

Business models for the implementation and management of urban parks

Edoardo Croci (scientific supervisor)
Benedetta Lucchitta
Francesca Procaccioli



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1 Urban parks

Urban nature holds profound implications for social, economic and environmental dimensions of sustainability, through the generation of a variety of ecosystem services (ES) related to provisioning, regulating and cultural categories (Haines-Young and Potschin, 2018), so contributing directly (e.g. food production, etc.) or indirectly (e.g. pollination) to human well-being (Dasgupta, 2021). Several authors analyzed ES generated by nature in cities. The most relevant ES generated cover CO₂ sequestration and storage, regulation of urban temperature and the decrease of the urban heat island effect, air quality improvement, decrease of extreme weather events and the reduction of buildings energy demand (Novak and Crane, 2013; Barò et al., 2014; Costanza et al., 2014; Almenar et al., 2021; Croci and Lucchitta, 2021; Lwasa et al., 2022). Additionally, it must be considered the pivotal role of nature regarding physical and mental health, social cohesion, community engagement and cultural exchange (Wolf, 2004; Kabish et al., 2016; Raymond et al., 2017; EC, 2020; Rojas, 2022). The provision of ES varies across different ecosystems, contingent upon their characteristics and overall health status (La Notte, 2023). In this context, different Nature-based Solutions (NBS) provide a rich variety of ES in cities, depending on their scale, characteristics, and state. NBS are defined as “actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits” (UNEA-5, 2022). Urban NBS include different typologies, such as green roofs and walls, urban forests, sustainable urban drainage systems, urban wetlands, etc. These solutions generate significant benefits, which can be associated to economic values. (Croci and Lucchitta, 2021) In particular, parks provide the highest value among NBS in cities (Crocinovis, 2021; Bockarjova et al., 2022). Urban parks are defined as public or private open green spaces primarily designed for recreational purposes and strategically placed within the city boundaries and accessible to all citizens and city users. Public parks were originally designed to replicate private domestic gardens, providing citizens with recreational and natural spots. They are characterized by lush vegetation, water features, recreational and sports facilities, playgrounds, and entertainment venues serving as zones for relaxation, socialization, and outdoor activities (Wolf, 2004; Rabare et al. 2012). Moreover, if well planned and maintained, they can increase biodiversity ensuring vegetal species richness and at the same time providing habitats for animals (Nielsen et al., 2014; Threlfall et al., 2016). Parks have been recognized also as a pivotal resource for climate change mitigation and adaptation thanks to their capacity to sequester and store CO₂, regulate temperature, improve air quality and ensure water filtration during rain events (Emilsson and Ode Sang 2017; IPCC, 2022). Finally, it is necessary to highlight also their important contribution to local economy, job creation and to city attractiveness (Wilson and Xiao, 2023; Rad and Alimohammadi, 2024).

Based on the economic classification of goods (Ostrom and Ostrom, 1979; Oakland, 1987), urban parks often show characteristics of public goods or common pool resources and therefore their (under)supply represents a market failure due to the absence of a price mechanism to guarantee an optimal level of their production and allocation (Wolf, 2004). So, historically, park implementation and management have been an issue of public finance, but in the context of decreasing public budgets, multi-stakeholder involvement becomes a key option (EEA, 2021; Mayor et al., 2021; Croci and Lucchitta, 2022). To facilitate this process, it is crucial to design and adopt business models (BM) that can address the complex needs of both private and public stakeholders, providing a clear and accessible framework that fosters cooperation and at the same time allows sharing resources, expertise, and responsibilities, with the goal to maximize social value (Timeus, Vinaixa, & Pardo-Bosch, 2020).

In this paper BM archetypes for urban parks implementation and management will be identified. The spectrum of BMs applied to urban park implementation and management will be analyzed through the review of relevant international case studies. The paper consists of 6 main sections. Following the introductory section (Section 1), Section 2 delves into the definition of BM for urban park implementation and management. Section 3 describes the methodology, while sections 4 and 5 are dedicated to analyzing and systematizing case studies

and identifying archetypes of BM for urban parks implementation and management. Finally, section 6 draws conclusions.

2 Business models for urban parks

The paper analyzes BM for both implementation and management of urban parks. Parks implementation refers to the period during which the planned design and development activities are put into action to transform conceptual ideas into physical reality. Implementation involves a series of steps and activities aimed at constructing, installing, and establishing the various elements and features of the park according to the approved design and specifications (EEA, 2021). Parks management begins once the park has been constructed and officially opened to the public. Management encompasses ongoing activities and processes aimed at ensuring the efficient operation, maintenance, and stewardship of the park to meet the needs of visitors, preserve natural resources, and sustain its value as a community asset (Neal, 2013).

The concept of the BM has undergone a notable evolution, shifting from a conventional, firm-centric outlook to a more expansive understanding that considers the interconnected nature of activities transcending organizational boundaries (Zott and Amit, 2010; Attanasio et al., 2021). Traditionally, businesses viewed BM as a tool to articulate the logic of value proposition, value creation, delivery and capture within their organizational boundaries (Attanasio et al., 2021). The concept of value has evolved until the theorization by Porter of “creating shared value” meaning the capacity to generate benefits for different stakeholders and so to create social value (Chang, 2020). Recently, literature on BMs has expanded taking sustainability into consideration (Stubbs and Cocklin, 2008; OECD, 2013), aiming at reducing negative externalities and/or creating positive effects on the natural environment and society (Schaltegger, 2016), and so maximizing social value (Gauthier and Gilomen, 2016; Caldera et al., 2018; Chang, 2020; EEA, 2021). Sustainable BMs are applied to different sectors and over different dimensions among which the urban one is gaining popularity (Timeus et al., 2020).

The core of BMs for the implementation of urban parks lies in broadening the concept of value proposition and redefining the items of value delivery and value capture. Value proposition entails delineating the value intended for citizens, city users, local government, and other stakeholders, as well as specifying the needs the park seeks to address and fulfil (McQuaid & Nua, 2019). Value delivery refers to the generation of social, environmental, and economic advantages via activities, channels and partners. Value capture is about considering how to earn revenues from the provision of goods, services or information to users and customers (Croci and Lucchitta, 2022). Furthermore, they are characterized by the engagement of multiple stakeholders who interact in different forms of governance and which are recognized for their capacity to generate shared and enduring value (Mayor et al., 2023). Based on stakeholders’ motivation and the role they cover, collaboration between public and private stakeholders can take various forms aimed at maximizing park’s economic potential while safeguarding its ecological and social integrity (Walls, 2014). The motivations of public stakeholders for participating in BMs revolve around promoting public welfare, environmental conservation, and sustainable development within the park (Collomb, 2015). On the other hand, private stakeholders, prioritize economic interests, reputational aspects, and leveraging park resources for commercial activities (Walls, 2014). Finally, in the long run one of the core objectives of sustainable BM is financial sustainability (Chang, 2020). To ensure financial sustainability it is necessary to identify suitable financing instrument for both implementation and management of urban parks facilitating investment repayment that can be provided by either public or private entities. Based on the financing mechanism adopted to implement and maintain a public park involved stakeholders and the reason of their involvement change modifying the entire structure of the BM. It is therefore evident that the typology of financing instruments plays a crucial role in shaping the BM structure, as it influences capital structure and the allocation of value between stakeholders (Rocca, 2007).

3 Methodology

Methodology is articulated in the following steps: i) definition of an assessment framework to evaluate the peculiarities and characteristics of BM for urban parks adopted in different contexts; ii) selection of relevant case studies of implementation and management of urban parks; iii) application of the assessment framework to the selected case studies to identify key relations; iv) identification of BM archetypes.

The assessment framework has been defined through a review of the literature that has been undertaken through the following queries: ("public park" OR "green area" OR "public green space" OR NBS") AND ("business model" OR "governance model" OR "financing" OR "funding" OR "implementation" OR "management") and utilizing three databases—Scopus, Google Scholar, and Google Search. A total of 718 documents (comprising scientific and grey literature) were retrieved through responsive queries. Initially, the title and abstract served as selection criteria, resulting in the identification of 89 documents for further scrutiny, with subsequent refinement leading to the selection of 33 articles (Table 1). Employing the snowball technique, an additional 35 papers were incorporated. In sum, 89 papers are deliberated upon for the literature review and subsequent selection of case studies.

