CDIA is an international partnership initiative, established in 2007 by the Asian Development Bank (ADB) and the Government of Germany, with additional core funding support from the governments of Austria, Sweden, Switzerland, and the Shanghai Municipal Government. CDIA provides assistance to medium-sized Asian cities to bridge the gap between their development plans and the implementation of their infrastructure investments. CDIA uses a demand-driven approach to support the identification and development of urban investment projects that emphasize urban environmental improvement, urban poverty reduction, climate change mitigation or adaptation, and improved governance.

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INCLUSIVE INFRASTRUCTURE AS A CATALYST FOR REDUCING POVERTY AND SHAPING COMPETITIVE CITIES

Business opportunities and social and economic benefits come from investing in socially oriented infrastructure and from a sustainable city environment. To be competitive and inclusive, cities need to provide a good business environment—one that harmonizes social, economic, and environmental development with fast-track and transparent procedures conducive to doing business. Clean city environments, with provision of good and inclusive basic services, are an important ingredient of business-friendly cities (Box 1).

Following high economic growth, the Asia and Pacific region is rapidly urbanizing. In 2014, 55% of the worldwide urban population was living in Asia and the Pacific, up from 47% in 2012. By 2018, it is estimated that more than 50% of the Asia-Pacific population will live in urban environments; furthermore, it is expected to increase to 66% by the year 2050. Indeed, this is the “urban century: the first in which the number of people living in towns and cities is greater than those living in the countryside.” A major reason for this increased urbanization is migration, especially by the poor, who try to benefit from economic growth in cities. Nevertheless, this growth does not always provide sufficient income for them to overcome poverty, or an environment conducive to improved living conditions.

Asia and the Pacific is “home to the world’s largest urban slum populations and the largest concentrations of people living below the poverty line.” UN-Habitat estimates that over 900 million people in Asia and the Pacific live on less than US$1.25 a day, more than half of them in urban areas. In the Asian region the number of slums is on the increase, and effective measures are needed to reverse this trend. To achieve significant poverty reduction impacts, infrastructure services need not only be targeted to low-income areas, but should also be made more inclusive with a focus on vulnerable people living in slums. The cities that positively address infrastructure investments and poverty reduction will have a competitive edge over those whose citizens and urban poor suffer from serious absence of infrastructure and services, poor housing, and unhealthy environments.

The provision of infrastructure stimulates economic growth and development in cities. The key challenge for governments in Asia is to provide infrastructure and basic services for rapidly growing populations in...
Box 1: Potentials of inclusive infrastructure investments

“Cities with proper infrastructure facilitate higher productivity and the resulting higher returns attract foreign direct investment. Within Asia, urban infrastructures display wide variations in terms of quality. In this regard, East and Northeast Asia provide the best the region has to offer and therefore has attracted larger amounts of foreign direct investment than any other subregion. However, it must be noted that the quality of the infrastructure still falls short of standards prevailing in OECD countries.”

It is important also to note that despite increased foreign investment in some Asian regions and high infrastructure standards, a more inclusive approach is needed to reduce the urban population living in slums, which is estimated to be 35% in Southern Asia compared to 24% in Latin America and the Caribbean, and 13% in North Africa. (Source: UN-HABITAT and UN-ESCAP, 2010 & 2015)

an inclusive manner that not only ensures incentives to economic growth but also targets poverty reduction.

For an inclusive city, the link between the urban environment and the poor is an important paradigm. Municipal administrators need to be more proactive in finding ways to fill the gap of urban infrastructure in an inclusive manner.

• facilitate understanding of concepts and issues related to the design of infrastructure projects that will directly or indirectly benefit the urban poor;

• assist local government officials, sector specialists, and project planners in the formulation and design of inclusive infrastructure investment projects; and

• stimulate change and motivate mayors, local government officials, and other decision makers in medium-sized cities to make use of inclusive infrastructure investments in their cities with an eye on increased competitiveness - this should be a two-pronged approach to both urban development and poverty reduction.

ANNEXES
APPLIES TO SECTION 2 AND 3

The 5-A Model
Key design principles to ensure impacts on the poor by infrastructure investments
Key questions related to the steps in the project design process
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PURPOSE AND USE OF THE GUIDE

This publication¹ is intended as a practical guide for mayors, local government officials, sector specialists, planners, and other decision makers involved in the programming and design of urban infrastructure projects in medium-sized cities.

