016). However, as explained by the same authors, the problem in using Brownfields for urban projects, lies in the lack of classification as they are all grouped in a single category and deemed unusable. In this regard, the authors propose a classification that clearly identifies the different types of brownfields:

Abandoned Land

“...defined as a land that for any reason as failed to operate, becoming vacant and unused for a prolonged period.”

Contaminated Land

“...regardless the origin of the contamination, the classification of any landscape as contaminated is somehow dependent on objective criteria as it is the concentration of certain substances.”

Derelict Land

“...includes closed and disused tips, worked out mineral excavations (including undermined areas liable to subsidence), and abandoned military, service and industrial installations or premises.”

Underutilized land

“...implies two things: first, that the site is at least partially occupied and second, the activities or functions performed or developed in it are inferior to its ‘highest and best use’...”

Vacant Land

“...can be large or small, regularly or irregularly shaped parcels, previously developed or left over from earlier development, parcels with or without physical limitations, among others.”

Even though the classification suggested by the authors is clear and easy to understand, for the purpose of this paper, we will use the term brownfield, to refer to any and all the types mentioned. It is understood that each type of brownfield has a very specific set of challenges and limitations, but the objective is to determine critical success factors in a universal framework for urban regeneration projects. For the case study selection proposed further along this paper, we will concentrate on derelict, abandoned and underutilized land as they closer define the case in Barranquilla.

From the literature on brownfields, we can identify that these plots of land, regardless of the reason why they became as such, pose a tremendous opportunity for cities as they are usually located in strategic places inside the city. This is a crucial in stopping urban sprawl and this is why this paper focuses on key success factors for urban regeneration projects in shoreline brownfields. Also, such spaces in the urban context are of great interest as the market value of the land (usually not the cheapest) is compensated by the availability of existing infrastructure (less investment) and can contribute to economic sustainability of the project.

2.3.2 Challenges for Brownfield Regeneration Projects

Working urban regeneration projects on brownfields implies an additional level of difficulty for success. Not only should the success factors mentioned in previous sections of this document be considered, but also issues such as site contamination, remediation costs and also, environmental issues. As mentioned

by the PlaNYC document: *“The biggest obstacles to brownfield cleanup and redevelopment are the uncertainty of cleanup obligations, fear of pollution liability, and lack of financing.”* (PlaNYC, 2011. Pg. 50).

2.4 Shoreline Regeneration Projects

Shoreline parcels are usually located very near (sometimes within) urban agglomerations and have been occupied historically by factories and shipping sites. However, newer technologies and modernization of the global economy during the last century made many of these sites obsolete and no longer productive (Yocom, Andrews, Faghin, Dyson, Leschine & Nam, 2016). These former sites become a great opportunity for developers and policymakers to provide new space for development in the shape of urban regeneration, while avoiding urban sprawl. Shoreline development can help meet the need for housing and other services for the increasing number of citizens coming to urban agglomerations

Furthermore, there is a social associated in dealing with shoreline parcels, that includes the citizens right to access to the waterfront. As mentioned in the PlaNYC documents: *“Our waterfront is an invaluable asset, but for decades New Yorkers have had access to too little of it. Recently, we have engaged in a wide-ranging effort to reclaim our waterfront. We have opened access to miles of shoreline that had been closed to the public, developed new parks in all five boroughs, built thousands of units of new housing, created new maritime jobs, and cleaned our waterways.”* (PlaNYC 2011. Pg. 170-171)

In this section of the literature review, the paper will consider particularities on regeneration projects located in shoreline areas. The idea is to focus on the unique location of shoreline parcels as in many cases, success of urban regeneration in these areas is related to bring the community back to the waterfront. There are several common traits regarding all shoreline areas, that can critically influence the outcome of an urban regeneration project. In addition to the challenges mentioned in previous sections of this research, projects developed in shoreline parcels deal with the preservation of maritime and river activities, shoreline accessibility, water related ecological and design restrictions and opportunities (Hersh, 2012). With this in mind, there are specific considerations to be made.

2.4.1 Location Advantage

All across the globe, there is an understanding that waterfront “always sells”, is there is no surprise in understanding that developers are more interested in this type of projects more than others. Also, shoreline urban regeneration in brownfields, allows for developers to present the project as a site clean-up and re-opening the waterfront (Hersh, 2012). However, as explained before, this is a challenge for shoreline parcels, as the private sector profit driven interests will

be more intense, and the delicate balance between it and public interest might be disrupted more easily and future social and environmental sustainability lost.

Also, taking into account that all development projects must satisfy market dynamics such as demand and supply, waterfront regeneration relies greatly on catching the interest of end-users. As described by Hersh (2012): *“Waterfront redevelopments must utilize the water as an asset, rather than an access barrier. The mix of uses, attractive design and events that bring a community back to its waterfront — all these have been key to successful projects.”* It has been established, that developers are characterized by conducting their site selection in terms of real-estate attractiveness.

2.4.2 Project specific team

Due to the complexity of this challenges, the group of people associated with the leadership of the project is, in these types of projects, usually larger and more multidisciplinary than for other endeavors. As described by Hersh (2012): *“In addition to the civil engineer, there will be environmental engineers, hydrologists, sustainable storm water designers and possibly other specialists. The legal team will need to be expert not only in real estate transactions and land use approvals, but also in dealing with environmental regulators and liability protection. An insurance broker specializing in environmental policies is often used. The architectural team will not only have to deal with building design, but also waterfront issues, green certifications and possibly historic preservation.”* Therefore, in the case of shoreline regeneration projects, strong leadership is particularly more challenging in the sense that it has to employ strategies effectively for selecting the team and getting all of them to work together.

2.4.3 Uncommon stake holders

Besides the regular challenges for brownfield redevelopment, shoreline urban regeneration projects have a very specific set of stakeholders, that are uncommon to many of the developers and government officials. There are parties that only appear in this type of projects and therefore need specific attention. For example, shoreline projects might need to deal with navigation entities and even water transportation. Boating community and fishermen are also involved in the projects. Marine and river environmentalists will also have a say in the development. And trade and port authorities will definitely be affected by any proposal, just to mention a few. This is why the project needs to address these groups concerns as early in the process as possible and take advantage of technology (social media and blogs) to reach out to stakeholders (Hersh, 2012).

3. Cases

3.1 London – Canary Wharf

London, as the United Kingdom's most prominent city, has long been a major metropolis in the global context. With the evolution of the shipping industry, some 2,200 hectares of dockland brownfields became available for redevelopment, stretching east from the Tower Bridge on both sides of the river. Canary Wharf is located in the West India Docks situated in the North Western portion of the Isle of Dogs and it was the main flagship development in the Enterprise Zone, and assisted in stimulating further investment in the entire dockland (Beswick, 2002). The context of London and the Canary Wharf project, will be assessed, according to the findings in the previous section. The results of this evaluation, will be listed in the analysis section.

3.1.1 Context

The potential for regeneration projects in the London docklands in general, came to light after the merchant ship industry suffered a global restructuring process. New technologies, around the 1970's made the old shipping industry obsolete. According to Home (1990): *"Ports in the UK and across the world had been forced to close for various reasons, the most important of which was the change to containerized goods handling and larger cargo ships. Many thousands of docks related jobs were lost and large tracts of land and building became redundant."*

One of the most notorious areas of the new land, open for regeneration projects, was the Isle of Dogs, (wrongfully named, as it is not an island but rather a peninsula). After having experienced a long period of prosperity due to the Millwall, East and West India Docks, in the 1970-80s the Isle of Dogs had become an isolated, tightly knit community seemingly in the grip of irreversible decline (Feriotta, 2015). Canary Wharf became an interesting site in the Isle of Dogs, open for regeneration. The area, owes its name from the warehouses that previously stored the fruit imports from the Mediterranean routes, in particular the Canary Islands of the coast of Spain. Canary Wharf, covers 195 hectares of land and through some government initiatives and private sector developers, a project for its regeneration was proposed in the late 1980's. In May 1988 the UK Prime Minister of the time, Margaret Thatcher, launched the project. As described by Home (1990): *This megaproject included a huge private sector commercial development with various kinds of land-use, similar to a central business district.* The impact of the project can be presented in changing figures. For example, the vacancy rate within Canary Wharf was at 6%, compared to the city-wide statistic at 7% in early 2000's. (Beswick, 2002).



Figure No. 02 Canary Wharf, London: Source: Beswick, 2001

3.1.2 Actors Involved

The Canary Wharf dockland brownfield regeneration project had the participation of several actors, working together. During the early 1980's, most development in the area had consisted of simple refurbishment of old warehouses and other derelict buildings. The large-scale regeneration followed the consolidation of a large partnership approach between local authorities, the national government and the private land owners in the wider Thames Gateway area was implemented.