Queries	Database	Total	Read	Picked
("public park" OR "green area" OR "public green space" OR NBS") AND ("business model" OR "governance model" OR "financing" OR "funding" OR "implementation" OR "management")	Scholar	397	27	9
	Scopus	238	35	16
	Google search	83	27	8
Total		718	89	33

Table 1: Literature review analysis – research queries and results

The evaluation framework is established upon the BM canvas, consisting of nine components, (Figure 1).

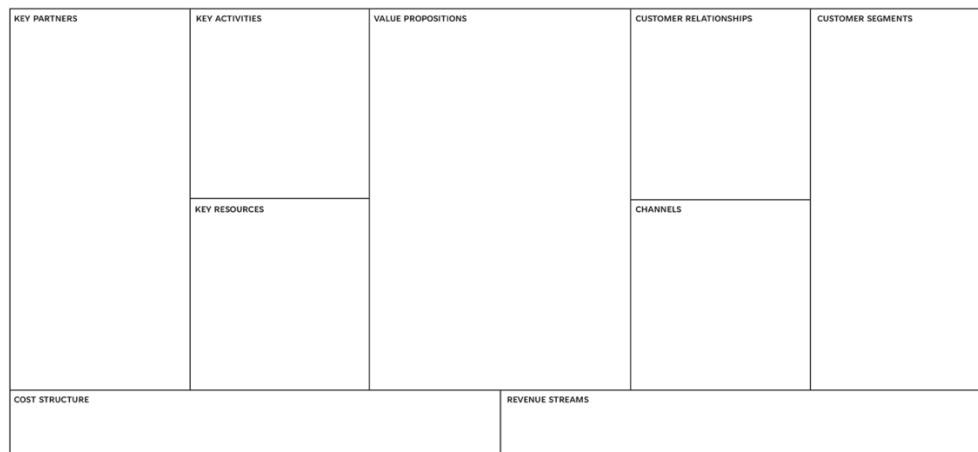


Figure 1 :Business models canvas

At its center, the value proposition serves to explicate the value extended by a company to clients. On the right side, customer segments, their needs and behavioral patterns are identified. Channels delineate the modalities through which value is imparted to these segments, encompassing sales, marketing, and distribution channels. Customer relationships indicate interactions with clients, with a focus on acquisition, retention, and satisfaction. On the right side, key partners, resources and activities are considered. Key partners identify the external entities involved in BM application. Key resources are the assets required to deliver the value proposition to the customer segments. These can include physical resources, intellectual resources, human resources, and financial resources. Key activities encompass all the operational activities and processes that are necessary for the business to function and create value. At the bottom, cost and revenue streams are assessed. The cost structure encapsulates all incurred expenses for capital investments and operations. Lastly, revenue streams elucidate the sources of income, whether from product sales, or alternative avenues.

Elements included in the canvas are here used to assess BM adopted for implementation and management of urban parks (Gerlach, 2015; Collomb, 2015; McQuaid & Nua, 2019; Mayor et al., 2023; Stork et al., 2023). The core item of BM canvas applied to urban parks remains the value proposition. The value proposition for urban parks lies in providing communities with spaces for recreation, relaxation, cultural enrichment, biodiversity conservation, and environmental education (Konijnendijk et al., 2013; Sadeghian and Vardanyan, 2015; UN-Habitat, 2018; Ali and Dimitrijevic, 2022). Key partners encompass a diverse range of individuals, organizations, and entities that can be engaged in urban park implementation and management. These partners contribute resources, expertise, and support critical to the success of the parks (Gerlach, 2015; Mayor et al., 2023; Stork et al., 2023). A broad range of literature focuses on the importance of stakeholder participation and the role they cover in BMs (Gauthier and Gilomen, 2016; McQuaid and Nua, 2019; Mayor et al., 2021; Ali and Dimitrijevic, 2022). Typically, they are divided into public-governments and government-affiliated entities- and private stakeholders- general businesses, no-profit organizations, land developers, NPOs and citizens- (Mayor, et al., 2021; den Heijer and Coppens, 2023). Key activities include core operational tasks and initiatives, ranging from park design, and construction to its maintenance and preservation. Key resources such as physical assets and financial resources are essential for park operation and enhancement (Gerlach 2015; Stork et al., 2023). Customer segments, channels and customer relations focus on the identification of main target groups and on the use of ad hoc channels to reach them. The cost structure encompasses various expenses incurred in park investments and operations, including personnel costs, utilities, maintenance, marketing, insurance, permits, and administrative overhead (McQuaid & Nua, 2019; Stork et al., 2023). Finally, revenue streams consist of resources retrieved by economic activities carried out in the park such as concession fees, including those for cafés or specialized recreational activities (Collomb, 2015; Gerlach 2015; Stork et al., 2023).

The typical business canvas structure has been adapted to specificities of urban parks implementation and management. So, a limited number of elements have been considered with the goal to identify distinctive features characterizing BM archetypes. Moreover, some elements of the standard business canvas have been adapted to take into account parks' specificities. At this purpose, the framework includes: Ownership which influences governance structures and stakeholder engagement strategies, Value Proposition, 'Stakeholders' (enlarging the concept of 'Key Partners,'), 'Roles', identifying the activities stakeholders perform, 'Financing', defining the access to key economic resources, and Revenue streams (Table 2).

BUSINESS MODEL ASSESSMENT ELEMENTS
Ownership
Value proposition
Stakeholders (Key partners)
Roles (Key activities)
Financing (Key resources)
Revenues stream

Table 2: Data analysis key elements

For each of the elements, a definition has been given and when necessary further categorization has been provided. Ownership is the legal possession and control over the property, in this case, three main categories have been identified: i) public, ii) private, and iii) mixed. Value proposition encompasses the value that the solution intends to create for stakeholders and needs that the solution aims to address and satisfy. Regarding Stakeholders, categorization has been performed following the definition of Messenger (2017). In total, six stakeholder types have been identified: i) Public Entity (PE- government-owned or operated organizations, including government and entities serving the public interest); ii) Purpose Agency (PA- organization with limited, well-defined purposes and legal personality established to achieve specific, focused, or temporary goals); iii) Land Developer (LD- individuals or companies acquiring land for implementation of different functions and services); iv) No-Profit Organization (NPO- legal entity formed for purposes other than profit,

organized to serve public or community benefit including charities, educational institutions, religious entities and trusts); v) Business (B- legal entity conducting commercial, industrial, or professional activities, which engages in profit-oriented activities); vi) Citizens and Citizens Associations (C- individuals and associations engaging in no profit activities). All these stakeholders can cover different roles in BMs. Roles for in urban parks' implementation are: Owner (legal possession and control over the property); Promoter (any person or organization who has been the initiator of the process that led to the park realization); Developer (any person or organization who takes care of the implementation and the construction works of the park); Funder (any person or organization who provides money for the implementation of the park); Designer (any person or organization who realizes the masterplan for the park). Roles for in urban parks' management are: Manager (any person or organization that takes the leadership role in the management of activities and resources for the park operation and maintenance); Funder (any person or organization that provides money for the management of the park); Business operator (any person or organization who owns, leases, operates or manages a business within the park). Based on the literature, different financing instruments can be used for urban park implementation allowing the investment to be repaid and management to ensure the financial self-sufficiency of the park. Considering different classifications existing in literature (Walls, 2014; Van Ham and Klimmek, 2017; Heijer and Coppens, 2023) financing instruments can be categorized in public, private, and regulatory. **Public funding** includes mechanisms through which funds are provided by government entities, typically at the local, regional, or national level, to support various projects or initiatives. These funds are sourced from tax revenues, transfers from higher levels of government, public debt, special purpose taxes, tax increment financing, public grants. **Private funding** includes mechanisms through which funds are provided by private individuals, organizations, or entities to support projects or initiatives. Private financing may involve equity, debt (bonds or loans), sponsorships, donations, crowdfunding, and voluntary initiatives such as business improvement districts (BID). **Regulatory compliance funding** includes mechanisms through which funds are raised or allocated through regulatory frameworks, policies, or legal requirements. These instruments are typically used by governments or regulatory bodies to generate revenue, manage financial resources, or influence behaviors. Examples of instruments used for park implementation include impact fees imposed on developers to mitigate the effects of new developments, zoning and land use regulations requiring contributions to public amenities like parks, developer exactions mandating the dedication of land or financial contributions for public purposes, and purpose taxes levied to fund specific projects or services. Other regulatory instruments include impact fees, payment for ecosystem services, betterment taxes, special assessment districts. Financing instruments are listed in detail in Table 3. For parks implementation and management individual instruments or a mix of them can be used. Despite this, the selection of the most suitable financial instruments depends on many factors, including: the main actor leading the BM, the BM value proposition, available funding sources to support the BM, the typologies and functioning rules of financial instruments according to the specific country regulation, availability of skills, knowledge and time resources needed to put into operation a specific financial scheme.