The guide aims to:

STRUCTURE OF THE GUIDE

As shown in Figure 1, this Guide is divided into four Sections. Section 1 highlights the important role that provision of infrastructure has for the competitiveness of cities and the importance of its provision in an inclusive manner to improve the living conditions of the poor. In addition, it provides practical tips on matters of concern in

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¹ This is an update of the 2012 Pro-Poor Infrastructure Investments Guide, the development of which was initiated during discussions at pro-poor infrastructure workshops held in three Asian cities (Chennai, India; Yogyakarta, Indonesia; and Naga City, Philippines) and one regional workshop in Bangkok, Thailand.
the conceptualization process of infrastructure investments intended to target or increase positive impacts on the urban poor. Section 2 provides an overview of principles and steps that will guide decision makers to ensure that, through using either the targeted or the inclusive approach, benefits for the poor are maximized. Section 3 summarizes issues related to linking pro-poor infrastructure projects to financing. It describes in simple terms how to go about a cost-benefit analysis to test the financial viability of a project. It also describes potential public and private sector financial sources that can be used for their implementation. Finally, a set of Annexes provide additional information related to the other sections of the Guide.

Box 2: Economic benefits of investing in inclusive infrastructure

“Investing in water and sanitation yields an overall estimated gain of 1.5% of global GDP and a US$ 4.3 return for every dollar invested in water and sanitation services due to reduced health care costs for individuals and society; greater productivity and involvement in the workplace through better access to facilities, especially for women in the workforce; opportunity for growth of new industries, such as infrastructure, disposal and use of human waste and materials supply.” (Source: World Health Organization, 2014; Photo: Eva Ringhof, 2016)
KEY QUESTIONS
What is inclusive urban infrastructure development?
What are the economic and social benefits of pro-poor urban infrastructure?
What are the practical issues in pro-poor urban infrastructure investment?

1.1 WHAT IS INCLUSIVE URBAN INFRASTRUCTURE DEVELOPMENT?
For the purpose of this guide, inclusive urban infrastructure development is defined as an approach that enhances the access to and the use of infrastructure and services by the poor and disadvantaged/vulnerable people, either through city networks or area-specific interventions. In well-managed cities, inclusive and pro-poor infrastructure investments are already part of city development strategies.

Inclusive urban infrastructure development has direct and positive impacts on the poor and the vulnerable and socially excluded population by improving:

- **access to municipal services** such as water, sanitation, waste management, transport, shelter, electricity, and protection against human-made or natural hazards. The poor are usually poorly served by urban infrastructure, leading to a range of problems exacerbating poverty.

- **access to resources**, such as financial resources, that generate employment or decent income possibilities. Targeted investments in strategic infrastructure provision or improvement, and promotion of small and medium-sized enterprises through finance can stimulate pro-poor economic growth and development, leading to income generation and improved livelihoods for the urban poor. Inclusive infrastructure investments can also enhance access of the poor and vulnerable to key assets such as land and property titles.

- **access to decision making**, which means participation and empowerment. The poor are generally not sufficiently involved and consulted in urban planning and infrastructure development. Community empowerment can be a key outcome of a well-managed project development process. Participation also provides an avenue for promoting gender equality and inclusiveness for minority groups.

1.2 WHAT ARE THE ECONOMIC AND SOCIAL BENEFITS OF INCLUSIVE URBAN INFRASTRUCTURE?
Many benefits for the poor are derived from urban infrastructure:

- **Competitiveness and resilience of cities.** Provision of infrastructure enhances the efficiency of cities and stimulates investments by local business people and outside investors seeking to establish their businesses in cities and towns where urban infrastructure is available and services are reliable. This will be positively enhanced in cities where human settlement conditions enable a clean and healthy life for the labor force (Box 3).

- **Formal and informal sector dynamics.** When infrastructure is targeted to poor areas, it stimulates investments (trade, commerce, housing) and promotes economies of scale that support both formal and informal economic activities in the areas of intervention and their surroundings. Pro-poor and inclusive infrastructure investments trigger investments in
other sectors like housing; trade and commerce; and secondary infrastructure like electricity, water, and sewerage connections to businesses and homes (Box 4).

- **Increase of local revenues.** Provision or improvement of infrastructure in marginalized and poorly served slum areas contributes to the consolidation and the formalization of such areas and to economic activities that increase the opportunities of urban authorities to raise revenues through property taxes, building taxes, commercial licenses, service fees, etc. (Box 4).

- **The “inclusive city” image for livability and health.** In the future, cities and their leaders will build their image as smart and just cities. They will be recognized if innovative methods are pursued to address poverty issues. The building of a positive image of a city will be beneficial in many regards: for its competitiveness, for its environmental performance, and for its economic future. Inclusive urban development will be a win-win situation for the urban dwellers, for the city leaders who rely on the votes of the poor for their (re-)election, and for the business world.

