Innovative Financial Mechanisms for Urban Heritage Brownfields

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ABSTRACT

World cities are facing main structural challenges such as the promotion of the development of strong internal markets, and large inflows of migrants; these trends impose pressures within the urban framework in relation to provision of services, negative externalities such as pollution and congestion and urban sprawl. In this context, the redevelopment of urban heritage sites (natural and cultural), such as natural brownfields, poses in general different hurdles in relation to targets for deprived sites and to the effectiveness of redevelopment strategies. Nonetheless, the potential for significant positive impacts, particularly inner-city regeneration and new alternatives to urban sprawl, increasingly makes urban heritage sites a part of the investment portfolio of public authorities and the private sector.

The intense pressures from accelerating urban growth worldwide require innovative funding mechanisms to support sustainable urban redevelopment. Different platforms have been established to address the problem of best practice in urban development, such as URBACT, OECD-LEED, and Urban Knowledge Network, but very few focus strongly on the financial issues associated with urban transformation and regeneration.

Infrastructure Funds and Real Estate Funds have been growing rapidly in the past few years, but they suffer from various limitations. In both cases the funds generally do not focus on urban regeneration issues and they lack an integrated approach and coherence with city development strategies. Moreover, Real Estate Funds often seek high financial returns on a short-term investment horizon.

However, in recent years there has been major support for the establishment of financial instruments aimed at closing the gap in the market of funds dedicated to sustainable urban redevelopment. The aim of many urban redevelopment funds is to increase the availability of financial resources and funding mechanisms for sustainable urban transformation, in a context where urban investment by the public sector is often affected by budget constraints and by the private sector is subject to speculative and short term approaches and limited delivery capacity, particularly in mid-sized and smaller cities. Naturally, the analysis on sustainable urban redevelopment funds assumes a relevant role in many cities in developing countries where steady increases in population growth, traffic congestion, air pollution, and slum formation are confronted with a lack of investment and availability of funds.

The objective is to develop a study which reviews the main financial mechanisms for urban heritage redevelopment. The sustainable urban redevelopment funds supporting the urban projects/programmes will need to satisfy two basic conditions: (a) to not be exclusively profit-driven and to be engaged in socially responsible and/or ethical investing mechanisms, and (b) to seek private sector involvement. We will identify the general structure of sustainable urban redevelopment funds. In order to do so, we will need to assess the long-term risk and performance of urban assets, paying attention to issues such as the sustainability of urban wealth across generations and how to capture the value of undervalued/vulnerable urban assets (latent capital). We will then consider various financial mechanisms, such as impact funds, land value finance, and public and private partnerships with relative examples, and by paying particular attention to urban projects and/or programmes in emerging economies (e.g., India, South America, India).
1. Introduction

The scope of urban cultural heritage has broadened considerably since the Venice Charter of 1964, with UNESCO and ICOMOS at the forefront of this shift, away from an emphasis on objects and sites as ends in themselves, to include environmental and social factors as well as intangible values. Notwithstanding, we witness many approaches dedicated to the rehabilitation and conservation of cultural heritage in cities, often using in their operational applications the concept of cultural heritage as spatially well-identified sites or as a series of discrete group of remains. Within these different types of interpretations, as Moylan et al. (2009) observe, cultural heritage areas are indeed seen as belonging to the past, but they are nevertheless disconnected from the present and from each other as part of a product of the urban landscape. In addition to this problem, worldwide at both national and regional levels, the scope and thus the legislative framework dedicated to urban heritage are often not uniform; for instance, in China, heritage is defined as: “immovable physical remains … that have significance” (ICOMOS, 2000); whereas in Vietnam, cultural heritage comprises both tangible and intangible elements (ASEAN, 2000). This discrepancy in approaches is often the consequence of the specific operational contexts of the involved agencies and tends to reflect an even greater difficulty in attracting financial support, particularly from the private sector, for cultural heritage rehabilitation (Brown, 2007). Devising creative financial solutions for the revitalization and rehabilitation of urban heritage areas by leveraging a combination of available resources from the private and public sector is thus an intriguing and complicated task.

At this point, we need to emphasize that if we interpret urban heritage as an evolving inter-relationship between history, ecosystems, and culture, this interaction must be seen as a multi-layered integration of natural and cultural heritage. However, urban natural assets (including soils, geology and geomorphology), i.e. the natural heritage, do not suffer the financial obstacles and restrictions that urban cultural heritage does; extensive best practice in the past 20 years has developed a thorough range of financial supports and mechanisms for the management of urban natural areas, particularly the rehabilitation of urban natural brownfields (Diamond et al., 2010; RELECOM, 2007; RESCUE, 2005; U.S. EPA, 2005). From this perspective, we aim in the present report to extend the interpretation and approaches applied to urban natural brownfields to the rehabilitation and conservation of urban cultural heritage sites.

An urban brownfield can be defined as any land in a city which had in the past been used and is not available for immediate use without some type of intervention (Alker and Joy, 2000); urban brownfields are areas which may be partially occupied or vacant. In this report, therefore, we extend the definition of brownfield often used in the USA, that is, contaminated land usually as the result of former industrial activity (Sym, 1999). Our approach aims to examine urban brownfields where there is continuity between the past and the present and between natural and man-made environments (CABERNET, 2008; RESCUE, 2005; NRTEE, 2003; De Sousa, 2000; UK DETR, 1998). From this perspective, urban areas that are blighted
and idle but which have cultural heritage, such as the historic districts in Asmara and Massawa in Eritrea, can also be identified as urban brownfields (Figure 1).

Our next step is to observe that if the value capital of a city is its urban heritage, this implies that in both cases of brownfields (natural and cultural) we have a depreciation of this urban capital, either due to site contamination (in the natural brownfield) or due to its derelict and blighted status (in the cultural brownfield). The area of Makina in Medina Fes (Morocco), for example, combines these two aspects; it is in need of conservation and rehabilitation of its historic housing stock, but in the area of Ain Nokbi a remediation plan has been developed to reduce the land’s contamination and pollution resultant from copperware activity (Government of the Kingdom of Morocco, 2008).