Type	Model
Public funding	Government budget allocation, Public Grants, Public Debt (Bonds or Loans), special purpose taxes, Tax increment financing.
Private funding	Equity, Debt (Bonds or Loans), Sponsorships, Donations, BID, Crowdfunding.
Regulatory compliance funding	Impact Fees, Zoning and Land Use Regulations, Developer Exactions, Payment for Ecosystem Services, Betterment taxes, Special assessment districts.

Table 3: Financing instrument classification

Lastly, for the assessment of BM for urban parks management **Revenues** are defined as income generated from normal business operations that take place within the park. Based on sample observation, the sources of revenue have been categorized as follows: i) activities directly managed by the park entity; rental of spaces for management by third parties; and royalties for management of activities within the park. Activities considered

are: i) Commercial activities (Restaurants and/or cafes, Food and/or beverages kiosks, Markets, Retail shops); ii) Cultural and entertainment; iii) Educational activities iv) Lot sale; v) Rental space for events; vi) Parking fees for cars/bikes; vii) Rental of sports equipment/venue/classes; and viii) Membership fees. Table 4 summarizes the whole assessment framework that has been built and applied for the assessment of implementation and management of BM for urban parks.

IMPLEMENTATION	ELEMENTS	CATEGORIZATION
	Ownership	Public
		Private
		Mix
	Value proposition	/
	Stakeholders	Public Entity
		Purpose agency
		Land developer
		Business
		No profit organization
		Citizens
	Roles	Owner
		Promoter
		Funder
		Designer
		Developer
	Financing for implementation	Public funding
		Private funding
		Regulatory compliance funding
MANAGEMENT	ELEMENTS	CATEGORIZATION
	Stakeholders	Public Entity
		Purpose agency
		Land developer
		Business
		No profit organization
		Citizens
	Roles	Funder
		Manager
		Operator
	Financing for management	Public funding
		Private funding
		Regulatory compliance funding
	Revenues stream	Parking fees for cars/bikes
		Lot sale
		Membership fees
		Markets
		Cultural and entertainment
		Educational activities
		Rental space for events
		Merchandise
		Retail Shops
		Rental of sports equipment/venue
		Food/beverages kiosks
		Restaurants and bars

Table 4: Assessment framework for BM for urban parks implementation and management Designer

The assessment framework has been applied to the case study sample. Case studies have been picked adopting three criteria: a) location- park should be located within the city boundaries; b) accessibility – no fee should be imposed to enter the park; c) governance – responsibilities and roles should be shared and distributed with private stakeholders in the implementation and/or management of the park. Adhering to these criteria, 87 cases were identified. 40 cases have been retrieved through the review of the literature and 47 through consultation with online case studies repositories (Urban Nature Atlas and Oppla). After a preliminary analysis, out of the general sample of 87 cases, 44 of them have been selected to conduct a deeper BM assessment. In total, 36 out of the 44 cases involve both park implementation and management, 4 involve only management and 4 involve only implementation.

4 Results of case studies assessment

The 44 cases included in the sample cover 15 countries (Figure 2). The majority is placed in North America, especially in the United States (12 cases). The second most represented country in the sample is United

Kingdom with 9 out of 44 cases. This can be explained by the fact that United States and the United Kingdom are countries with a long tradition of collaboration between public and private actors in the sphere of public goods management. Additionally, the national and local legislative frameworks are more developed and consolidated than other countries.

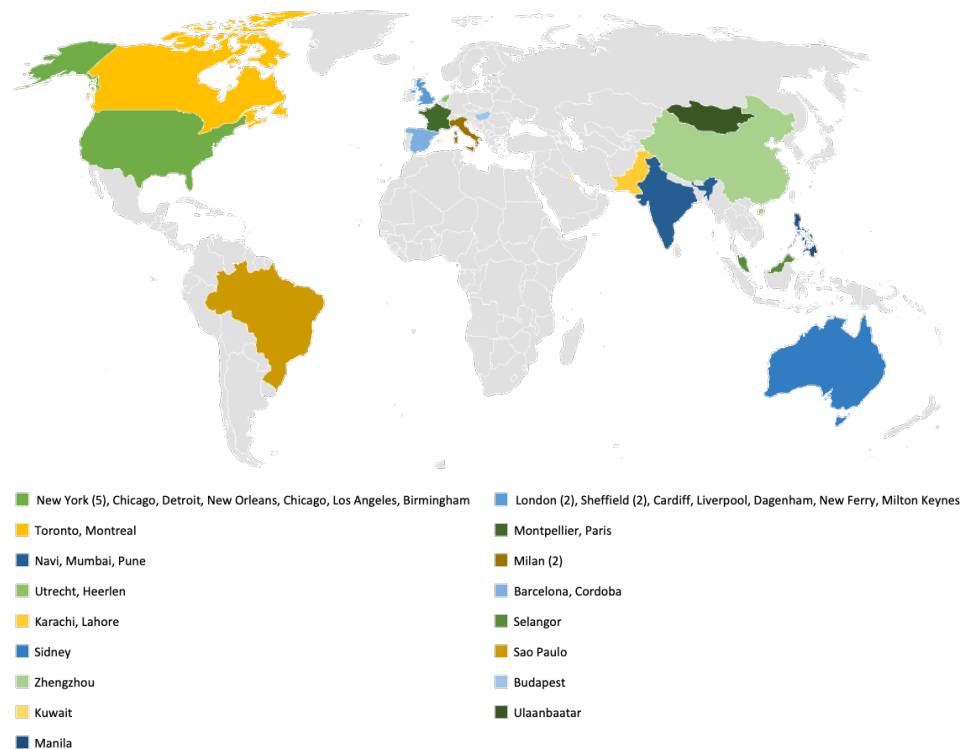


Figure 2: Cities and Countries representation among the sample

To better understand the typology of urban parks represented by the sample a classification by extension has been conducted. 19 parks over 44 fall under the Metropolitan Parks category (XL) which is close to 45% of the total sample. Instead, Pockets parks (XS) and Neighborhood parks (M) follow with 9 cases each (21%). This can be justified by the broader potential inherent in a large park, as it has the capacity to draw a higher return on investment due to its diverse physical resources and a comprehensive array of facilities.

4.2 Results on park implementation

In line with the literature, the value proposition is similar in the case studies included in the sample. Value propositions identified are: i) requalification of dismissed or abandoned areas to diminish crime rate and ignite revitalization of distressed zones; and ii) creation of green areas for recreational purposes. In the sample, the role of “Promoter” is mainly covered by public entities (18 out of 44). This is in line with the literature and with the fact that most public parks presented in the sample are publicly owned. The second most frequent stakeholder playing the role of promoter is a No-Profit Organization (13 out of 44). Finally, in 14 cases the implementation has been promoted by a private stakeholder (Special Purpose Agencies, Land Developers, Businesses, or Citizens). Considering the role of “Funder” the sample shows heterogeneity in how stakeholders engage in this role. It is interesting to highlight that in 31 cases parks have been financed by a PPP, 11 cases by a single stakeholder, and 2 cases through a partnership between private actors. In the majority of cases, public authorities established PPPs with No-Profit Organizations using Public Grants, Private Funds (Direct investments) and Regulatory compliance funding (Taxes, Re-zoning and Compensation) to finance park implementation. When, PPP includes other actors such as Citizens, Businesses, and Special Purpose Agencies, the instruments used include also Donations, Crowdfunding, and Sponsorships. A similar scheme is followed in the PPP with Businesses (4 cases) in which parks implementation is financed using National grants,

Regulatory compliance funding (Developer exactions), and BIDs. Another type of PPP involves Land Developers (4 cases) and in these cases, a mix of financing instruments is used for the park implementation (EU and National Grants, Direct Investments, Developer exactions, Crowdfunding, and Sponsorships) also. For instance, the adoption of Re-zoning as a regulatory instrument is more common when a No-Profit Organization is present in the partnership. Moreover, across the sample, over the total of No-Profit Organizations employed as implementers, 14 have been founded ad hoc for the park implementation. At the same time, Developer exactions are adopted when the partnership includes Land developers or Businesses. In the case of single funders or partnerships between private actors, the instruments used are Public grants and Private funds (Direct investments, Donations, Crowdfunding, and Sponsorships). Table 5 summarizes financing instruments used for park implementation in the sample.