- **Environmentally conscious cities.** Cities that are proactive in adapting to the impacts of climate change entertain higher chances to stay competitive by providing a more resilient and sustainable environment for their businesses and populations to flourish and grow. Asian cities, especially coastal ones, are under threat of climate change. Provision of adaptation infrastructure will assist in decreasing the risk of disasters and the devastating effects that normally accompany these events. Since lack of access to adequate land or housing pushes most of the poor to live in high-risk sites, investments need to be made to decrease their vulnerability to natural and human-made hazards (Box 5).

Good quality public spaces and social amenities need to be built in cities, including in those areas with high concentration of low-income households. Manila, Philippines. (Photo: Liliana Marulanda Montes, 2012)

**Box 3: Building a city on the principles of social equity and quality of life in Bogotá, Colombia**

“Bogotá, Colombia proves that cities can be reborn by redesigning them not primarily on economic principles of profit but on those of social equity and quality of life. The city developed a public transport system that included bike lanes and pedestrian-friendly sidewalks. Existing public parks were improved and new ones developed, also in the poorer areas of the city. Efforts were made to connect the slums to the inner city. In short, Bogotá developed infrastructure that benefitted all its inhabitants, especially the poor, resulting in the creation of one of the most competitive and livable cities in Latin America.” (Source: United Nations, 2011; Photo: Eva Ringhof)
1.3 WHAT ARE THE PRACTICAL ISSUES IN INCLUSIVE URBAN INFRASTRUCTURE INVESTMENT?

Practical issues to take into account include:

1.3.1 Rational urban development

• Analyzing a project in relation to the project area, its surroundings, and the city context. Spatial analysis of the project components at the city level widens the understanding of its possible impacts on surrounding areas in particular, and at the city level in general. The project design can take advantage of other projects or programs and of the physical and economic synergies that are created by the investment. This must ensure, to the extent possible, that it benefits the poor. Equally, it needs to be kept in mind which other projects may threaten the livelihood and habitat of poor urban communities.

1.3.2 Effectiveness in reducing poverty

• Targeting the poor and most vulnerable groups and areas. Selecting areas with large concentrations of poor residents as targets for infrastructure investments is one of the most effective ways to contribute to poverty reduction. Since the lack of affordable options pushes poor people to settle in locations prone to disasters, a combined focus on both the most vulnerable population and at-risk locations is an effective way to ensure greater impact of infrastructure investments on poverty reduction.

• Supporting the creation of job opportunities/income. The opportunities created by the synergy between infrastructure investments and the economic sector can be used, among others, to generate income and improve the livelihoods of low-income families. A survey of technical and professional skills available in project areas or among low-income beneficiaries could match project activities with existing skills. Employment generation for the urban poor by an infrastructure project should be one of the criteria to rank a project or component during prioritization of investments (Box 7).

Box 4: Redevelopment of low income areas, “Ger area” in Ulaanbaatar, Mongolia

The redevelopment of ger areas or low income settlements in Ulaanbaatar, Mongolia through the provision of affordable housing has brought a rapid increase in the economic activities of ger areas. Land values around the ger areas increased; the citizens were ensured of their rights to live in a safe and healthy environment; housing price was stabilized; and the increase in housing supply has led to the creation of an environment conducive for small businesses. (Source/Photo: Sarnai Battulga, 2016)

Box 5: Flood protection project in Naga City, Philippines

“Since 12 out of the 27 barangays in Naga city are low lying barangays, and thus flood prone, the flood protection project will benefit about 20,000 households, 40% of which are urban poor. About 5,000 residents and tourists will benefit from the river walk. About 26,000 jobs are created by the two projects (70% are residents from the project locations and 99% are male)” (Source/Photo: CDIA, 2015)
Minimizing relocation and negative impacts on the poor. Participatory on-site and in-city relocation approaches that do not disrupt the proximity between living and working environments, nor the social links and networks of the poor, are recommended. Reasons for relocation need to be thoroughly analyzed, since in many instances, proper relocation tends to be more expensive and disruptive than in-situ upgrading. If relocation is unavoidable, voluntary relocation should be sought by offering adequate compensation so that the situation of affected households will not be worse than what they had prior to the infrastructure investment (Box 8).