As shown in Figure 1, the two typologies of urban brownfield share public good characteristics relative to the negative and positive externalities and the risks and uncertainty of these types of projects; in the next section we will examine in greater detail the public good features of urban brownfields and in so doing consider their impacts in relation to costs and benefits. In this context it is important to highlight that in both brownfield definitions the costs and benefits of the interventions are very hard to predict because they are related to three activities unique to brownfield redevelopment: site assessment, site remediation plan and actual redevelopment. From a financial vantage point, remediation and redevelopment activities should be viewed as brownfield development potentials, as Groenendijk (2006) argues, “it is important to be flexible about the end use of the site…Making (minor) changes to the site plan may result in much more cost-efficient reclamation.” Therefore, the costs and

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**Figure 1. Definition of Urban Heritage Brownfield**

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benefits of brownfield interventions are always linked to the actual end use of the site; for example, the level of reclamation and clean-up – the costs and benefits – necessary for the intervention of high-speed rail (Stratford Station) in East London (Halcrow, 2010) differs from that which was necessary in the project of Tacoma (Museum of Glass) in Washington state (EPA, 2002), despite the fact that both sites had similar levels of industrial site contamination.

Bartsch (2002) warns us that brownfield remediation is a financial ‘twilight-zone’ and thus the definition of adequate and affordable financing mechanisms is the most significant barrier against reusing brownfield heritage urban areas. With Bartsch’s caveat in mind our objective in this report is to review different financial mechanisms dedicated to cultural and natural heritage brownfields where we have the intervention of the private sector. The report is structured as follows: in Section 2 we provide the background to the report with a discussion of the risks and externalities associated with investment in urban brownfield development. Next in Section 3 we address the role of government (the public sector) as the catalyst for the development of urban brownfield sites. In so doing, we turn to the private sector as the primary source for urban brownfield funding, and we discuss four specific financial mechanisms Public Private Partnerships (PPPs) (Section 4), Land Value Capture mechanisms (Section 5), Urban Development Funds (Section 6) and Impact Funds (Section 7). Each section will be integrated with a specific case study relative to the considered financial mechanism. Conclusions and policy recommendations are contained in Section 8.

2. Public good assets and private intervention

The inability to obtain financial resources for the redevelopment of natural and cultural heritage brownfields is often related to their public good features. In our analysis we focus on urban brownfield areas that have development potential due to their heritage status, but are also imbued with significant risks and externalities of development; therefore, by following the three-tiered model of the NRTEE framework, these areas are labelled as B-sites (see Figure 2). The uncertainty and externalities are two specific market failures that dominate the development of B-sites.

![Brownfield classification](image)

Figure 2. Brownfield classification
In addition to the normal risks that we confront in an urban development (site risks, construction risks and operating risks), we accrue two other risks in brownfield investments, which are uncertainty about the actual redevelopment costs and uncertainty relative to future land value. These two types of risk instigate various other risks associated with the financial lenders, particularly loan and credit risk, which relate to the inability of borrowers to make loan payments; for example, in case the value of the property which may be given as security is eroded. These types of risk are particularly troublesome in developing countries where there is seldom a well-developed credit system, and there may also be limited experience in the brownfield borrowing business (Meyer, 1997). Moreover, Bartsch (2002) notices that, because the transaction costs related to brownfield project underwriting have tripled in the last decade, lenders have begun to impose ‘informal rules of thumb’ as specific conditions for urban brownfield redevelopment; for instance, developers must have a minimum of 25% equity in the project in order to guarantee sufficient capital risk. Other financial risks such as collateral risks are in general associated with the characteristics and size of the project (Missimer, 1996); in this case small loans may have proportionally higher fixed costs of foreclosure and of resale to large loans, and thus the associated exposure to these risks has a greater impact on projects in developing countries where size of project and size of investment are often limited (under $2 million) (Yount and Meyer, 1999). Under these circumstances private developers may undervalue their own commercial returns and overvalue the related costs of the brownfield project, and this will determine the market failure effect, that is, brownfield redevelopment may be undersupplied.

Urban brownfields also involve the impact of negative and positive externalities. In general, development can determine negative externalities because the project may impose considerable disturbance for the surrounding area and its inhabitants. Most significantly, brownfield redevelopment, either as cultural heritage or natural heritage, relates to substantial positive externalities for the city and society at large (De Sousa, 2000). Renewal of the urban core, thereby reducing the pressure for new development, can help to contain urban sprawl, and as a consequence of the intervention we may behold a reduction of commuting, transport pollution and congestion. But particularly important in this typology of heritage projects is the increase in the quality of life, the reduction of urban poverty and subsequently their capability to stimulate the sense of urban belonging (Baskaya, 2010). As Lee (1996) observes, the main toll for living in blighted urban areas is paid by the most destitute urban minorities in terms of crime, residential quality, prices of final goods, education, and health provision. Moreover, as in the case of the area of al-Azhar, situated in the old city in Cairo, the inhabitants of urban brownfields are often new migrants with limited financial means which hinder the maintenance and conservation of the old fabric of the city (Sedky, 2009). The private sector, also in this case however, as for the market failure due to risks, in general fails to capture and internalize the collective benefits related to environmental and cultural heritage.

The development of both cultural or natural urban brownfields must represent a cash flow project for the private sector and be linked with the sale and commercial operation of the
redevelopment property. Certain private actors will also examine their revenue and investments in relation to their corporate social responsibility, mainly as a marketing strategy, but they are only likely to do so with investments having a high financial rate of return (Figure 3).

Figure 3. Public and private intervention in urban brownfields

Given the public good characteristics of brownfield investments, the economic justification for public sector investment is well-established, since the private sector would provide sub-optimal brownfield redevelopment and under-provision of investments due to the presence of risks and externalities and sometimes due to coordination problems among the private agents (Isham and Kaufmann, 1999). However, the redevelopment of cultural and natural heritage is a form of impure public good investment (Serageldin, 1999), therefore the role of the public sector as the sole investor and provider of urban brownfield redevelopment is disputable.

The discussion of the modes of financing urban brownfields and the allocation of the public investments is a recurrent debate, particularly the interrelationship that public investments induce between the complementarity and crowding out of private investments (Khan and Reinhart, 1990; Aschauer, 1989); this relationship may coexist but certainly it changes its magnitude in relation to scheme and context (Blejer and Khan, 1984; Lora, 2007). For instance, in an interesting analysis of Indian public investments, Pradhan et al. (1990) observe that if the investment of the public sector is through market borrowing rather than deficit financing, this leads to a rationing of bank credit for the private developers and thus imposes crowding out of the private investments (Figure 4).
Another distinctive effect in urban brownfield investments is associated with public sector institutions. In an extensive study of 116 developing countries from 1980 to 2006, Cavallo and Daude (2011) analyze how different forms of public investment may render different effects, particularly in investments such as urban heritage brownfields that have tangible and intangibles features. They argue that the crowding out effect is negatively amplified by weak institutions saddled with problems of coordination between local and central government, uncertainty about legal liability, insufficient practical knowledge, high fiscal evasion, and corruption (Khemani, 2010; Davis, 2002; Friedman et al., 2000). It is evident that, in relation to these administrative and legal deficiencies, the intervention of the private sector and thus its marginal productivity, is reduced because the complementarity with the public investments is hindered and barely present.