	Stakeholder class	Cases	Public instruments	Private instruments	Regulatory Instruments
Single Funder	PE	2	National grants + Municipal grants (1) National grants (1)		
	NPO	1		Donations + Direct investment (1)	
	LD	3		Direct investment (2) Direct investment	Re-zoning + Standards and codes (1)
	B	2		Direct investment (1) Direct investment	Re-zoning + Developer exactions (1)
	C	3		Direct investment (1) Donations (1) Donations + Direct investment (1)	
PPP	PA-PE	2	National grants + Municipal grants National grants	Donations (1) Sponsorship + Direct investment + Debt instrument	Re-zoning (1)
	PE - NPO	10	Municipal grants	Donations + Sponsorships + Crowdfunding (2)	
			Municipal grants + National grants	Direct investment + Sponsorships + Crowdfunding (2)	
			Municipal grants	Donations (1)	
			Municipal grants + National grants	Donations + Sponsorships	Re-zoning (1)
			Municipal grants + National grants	Direct investment + Sponsorships	Compensation (1)
			National grants		Taxes/fees (PILOT) (1)
			Municipal grants	Direct investment + Donations (1)	
			Municipal grants	Direct investment + Sponsorships (1)	
	PE-LD	4	National grants	Direct investment (1)	
			National grants	Sponsorships (1)	
			National grants	Direct Investment + Crowdfunding (1)	
	PE - B	4	European grants + National grants	Direct investment	Developer exactions + Re-zoning (1)
				Direct investment	Developer exactions (2)
			National grants	Donations (1)	
	PE - C	1	National grants	Sponsorships (1)	
			National grants	Sponsorships (1)	
	PE - NPO - B	2	National grants National grants + Municipal grants	Crowdfunding Direct investment (1) Sponsorships + Donations (1)	Agreement (1)
	PE - B - LD	1	Municipal grants	Direct investment + Sponsorships	Developer exactions (1)
	PE - PA - B	1	National grants + Municipal grants	Direct investment + Sponsorships (BID)	Taxes/fees (1)
	PE - PA - C	1	National grants + Municipal grants	Sponsorship (BID) + Donations (1)	
	PE - NPO - C	2	National grants	Direct investment + Sponsorship + Donations	Re-zoning + Incentives + Taxes (1)
			European grants + National grants	Direct investments + Crowdfunding + Revenues from activities + Donations (1)	
	PE - NPO - B - C	1	European grants	Direct Investment + Crowdfunding (1)	
	PE - PA - NPO	1	National grants	Donations + Debt (green bond)	Re-zoning (1)
	PE - PA - NPO - C	1	National grants	Donations (1)	
PP	NPO - C	1		Crowdfunding	Re-zoning (1)
	NPO - B - C	1		Donations (Corporate social responsibility) + Volunteering (1)	

Table 5: Financing instruments for the implementation breakdown

In addition to this, attention has been devoted to the role of “Developer” to investigate how the project has been logistically implemented. 35 cases out of 44 present a single stakeholder as Developer. From the analysis it emerges that the most frequent class of stakeholder covering the role of Developer is No-profit Organizations with 11 cases overall. This stakeholder class is followed for frequency by Land developers and Businesses which equally are developers of 6 cases each. Then, 5 cases are developed by Citizens, 3 by Public entities and 4 by Special Purpose Agencies. Finally, the last role investigated is the one of the Designer to see whether the public park implementation has given attention to landscape value. Over 44 cases 38 present the engagement of a designer.

4.3 Results on park management

Results of urban parks management schemes in the case studies sample show the participation of different stakeholders covering different roles. In the majority of cases, the park is managed by a single stakeholder. Only 5 parks out of 44 are managed through a PPP or a partnership between private actors. Out of the remaining sample, the most frequent stakeholders type employed as Manager is No-Profit Organization with 17 out of 44 cases. On the contrary, in a few cases, parks are directly managed by municipalities (or other public entities). Looking at the “Funder” role, in 20 cases park management is financed by a single stakeholder, in 21 by PPP and in 3 by partnership between private actors. Table 6 summarizes financing instruments used for park management in the sample.

	Stakeholder class	Cases	Public instruments	Private instruments	Regulatory Instruments
Single Funder	PE	2	Municipal grants (2)		
	LD	3		Direct investment (3)	
	NPO	7		Direct investment + Donations (1)	
				Direct investment (1)	
				Revenues from activities + Donations (1)	
				Revenues from activities + Sponsorships (1)	
			National grants	Sponsorships + Crowdfunding	Taxes (1)
				Revenues from activities + Donations + Sponsorships (1)	
			Municipal grants	Revenues from activities + Donations + Sponsorships (1)	
	B	5		Direct investment (1)	
PPP				Direct investment + Revenues from activities (1)	
				Direct investment + Revenues from activities + Donations (1)	
				Revenues from activities + Donations + Sponsorships (1)	
			National grants	Sponsorships (BID) (1)	
	C	3		Donations (2)	
				Direct investment (1)	
	PE - PA	1	National grants	Donations (1)	
	PE - LD	3	National grants	Direct investment (1)	
			Municipal grants	Direct investments + Revenues from activities + Sponsorships (1)	
			National grants	Sponsorships (1)	
	PE - NPO	9	Municipal grants	Direct investment + Revenues from activities + Sponsorships (2)	
			Municipal grants	Revenues from activities + Sponsorships (2)	
			Municipal grants	Revenues from activities (1)	
			Municipal grants	Revenues from activities + Donations (1)	
			Municipal grants		Taxes/fees (1)
			National grants	Direct investment (1)	
			National grants	Revenues from activities + Sponsorships + Donation (1)	
	PE - B	1	National grants	Direct investment (1)	
	PE - B - C	1	National grants	Donations + Volunteering (1)	
	PE - C	1	Municipal grants	Donations (1)	
	PE - NPO - B	1	Municipal grants	Revenues from activities + Sponsorships	Standards and codes (1)
	PE - NPO - B - C	1	European grants	Direct investment + Revenues from activities + Crowdfunding (1)	
	PA - NPO	1	Municipal grants	Revenues from activities + Sponsorships (1)	
	PA - B	1	Municipal grants	Direct investment + Revenues from activities + Sponsorships (1)	
	PA - NPO - C	1	Municipal grants	Donations (1)	
PP	NPO - B	1	National grants	Revenues from activities + Sponsorships (BID) (1)	
	NPO - C	2		Sponsorships + Donations (1)	
				Direct investment + Revenues from activities (1)	

Table 6: Financing instruments for management breakdown

When management is financed by a single stakeholder, used instrument are: Direct Investments, Taxes, Revenues from activities present in the park, Donations, Sponsorship, Crowdfunding, and BID (2 cases). Looking at the parks which finance their management through PPP (21 cases out of 44), results highlight that almost half of these (9 out of 21) are financed by a PPP with No-Profit Organizations. Management financing is shared between public entities (through National or Municipal grants, and Taxes) and No-Profit Organizations (contributing with a combination of Donations, Sponsorships, or Direct Investments). The second most frequent PPPs are the ones with Land developers and Businesses (4 cases). In these cases, funding for management is provided through Public Grants, Direct investments, Donations, and Revenues from activities. Lastly, there are cases in which public entities enter into contracts with more than one actor. It is the case of PPP between No-Profit Organizations and Businesses. Here financing instruments adopted for maintenance are: Public Grants, Private Funds (Sponsorships and reinvestment of revenues) and Regulatory compliance funding (Standards and Codes). Finally, 3 cases of partnerships between private actors have been identified. All of them involve No-Profit Organizations that have been established specifically in conjunction with the creation

of public parks. The first partnership is formed between No-Profit Organization and a Business organization and it is based on the reinvestment of revenues from activities and a BID to finance maintenance. The remaining 2 partnerships are formed between No-Profit Organizations and Citizens using a combination of Sponsorships and Donations, Direct Investment and reinvestment of revenues from activities carried out in the park.