Box 6: Economic Impacts of Disasters

“Asia suffers the brunt of the world’s disasters. According to EM-DAT, the region accounted for half of the estimated economic cost of disasters in the world over the past 20 years, or $927 billion in Asia (more than $40 billion annually on average) and $956 billion outside of Asia. While the region generated almost 25% of the world’s gross domestic product (GDP) during 1980–2009, it accounted for 38% of global economic losses due to natural disasters in that period.” (Source: ADB, 2013)

In Indonesia, the 2007 flooding in Jakarta “inundated nearly three-fifths of the capital, killing 52 people, displacing some 450,000 more and costing nearly $1 billion.” (The Economist, 2012)

Typhoon Haiyan, locally named Typhoon Yolanda in the Philippines affected a total of 1,473,521 families, according to the Philippine government. Moreover, “Haiyan caused an estimated $700 million in damage to agriculture and infrastructure, and completely destroyed more than half a million homes. The United Nations’ Office for the Coordination of Humanitarian Affairs reports that 77% of farmers and 74% of fishermen in the central Philippines have lost their primary source of income” (Source: The Wall Street Journal, 2013).

Box 7: The social and economic benefits of integrating waste pickers in Pune, India into the municipal solid waste management

“Research found that each waste picker in Pune contributed US$5 worth of free labour to the municipality every month, and their combined labour saved the municipality US$316,455 in municipal waste transport costs” (Chikarmane et al 2001:101). Collectively waste pickers earned US$2.25 million annually. It is estimated that in Pune alone nearly 118,000 tons of material was recovered by the informal sector annually, diverting 22 per cent of the recyclables away from landfills in 2006. In money terms, the net environmental benefit accruing from the informal sector is calculated as 2.830.333 euros (US$3,615,900) for the same year. (Scheinberg et al. 2010:.15). This documentation made it possible to conduct evidence-based advocacy and secure gains for waste pickers. Medical insurance paid for through the municipal budget was one such gain (2002); support for the SWaCH (Solid Waste Collection Handling) Cooperative was another (2006); and space in the city for SWaCH+ value-added services and activities was yet another (2012)” (Source: WIEGO, 2012).
Negative impacts may particularly occur with infrastructure investments when the poor are not the direct or even indirect target beneficiaries, or when they are subjected to involuntary relocation. The most common negative impacts of infrastructure projects on the poor are the loss of assets, jobs, and livelihoods.

1.3.3 Safeguarding equality and inclusiveness

- **Safeguarding the interest of women, children, elderly, persons with disabilities and other minority groups.** The systematic application of safeguards during project programming and detailed design is required, so that project responses will match the concerns and expectations of affected persons. This can be promoted through the participation of beneficiaries and other affected persons, and the inclusion of social development professionals in the project management team to safeguard their interests.

1.3.4 Securing funding for interventions

- **Identifying potential financing sources and partners as early as possible.** Financing pro-poor and inclusive interventions is more feasible when potential sources are identified as early as possible during the project design process. Having an early picture of potential financing sources helps the process to maintain realistic objectives and targets. This is especially important when mobilization of poor communities is relevant. It will help to keep the expectations of beneficiaries at a realistic level.

- **Use of financing combinations.** To enhance affordability to the poor, decision makers can explore creative financing combinations of public and private sources. These may include cross-subsidies, in-kind contributions by beneficiaries and project stakeholders, PPPs, etc. Proactive thinking, cost-sharing possibilities, and willingness to provide services to the poor are common ingredients found in projects financed from multiple sources (Box 9).

- **Establishing strong Public-Private Partnerships (PPP).** PPPs are efficient modes of mobilizing additional funding for infrastructure. They help reduce construction time and costs, thus providing better value for money. They also play an important role in improving project planning and coordination, as well as the regular maintenance of the project. Because of the increased participation of the private sector, transparency is ensured. All of these then leads to improved service delivery.

1.3.5 Sustainability of interventions

- **Supporting participatory planning and design with beneficiaries and relevant stakeholders.** Participation of stakeholders from both the public and private sectors in formal and informal planning and programming will ensure that the needs and conditions of beneficiaries and other stakeholders are discussed, understood, and translated into action. Demand-driven and
community-driven approaches can help to ensure higher levels of ownership and commitment. Participation of all stakeholders can also ensure a transparent system for decision making that respects the interests of the poor.

- **Creating synergies among actors and resources for the service provision.** For the provision of urban infrastructure and services, governments need to take advantage of the synergies that can be created between formal and informal actors to increase coverage and efficiency. In sectors like water, transport, and solid waste management, the role and relevance of the participation of the informal sector in providing services is very significant. The informal sector has a value not only for facilitating access to services and the employment generated for the poor; it is also complementary to formal systems such as in the case of urban mobility and solid waste management.