In order to spur private sector investment in urban brownfields, it is therefore necessary to create continuous stimulus and incentives to diminish the market failures present in these types of investments, and this is especially paramount in developing countries. We are aware that private sector funding for urban brownfields (especially natural heritage sites) is increasing (Kurdila and Rindfleisch, 2007), and numerous foundations and private companies have a long tradition of patronage of urban cultural heritage. These actors need to assume a relevant role in the urban brownfield strategic investment. For instance, non-profit corporations with tax-exempt status have often accomplished brownfield development with the use of revolving funds provided by private capital. Another possible solution is to spread insurance risks across a number of small investments through the use of portfolio investments. An example is given by the private equity fund known as the GINKGO fund, which is dedicated to acquiring a portfolio of natural brownfield projects in France and Belgium. The French fund has been signed by the Caisse des Depots, the European Investment Bank, the Compagnie B. de Rothschild, and other private investors (signed in
2010, duration 8 years, capital € 100 bn) and its task is to lease and acquire brownfield sites (in France there are over 250,000 potentially polluted industrial sites) in order to implement clean-up, remediation and construction of energy efficient buildings.

Understanding the context, objectives and constraints of the different private actors is as Serageldin (1999) observes, like a Rubik’s cube which “requires patience, dedication and imagination.” To pursue and encourage private sector investment and partnership with the public sector in the development of urban brownfield sites, although difficult, is a reasonable aim. In the next sections we will first highlight the role of the public sector as prime mover and catalyst in leveraging resources and programs, and then examine four types of financial partnerships between the public and private sector for urban brownfield investments.

3. **The catalyst player: the role of government**

Urban brownfields present particular challenges to national and regional policymakers because by having significant heritage (cultural or natural) legacies and potential for further development, these areas are often left abandoned due to contamination, decay from lack of maintenance, lack of documentation, limited access to transport, depressed local economies, or an unemployed workforce. As numerous examples show, e.g. in Latin America (Marker et al., 2007), the high cost of facilitating the reintegration of rehabilitated sites into the property market and the lack of expertise in this field often slows the process of bringing former brownfields back into new economic uses (Jackson et al., 2002). In general, public sector financial assistance is needed to make a site-reuse project economically viable, because remediation and preparation costs render many sites economically uncompetitive, at least initially (Kurdila, 2007; Wernstedt et al., 2006; Meyer et al., 2000; McCarthy, 2002). This can be overcome, however, by providing a range of coordinated inputs (policies, instruments, planning, funding, and training) in order to increase site attractiveness to the point where the market will take hold of them and exploit their potential, especially given their centrality.

The management of increasing amounts of derelict land in inner city locations is a very important issue on the agendas of contemporary urban planners and property-related private stakeholders. When we consider the on-going consumption of open space for housing, retailing and industry, it is clear that a sustainable built environment cannot be achieved without re-integrating brownfield land into the property market and encouraging development back into central urban locations (RESCUE, 2004). When new developments are built on city peripheries the historic and post-industrial quarters in the city core almost always remain abandoned or partially occupied, for instance, this process is especially evident in the CEE and Baltic States, as in the case of Tallinn, the capital of Estonia (Cocconcelli and Medda, 2010).

Numerous examples around the world show that innovative approaches are needed to financially structure and manage urban brownfield projects (Wernstedt et al., 2006). Where
possible, the state should play a catalyst role by using public funds judiciously to lever private capital into deprived neighbourhoods (ODPM, 2002). For many brownfield heritage areas ring-fencing the revenue they generate, rather than seeing it disappear into the central revenue fund, would provide redevelopment projects with more financial security; however, it could reduce the ability of well-known sites to cross-subsidize less known, but equally important sites. A successful case of post-industrial heritage redevelopment is that of Eskişehir, Turkey, a market-oriented brownfield regeneration process with government assistance that has allowed industrial buildings to be preserved as part of Turkey’s 20th century architectural heritage (Cahantimur et al., 2010).

In recent decades public authorities have developed a wide range of public financial tools, including grants, loans, revolving loan funds, tax incentives, and other financial mechanisms to stimulate the reuse and redevelopment of brownfield urban areas and make them more attractive to private investors. In countries such as India and Egypt the regeneration of brownfields mostly relies on governmental grants which are to date the most successful instruments in facilitating regeneration projects and attracting private investors.

Local governments, more so than regional and central governments, are uniquely situated to foster heritage brownfield regeneration as well as lead and facilitate brownfield efforts in the community. Local authorities may create financial solutions to the brownfield financing problem by leveraging a combination of available national and local resource funds and private money. Programs usually offer one or more of several types of incentives, i.e. regulatory relief, liability relief, financial support through mechanisms such as grants, loans, subsidized insurance, waivers of development fees, property tax abatements, and remediation tax credits, public investments in infrastructure and amenities, changes in regulatory procedures, among others. Table 1 briefly presents financial tools broadly used by local authorities for brownfield projects. These financial mechanisms are used particularly for natural heritage projects but certainly we can easily foresee appropriate applications and extensions to cultural heritage brownfields.

Central government programs in general require that beneficiaries meet special eligibility criteria, many of which are intended to combine public funding with private sources, thereby creating barriers against applying for funds. However, central authorities’ initiatives provide a solid foundation upon which local governments are able to build their own brownfield financing strategies.
### Table 1. Local financial tools broadly used for brownfield financing