One other main actors in the Canary Wharf projects was the British central government through a specific Urban Development Corporation for the area. The London Docklands Development Corporation (LDDC) was created in the spring of 1981, and was given considerable powers to regenerate the 8.5 square miles of Docklands area. As explained by Home (1990): *"... an urban development corporation (the London Docklands Development Corporation or LDDC) was created in 1981, with wide ranging powers and the objective: 'to secure the regeneration of the area... by bringing land and buildings into effective use, encouraging the development of existing and new industry and commerce, creating an attractive environment and ensuring that housing and social facilities are available to encourage people to live and work in the area.'"*

The three major powers delegated onto the London Docklands Development Corporation were:

- 1) Land Assembly: The LDDC had special vesting powers which allowed it to buy land quickly and without public inquiry, from other public bodies, such as the Greater London Council, local boroughs and Port of London Authority. In addition to this, it also had compulsory purchase powers.
- 2) Development Control: The LDDC was given authority within the 3 boroughs - Tower Hamlets, Southwark, and Newham, to handle all new development on the docklands.

- 3) Government Grant Spending for Land Preparation: The LDDC was allowed to spend central government money to prepare land for development and to bring about physical, social, and economic regeneration of the area.

This central government agency was given, substantial funding and powers to regenerate declining neighborhoods. Through this agency, national government provided 77 million initial cost of the Docklands Light Railway. Later on, it provided more: DLR extension £240 million, road improvements £650 million, Jubilee Line extension £900 million, £350 million extra grant for the London Docklands Development Corporation (Home, 1990).

Besides the London Docklands Development Corporation, another agency called English partnerships was created. As explained by Beswick (2002): *“English Partnerships is an agency created from fusion of the Commission for the New Towns and the Urban Regeneration Agency. The agency focuses upon co-ordination of national and cross-regional regeneration schemes, in conjunction with the Urban Renaissance. In addition, it facilitates and implements new public-private partnerships.”*

The borough authorities and the Greater London Council, also actively participated in the process, as they remained the strategic plan making authorities. Furthermore, the boroughs and the Greater London Council, were responsible for the development of housing, education and health issues of the local residents (Beswick, 2002).

Local community residents were equally involved during the consultation, planning and implementation process, given in some cases it was mandatory for the receipt of funding.

Also, the London Development Partnership was created. This agency involved representatives of the private, public, voluntary, academic and training sectors in addition to trade union members. Membership was voluntary but their work produced London-wide strategic plans often considered by the Mayor (Beswick, 2002).

Finally, Canary Wharf Group, a private institution, worked closely with local boroughs and other agencies on a wide range of community activities and educational programs on improving literacy, homework clubs and the creation of an educational trust for lower income residents. The Canary Wharf Group was also aimed at improving the employment opportunities for local community members. In addition to this, the Local Business Liaison Office, another institution created for the project that was set up in 1997, worked to enable relationships between developers, contractors, procurement managers and local businesses and act as a facilitator in the placement of contracts with local companies. (Beswick, 2002).

3.1.3 The Project

Construction of the first phase began in 1988 on a 71 acre plot and the project presented ten million square feet of new office space, five hundred thousand square feet of commercial areas, six thousand five hundred parking slots and a hotel and conference center (Home, 1990). Also, it included 13 office buildings, retail and conference center, the Docklands light railway and 17.1 acres of open spaces (Beswick, 2002).

The project created 3.3 km of dockside public walkways around Millwall Docks and at Canary Wharf. It also invested in the Docklands Sailing and Watersport Centre and created new open spaces, such as the Great Eastern Slipway and the Johnson Draw Dock (Feriotto, 2015).

An important component for the project, was the creation of the Enterprise Zone, that was essentially a set of policies for private sector incentives. The measures included:

- 1) exemption from business rates until 1992
- 2) 100% capital allowances available on buildings where construction started prior to April 1992
- 3) less interventionist planning control

As described by Feriotto (2015): *“Covering 195 hectares, the Enterprise Zone also included ‘a small part of the Leamouth area extending into the London Borough of Newham’ and was conceived with the aim of attracting investors and enterprises, granting them particular concessions as concerns tax and planning. For example, some of the measures proposed by the LDDC included a ‘no development land tax’, a simplified planning procedure and a ‘100 per cent capital allowance for new commercial buildings to be set against corporation and income taxes’”.*

Another incentive given by the central government, was in providing lower prices for the land to be regenerated. The national government passed land proprietorship of the former trading company plots, to the London Docklands Development Corporation, which in turn sold it to private developers at affordable prices. (Home, 1990).

After these incentives were adopted, in 1985 the Canadian company Olympia & York, moved forth and committed the funds. (Feriotto, 2015). By 1989, government stated that the private sector had already provided 4.4 billion pounds into the project, for the construction of five million square feet of new business space created and that 15 000 dwellings (Home, 1990).

In addition to the incentives given for the private sector, the London Docklands Development Corporation used a 'leverage planning' approach, which can be described as the use of public investment to stimulate a weak or flagging private market in land and property development.

In this regard, the London Docklands Development Corporation focused on solving one of the main challenges the area faced: lack of connectivity. They proposed and executed three transportation projects:

- 1) Docklands Highway - The London Docklands Development Corporation put in a new spine road to open up the Enterprise Zone, and build a major new road across the top of the peninsula, linking Canary Wharf with Wapping to the west and the mouth of the River Lea and the Royal Docks to the east. (Home, 1990). The project finally opened in 1993, at a cost of over £300 million. (Gordon, 2001).
- 2) Docklands Light Railway – The light railway (first phase opened in 1987), provided 12 km of track and 15 stations. It was the cheapest practical option available at the time, using existing track and railway alignments where possible. (Home, 1990).
- 3) Jubilee Line - The extension of the Jubilee Line in the underground railway system was a major contributor to the success of the project. In November 1989, the government announced the project that ran from Green Park via Waterloo and London Bridge to Canary Wharf and beyond. The total projected cost was £900 million (Beswick, 2002).

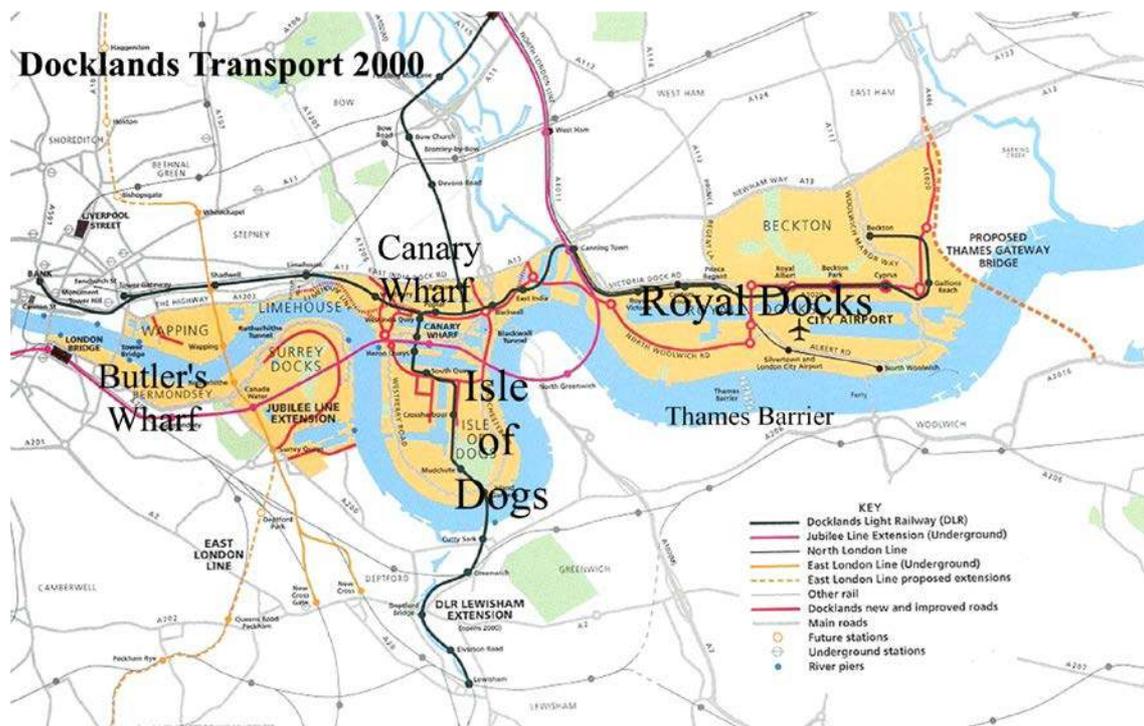


Figure No. XX Area Map of the London Docklands Transportation system. The London Development Partnership (2000)

In addition to transportation investments, the London Docklands Development Corporation, also provided funding for:

- 1) Education: Tower Hamlets College's extension in Poplar High Street, the building of Arnhem Wharf Primary School and the financial support to many other institutes.
- 2) Social Services: London Docklands Development Corporation opened Access Centers aimed at connecting training providers and the unemployed citizens.
- 3) Health: contributing towards Island and Newby Place Health Centers and the Docklands Medical Centre.
- 4) Housing: By 1997, 4,000 new homes had been built on the Isle of Dogs of which 81% were for private ownership and 19% for rent. These housing projects were done through housing associations, or for shared ownership. (Feriotto, 2015)

Finally, another investment backed by the London Docklands Development Corporation was the construction of their own headquarters in the Canary Wharf area.