- **Balancing between the standard of infrastructure and the poor beneficiaries’**
The project design needs to ensure that agreement among stakeholders is reached on standards of services that are affordable to poor beneficiaries. It is important to avoid overdesigning of infrastructure, making it less affordable for the poor and, thus, more demanding on government budgets. A realistic assessment of these factors is the key to sustainable solutions.

- Including realistic costs for long-term operation and maintenance as an indicator for sustainability of services and amenities. Irrespective of whether it is a pro-poor investment, a long-term operation and maintenance budget is required to ensure that the value of infrastructure assets is maintained and the services are sustainable. The involvement of community groups and beneficiaries in operation and maintenance activities not only generates employment, but also helps to ensure the sustainability of the infrastructure and amenities provided.

- Scaling up sustainable systems. To facilitate the shaping of an effective delivery system of pro-poor infrastructure and services projects, the involvement of non-government organizations (NGOs) and other groups that have experience in delivering services for the poor is recommended. These organizations (such as water and other service providers) can act as intermediaries and ensure that projects, programs, and interventions are more effective and scaled up to reach a larger number of urban poor and increase impacts on poverty reduction. Special purpose vehicles, like a dedicated unit in the government to deal with these projects, are an alternative option for scaling up, but sustainability concerns need to be taken into account from the outset.
### Figure 2: Summary of practical issues of pro-poor infrastructure investments

<table>
<thead>
<tr>
<th><strong>FOR RATIONAL URBAN DEVELOPMENT</strong></th>
<th>• Analyzing a project in the project area, its surroundings, and the city context.</th>
</tr>
</thead>
</table>
| **FOR EFFECTIVENESS IN REDUCING POVERTY** | • Targeting the poor and most vulnerable groups and areas  
• Using infrastructure investments to create job opportunities for the poor  
• Preventing or minimizing negative impacts on the poor  
• Avoiding or minimizing relocation impacts |
| **FOR SAFEGUARDING EQUALITY AND INCLUSIVENESS OF MINORITY GROUPS** | • Safeguarding the interests of women, children, elderly, disabled, and minority groups |
| **FOR SECURING FUNDING FOR INTERVENTIONS** | • Identifying potential financing sources and partners as early as possible  
• Making use of creative financing combinations |
| **FOR SUSTAINABILITY OF INTERVENTIONS** | • Supporting participatory planning with beneficiaries and other relevant stakeholders  
• Establishing a delivery system for sustainability and scaling up  
• Striking a realistic balance between the standard of infrastructure and the capacity of poor beneficiaries to pay  
• Including realistic costs for long-term operation and maintenance as an indicator of sustainability of services or amenities  
• Creating synergies among actors and resources for provision of services |

The issues presented in Figure 2 are very relevant and generic in their application to pro-poor and inclusive infrastructure projects. For each urban infrastructure sector (transport, water supply, sanitation, slum upgrading, urban revitalization, etc.) there are specific features to be considered. These will be dealt with in more detail in the next section of this Guide.
2.1 HOW CAN INFRASTRUCTURE INVESTMENTS BE TARGETED TO BENEFIT THE POOR?

By targeting benefits to the poor and the most vulnerable areas, infrastructure projects can make a significant impact on slum eradication and poverty reduction through the enhanced provision of basic services, and increased participation to economic activities, among many others. There are two routes that can be taken to ensure that the urban poor benefit from infrastructure investments: the direct and the indirect (Figure 3).

The direct route includes the urban poor as beneficiaries and embraces two approaches: the targeted approach and the inclusive approach2.

The targeted approach focuses on the urban poor or on vulnerable areas where poor families live as

---

2 Targeted Poverty Reduction Approach: The urban poor, poorly serviced, vulnerable areas and people are the main beneficiaries of the infrastructure projects. More than half of the beneficiaries are considered poor or disadvantaged people with low resources.

Enhanced Inclusiveness Approach: All people in the city benefit from equal access to infrastructure services networks. In order to make the overall system more inclusive, the percentage of poor beneficiaries is higher than the percentage of people living below the poverty rate. Benefits for the poor are perceived also through complimentary interventions.
main beneficiaries of the infrastructure projects. The focus of projects that use this approach is poverty reduction through the improvement of living conditions of the urban poor (Box 10).

The inclusive approach targets citywide improvement of infrastructure or service networks by providing all people in the city equal access to services. Emphasis is placed on trying to extend benefits to the poor either directly or indirectly. The inclusive approach can maximize benefits to the poor by supporting complementary interventions through which the poor can profit. The complementary interventions can be components of the same project or initiatives financed and implemented by other partners (Boxes 11, 12).

Both the targeted and the inclusive approach can use the pro-poor principles included in Annex 1 during project formulation and design. These are meant to ensure that as many options as possible are considered for the benefit of poor households.