It is interesting to show that parks' profit sources can stem from directly managed activities or activities managed by third parties. In both cases, for the scope of this analysis, only streams of revenues that are employed for the maintenance of the public park are considered. It must be highlighted that 40 cases over 44 show clear identification of activities and programs devoted to revenue collection. Figure 3 summarizes the activities present in the sample assessed. Most frequent revenue stream refers to commercial activities which are present in more than half of the sample (25 cases out of 40). Another source of revenue is the rental of space for events planning and organization (24 cases). Even though less pronounced, the presence of Educational activities, entertainment programs, such as cultural events, and the possibility to rent equipment to practice specific sports are still significant in the sample (14 out of 40). Lot sales (10 out of 40), membership fees (10 out of 40) and parking fees (8 out of 40) are interesting profit activities which are not very common.

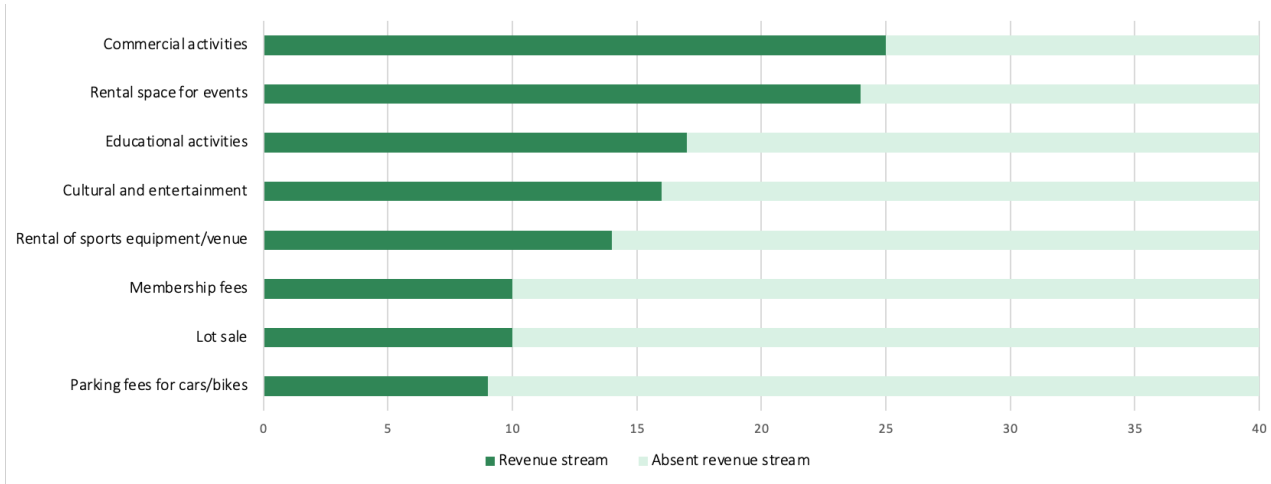


Figure 3: For profit activities distribution in the sample

Most activities independently of the type, are concentrated in XL urban parks. This is due to the higher suitability of this typology of parks to host various activities simultaneously and their capacity to host a higher volume of visitors. Nonetheless, restaurants and bars, markets and educational activities are significant sources of revenue in small (S) and extra small parks (XS). Markets and educational activities are connected to the nature of S and XS parks to be community-led and their proposition of enhancing community participation (Table 7). Additionally, a distinct pattern in the distribution of economic activities across regions has emerged. Results highlight a concentration of commercial activities and rental space for events in the United States and the United Kingdom. Interestingly, a notable contrast emerges with the lower prevalence of activities such as markets and lot sales in the US, as opposed to their more prominent presence in the European region. The observed differences may reflect underlying cultural disparities in consumer behavior and preferences between regions, with markets and lot sales playing a more significant role in European economies. Moreover, market dynamics, regulatory frameworks, and historical factors likely contribute to shaping these patterns. From a strategic standpoint, these observations offer opportunities for businesses to explore new markets or models and foster cross-border collaborations. Lastly, they underscore the potential for cultural exchange and learning, as stakeholders analyze and leverage these distinctions to inform decision-making and drive innovation.

Activities	XS	S	M	L	XL
Parking fees for cars/bikes	/	2	1	2	4

Lot sale	1	1	1	1	6
Membership fees	/	/	3	2	5
Rental of sports equipment/venue	/	1	2	2	9
Cultural and entertainment	/	1	4	2	9
Educational activities	2	1	3	1	10
Rental space for events	1	1	6	2	14
Merchandise	/	/	1	1	5
Retail Shops	/	/	1	/	5
Markets	2	1	/	/	5
Food/beverages kiosks	/	/	2	1	7
Restaurants and bars	4	3	2	1	11

Table 7: Breakdown of profit activities by area extent

5 BM archetypes for urban parks

Literature review and case studies assessment have revealed the main elements of BM utilized for implementation and management of urban parks, which may influence their structure and governance. These have been chosen for the delineation of BM archetypes for urban parks. In the context of implementation BM, the first selected element is the financing mechanism employed to fund the park's establishment, followed by the roles assumed by various stakeholders, with particular attention on the Funder and Developer. Regarding management BM, the first selected element is the financing mechanism employed to fund the management activities, followed by the roles assumed by various stakeholders, with particular attention on the manager. The different combinations of identified elements have the potential to produce a spectrum of BM for the implementation and management of urban parks.

Following these elements, **two implementation BM archetypes** have been identified: **Discretionary and Regulated ones**. Each archetype, based on the typology of instruments used and the number and typology of stakeholders involved, can have variants. The **Discretionary BM** archetype refers to a scheme in which one or more actors voluntarily promote and provide resources (economic or in kind) for park implementation. In this archetype, implementation can be promoted and funded by a single private actor, multiple private actors, a single public entity, or by a combination of them. The **Regulated BM** archetype entails a scheme in which park implementation is promoted by a public entity through the imposition of regulatory instruments or the establishment of voluntary agreements. In the first case, we refer to a Compliance variant, in which park implementation is funded by one or more private actors. In the second case, the Negotiated variant, the park can be implemented by a private actor through the definition of an agreement promoted by public entities. **Management BM archetypes** identified are **Direct** management and **Outsource** management. In the Direct management scheme, management activities are funded and overseen by the same actor. In contrast, in the Outsourced management scheme, management activities are delegated to an external actor. Both archetypes can utilize various funding sources, such as revenues from activities, donations, sponsorships, and volunteerism. BM archetypes for management can be paired with all the BM archetypes identified for urban parks implementation. Figure 4 summarizes the identified archetypes for urban park implementation and management, along with their variants.

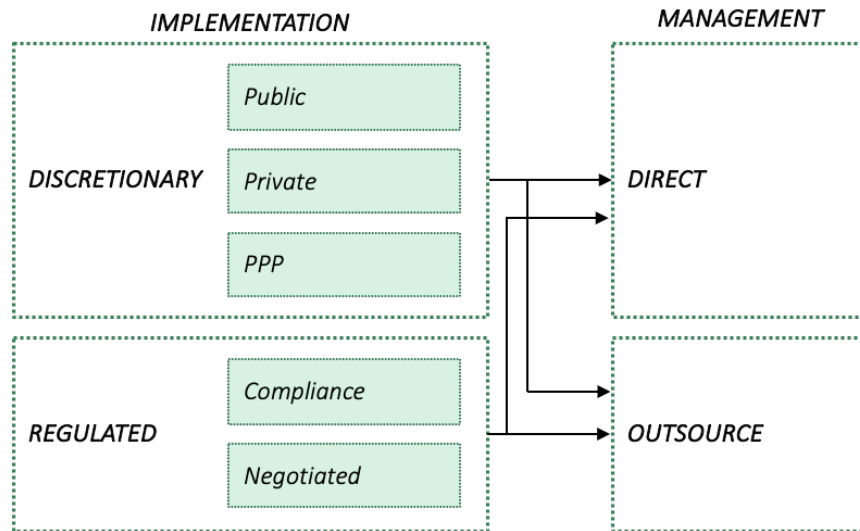


Figure 4: BMs for urban parks implementation and management archetypes

The elements that characterize the BM archetypes are the typology of financial instrument use and the role of stakeholders in the BM. The different combination of these variables determines several BM models. Detailed descriptions of these archetypes are provided in the following sections.