Regarding the planning strategy London Docklands Development Corporation, decided to avoid the formulation of a master plan for the area. The decision was based primarily on seizing the contextual opportunity that the market had provided. They felt, a master plan would take up too much time to prepare and that time should rather be devoted to taking advantage of market opportunities. By not having a masterplan, the project relied solely on market driven redevelopment.

However, even if there is no evidence of a masterplan itself, the London Docklands Development Corporation, did commit to the revision of exiting plans in order to articulate Canary Wharf into the city's long-term plan. For example, the project size and impact meant a significant design revisions of other metropolitan transportation projects like the first phase of the Limehouse Link (Home, 1990).

3.2 Bilbao – Abandoibarra

Bilbao, with a population of 347,278 by 2014, is the most populous city in the Basque Country, an autonomous community in the north of Spain (Bilbao Udala Ayuntamiento, 2015). It gained notoriety on the global context after a major urban regeneration project was completed at the beginning of the century.

Much like London and other port cities worldwide, changes in the shipping and manufacturing industries, provided for vast amounts of docklands and shoreline plots to become derelict. The case of Bilbao and the Ria Shoreline regeneration project, will be reviewed in this section. The results of this evaluation, will be included in the analysis section.

3.1.1 Context

Bilbao originated as a port city on the shores of La Ria del Nervion waterway as a link for all the Basque country in Spain and the ocean. During the latter half of the XIX century and the first part of the XX century, Bilbao reached its peak economic development stage as a key hub in Spain. Port activity, shipbuilding industry, iron exports and metal mills were the core of its economy throughout its history (Metropoli-30, 2015). Due to the importance of these industries, train lines for cargo and warehouses came to occupy the shoreline territories. Highly valuable plots of land were given to the most productive industries in securing economic productivity (Otaola, 2017). As the industry changed, so did the urban landscape in trying to accommodate the requirements of the new developments. In more recent years, highways and roads were built along train lines to improve cargo connectivity and increase port activity development. During the 70's, a deep economic crisis marked the beginning of industrial demise in Bilbao and the Ria shoreline turned into a collection of abandoned factories or underutilized warehouses. Unemployment rates came up to 35% in certain sectors of Bilbao Metropolitan Area and 8 important global conglomerates move out of the city: AHV, B&W, General Electric, Euskalduna, Westinghouse, Etxebarria, Sefanitro and Unquinesa- as a sign of economic stagnation (Metropoli-30, 2015).



Figure No. XX Industrial Bilbao. Circa 1978.

After a difficult decade, characterized by derelict plots of land and generalized poverty, the city urged for a change. According to Gomez (1998): *“Deindustrialization left in Bilbao, a picture of very high unemployment rates, huge swaths of derelict industrial areas, negative threatening images and generalized demoralization.”* By the end of the 80's, the city starts thinking on how to come back from decline. There was a generalized socio-political consensus that something needed to be done and a sense of urgency as the economy was going performing poorly (Otaola, 2017). In that process, the city comes to the conclusion that it is now turning its back on the Ria, their geographical asset that had initially brought prosperity to the city. This is when an integral rehabilitation plan for the Abandoibarra area was drafted with the purpose of placing Bilbao as an attractive urban setting for its citizens. The recovery

process started in 1992 and regenerated derelict brownfields along with a transportation and environmental plan (Bilbao Udala Ayuntamiento, 2015).

These interventions gave the city of Bilbao a new face in which the regeneration of shoreline brownfields turned into cultural assets for the city's competitiveness. This idea became internationally regarded as "The Bilbao Effect". Public acknowledgement, both locally and internationally (awards and press coverage), have validated the process and kept it looking forward. Nowadays, the best part of the Bilbao project is verifying citizen satisfaction and that it was possible because the common goal for all the stake holders -including the citizenship- was changing Bilbao (Otaola, 2017).

3.1.2 Actors Involved

The scenario for any urban project in Spain is filled with participation of different actors with intricate relationships and Bilbao is not the exception. The public sector in the Bilbao consists of a set of institutions such as the Basque government, the provincial government and the municipality, that don't interrelate. Furthermore, as described by Gomez (1998): *"All of them have perpetuated the traditional and visible Spanish divorce between policies which emphasize territorial approaches and those which target sector problems without paying attention to their physical dimension."*

As described by Otaola (2017), several target specific public yet non-government organizations were created to manage the development:

- 1) Water Consortium
- 2) Port Authority
- 3) Imebisa for the subway
- 4) Bilbao Ria 2000
- 5) Guggenheim consortium
- 6) Euskaiduna Jauregia for the Convention center

In addition to these task specific institutions, on May 9th, 1999 Bilbao Metropoli-30 was founded, as a public-private entity that should revitalize the city and not confined to any public entity but rather across them. Bilbao Metropoli-30 is a completely a-political entity (Metropoli-30, 2011). This entity included actors from all government levels, as show in the image below:

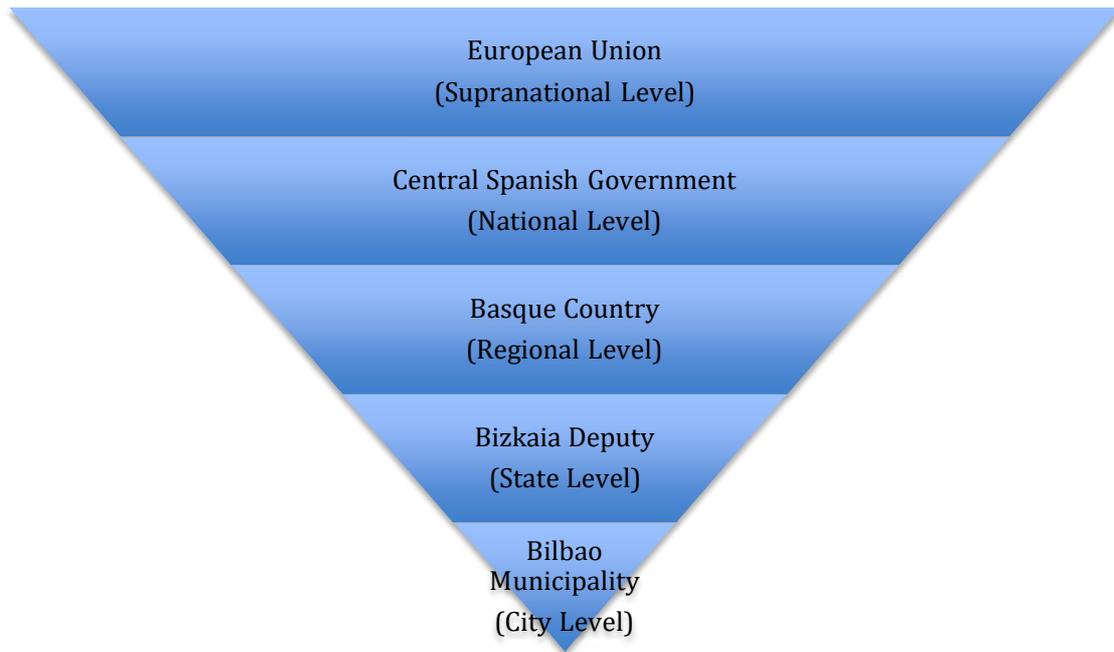


Figure No. XX Composition of the Public Actor Participation in Abandoibarra Project. Own material (2017).

In addition to the public sector, more than 130 private companies and institutions also adhered to the vision proposed. This strategic plan lacked statutory powers or capacity. Nonetheless, some of the recommendations regarding business plans and flagship projects have been taken into account by the public sector (Gomez, 1998).