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Increment Financing (TIF)</td>
<td>TIF is the most common form of local support and a key part of a strategy to address financing gaps. The TIF mechanism uses anticipated growth in property taxes from a development project to finance public sector investments therein. It is usually used in economically distressed or abandoned areas. TIF bonds are issued for the specific purposes of the redevelopment, such as acquiring and preparing the site, cleanup, upgrading utilities, streets or parking facilities, as well as carrying out other necessary site preparations and improvements.</td>
</tr>
<tr>
<td>Special Service Areas or Taxing Districts</td>
<td>Cities can delineate a “special service area” and use it as a way to raise cash to finance extra services, improvements, or facilities to benefit the targeted area. The property owners in a special service area agree that a special property levy or special fee will be imposed, with the proceeds used to pay for the defined services or activities. The jurisdiction uses this additional revenue to finance the improvements, by either earmarking it directly for the area, or using it to issue bonds to fund the projects.</td>
</tr>
<tr>
<td>Tax Abatements</td>
<td>These are reductions of, or forgiveness for tax liabilities. There are usually two forms of tax abatement: - a reduction in rates for a specified period (5-10 years); - a freeze on property values, usually at a pre-improvement stage. It is a workable, flexible incentive which helps influence private investment decisions, but it has to be carefully designed to target intended beneficiaries without offering unnecessary subsidies, a feat that can be difficult to accomplish. Tax Abatements are commonly used to stimulate investments in building improvements or new construction in areas where property taxes or other conditions discourage private investment.</td>
</tr>
<tr>
<td>Local Revolving Loan Funds</td>
<td>Revolving funds are usually established to meet specific objectives of the city. They can be used i.e., for clean-up, removals, etc. After the loan is repaid to the fund, money is available for new projects.</td>
</tr>
<tr>
<td>General Obligation Bonds</td>
<td>General Obligation Bonds can be issued for any proper public purpose which pertains to its local government and affairs. They can be used to support brownfield cleanup and reuse projects, as well as for acquiring land, preparing sites, and making infrastructure improvements.</td>
</tr>
<tr>
<td>Debt Leveraging</td>
<td>Debt leveraging is a strategy that increases the return on equity when the investment is financed partially with borrowed money. In the case of brownfields, a public entity can serve that purpose by fronting the capital to make private investment less risky. This strategy has not been used much, but it has been effective in attracting private capital to brownfield sites.</td>
</tr>
<tr>
<td>Fees or Fines for Brownfield Activities</td>
<td>The collected fines or inspection fees can be collected and devoted to urban projects instead of having these resources disappear into the general local fund.</td>
</tr>
</tbody>
</table>

*Source: Bartsch, 2002; NALGEP, 2011*

The foregoing analysis of urban brownfield projects indicates that the public sector must be the initiator of the regeneration process of blighted and under-used urban areas. As we summarize the financial tools presented here, we can observe that public financing initiatives must usually achieve one or more of the following strategies:

- **Reducing the risks on the lender site** make capital more available for brownfield redevelopment. Incentives, i.e. loan guarantees or companion loans, can ensure a
minimum return by limiting the borrower’s exposure to unforeseen problems that can affect the value of collateral effects or the borrower’s ability to pay.

- **Reducing the borrower’s financing costs** make capital more affordable. Local authorities can subsidize interest costs through tax-exempt financing and low-interest loans, and can reduce loan underwriting and documentation costs through loan packaging assistance and technical support.

- **Improving the borrower’s financial situation.** The project’s cash flow can be improved through tax credits, tax abatements or re-payment grace periods, and make it easier for the project numbers to show the expected profitability.

- **Providing direct financial assistance** in the form of grants and forgivable loans makes projects more attractive for private investors. This strategy is increasingly popular among local authorities, especially for site assessment and clean-up (Bartsch, 2002).

After having highlighted the public sector as catalyst for urban brownfield redevelopment, we will next examine four specific financial mechanisms that are applicable to urban heritage brownfield redevelopment.

4. **Public-Private Partnerships**

The World Bank and the Public-Private Infrastructure Advisory Facility (PPIAF) define brownfield projects under Public and Private Partnerships (PPPs) not only as being comprised by abandoned and polluted areas but also by poorly maintained infrastructure service systems. We are therefore confronted with a restricted definition of brownfield which does not include the cultural heritage areas, as we have proposed in this report. The PPI Project Database identifies three types of PPP contracts (or concessions) regarding brownfield projects in developing countries: ROT (rehabilitate, operate, and transfer), BROT (build, rehabilitate, operate, and transfer), and RLT (rehabilitate, lease, and transfer). Some brownfield projects that have utilized ROT concession are the Lianyungang Wastewater concession in China (16.9 US$ Million); the Linyi City Salcon Water concession in China (4.4 US$ Million) and the Caticlan Airport concession in the Philippines (52 US$ Million); whereas examples of brownfield rehabilitation under the BROT concession include such projects as Aguas de San Andres in Colombia (9.3 US$ Million) and EMFAPA Tumbes in Peru (72 US$ Million).

In Figure 5 we display the distribution of brownfield concessions for the time periods 1990-1999 and 2000-2009. BROT and ROT types dominate in both periods in relation to RLT concessions.
In Figure 6 we visualize the geographic distribution of brownfield projects in developing countries. We can clearly distinguish that brownfield projects are emerging issues in the Latin America and China-India regions.

Public and Private Partnership (PPP) mechanisms are generally viewed by governments in industrial and developing societies as a feasible alternative for lack of financial resources and
a way to involve and transfer to the private sector the management and ownership of assets previously understood merely as public assets. Within this point of view, Public and Private Partnerships (PPP) in their informal and formal structures are substantial and also commonly adopted in urban cultural heritage brownfield redevelopment. Many successful examples of PPP applications in urban heritage brownfield can be listed. Porto Vivo (SRU) is a public entity established in 2004 for the rehabilitation of the historic center of Baixa Porto (Portugal). The agency played a critical role in the redevelopment of the city because its responsibility covers the collection of urban taxes, the definition of incentives and compensation, and the sale, demolition, renting and rehabilitation of the historic building stock. These activities are always carried out in co-operation and in formal partnerships with the private sector.

Another interesting redevelopment is the example of the former Poznanski’s cotton factory in Lodz (Poland). In this case the PPP mechanism was structured under an informal framework whereby the private actor was the main investor (cost of the whole investment estimated at €120 Million) and the local authorities (City Hall, Marshal Office, and Provincial Heritage Conservator) were involved in the design works and execution of building renovation. The project of the multifunctional center, which opened in 2006 under the name Manufaktura, is comprised of entertainment, commercial and cultural activities (National Museum of Modern Art, co-financed by the EU). The Manufaktura project has provided significant impetus to the economic regeneration of the city center by focusing on an extensive derelict area (27 ha) and has also had an important impact on the economy of the city as a whole. For instance, 2,500 people were employed for the redevelopment and 3,500 persons are now working in the center.

Formal PPPs are usually comprised of a solid structure of different parts which in turn have a key role for the implementation of a project. In Figure 7 we report a synthetic schema of the agents, parts and relationships having roles in a PPP, in accordance with the Special Purpose Vehicle approach (EIB Papers, 2010).