The indirect route ensures benefits to the poor through indirect impact channels. With this approach, no immediate benefits will be enjoyed by the poor, but these indirect channels will ensure that the urban poor will eventually benefit from the overall economic uplift that infrastructure investments will bring about. For example, with water supply and sanitation projects, or solid waste management projects that are directed at cities at large, the intention is to improve the performance of public (or private) infrastructure or service corporations. Through cost-efficient service delivery and effective management of cost recovery, impacts will reach a wide range of beneficiaries (Box 13).

**Box 10: Targeting the poor through the Neighborhood Upgrading and Shelter Sector Project (NUSSP) in Indonesia**

The NUSSP is a national program financed through a loan from ADB. The project made loans available to cities for improving the living conditions of the urban poor. The city of Pontianak, as part of its efforts to improve its environment and reduce poverty, decided to participate with upgrading of 10 slums. The project included new urban services (water supply, sanitation, drainage, footpaths, roads, and solid waste management), integrating these communities into city infrastructure networks. Infrastructure was financed through the ADB loan, and social infrastructure was covered by the local government. *(Source: ADB, 2011; Photo: ADB, 2012)*
Box 11: Targeting benefits of infrastructure and services to the urban poor

As part of a larger pro-poor intervention and urban upgrading, the city of Medellin, Colombia, provided a system to improve the mobility of the urban poor. The Metrocable is an elevated cable-car system that connects areas with very high concentration of poor population to the city's metro system. Improved mobility by an inclusive system has enhanced, among others, access of the poor to the city's resources and opportunities. (Source: University of Cambridge DPU; Photo: Liliana Marulanda Montes, 2005)

Box 12: Pro-poor infrastructure investments in the transport sector

The Khulna City Corporation in Bangladesh is supporting the development of a pro-poor and green approach to the city's transport sector. Of the eight project components, two were designed to directly benefit the urban poor.

The targeted approach. One component focuses exclusively on the accessibility and mobility needs of the urban poor by strengthening and extending existing access routes for both pedestrian and non-motorized transport to urban slums, benefiting approximately 45,600 urban poor households.

The inclusive approach. Other components include road improvement in various parts of the city, new footpaths, roadside drainage, street lighting and beautification, together with rehabilitation of existing culverts/sluice gates to reduce the vulnerability of the area and the infrastructure to flooding. Some of these roads are on the fringe of low-income settlements, enhancing the mobility of the urban poor with improved links to Khulna’s main transport network and routes. (Source/Photo: CDIA, 2010. CRDP Sub-Project: Pro-Poor and Green Urban Transport in Khulna. Project Draft Final Report)
the Guide, other more sector-specific features are discussed. These sectors are as follows:

2.2.1 Urban renewal

Urban renewal is inclusive in the sense that affordable and accessible housing and employment options are available to different income groups comprising the area’s existing and potential new inhabitants. This can be enhanced through subsidies and incentives. Issues of concern for the poor include the following:

- **Formal and informal economic activities of the poor.** Since most of the economic activities of the poor and marginalized are in the informal sector, urban renewal interventions need to devise solutions that provide or improve spaces for medium- and small-scale economic activities by poor shopkeepers, street vendors, food stall owners, those involved in informal transport systems, porters of goods, sweepers, solid waste workers, etc.

- **Impacts of formalization.** Interventions need to consider the impacts that increased prices for space, rent, operation, and maintenance of the renewed facilities and infrastructure services will have on poor and low-income shop owners and jointly design appropriate mechanisms so that such people are not pushed out of their area of work or residence. Special attention should be paid to impacts on single-headed households and other vulnerable groups.

- **Potential for employment generation.** Design should explore ways to increase employment opportunities, as well as to improve the conditions of the poor already earning a living from commercial activities in the area, for instance hiring them as part of the operation and maintenance crews of the new infrastructure facility as accountants, security personnel, etc. A technical and professional skills survey of low-income residents as part of the project activities could be used to match opportunities with available skills of the poor population.

- **Housing for poor residents.** If housing is a project component, ensure that there are appropriate housing designs and financial products that permit poor residents to stay, and ensure that the new housing development will not be taken over by higher income groups (gentrification).

2.2.2 Slum upgrading

Pro-poor slum upgrading is sensitive to the problems, needs, and opportunities of the poor and marginalized groups, and contributes significantly to the improvement of existing conditions. It is essential that the poor and minority groups have access to an affordable standard of housing and services, as well as access to land. Although this type of project varies in magnitude, nature, and context, the pro-poor features of slum upgrading need to emphasize the following:

- **Improvements focused on the poor and most vulnerable.** Even slums have a mix of income
groups. The process needs to ensure that the poor, the vulnerable, and the marginalized take active part in the project.