3.1.3 The Project

The Abandoibarra Urban project was conceived as a major regeneration of close to 40 hectares of shoreline land. According to Otaola (2017):

“The whole transformation can be summarized as a game of points, lines and planes:

- Points: Guggenheim Museum, Airport and the other public buildings*
- Lines: Subway, Train lines for trams, turning old docks into walkways and the cleaning of the water way “La Ria”*
- Planes: New port, zoning plans and parks”*

In December 1992, national government and Basque country leaders, agreed to create Bilbao Ria 2000, an agency modeled after the British Urban Development Corporations. This agency was constituted to operate as a private a-political corporation. The funding for the agency comes from public resources. The main

function of Bilbao Ria 2000 was to put in practice urban renewal developments in the city (Gomez, 1998).

In the overall cost for the project, financing came from all levels of government, yet an important share came from self-financing. The initial source for the self-financing came from the land that had been transferred to Bilbao Ria 2000 agency for real estate development.

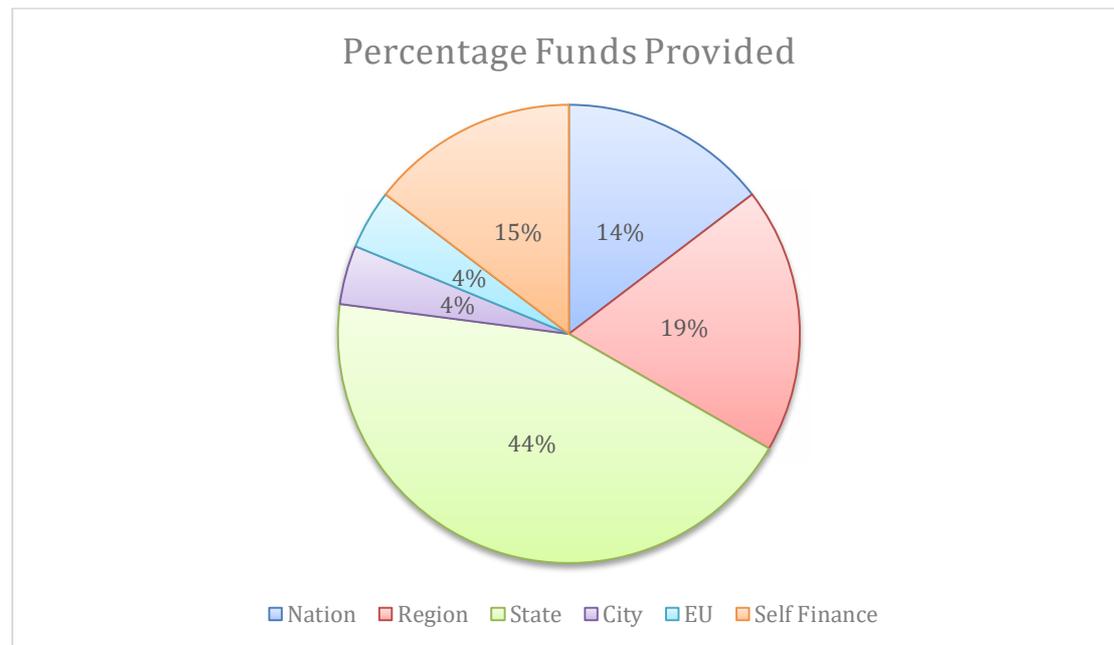


Figure No. XX Composition of the Public Actor Participation in Abandoibarra Project. Own material (2017).

Two of the major projects that were completed in order to put the whole plan in motion were the Guggenheim Museum and the Euskalduna Conference and Performing Arts Palace.

Many internationally acclaimed architects were invited to participate: Cesar Pelli's masterplan, Norman Foster's Metro Stations and Frank Ghery's museum, for example. Their involvement certainly gave the project notoriety.

Regarding the policy framework, the whole project was executed under a set of strategic actions that worked at the same time in most cases. As describe by Otaola (2017): "*The main strategic actions that fronted the transformation were:*

- 1) Ria Clean-Up plan 1984-2010 (environmental recovery of the water way)*
- 2) Port expansion (started in 1991; gave the city 100 new Ha for port activity).*
- 3) Subway (started 1988; first line 1995, second line 2002 and third line 2017)*
- 4) Bilbao Ria 2000 urban regeneration (old ports for new uses, no city expansion)*
- 5) Cultural tourism strategic plan"*

4. Analysis

Up to this point, this paper has offered literature review covering success factors for urban projects, brownfields and shoreline regeneration. It has also presented findings for two cases studies, Canary Wharf in London and Abandoibarra in Bilbao, and presented information on the context, its actors and the projects themselves.

It is important to highlight that urban regeneration will continue to be an important trend regarding densification efforts employed to halt sprawl. From this understanding, it is evident that the focus should be on the success for urban regeneration projects, as their failure clearly means moving back to uncontrolled land consumption as cities grow in area to makes space for growing populations. In this review for success factors we found the following to be the most recurring and critical:

- 1) Project Financing
- 2) Actor Participation
- 3) Leadership
- 4) Building Momentum
- 5) Long-term planning

On the second section of the literature review the paper focused on Brownfields as they constitute a very specific condition that is linked to the success of urban regeneration projects. Brownfields, as reviewed, represent a tremendous opportunity for urban regeneration, as they are usually large plots of unused land. However, these sites usually have additional considerations such as site clean-up, negative image and lack of connectivity to the rest of the urban setting. On the other hand, brownfield regeneration can pose an advantage as land prices may be lower than market value and investment on infrastructure is less.

The third section of the research reviewed another site specific condition that can have an impact on the outcome of an urban regeneration project: Shoreline Regeneration Projects. As evidenced with the literature review, a project proposed on or very close to the waterfront has additional challenges for success. Mainly, projects located in these sites, need to provide a very specific team of experts that can handle waterfront issues and a set of unique stakeholders need to participate in the process. However, the waterfront location can bring the geographical market advantage and the social capital of opening up an unreachable natural asses for the citizens.

In this part of the document, the focus will be on analyzing the case of Canary Wharf and Abandoibarra according to the findings on the literature review. The analysis will attempt to determine how the managing of private funding for project finance contributed to the success of the projects. Likewise, the goal is to determine if there was a city-wide actor participation framework and the leadership of a project champion. Finally, the paper will attempt to prove that

both case studies were benefited by a public-sector building momentum towards a long term goal.

4.1 The Case of Canary Wharf

Overall, Canary Wharf is considered a success case for Urban Regeneration in Brownfields on Shoreline Land. The fact that such a large tract of land was completely developed and turned from abandoned warehouses to sleek new buildings is a success itself. However, given the notion of sustainability implied in the definition of regeneration, we will focus on the factors that contributed to that regeneration.

By the 1980's however, London started consolidating itself a major global financial hub and a great number of foreign actors, such as overseas banks and financial services companies, which came to the city attracted by its new status as financial key player. As stated by Daniels and Bobe (1993): *"The invasion of the domestic City by overseas banking and financial services in the 1980s was rapid; the number of foreign banks and securities houses increased by 26% and 52%, respectively, between 1980 and 1989"*. This rise in new companies coming in or being founded, generated a demand for office spaces. The Docklands area and Canary Wharf in particular, became a prime opportunity to buy large areas of land unavailable in the City (as most of the market was in older buildings with high market value). Furthermore, these new open land, was available for more modern space configurations that could accommodate the new firms. The entire Canary Wharf development gained from this market timing opportunity that opened a market in the city of London for new office spaces.

The call for proposals from the private sector to develop Canary Wharf was made as early as the second half of the 1970's, yet the amount of funding was unattainable and the whole initiative is riddled with skepticism. After several failed attempts and very low impact interventions, central government quickly understood, that the first move needed to come from the public sector. Also, the inability of the local authorities to address the severe deprivation occurring within the Dockland boroughs caused Central government to take action. The national government played a key role in the development of Canary Wharf as it not only provided funds for the project, but also took on the leadership as a project champion. The main strategy for this, was the creation of a project specific agency that would be in charge and gather all the actors. However, one of the major challenges faced by the London Docklands Development Corporation was that it was not a strategic plan making authority, (still the responsibility of the boroughs and the Greater London Council). Furthermore, the boroughs and the Greater London Council, were responsible for the development of housing, education and health issues of the local residents (Beswick, 2002).

Despite the strong leading role, government focused on involving other government agencies, private sector actors and the community in general, through initiative like the Canary Wharf Group and the London Development

Partnership. Local authorities for the affected boroughs did had different roles for their participation and influence in the regeneration process, but they have always been present. As described by Beswick (2002): *“Towards the end of the 1990’s it became apparent that in order for a regeneration project to succeed and sustain itself over time, community residents and local authorities had to be involved on an equal level during the planning, consultation, and implementation phases.”* The appearance of a strong leadership from the London Docklands Development Corporation, as project champion, was decisive for the success of the regeneration of the area.