![Figure 7. Special Purpose Vehicle schema for PPP (EIB Papers, 2010)](image-url)
The special purpose vehicle (SPV) is typically a consortium of financial institutions and private companies responsible for all PPP activity (including the coordination of the financing and the service delivery). In the case of urban brownfields, SPV creates a series of contracts with the procuring authority (i.e. the government), users of the service, building and operation contractors, and the investors and financiers. Each of these contracts is a potential source of conflict that may endanger debt holders and the governance structure of the procuring authority; its degree of independence and the financial and political condition of the government also affect the level of risk of a project. As we have described in the previous section, several risk factors specific to brownfield projects may increase the yields demanded by the private sector for investing in urban redevelopment; it is these aspects which are particularly onerous in developing countries. For instance, the PPP framework for the renovation of Bucharest city center is in a chaotic situation, according to different commentators (Nae and Turnock, 2011). This problematic situation is mainly due to the centrally controlled system of planning and regulation that, given its ineffective action, has sanctioned ‘private urbanism’ such as the case of the Unirea site. However, the Romanian state housing building (ANL) and local agencies are gradually improving their capacity and competence, for example, by providing grants for first-time buyers and offering guaranteed mortgages, as in the case of the residential housing parks project in the former industrial areas Rahova and Ferentari; and by being more stringent in their planning control activities, as in the case of the rescheduling of the project financed by Gran Via to build 500 apartments in the old Electrotechnica Frogocom and Tricodova industrial sites.

A number of urban brownfield heritage projects have encountered problems of cash flow (Annez, 2006; Leighland, 2008). This problem is related mainly to an over-estimation of profitability as well as poor project preparation, whereby neither accurately accounts for the real condition of the sites nor for the pollution problems. Latin American countries offer some of the most evident examples of the decline of concessions in natural heritage brownfields. Moreover, a study by Sirtaine et al. (2004) suggests that the short term concession was also one of the problems of brownfield concessions in Latin America in the 1990s. Investors should begin to expect profits only after 10 years from the start of operating the project. Thus, for local investors cash flow appears to be the main reason driving the renegotiation or even the cancellation of brownfield contracts.

Another critical factor in the PPP mechanisms in urban brownfield projects is the close cooperation of the different partners who should be involved in the investment realization. In this context it is particularly important to involve and consult with the residents of the projects. In the case of the regeneration of solid waste disposal sites in Istanbul (Turkey), a main obstacle to the financial success of the project was the lack of consultation with the inhabitants, who had a strongly negative psychological stigma attached to these sites. The role of public partner is thus paramount in these cases in order to ensure that brownfield projects give positive feedback, especially for those who will mainly benefit from the urban investment (by living at the site).
Case Study

The “Sumidouro” project is located in the district of Pinheiros, São Paulo, Brazil. The case is a successful example of a brownfield project with a cultural heritage focus. The project has been financed through a public-private partnership as the main instrument. Developed according to the schema presented in Figure 8, the project is the result of environmental remediation work in the old central waste incinerator “Sumidouro” in order to build a recreational area for cultural and educational activities. The project covers 13,648 m² of land that had been contaminated by heavy metals in soil and ground water, whereas in the main building dioxins and furanes were found. Private investors (Abril Group in partnership with Even, Itaú Bank and Petrobras) financed the remediation activities and the creation of a new public park, the Victor Civita Square, and the new educational and culture center (Motta, 2006).

Figure 8. Stakeholder map of the brownfield redevelopment project “Sumidouro”
Source: Marker et al., 2007

Figure 8 shows which stakeholders participated in the project. The public-private partnership was established between the municipality of São Paulo and the aforementioned private investors. Other public stakeholders who played a relevant role in the project were the municipal environmental department, in charge of the elaboration and monitoring of the remediation and revitalization plans, and the state environmental agency (CETESB), in charge of licensing, establishing remedial goals, and supporting investigation, logistics and technology developments. GTZ, a German consultant, acted as facilitator and technical consultant for the soil and ground water cleanup.

The “Sumidouro” Project entitled “Praça Victor Civita,” was completed in March 2009 after four years of institutional negotiation between public and private bodies and two years of
environmental remediation activity\(^1\) for a total cost of about R$ 6 Million. The *Praça Victor Civita* is currently used for several activities including lectures, school visits, workshops on environmental education, concerts, indoor and outdoor sports activities, and elderly daycare activities in the center.

5. **Land Value Finance**

The basic assumption of land value capture finance (LVF) is to recover the capital cost of the urban investment by *capturing* some or all of the increments in land value resultant from the investment (Figure 9). The approach has a wide literature and numerous applications around the world (for a review, see Medda, 2008; Smith and Gihring, 2006; Bowes and Inlannfeldt, 2001; Andelson, 2000). LVF is a flexible mechanism that can be used to finance a broad range of urban development and regeneration project types, for instance, transport infrastructure, affordable housing, cultural restoration, and community amenities enhancement.

![Figure 9. An idealized value capture finance positive feedback loop](https://www.pracavictorcivita.org.br)

*Source: Huxley, 2009*

\(^1\) [www.pracavictorcivita.org.br](http://www.pracavictorcivita.org.br)
The increases in land value may be captured directly or indirectly through their conversion into public revenues as fees, taxes, exactions, or other fiscal means. In general, in its fiscal form we can observe that the land value capture mechanism satisfies equity principles, because it recoups the investment in the urban brownfield and returns the windfall profits to the public, i.e. the source of the intervention, due to the redevelopment of economically idle urban areas. Since we can estimate the levy in accordance with the land market situation and target specific landowners, such as in commercial and business land use, LVF plays a potentially progressive role. In its different forms LVF is seen as a method that can implement the urban development of abandoned properties with wider public goals, such as discouraging urban sprawl; it can also work effectively alongside other financial instruments such as urban development funds, PPPs, and wider Joint Ventures.

However, an annual levy on land value may determine land price spirals as well as distortions in land supply by inducing, for example, incidentally asset rich land-owners but poor in capital to sell their land; this problem is significant in developing countries with high inflation rates and low economic growth rates. An example may be given by the Desepaz housing development project in Colombia, where one of the project goals was to rehabilitate housing estates for the city’s poor. In this case the LVF approach has determined various economically detrimental effects resultant from the phenomenon of speculation which effectively restricted the realization of the social objectives (Otoya and Loaiza, 2000).

Among the various land value finance techniques capable of raising capital for urban brownfield investments, the most successful are:

- **Special Assessment** – a tax assessed against parcels identified as receiving a direct and unique benefit as a result of a public project;
- **Tax Increment Financing** – a mechanism that allows the public sector to “capture” growth in property tax (or sometimes sales tax) resulting from new development and increasing property values. Tax increment finance mechanisms operate in two ways: through fiscal incentives as tax relief or through tax disincentives in order to encourage urban development;
- **Joint Development** – a mechanism of cooperation and risk sharing between the public and private sectors, usually applied to transport investment in order to promote efficiency and benefit equity among participants, thus creating a win-win situation;
- **Developer/Impact Fee** – a fee assessed on new development within a jurisdiction as a means of defraying the cost to the jurisdiction of expanding and extending public services to the development.