5.1 Discretionary BM archetype

Discretionary BM archetype refers to a scheme in which one or more actors voluntarily promote the and provide resources (economic or in kind) for park implementation. In this archetype, implementation can be promoted and funded by a single private actor, multiple private actors, a single public entity, or through a public-private partnership. Based on the typology of actor that funds the park implementation the different archetype's model have been identified: i) **Discretionary private**; ii) **Discretionary public**; and iii) **Discretionary PPP**. Each model has variants based on the governance used for the implementation and management of the park. If the park is funded, implemented and managed by the same actor the model is direct if the park is funded by an actor but implemented and/or managed by another it is outsource. All in all, three discretionary archetypes BM have been identified each of them have 2 main variants.

The Discretionary Private BM archetype is depicted in Figure 5a and 5b. More in detail, the BM foresees the implementation of the park through a private bottom-up initiative in which different private stakeholder (e.g.: citizens, local businesses, etc.) voluntarily decide to fund, implement the realization of an urban park and then also to manage it. The financial resources allocated for both the implementation and management of the park are privately sourced, often through voluntary donations or sponsorships. Within this framework, the stakeholders who provide funding for the park's creation may also undertake its implementation and management (Figure 5a), or opt to outsource these responsibilities to a specially formed association (NPO or special purpose agency) (Figure 5b). The association will be in charge of the operation of the park. Seven case studies have been classified under this archetype and the majority of them are of small dimensions (XS, S, M), their implementation and management are based on voluntary donations or work by citizens and associations with the aim to improve the aesthetics of the neighborhood or to provide additional services. Only two of them are classified as XL parks and in both cases the funder, manager and developer are businesses.

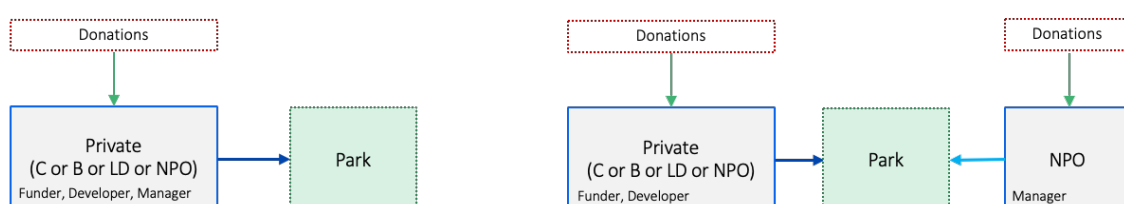


Figure 5: Discretionary private BM archetype a) Direct implementation and management by private actor; and b) Direct implementation and outsource management

The structure of the Discretionary Public BM archetype bears resemblance to its predecessor, albeit with a distinct feature: the promotion of the initiative is spearheaded by a public entity responsible for financing, executing, and managing park operations. Figures 6a and 6b illustrate the Discretionary Public BM archetype. In the former scenario, the public entity manages the park's implementation and operations through voluntary contributions or sponsorships, supplemented by volunteer involvement in park management. In the latter scenario (Figure 6b), park management is outsourced to a specially formed association (NPO or special purpose agency). Additionally, profits generated from park activities- such as kiosks, sporting events, and space rentals - are reinvested into park maintenance in this model. Parks implemented and managed using this BM archetype are of small dimensions and typically stem from a bottom-up movement initiated by C or NPO. It is the case of Bryant Park in New York and the project Gebrookerbos in Herleen (Netherlands).

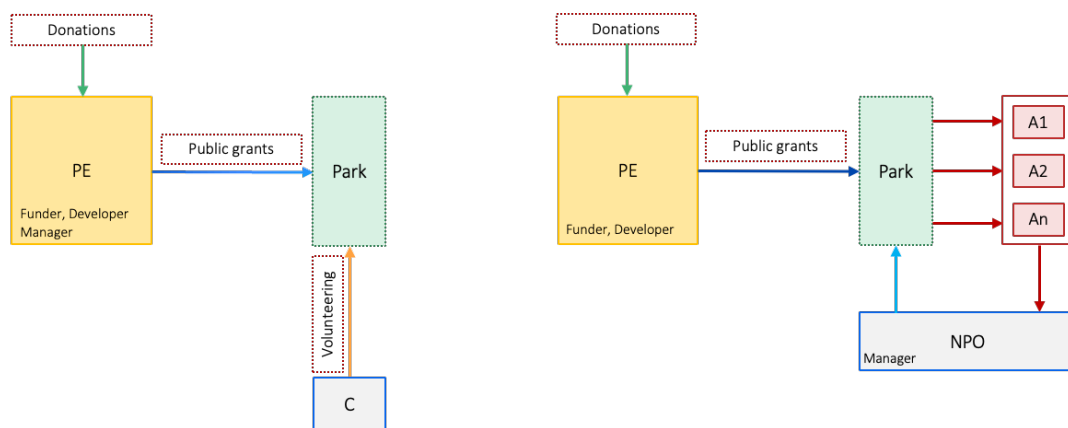


Figure 6: Discretionary public BM archetype a) Direct implementation and management by public actor; and b) Direct implementation and outsource management

Finally, Figures 7a and 7b illustrate the Discretionary PPP BM archetype. In this case, park implementation is led by a group of private actors, with support from a public entity to finance the park's realization. In the first case (Figure 7a), private actors who provide funding are in charge of the park's implementation and operations within the BM archetype's governance. In the second scenario, implementation and management are outsourced to an ad hoc association. In both instances, park management is sustained through reinvestment of revenues generated from park activities' profits and voluntary donations or sponsorships. This archetype is quite spread in the sample analyzed. In fact, 21 cases are falls under this BM type. The simplest form that falls into this BM type is the one in which the project is implemented without the aid of the of the PE in the implementation phase through only Donation. It is the case of Fuenesanta ecological gardens in Cordoba in which the PPP sees the PE entering only the management phase. Moreover, there are parks following this BM type which are directly managed by the PPP actors, for example Heeley Millennium of Sheffield Park and Downsview park of Toronto or an NPO, as stated before, is created ad hoc for implementation or management or both. Some examples of this MB type in such form are Central Park in New York, Park Jean Drepeau in Toronto and the 606 Trail in Chicago.

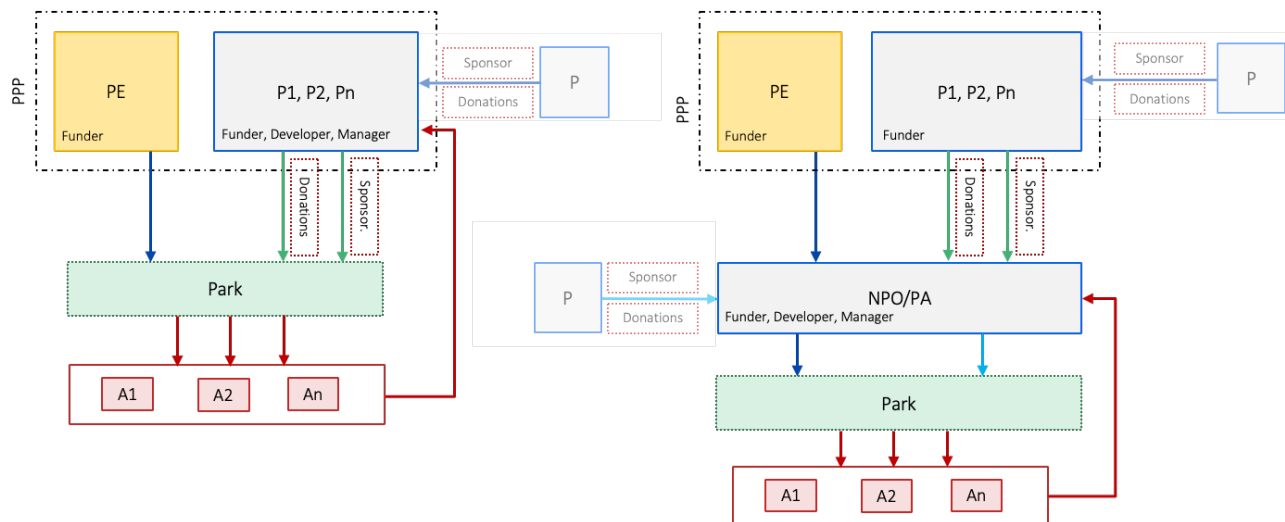


Figure 7: Discretionary PPP BM archetype a) Direct implementation and management by private actor with the support of public actor; and b) Direct implementation and outsource management