Besides, the strategies mentioned before, it was important for the London Docklands Development Corporation to get support from the community in general. In this regard, their strategy lay in providing a new vision for the area, that would benefit the entire city. As described by Home (1990): *“The LDDC’s marketing for the Isle of Dogs emphasized the environmental attractions of water, with photographs of wind surfers...”* Even if this type of marketing strategies were sometime cheesy and typical, the goal was to provide information to the community. The project, besides the real estate business opportunity, was working to improve the environment of the Isle of Dogs and in particular to provide access to the waterside for an entire portion of the city. It was crucial for the project, given its mega scale, that besides getting support from those actors directly involved, it had to secure backing from the large portion of the city in general. The massive scale of the project would suppose a city wide impact and the project leadership was quick in capitalizing from the advantages of the regeneration for the rest of the citizens in general.

Also, getting the interest of the private sector was crucial. As authorities clearly perceived, the regeneration of such a large tract of land, outside of the city center, was a daunting task. Only until 1986, when a series of deregulatory measures were implemented (in addition to the previously described office space shortage in central London), brought the interest for large developments (Home, 1990). These benefits for the Enterprise Zone (relief from business, full percentage capital allowance and rates looser planning regulations) made the project interesting for private investment. These incentives and the new offices space demand, make it evident that private capital in development was an attractive proposition. (Daniels & Bobe, 1993). The Enterprise Zone was an experiment in deregulation, proposed by the government in the late 1980’s, as a strategy to attract private sector investment for development in these dockland brownfields. Developer’s interest spiked, given they had less complicated regulation and clean slate land at low prices. As described by Home (1990): *“The Isle of Dogs Enterprise Zone had been proclaimed as one of the main successes of the deregulatory approach to inner city regeneration in the 1980s”.*

As mentioned before, one of the factors that contribute to the success of an urban regeneration project is sparking the investment of the private sector. The incentives described previously clearly made it interesting for the private sector to provide funding for the project, as they created a more amicable investing environment, but additional action needed to take place in generating

momentum for investment. When public investments were eventually made, private investments followed. The idea was to generate confidence in the private sector by showing the commitment of public funds. As part of this strategy to generate confidence in the private sector and build investment momentum for the project and the support of the office space construction in Canary Wharf, the London Docklands Development Corporation decided to get directly involved. As explained by Feriotta (2015): *"The breakthrough for this area began in 1981 with the advent of the LDDC, which played a leading role for the regeneration of the district: it decided to base its headquarters in this area and radically transform the Isle of Dogs."*

As mentioned before, one of the major challenges for Canary Wharf, was to get the interest of the private sector developers. This in itself was a struggle as the areas was very deteriorated and away from the city center and the traditional business district. In this sense, the project had two immediate priorities, the first was to make the land attractive for investors and the second was to make the area interesting and amicable. The promoters and the London Docklands Development Corporation, made an effort in remediating the land and providing basic utilities, such as gas, electricity, sewage, and roads. This strategy made the land to be saleable to private developers. The second immediate challenge needed to change people's perceptions of the 'East End'. This required the creation of a unique and individual identity for the sector, based upon the historical past, architectural significance, and location of the Docklands (Beswick, 2002).

One of the main strategies was focusing on the connectivity issue. As described by Daniels and Bobe (1993): *"...for the development to proceed the government would have to act to improve the local infrastructure."* In doing so, the project leadership tackled one of the main criticisms for the project location and at the same time showed commitment from the public sector towards the project. In this sense, the project leadership carried out three major projects: the Docklands Highway, the light rail extension and the Jubilee Metro line. Filling the project with tenants and residents requires the image of inaccessibility to be dispelled earlier.

Finally, there was a great risk for the regeneration project in not having a long term planning strategy, but the upside was launching the project successfully and having the long term goal for the development. In addition to the timing issue and seizing the opportunity, this strategy had an additional benefit, as it demonstrated confidence in the private sector. As described by Beswick (2002): *"Such tactics would reinforce and solidify the confidence of the private sector, the public and the Government. For instance, the Isle of Dogs design guidelines that were produced in 1982, illustrate the flexible attitude the LDDC had towards developments."* Overall, it can be considered that even if the strategy is not a long term master plan, there needs to be a game plan. In the case of Canary Wharf, the long term goal was to have market oriented development. Therefore, the rest of the work plan was geared toward this objective.

4.2 The Case of Abandoibarra

Culture became the new economic focus and the face for the transformation. Culture can attract visitors, especially from more affluent classes, who stay only a short while and make few demands on public services. It taps into an expanding sector, linked to the leisure economy.

Milestone accomplishments like the Guggenheim Museum and the Euskalduna Convention Center gave the entire project credibility.

According to Gomez (1998): *“These projects serve to advertise the commitment of the city to provide a new, attractive, innovative and entrepreneurial environment for business and thus help to attract footloose capital”.*

Over all the project was not conceived as a transformation for a specific event, like Barcelona for the Olympics or Seville for the world Expo, so it didn't have a specific finalization date. This gave it an “ongoing” quality that made it possible for the entire citizenship to participate. In that sense, the development of the project responded more to consensus and coordination of a strategic public-private plan than to old-school planning (Otaola, 2017).

4.3 Framework

As we consider the previous analysis, we can see evidence of some commonalities present in two of the most recognizably successful waterfront brownfield urban regeneration projects in the global context. However, the main challenge in an urban regeneration project is balancing the interests of the different actors. In order to do so, there needs to be an understanding of how the critical success factors contributed to the overall process. In this sense, and considering the underlying certainty that governance is at the core of any urban phenomenon, this document proposes a framework in which the critical success factors extracted from the literature and verified in the case studies are reviewed under the lens of how it relates to the key actors common to every context: public sector, private sector and citizenship.

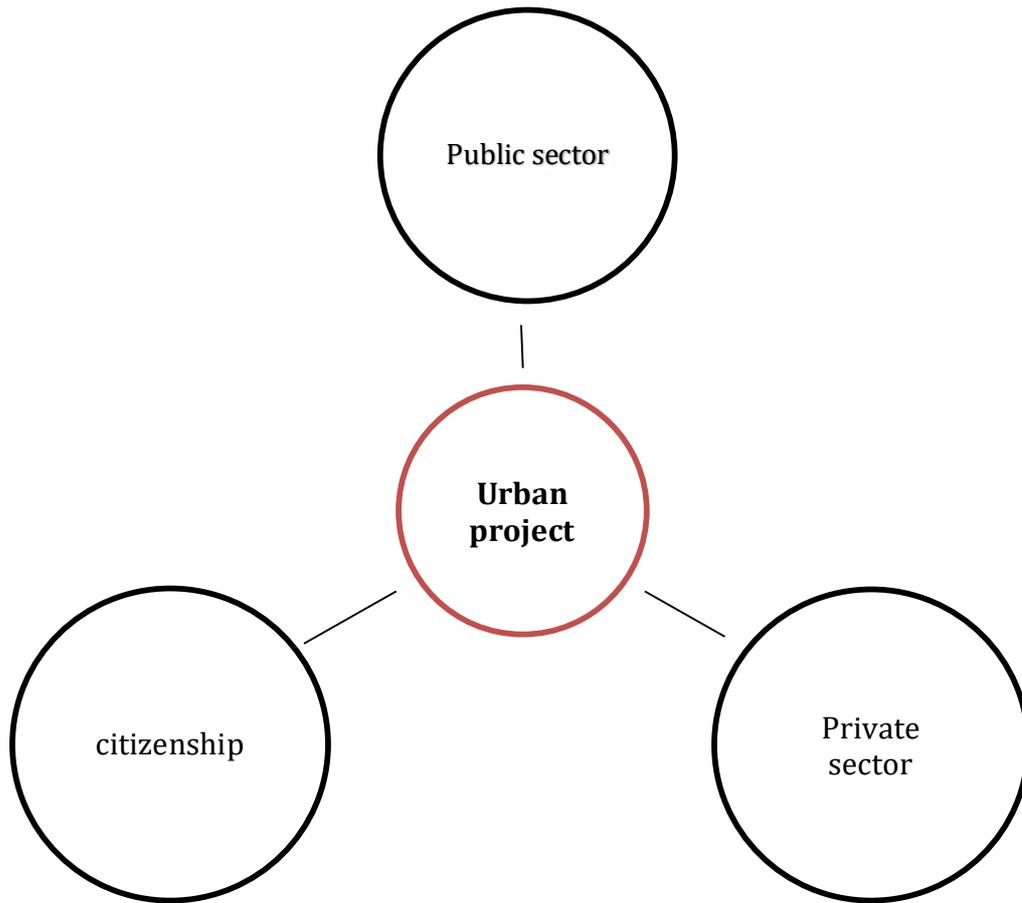


Figure No. XX Diagram illustrating urban regeneration actors in perfect balance.