As many successful examples have proven, land value finance techniques can be a powerful mechanism to finance urban heritage brownfields. We can draw from a number of effective brownfield projects (especially natural heritage) in the United States, where tax increment mechanisms in particular have gained much public sector attention (Smolka, 2000; Calgary
City Council, 2005; Dye et al., 2006). For instance, among the various financial programs supporting urban brownfield projects in New York State, the redevelopment tax credit is an interesting example of LVF with a broad urban remit. The redevelopment tax credit is comprised of three components that accrue credit between 10% and 22%: site preparation credits, tangible property credits, and on-site groundwater credits. The participants in the scheme can be either owners or operators of the urban brownfield areas; and significantly, the credits are increased from their basic level in relation to the number of employees the developer hires; this tactic is implemented in order to reduce poverty and unemployment. However, it should be underlined at this point that no standardized model of land value finance may be replicated across cities, as usually the most successful applications are cases where the financial tools are tailored to the specific objectives and needs of a project.

**Case Study**

A mixed-use development project in the center of Istanbul, Turkey is a successful example of the application of land value finance to leverage public money and renovate a city’s heritage buildings. Akaretler Row Houses was originally built as housing for palace workers in the 19th century; with its neoclassical frontage design the group of residences represents one of the best examples of 1870s civil architecture. Strict regulations for the preservation of historical buildings owned by a national public sector real estate owner, the Turkish Foundation, in conjunction with tedious procedures for obtaining construction permits for development, hindered the possibility of restoring the historical value and bringing new life to this area for many years. However, by the time the General Directorate of Preservation of Cultural and Historical Heritage and the General Directorate of the Turkish Foundation approved the development plans, it had raised the potential for an increase in land and real estate values. In addition, real estate and tourism tax breaks given to this project helped to create the demand and potential value.

The public sector agreed with a project developer, the Bilgili Group, on several ways in which the value was to be captured, i.e. local taxation, private-led real estate renovation, and local service agreements. As a result of negotiated conditions, the locally-generated tax collected by the municipality was successfully able to fund the infrastructure improvements to the site, while the private investor, the Bilgili Group, led the direct restoration of the highly culturally valuable Akaretler Row Houses. The company also helped to market the area through its involvement in other renovation projects nearby (The State Naval Museum) and also assumed the management of surrounding public spaces as part of an agreed basic service provision, including cleaning and gardening within a small local park. Thanks to this investment, a nationally significant cultural site in Istanbul has become available for visitors, and more importantly, for its residents. It has also contributed to the creation of new jobs in the area and supports local businesses due to rising numbers of tourists. And noteworthy is that the land value finance mechanism has successfully maintained both the inward and
external rates of return. The net return on investment projections in 2009 for the Bilgili Group was €8.1 million, compared to the total cost estimation of €51 million.

However, an issue arose during the implementation of the project. As all construction and restoration projects in Turkey are subject to prior written approval of several institutions – the General Directorate of the Turkish Foundation and the General Directorate of the Preservation of Cultural Heritage and District Municipality, plus in this case the Metropolitan Municipality, since the project entailed infrastructure development – it was essential to retain good relations with key players. This approach has helped all stakeholders to capitalize on opportunities and overcome challenges while the project was being carried out. Moreover, all the involved actors proved that a strategic approach is necessary in order to implement all components of a project to the highest possible standards.

6. Urban Development Funds

In the last ten years there has been a significant rise in the number of both unlisted and listed urban funds. These funds have provided the vehicles for a range of investors in order to gain exposure to real estate markets by committing incremental and small amounts of funds directly in urban investments. These funds focus on all forms of urban investments; they operate within a broad geography and have different maturity dates that offer considerable choice to investors. Infrastructure Funds and Real Estate Funds have been used increasingly for urban investments in recent years, but they nevertheless suffer from various limitations for brownfield applications. In both cases generally, the funds do not focus on urban regeneration issues such as brownfield redevelopment, and they lack the potential for integration and coherence with city development strategies. Particularly in the case of Real Estate Funds, we observe that these funds often seek high financial returns on a short-term investment horizon.

Urban Development Funds (UDFs) integrate in their structure many positive features of the previously described funds. UDFs promote private sector finance towards financial sustainability, by this we mean that UDFs are able to integrate self-sustaining mechanisms of the financial resources (non-grant) within the structure of funds slated for urban social, economic and environmental objectives. The time horizon of the urban development funds must therefore be long-term in relation to the definition of a portfolio of urban mixed-use developments. This structure is advocated in order to implement synergies and cross-subsidization between projects and to foster investments in difficult urban locations, especially in heritage brownfield areas.

The inclusion of brownfield investments into a UDF portfolio reflects various significant financial factors such as:

a. The income return is a strong component of total returns;
b. Less volatile income in the short-term due to length of leases;
c. Generating value through active management say, for example, by adding to the brownfield redevelopment of urban cultural heritage leisure activities such as the case of the hotel network system of Paradores in Spain.
d. Urban brownfield projects are seen as a means of achieving greater diversification in portfolios due to their lower volatility and long-term returns.

Urban brownfield investments in developing countries can, however, suffer from certain obstacles. One problem may be the income return, which is inflation hedged; this problem can be solved through regulation and negotiation of the pricing mechanisms in order to adjust the income for inflation. Furthermore, the longer term commitment in brownfield investments can hinder investors; however, we need to observe that these investments should benefit local economies, thus result in sustainable returns, and at the same time assist in the accomplishment of private financial goals.

There is extensive evidence of urban development funds dedicated to urban brownfields operating especially in the US, a development fund known as EPA Brownfield Revolving Loan Fund (BRLF), to finance the remediation activities of redevelopment projects through low-interest or even no-interest loans for brownfield cleanup. By 2006 funds were given to approximately 190 projects. There are also heritage funds established in European countries: in Ireland the Hearth Revolving Fund is mainly a privately financed fund designated for the restoration of listed buildings for resale, usually as dwellings; and in the Netherlands a revolving fund, a joint initiative entitled “Brownfields Beter Benut” (Brownfields Better Used) provides low-interest loans for brownfield project promoters.