5.2 Regulated BM archetype

The **Regulated BM archetype** involves a framework wherein park implementation is advanced by a public entity through the application of regulatory measures or the establishment of formal agreements. Within this archetype, two primary models emerge: the **Compliance model** and the **Negotiated model**. In the Compliance model, city governments can mandate the creation of new urban parks as part of regulations governing new urban developments, redevelopments, or improvements. Alternatively, regulatory incentives may be employed to encourage private actors to undertake park implementation, with funding provided by these private entities. Conversely, in the Negotiated model, park implementation can be undertaken by private actors through agreements facilitated by public entities. City governments may create conditions to facilitate the involvement of business actors or engage community participation in park implementation and management. Both the Regulated Compliance and Regulated Negotiated archetypes present two possible variants. Additionally, variations arise based on the governance structure employed for park implementation and management, distinguishing between direct implementation/management and outsourced implementation/management.

The Regulated Compliance BM archetype comprises two primary structures, the first of which is depicted in Figure 8. In this scenario, a public authority establishes a regulatory framework mandating private actors (e.g., developers) to construct an urban park according to predefined standards and codes. Regulatory instruments governing this archetype include developer exactions, PILOT agreements, or compensations. Through adherence to these regulations, private actors are obligated to finance, implement, and manage the park. Park management is sustained through reinvestment of revenues generated from park activities' profits, as well as through voluntary donations or sponsorships (Figure 8a). Additionally, park management can be outsourced to a newly formed association created explicitly for this purpose (Figure 8b). One of the most known parks which falls under this category is Brooklyn Bridge Park in New York. In this case a PILOT is introduced by the Municipality of New York to implement the park, then a NPO is formed and received the financial influxes from the PE and private sponsors to implement and the manage the park. The NPO of Brooklyn Bridge Park manages the park also thanks to the revenues generated by a wide range of activities.

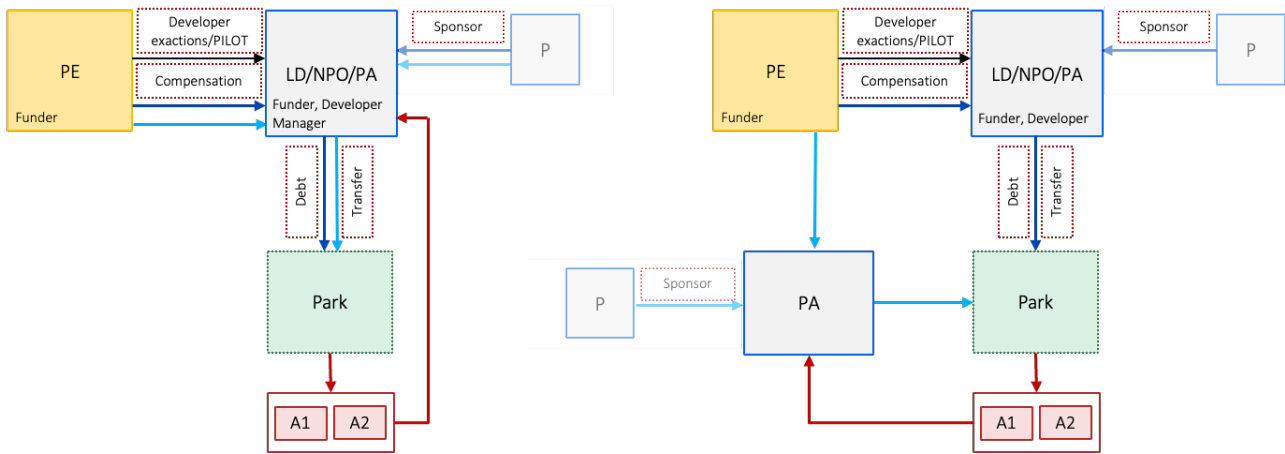


Figure 8: Regulated compliance BM archetype direct implementation and management by private actor

The second Regulated Compliance BM archetype relies on the utilization of citizen taxes for the implementation and management of urban parks. Specifically, as depicted in Figure 9, the public authority employs citizen taxes to finance, implement, and oversee urban parks. In addition to taxes, other sources of funding such as voluntary donations and sponsorships may be utilized. The taxes allocated to park financing may be pre-existing or newly introduced by the city specifically for park implementation, a practice known as purpose taxes. Park management is executed by the public authority, utilizing revenues generated from park activities' profits. Alternatively, the public authority may opt to outsource the implementation and management of the park, as shown in Figure 9b.

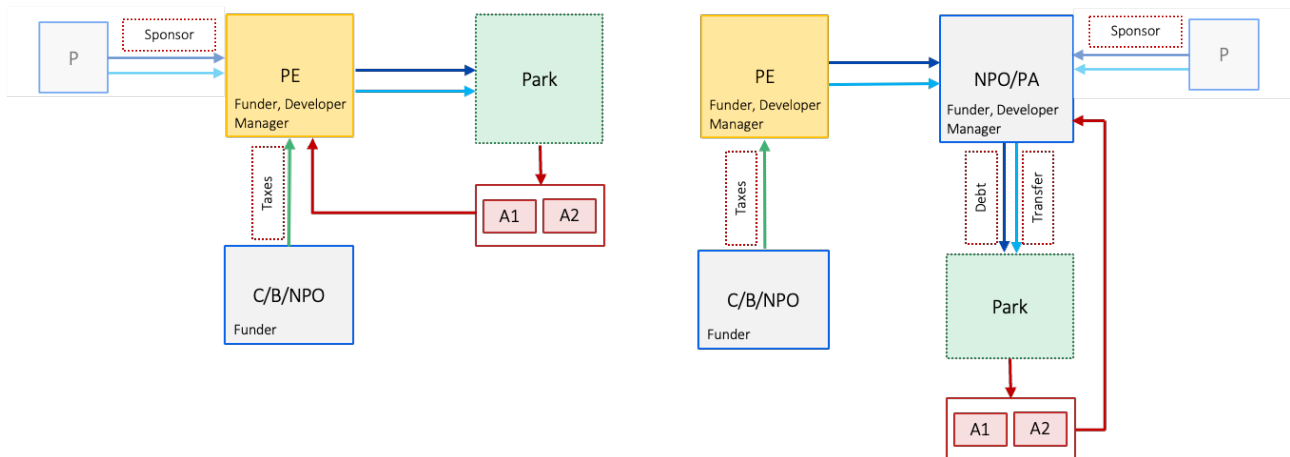


Figure 9: Regulated compliance BM archetype a) Direct implementation and management by PE; b) Outsource implementation and management

The Regulated Negotiated BM archetypes are predicated on legal agreements between public and private actors. In the first Regulated Negotiated BM archetype, the public authority establishes a standardized agreement in collaboration with the private actor responsible for park development. This agreement encompasses standards and codes that the private actor must adhere to for the implementation and management of the park. In addition to standards and codes, the public authority may include provisions such as re-zoning or increases in building rights within the agreement to incentivize private actor participation in the financing and management of urban parks. Implementation is primarily financed by the private actor, potentially with support from the public authority or other private entities through donations or sponsorships. Figure 9 illustrates the structure of this BM archetype. Also in this case, the Park management is overseen by the private actor, leveraging sponsorships, public funds, and revenues generated from park activities' profits (Figure 10a). Alternatively, the private actor may choose to outsource the implementation and management of the park (Figure 10b). This BM type is recurrent in Europe, especially in France. Some examples of this are Parc Georges Charpark, built within the context of Port Marianne requalification project, and Clichy-Batignolles

Martin Luther King Park in Paris. At the core of these project there is a Re-zoning program over which other instrument, standards, can overlap to sustain the implementation and management of the parc. In the two examples cited above, a PPP is formed between the PE and NPO to implement the park, after that, the PE form a PA which will be responsible of the park maintenance.