The balance between citizens, private business sector and government, can easily turn into a vicious cycle, harming the outcome of an urban regeneration project, if there is a selfish pull generated by at least one of the three parties. In the case of the public sector, if the only pull is towards its own political agenda, there will be an imbalance of the actor interests, and the cycle will begin. If the only interest for the public sector is financial gain, then the benefits of the project will shift towards the private sector, leaving the interests of the citizenship in last place, harming the project as people might not support the initiative. If on the other hand, the main interest of the public sector is political credit, then the cycle will turn towards the citizens first, posing a great risk for the project because the private sector is not considered and may not back the initiative.

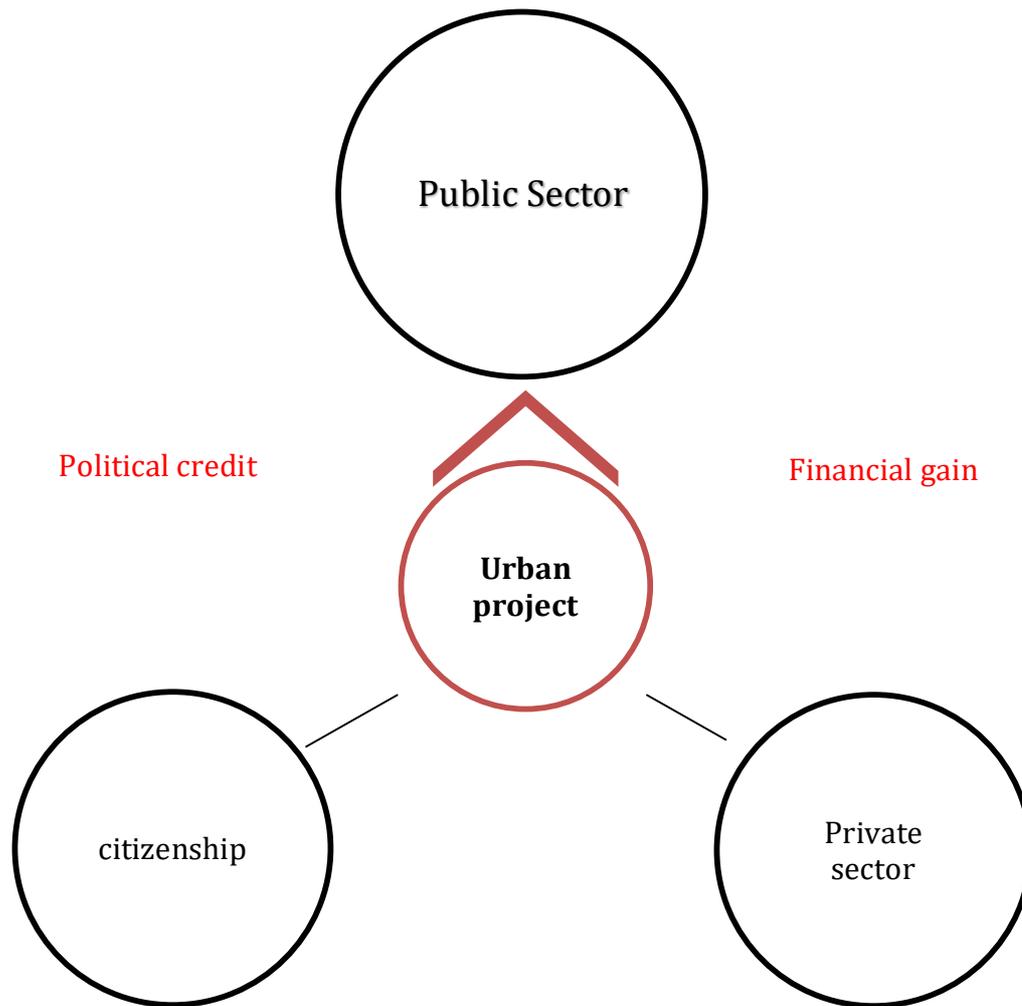


Figure No. XX Diagram illustrating urban regeneration actors with interests shifting towards the Public sector.

Also, under this framework, if the main interest for the urban regeneration project is the selfish pull of the private sector, then the benefits will shift that way and cycle will begin accordingly. If the main interest of the private sector is financial benefit from state funding, then the cycle will turn towards the government first, leaving the citizens in last place with no guarantee of any consideration of their well-being. On the other hand, if the main interest from the private sector is more business in general with the citizenship as a client (selling more real-estate for example), then the cycle will turn the other way and the urban project will be at risk as public sector backing might not be secured.

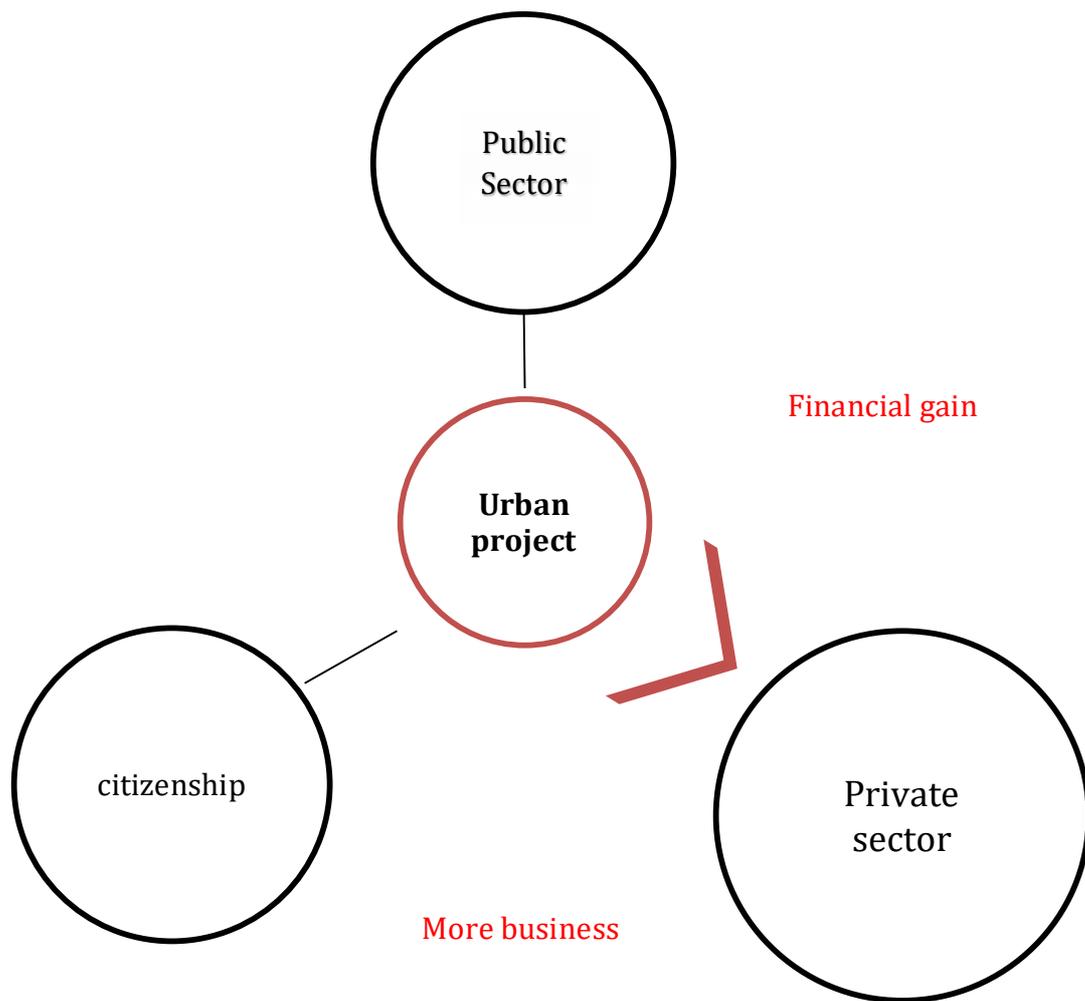


Figure No. XX Diagram illustrating urban regeneration actors with interests shifting towards the Private sector.

Finally, under this framework, if the main driver for the project is the selfish pull of the citizenship, then as in the previous scenarios, the benefits will shift that way and the vicious cycle will turn as per their interests. If the main interest of the citizenship is more business, then the motion will be towards the private sector, as they will demand it from the investors. If this happens, then the public sector is left in last place and the project might lack the support from government. On the other hand, if the main interest is bestowing political credit (votes in exchange for special legislation on a specific area for example) then the cycle will move towards the government and leave the private sector in last place.