From the perspective of financing urban heritage, it is worth discussing here the European Commission policy initiative JESSICA (Joint European Support for Sustainable Investment in City Areas), developed by the European Investment Bank and supported by the Council of Europe Development Bank (CEB). The financial crisis and increasingly scarce public budgetary resources have stimulated discourse on the best way to employ Structural Funds (SFs) in order to meet the growing development needs of EU Member States. As a result, the JESSICA initiative was launched with a view to providing new opportunities to Managing Authorities responsible for the implementation of SFs (JESSICA was promoted through the EU 2007-2013 programming cycle). JESSICA’s primary objective is the definition of a system of financial urban development funds by using revolving financial instruments in order to support sustainable urban development (i.e. renewal and regeneration projects). Such financial vehicles build portfolios of revenue-generating projects by providing them with loans, equity or guarantees that are then repaid by project revenues or cost savings over a given period.

One of the features of this specific urban development fund is the capacity to use the SF contribution, thus ensuring long-term sustainability for the urban development. By leveraging additional resources from the private sector it is able to create stronger incentives for better
performance of the final recipients, thereby increasing the efficiency and effectiveness of public resources. However, JESSICA represents a specific and interesting policy tool whose wider financial impacts would need to be tailored if it were to be implemented in countries outside the European Union.

Taking the above into consideration, significant potential exists for the creation of urban development funds dedicated to urban heritage brownfields, which would provide both appropriate funding and risk coverage. Several financial mechanisms may be considered:

- Guarantee fund, which could act as a surety to financiers in case a developer should prove unable to meet his obligations (example: The European Agricultural Guidance and Guarantee Fund);
- Insurance program, which could provide security by protecting against cost overruns and unforeseen risks;
- Revolving fund from which a developer could obtain low interest loans. Redemption and interest flow back into the fund and could cover residual risks and institutional controls after remediation is completed (example: The National Restoration Fund in the Netherlands).

We can conclude by observing that urban development funds based on a revolving financial mechanism could make funds available at a low-interest rate in order to attract investors, and these funds through self-supporting mechanisms may be reinvested or made available to cover residual risks. The revolving funds could act as an important tool in addition to already existing traditional urban development instruments such as grants and loans, particularly in developing countries. We believe that the establishment of a revolving fund within the structure of urban development fund for urban heritage projects could significantly improve both the quantity and duration of urban brownfield redevelopment.

**Case Study**

One country where JESSICA is being implemented is in Poland. Four regions, Wielkopolska, Westpomerania, Pomerania, and Silesia decided to create revolving vehicles and dedicate part of their Structural Funds to finance urban renewal and regeneration projects, particularly urban heritage sites, in their cities. Because of its history, for a long time Poland did not participate in the debate over regeneration needs and policies in Europe.

The Silesia region is an example of a highly industrialized region, with its numerous post-production and post-industrial sites, many of which have high historical value, e.g. in Katowice, the regional capital. The general directive on managing those sites, resulting from Polish environmental policy, stipulates that they should be used as soon as possible for other functions, such as recreation grounds and urban or industrial development. However, a lack of sufficient funds hinders the possibility for immediate intervention. JESSICA’s revolving mechanism will address this issue and narrow the financial gap in the region. The fund will
provide loans or guarantees to projects aiming at the revitalization of degraded town centers and city districts, as well as reinforcement of pro-development features of post-military and post-industrial areas in small and big cities (including comprehensive preparation of land for economic activity). Approximately €60 million of Structural Funds is dedicated from the Silesia Managing Authority to be used through the JESSICA program with the possibility to leverage additional private resources.

7. Impact Investment Funds

In the case of brownfields in emerging and developing economies we are often faced with a complex problem: the difficulty of securing large investments that give rise to social spin-offs in economies with scarce financial capacity, which then proceed to attract further investment and thereby generate wealth in order to reduce poverty. In this regard, philanthropic foundations have been the cornerstones of numerous urban revitalization projects in economically distressed areas with social and environmental targets. However, as Judith Rodin, the Rockefeller Foundation President, observes, “charitable donations do not provide enough capital to solve pressing social and environmental challenges at scale.” (Bridge Ventures and Parthenon Group, 2010).

In recent years a new form of investment known as Impact Investment Funds has emerged in the market with the goal to create a financial product able to achieve a broad range of impacts. The Impact Investment Funds are designed as socially-responsible investments which are not driven exclusively by profit and are generally targeted towards environmental and social issues. The impact investments are defined as “actively placing capital in businesses and funds that generate social and/or environmental good and a range of returns, from principal to above market, to the investor” (Bridge Ventures and Parthenon Group, 2010).

Impact Investment Funds can be differentiated from Socially Responsible Investments (SRIs), although they originate from the same roots. The main drawback of Socially Responsible Funds, e.g. ethical funds, is that they do not specifically emphasize urban investment. In particular, financial advisers are not seeing the reported interest on SRI translated into robust and sustained flows of investor resources into these funds. This may be due to the often disappointing performance of SRI funds; in fact, by having a restricted investment range, SRI funds cannot necessarily hold the best-performing assets in their portfolios. From this perspective, it has been necessary for the financial market to create a financial product dedicated to urban areas, particularly urban brownfields, which would combine cultural/social and environmental issues with consistently satisfactory performance.

In the case of impact funds investors are keen to achieve social and environmental goals through their investments, for example, by investing in urban areas with high unemployment
and contaminated properties, such as BoPs, but they are also interested in generating profits. In this context investors can decide if they prefer to prioritize social returns (impact first investors) and accept lower financial returns, or prioritize profits (financial first investors), which also includes social and environmental returns. In-between these two kinds of investors there is the so-called layered structure, where both types of investors (impact and financial first investors) work together and combine different financial and social/environmentally-oriented goals.

Urban brownfield projects, either of a natural heritage or cultural heritage quality, can certainly constitute a target for these funds, because they can generate social and environmental wealth, but at the same time the project implementation and redevelopment may generate significant returns to investors. For example, the cultural heritage project of the old district of Hafsia in Tunis is a double award-winning project (recipient in 1983 and 1995 of the Aga Khan Award for Architecture). The consortium of this credit impact fund is composed of private sector investors and the Municipality of Tunis, the association pour la Sanvegarde de la Medina, and the Agence de Rehabilitation et Renovation Urbaine. The success of this fund, which has produced an economic rate of return of about 11%, was not only included in the conservation project of the old town but also in the revitalization of the economic structure of the area, in safeguarding the social mix of the inhabitants, and in the accomplished resettlement scheme (Kaul et al., 1999). When we turn our attention to natural brownfields, an interesting case of impact funds is given by the example of India’s Byrraju Foundation and Water Health International (“Water Health”), which operates in India, Ghana and the Philippines. The aim of this fund is to implement water filtration businesses and provide access to purified water at about half the price these populations are used to paying for purified water (O’Donohoe et al., 2010).