- **Key gender issues.** Land ownership, safety and security, assured income, and livelihood are very important aspects for women and need to be addressed in the project design.

- **Design responsive to the needs of the poor.** Consultations on standards and design of services are needed so that the responses and responsibilities that come with these decisions are accepted by the beneficiaries (e.g., community services or individual connections; finished housing or core housing; wider roads and more displacement, or narrow roads and less displacement; who gains and who loses from certain decisions?).

- **Minimizing or adequately compensating negative impacts.** Relocation is especially disruptive to the lives of the urban poor.

### 2.2.3 Urban transport

Inclusive urban transport is affordable, and accessible options are available to different income groups, including poor passengers, especially women and others affected by the project. Special concerns for the poor are the following:

- **Access to opportunities and services.** Transport projects need to include routes that connect low-income settlements and slums efficiently with commercial districts, markets that facilitate commercial and economic activities, and social services like public hospitals and schools that the poor can afford. These projects must also consider affordable tariffs for the poor.

- **Gender issues.** In public transport, safety is an important concern for women. It needs to be addressed in the design of the system.

- **The poor and the informal transport sector.** The poor could benefit from the facilitation of stalls inside and near stations, and from a pro-poor regulatory framework that includes a transparent license system to avoid harassment and informal payments. Benefits can arise from the complementarities of the formal and informal modes of transportation. Feeder routes for mass public transport can be organized using existing informal systems, which employ a vast number of poor people.
• **Design concerns.** Transport projects need to consider the various types of users, and their needs. The needs of the poor include, among others, the possibility of transporting bulky packages of products to and from marketplaces, wide sidewalks and street lights along high-speed roads for their children’s and their own safety, paved roads and bicycle routes in their settlements to improve the mobility of people and goods, and health standards. Consider different standards and means to enhance affordability, provision of good roads for nonmotorized transport, low-cost options for public transport, etc.

2.2.4 Energy

Inclusive energy sector projects provide affordable and accessible options for all residents in the target areas. Important features for the poor in terms of energy include the following:

• **Key users.** Involve poor beneficiaries, especially women, who are main consumers and buyers of household-related items such as cooking gas, firewood, coal, and electricity. Safety concerns for women at night and facilitation of schooling activities for children at home are issues to be considered. For greater support, community-based energy associations must be encouraged.

• **Exploring alternatives.** Analyze possible positive and negative impacts on the lives and especially on the economic activities of the poor. Explore alternative designs and technologies that are low cost and support informal business and livelihood activities in slums.

2.2.5 Solid waste management

Solid waste management projects are inclusive when all stakeholders, particularly the poor, are invited to participate and to benefit from the project components. The result will ensure a tailor-made and sustainable solid waste management system, accessible and affordable to all regardless of income level, education, gender, etc. Features of relevance to the poor include the following:

• **Livelihood and informality in the sector.** Project design needs to take into account the livelihood ties to waste management activities, especially informal commercial activities connected to collection, recycling, and scavenging at dumpsites, and how the project will affect these negatively or positively. Recycling waste banks, using locally produced carts and charging small fees for each collection are some of the examples that can ensure the creation of an inclusive solid waste management system.

• **Employment generation.** Provide new employment opportunities in connection with the possible regularization of informal activities in the service system.

• **Gender aspects.** Women and children are more vulnerable to the adverse impacts of pollution. In low-income households, women are often responsible for waste management, and children are very much involved in scavenging and recycling activities. Thus their concerns and interest are crucial in the design of the project.

2.2.6 Water supply, sanitation, sewerage, and drainage

Water supply, sanitation, sewerage, and drainage are inclusive when safe and sustainable services are accessible and affordable to all beneficiaries in the
target area. In relation to these sectors, pro-poor features include the following:

- **Gender issues.** Since women, and to some extent children, in slum areas are responsible for water management at the household level, their habits, concerns, and needs are extremely relevant in project design. Privacy concerns of women in relation to sanitation need to be addressed.

- **Accessibility, affordability, and adaptability.** Poor beneficiaries are concerned that services are reliable, that the design suits the needs of their households and livelihoods, that tariffs are within their budgets, and that the collection system responds to their earning/salary schedules. Alternatives should be considered such as bulk meters, public and/or group water taps, private connections, community or private toilets that are low cost and can be upgraded, and other affordable technologies for water supply.