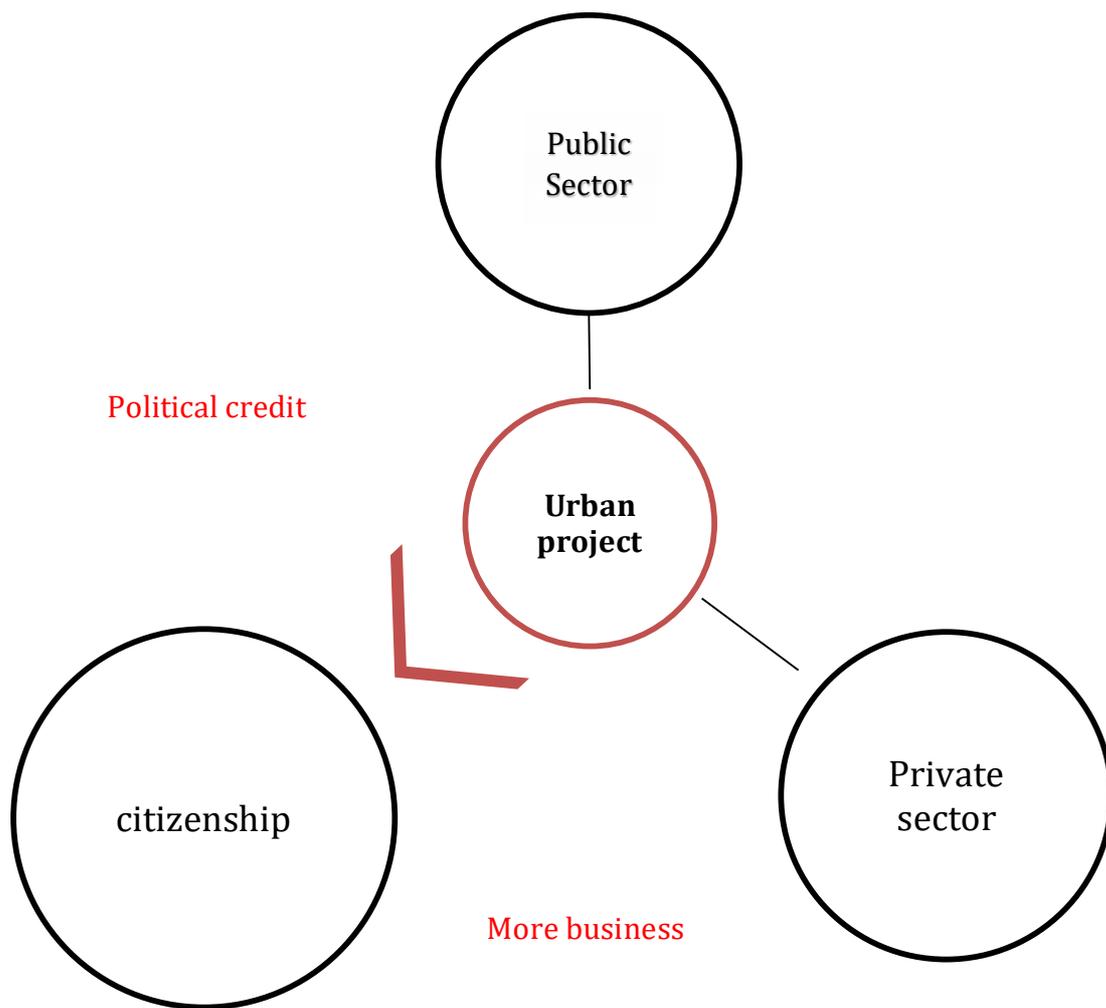


Figure No. XX Diagram illustrating urban regeneration actors with interests shifting towards the citizenship sector.

The benefit imbalance and the vicious cycle being set in motion by the selfish pull of one of the three parties jeopardizes the success of the project in general. In any the three scenarios, where one of the actors exerts a selfish pull that is sufficiently strong, then the project might fail altogether. For example, an urban regeneration project can be put in jeopardy because the pull from the government is too strong. As a government focuses blindly on getting the project done at whatever costs, the end result, might be a failed project that serves little purpose for the citizenship and is financially unsustainable for the private sector.

4.4 Assessment Analysis

From the previous framework, we can now proceed to determine, from the critical success factors identified in the literature review of the second section of this document, what role did they play in balancing the interests of actors, for the two large scale waterfront brownfield urban regeneration projects, Canary Wharf in London and Abandoibarra in Bilbao, From the previous analysis for each case study, we can determine some commonalities amongst the two and can therefore consider them as specific success factors for large scale waterfront brownfield urban regeneration projects. The following five critical success factors are proposed:

4.3.1 Attracting Private Funding

As evidenced in the initial literature review, securing project finance was an obvious key element. However, the way on how to secure these funds is not so clear. Many times, the public sector lacks sufficient funding to carry the entire weight of massive undertakings such as large scale waterfront brownfield urban regeneration projects. In addition to the scale of these projects, they have specific complexities, such as site clean-up, connectivity deficiency and waterfront challenges, that render the endeavor even more unattainable. As it was manifested after the analysis of the two case studies, these type of projects that require a tremendous amount of investment, need to rely on the private sector. In a typical scenario for these situations, where governments lack the funding, the focus needs to shift towards the private investment coming from developers.

Depending on private sector funding is a great risk for the project as there is no guarantee that the funds will come. In this sense, actions need to take place in order to spark the interest of the private sector. As it was evidenced from the case studies, a set of incentives is usually the first step. However, these incentives need to focus on the financial return on figures and allow for optimal investment conditions.

However, a set of incentives, greatly needed, is hardly enough. Other strategies need to be implemented in order to get the attentions of private developers. As we saw from the two case studies, showing commitment by the public sector in investing funds, was key generating the trust of private investors. The fact that public funds, even if they were not the major source for financing the project, demonstrated commitment towards the projected outcome.

4.3.2 City-Wide Support

For large scale waterfront brownfield urban regeneration projects, securing a city-wide support is fundamental for success. Regardless of the specific area of the urban context in which the project is set, the impact of it, given the scale of the intervention, makes it a concern for the entire population. In addition to the

scale of the interventions, large scale brownfields are ultimately unpopulated as they have been rendered derelict by abandonment and deterioration. This lack of community implies that new inhabitants and users for the project need to be attracted. In this process of rendering the newly regenerated area attractive, needs to speak to the entire population, relying on a city wide collective vision that includes the project.

In most failed large scale waterfront brownfield urban regeneration projects, citizen responsiveness is a missing element as decision makers oversee the city itself as the surrounding community. It is unlikely for a great urban project to be successful if the entire city doesn't take part in it. Both case studies reviewed capitalized on the fact that the project restored access to the waterfront in a democratic fashion. This was a strong argument in securing the support of the entire citizenship, as people backed the idea of opening up the previously inaccessible waterfront.

Furthermore, these type of projects present an opportunity for citizens to create a new ideal for their city. The uninhabited and unused brownfield is an opportunity for cities to secure a better version of their urban context in a clean canvas. In this sense, the projects are presented accordingly to various stakeholders under a different scope, given the intervention covers many aspects of city life. In the case of Canary Wharf, the new development remediated the landscape and provided democratic access to the waterfront. Also, the new project provided an ideal opportunity for new banks and companies coming to London, as they could have modern, open plan buildings to better suit their needs as opposed to old construction in the existing financial center. In Abandoibarra, the project provided new cultural spaces for locals and tourists to enjoy. At the same time, these new attractive spaces would serve as a catalyst for the development of an orange industry, providing job creation, international notoriety for tourism, economic spur of new segments and waterfront recovery.

4.3.3 Project-Specific Development Agency Leadership

To overcome the challenges associated with such complex interventions, large scale waterfront brownfield urban regeneration projects need strong leadership. The complexity of these type of projects, that involve sparking economies, remediating environmental setting, dealing with shoreline challenges, just to mention a few, calls for a leader that can harness the support and cooperation of all sectors in an urban context.

However, strong the leadership is, it is not enough. The leader needs to be able to operate with a large degree of autonomy given the overwhelming number of actors involved. The leader for these types of projects, need to be able to take action and move things forward proactively. In the overly complex governance structure that operates for such projects, the leader has to be able to keep all parties satisfied but assuming risks in order to get things done.

Finally, even if leadership can come from many places, it can be evidenced from the case studies, that project specific development agencies, run by technical elites or linked to sections of the business community, make for great champions. This a-political agency, created for the sole purpose of getting the project done, brings transparency and credibility to the intervention. This project champions, usually, can get a clearer message through as the city is not concentrated on possible ulterior motives. In the case of Canary Wharf it was the London Docklands Development Corporation, that was born in central government but could operate on its own and was able to gather all other actors. In the case of Abandoibarra, Bilbao Ria 2000, a project specific team of technicians that worked on it independently and acted as project champion.