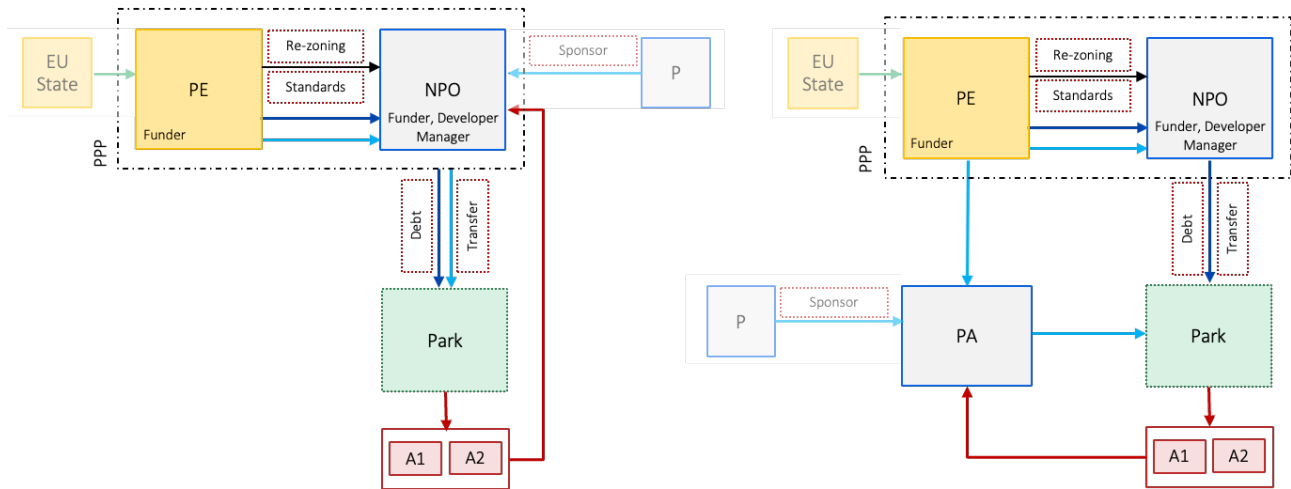


Figure 10: Regulated negotiated BM archetype a) Direct implementation and management by PE; b) Direct implementation and outsource management

Finally, a second Regulated Negotiated BM archetype has been identified. In this instance, the structure and governance of the BM resemble the previous archetype; what sets it apart is that the promoter of the PPP is the private actor, initiated through a bottom-up approach, with the public authority involved in the financing and implementation of the park. Specifically, through an agreement signed by the parties, private actors commit to implementing and managing the park over time, while the public authority supports this effort by contributing to the implementation and adopting regulatory instruments, such as re-zoning, to facilitate park creation. Additional funds for implementation can be collected through sponsorships or donations. In this scenario, park management is overseen by the private actor, utilizing revenues generated from park activities' profits (Figure 11a). Alternatively, the private actor may opt to outsource the implementation and management of the park by establishing a specific association (Figure 11b). The most popular park inherent to this category is the Highline of New York. In this case the PPP and the Rezoning program stem from a bottom-up initiative to accommodate the intentions of private stakeholders. The PPP can then manage directly the park or create an NPO ad hoc to conduct management operation as it is the case of the Highline.

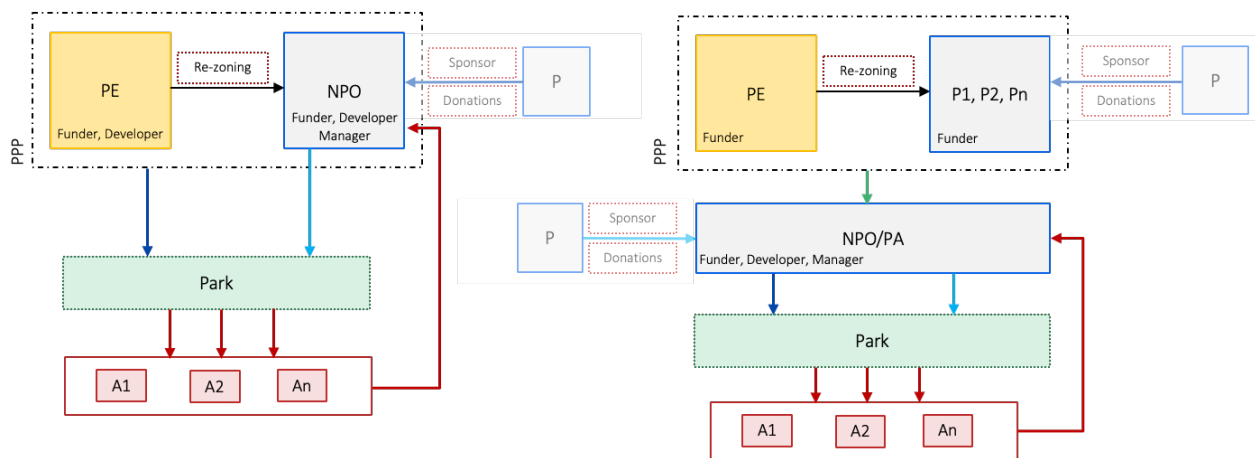


Figure 11: Regulated negotiated BM archetype a) Direct implementation and management by PE; b) Direct implementation and outsource management

6 Conclusions

Urban parks contribute significantly to the provision of ES. Given the multifaceted benefits derived from urban parks, it is relevant to adopt BMs that can effectively maintain and increase ES provision. By applying these instruments to urban park management, cities can optimize the allocation of resources such as funding, staff, and technology to enhance the provision of ES. Furthermore, adopting BMs that involve partnerships between public entities, private companies, and/or non-profit organizations can facilitate collecting and channeling resources for parks' implementation and management in the logic of efficiency and self-sustaining. At the same time, BM incorporate mechanisms to capture value, so to raise resources to invest in park implementation and management. All in all, BM offer frameworks for organizing resources, allocating responsibilities, and mobilizing investments, thereby facilitating the sustainable implementation and management of urban parks.

The paper identifies various BM archetypes applied in the implementation and management of urban parks. Through the analysis of international case studies, the study identifies two main categories: Discretionary and Regulated BM archetypes. In the Discretionary BM archetype, three subtypes are recognized: Discretionary Private, Discretionary Public, and Discretionary Public-Private Partnership. Each subtype involves different actors and governance structures. Discretionary Private models involve voluntary funding and implementation by private stakeholders, with management either carried out by the funding entity or outsourced to an association. Discretionary Public models are spearheaded by public entities, with management either internal or outsourced. Discretionary PPP models involve collaboration between private and public entities for funding and implementation, with various governance structures. On the other hand, the Regulated BM archetype comprises two subtypes: Regulated Compliance and Regulated Negotiated. In the Regulated Compliance models, park implementation is mandated by regulations, with financing and management carried out either directly by private actors or through citizen taxes. In the Regulated Negotiated models, implementation is facilitated through legal agreements between public and private entities, with financing primarily from private actors and management either direct or outsourced.

BM archetypes could be used in diverse urban contexts. While case studies focus on specific locations and contexts, the underlying principles and frameworks can be adapted and applied in various settings. The flexibility of these archetypes allows for customization according to the unique characteristics, needs, and preferences of different cities, communities, and stakeholders. Moreover, the paper recognizes the importance of considering cultural, economic, and social factors when implementing and managing urban parks. While the identified archetypes provide valuable insights and guidelines, their application should be accompanied by careful consideration of local context and stakeholder dynamics.

In conclusion, the paper emphasizes the variety of the identified BM archetypes and can support policymakers, and business actors to adapt and tailor these frameworks to suit the specific needs and conditions of their respective urban environments. By doing so, cities can enhance the sustainability, accessibility, and overall quality of their urban parks, contributing to the well-being and livability.

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