The Impact Investment Funds may therefore “out-performa” other types of social funds, because they are integrated across many industries and provide flexibility in investing in assets with performance potential. In conclusion, Impact Investment Funds must certainly satisfy two basic conditions: (1) they must seek private sector involvement, and (2) they cannot be dedicated exclusively to short-run profit-driven investments, but rather they must have a balanced investment portfolio that engages in socially and environmentally responsible and/or ethical investments in cities, particularly in brownfield areas.

**Case Study**

The Pine Ridge Reservation in Shannon County, South Dakota (U.S.) is a successful example of an application of impact funds to improve social and heritage conditions in an abandoned and depressed area. The Lakota Fund initially began to serve the Pine Reservation in 1993

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2 BoP stands for ‘base of pyramid’ and refers to people who earn less than $3,000 per year (Hammond et al., 2007).
3 Website for the Lakota fund: www.lakotaov.com
when Shannon County was listed as the poorest county in the United States. The Pine Ridge Reservation comprises an area of 4,340 square miles and a population of 15,521 in 2000.

Not only was Shannon County listed as the poorest county in the U.S. (with an average income about four times lower than the national average), but it also suffered the worst life expectancy in the nation: (56.5 years for males) and a 36% unemployment rate in 1995. Most of the population (80%) lived in rural areas far from services and had to travel between 40 and 180 miles to meet their bank advisors (Mushinski and Pickering, 2007).

The Lakota Fund is a community development financial tool established to provide “culturally appropriate strategies, including business loans, technical assistance, and targeted community and business development” (Lakota Fund, 2011). The fund has had a loan portfolio since 2008 and has made more than 660 micro and small business loans over $4.7 million. A number of educational and cultural programs have been launched in order to increase the skills of the Oglala Lakota people. The fund has moreover developed the first Native American-owned tax-credit-finance for affordable housing projects and the first Native American Chamber of Commerce. Nowadays, Shannon County is no longer the poorest county in the U.S.; 42 other counties are listed as poorer. Their capacity to generate wealth is certainly associated with the Lakota fund’s good performance, which has on average, a 2.5% rate of interest. The Lakota fund is regarded as a valuable example of an integration of both natural and cultural heritage (Malkin, 2003), and as we can read from the Lakota fund’s 2011 Mission Statement: “its success is to build up the world of creative entrepreneurship for Lakotas following their dreams, goals and opportunities while maintaining strong connections to their land and rich cultural heritage of productivity and trading.”

8. Conclusions and Policy Recommendations

The continuous dynamism of urban areas reflects the broader economic and social forces of a country, because cities are often a nation’s engine of economic growth and opportunity. In recent decades intense pressures have been brought to bear on cities by the worldwide acceleration of urban growth and decline processes; moreover, the present economic crisis due to the accumulation of massive debt, much of it in the property sector, calls for innovative funding mechanisms to support sustainable urban development, in particular urban brownfields. In this report we have extended the definition of urban brownfield by including not only natural brownfields such as contaminated sites, but also cultural heritage, as for example, abandoned historic districts.

A number of platforms have been established to address the problem of best practice in urban development, such as URBACT, OECD-LEED, and the Urban Knowledge Network, but few agencies focus exclusively on the financial issues associated with urban transformation and regeneration of brownfield sites. City governments, especially in developing countries, have difficulty finding efficient ways of financing urban regeneration, therefore the intervention of
private financial initiatives can be seen as a suitable means of resolving the brownfield financial shortfalls.

As we have noticed in this report, urban brownfield investment, more than other urban projects, exhibits public good characteristics, therefore, the role of the public sector is the driving force and facilitator of the relationship between public interests and private objectives. From this perspective we have demonstrated the necessity for introducing solid administrative institutions to foster private investments. However, public authorities also need to understand the interaction between natural and cultural heritage, and be able to attend to the present inhabitants and activities in the targeted areas; for instance, the Indian Parliament has passed a new Act (Ancient Monument and Archaeological Site and Remains Act, 2010) to prohibit any alterations, repairs or additions to existing properties within 300 meter zones of protected monuments. Given the dense urban structure of Indian cities, this Act may prove to be detrimental to living areas and thus to the heritage areas it aims to protect (Verna, 2010).

Therefore, two relevant points must be addressed: the contextual element; that is, what city and what type of brownfield investment is under consideration; and crucially, the economic relationship between the investment(s) and the market (for example the property market), must be understood by all players. From this perspective, formal partnerships with transparent and greater participation in the decision-making should be preferred above the informal partnerships often in use. In particular, policies that encourage decentralization for financing and implementing brownfield redevelopment may allow for a better response to city needs by offering more flexible tools and alternative forms of fiscal and fund incentives to develop the poorest city areas.

The main potential benefit of the private intervention methodologies reviewed here is their flexibility in adapting the structure of incentives and risk-sharing to specific features of a brownfield project and to the economic and institutional environment. Experiences in brownfield redevelopment and financing in developing countries are scarcer than those presented in the United States and in Europe, where EU Structural Funds are available, (Thorton, 2005). For instance, the US think-tank the Milken Institute has prepared a plan to alleviate the problem of scarce financial resources for a significant number of heritage sites in Israel. Among the various funding models include: community micro-financing, which would leverage loans and donations in order to finance local heritage sites; venture capital funding that links archaeological conservation with the tourism, small business and retail industries; and the sale of low-risk archaeological development bonds to provide long-term project financing. Funding could come from antiquity leasing, media content, intellectual property, artisan crafts, and replica merchandise (MacLean et al., 2011).

Taking into account the above, integrated urban land management policies related to heritage brownfield regeneration should focus on market-led incentives (indirect incentives, gap-
funding, etc.) and enable public intervention (direct funding and public-driven development) where necessary. Policies should be explicitly designed to:

- Broaden the scope of heritage brownfield redevelopment projects (inclusion of natural and cultural heritage);
- Eliminate legal obstacles to heritage brownfield redevelopment (i.e. clarify previously ambiguous legal liability);
- Provide direct and indirect financial incentives to encourage heritage brownfield development and discourage greenfield development;
- Discourage greenfield development by placing a high tax on its development.

In order to design new financial mechanisms for urban brownfields with private sector intervention, it is thus necessary to assess the long-term risk and performance of city assets by examining the sustainability of the urban potential across generations, income, and groups, and in so doing analyze methods for capturing the value of undervalued and vulnerable brownfield assets, that is, the city’s latent capital.

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