4.3.4 Public Sector Momentum Building

As it is easily recognizable, large scale waterfront brownfield urban regeneration projects require a long time. Not only is the planning process lengthy, but also the design phase and overall construction takes time. In this time spanning scenario, government can change, economies can shift and societies can morph. This variables are uncontrollable by the project itself, therefore it is imperative that the intervention remains active and valuable. This continuity of the importance of the project, is critical for success, as most of the times, projects enter a perpetual state of pause. Cities, specially in developing countries, need to keep investors interested as can easily loose trust on changing governments. Growing or aging populations might lose interest in the project if it is not considered current. Politicians can cut support if the endeavor is not moving forward.

The key to maintaining the status of the project as current and important or all sector of the city, is building momentum. In most successful large scale waterfront brownfield urban regeneration projects, there is always milestone or turning point and it is related to the completion of a flagship project by the public sector. This initial success, brings credibility to the whole intervention and grabs the attention of the entire city. Most of these types of projects need initial individual projects that will make people believe the large-scale intervention is possible. This initial interventions become a beacon of what the future brings and proof that is possible.

Also, successful urban regeneration projects keep the quick wins coming as they present to the community tangible milestones that keep the interest and generate credibility on the whole renovation intervention. This intermediate steps, are taken on by the public sector as they represent a small fraction of the total investment for the project, but become significant successes of the whole intervention. Most of these milestones are associated with rendering the area more attractive and solving urban issues such as connectivity, environmental remedial and waterfront solutions. By providing new transportation, providing site and water cleanup and creating access and recreational spaces on the waterfront, public sector will secure the continuity of the project by keeping it interesting for the city.

4.3.5 Long-term Goal – Short-term Strategies

Even if it may appear counterintuitive, having a long-term goals do not translate exclusively into creating a long-term plan. As we saw in the case of the two projects reviewed, a set of strategies short term were put in motion in order to reach the final objective. In recent scenarios, there has been doubt regarding the over planification of some projects. As it turns out, urban planning has become a business in recent years and specialists from all over the world attempt to provide some advice on major projects.

In the case of Canary Wharf and Abandoibarra, we saw that this was not the case. For Canary Wharf, project leadership decided not to have a long term plan, in order to jump start the project. Furthermore, this lack of a Master Plan, became a symbol for the confidence in the private sector and market regulated development. It is worth mentioning that even if there was no long term plan, the goal of the project was never lost. Canary Wharf was always conceived as an alternative solution in providing office space for a growing market. With this in mind, a set of short term strategies were set in motion, all of them conceived in order to help the development. Transportation solutions, market deregulation and integration to existing masterplans were all executed.

In the case for Bilbao we saw how a project specific agency, worked alongside with four other institutions in order to articulate the entire development. In that sense, the development of the project responded more to consensus and coordination of a strategic public-private plan than to old-school planning.

6. The Case of Barranquilla

Due to its geographical location, next to the delta of the Magdalena River, on the Caribbean Sea, and the thriving port activity, Barranquilla is one of the main cities in Colombia. Barranquilla and its economic development have always been tied to the Magdalena river. This intimate relationship betwixt the two is especially manifest in the fact that around 1880, the first river port in the country was established in Barranquilla's Magdalena riverbed and consequentially socio-economic indicators for the city and its growth skyrocketed. By 1905, the city was already ranked second in the country, regarding population growth and by 1959 the first free trade zone in Colombia was established in the riverbed and gave Barranquilla its economic core business. The Magdalena river, given its economic, social and cultural importance, gave, and continues to give, Barranquilla its relevance in the national landscape.

5.1 Context

For decades, the city's development gave its back to the river and limited the relationship it had with the citizens. As in many other parts of the world, the city developed according to its economic interests and gave the riverbed lands to the most important and productive industries. Therefore, metal, chemical and manufacturing production plants and warehouses established on large plots of land next to the river and its canals, given they benefited from this location to spark growth and trade using the natural waterway as a cheap transportation alternative. This phenomenon lead to the fact that most of the people in Barranquilla, understood the economy needed the river, but did not perceive it as part of city life or had any contact with it.



Figure No. XX Large plots of unused land framed on the Magdalena river waterfront.

As it happened in London, Bilbao and many other cities worldwide, globalization and changes in the shipping industry left a collection of obsolete buildings. Slowly, these large plots of land on the riverbed area, became brownfields. These unused backyards for perishing factories and manufacturing plants blocked the access to the river. Simultaneously, urban sprawl started consuming cheap available land that was located on plots previously dedicated to rural activity on the outskirts of the city. This enlargement of city surface, as in many other places in the world led to other, newer problems including transportation chaos, public utilities deficiency and lack of public spaces for citizens.

However, the regeneration of 430 hectares of brownfield waterfront land contained between the river basin, the main artery Via 40, is a very complex process which needs careful attention. In the following section, an assessment, given the proposed framework, will be provided.



Figure No. XX Aerial image showing the area to be developed along with the Magdalena River Project.

5.2 Assessment of the Magdalena Riverfront Regeneration

A few years ago, in the city's collective mind, the Magdalena river was not part of urban life. In fact, some people, grew up without even seeing the river. Very restricted views, from tall buildings far away and the bridge crossing the river, were the only contact point that existed between the people and the Magdalena. Fortunately, in Barranquilla, we have witnessed how some of the key elements exposed before, have brought the city the possibility of starting this massive undertaking that capitalizes on the social benefit of opening up the water front for everyone. This is certainly a driver that will bring support from a collective stand point. However, there is still much work to be done on this front. If the entire city does not get behind the idea of facing the river and building a new model for the city in the shoreline, then all the infrastructure that is being built will only remain as a good idea. In order for the successful renewal of 430 hectares of land, every sector of the community needs to participate, especially future generations that will work, live and play in these spaces.

A few projects that have been constructed along the proposed vision have enabled citizens to see what the future might be and they have responded. In Barranquilla, the restored city finances and strong leadership have enabled the completion of an initial flagship projects for the river renovation project. In 2016, the new Expo and Convention Center was completed in a plot of land on the riverbank that was previously occupied by a factory. The construction of this building gives credibility to the whole project and is a testimony of the foreseeable future. Also in 2016, city hall, announced that it was moving its offices to a new building as part of an urban development project called La Loma, that is located on the Magdalena basin, and it is currently under construction. Additionally, other projects like the restoration of a colonial customs building and the new bridge that crosses the river and connects the city to other parts of the country, are slowly becoming symbols of this new idea of embracing the river in city life. Additionally, and perhaps the most important intervention and the crown jewel of these transformative projects is the Magdalena River Park, that spans for 4.5km along the basin. This project, currently under construction, opens the city to the water and connects the area where factories used to be to the natural landscape. These initiatives, clearly show the commitment of the local government has in bringing the city closer to the river.

Recent public administrations sparked the conversation and a new land use policy, or POT for its acronym in Spanish (Plan de Ordenamiento Territorial), was drafted and adopted on 2014. This new plan, includes a major component in avoiding urban sprawl by identifying that there are still areas in the city core that have not yet been fully developed. Therefore, the land close to the river where factories used to operate, presented itself as a unique opportunity. The POT, proposes projects and new infrastructure on the river basin that will generated economic development in the entire area. The main strategy is simple: 1) change land use and ban new industries from the riverbed area, 2) generate incentives for the remaining factories to move elsewhere and 3) allow mixed used building projects. The goal is to replace the once bustling industrial economy with a tertiary and orange one. These new area of the city will provide

space for new economies. Nonetheless, it must be clarified that even if the urban plan is very clear, there is still a specific strategy missing for economic development of these new productive sectors.

However, despite these efforts from the public sector, private developments have not yet started. In general, there has not been a comprehensive incentive plan announced by the local administration regarding new developments. Also, some of the brownfields have serious environmental issues and remediation costs will be unattainable without a financial stimulus. Finally, land prices, as most of the plots (not all) are privately owned, are starting to suffer from real estate speculation, so the guarantee of cheap available land is missing for private developers.

Also, another concern for the project is the fact that there is no project specific champion. It should be mentioned that the current mayor has the highest approval rate in the history of our country (95%) and that his popularity and leadership are unquestionable. However, as seen in the case studies, leadership needs a project specific champion. Even the local administration has organized a task force that works under a development agency, the team is not entirely devoted to the regeneration project for the Magdalena Riverfront. It could be said, that such a massive undertaking needs the creation of a development agency that can act autonomously on the project specific details. Furthermore, some funding of this agency can come from self-financing if some of the publicly owned plots were transferred for their development.

6. Conclusion

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