- **Community involvement.** Participation of poor beneficiaries in the operation and maintenance of water services can reduce costs and generate employment. Poor beneficiaries can be trained to keep accounts, repair water taps or household connections, maintain drains, and septic tanks, collect fees, design awareness campaigns for better use of services, etc.

### 2.3 WHAT ARE THE STEPS IN THE DESIGN OF A PRO-POOR AND SOCIALLY INCLUSIVE INFRASTRUCTURE PROJECT?

These proposed steps can be followed using either the targeted or the inclusive approach to infrastructure investment projects. Independently of the approach used, the project formulation process needs to be participatory, so that public and private sector partners and stakeholders can reach agreement on what will be done; how; when; at what cost; and with what sources of finance for the implementation, operation, and maintenance of project components. All relevant stakeholders, and especially communities and their representatives, need to take active part in the whole process, so that the decisions made reflect fairly the interests of all partners (Figure 4).
2.3.1 Step 1: City poverty and vulnerability profile

The extent to which the focus for the Pre-feasibility Study (PFS) has already been determined differs from city to city. Sometimes a city has requested support for a PFS on a very concrete and tangible project, and in other cases the request for support is more general, such as looking into a specific sector or geographic area.

The first step in this process is to conduct a situation analysis of the city’s poverty and vulnerability profile. One purpose of the general situation analysis is to assess if the proposed project is relevant and justified from a social and poverty perspective, and if necessary to try to influence the focus of the project in a positive direction. Another purpose is to make sure that relevant general data (such as the characteristics and the geographical mapping of poverty in the study area) are available up front, when many of the parameters of the project are determined.

The situation analysis should rely mainly on secondary data but can be complemented by short but concise data collection such as field surveys, focus group discussions, and/or interviews where necessary. The level of detail depends on the complexity of the intervention and on the availability of data.

This step is also intended to provide basic information on the circumstances within which the proposed intervention is to be introduced. It should provide an assessment of the relevance of the intervention to existing urban strategies and plans, e.g., city development plans.

2.3.2 Step 2: Stakeholder and institutional analysis

To assess the potential poverty and socially inclusive impacts of an intervention, a clear understanding of the stakeholders and institutions that influence the planning and implementation and that are influenced by the intervention is necessary. In Step 3
Upper photo: Water vendors still perform an important role in many Asian cities since piped water supply remains illusive. Lower photo: drainage and flood control infrastructure is crucial for many cities. It can help to adapt cities to the impacts of climate change and to improve their livability. (Photos: Eva Ringhof, 2016)

Poor environmental conditions and lack of services hamper the ability of the poor to enjoy the benefits of urban life. (Upper photo: CDIA; Lower photo: Eva Ringhof, 2016)
it is therefore recommended to analyze stakeholders and institutions and include those that will be responsible for implementation or monitoring of the pro-poor features as part of the institutional arrangement for project implementation.

Stakeholders consist of agencies, organizations, groups, and/or individuals who have a direct or indirect interest in the development intervention or its evaluation. Target groups are the specific individuals or organizations for whose benefit the development intervention is undertaken. Target groups are thus key stakeholder groups for consideration. Four types of stakeholders can be distinguished:

- those who influence the intervention,
- those who are influenced by the intervention,
- target groups for the intervention, and
- intermediary/indirect target groups.

Stakeholders may be affected positively or negatively by the intervention, or may be able to influence the intervention in a positive or negative way. A stakeholder analysis tests assumptions about the interests of these social actors and their possible responses to the intervention.

2.3.3 Step 3: Assessment of conditions and needs of the target groups

Having identified target groups for the intervention, the PFS will provide the necessary understanding of the needs of the target groups to ensure successful project design. This includes equal access to infrastructure services, living conditions, livelihoods, socioeconomic conditions, willingness to pay for municipal services, etc. as well as social (and gender) issues, cultural issues, etc. This analysis should be strictly in relation to the infrastructure project at hand. Strategies to cope with urban poverty and inclusiveness can also be discussed, both formally and informally.

The needs analysis should identify the basic needs, demands, constraints, and capacities of relevant subgroups in the population in relation to the scope of the project. This profile is an important input into the project design process, including the analysis of underlying development problems, objectives, and alternatives, and provides baseline data for monitoring the social impacts of the project on the relevant groups. The first step in constructing this profile is to identify the client/beneficiary population and any other populations that the project will likely affect. The second step is to identify subgroups within this population that may have different needs, demands, constraints, and capacities (based, for example, on gender, ethnicity, age, income level, and/or ownership of land or other assets). These should have been identified as part of the stakeholder analysis.

The analysis should focus on the poor both as users and as providers of infrastructure. Without this

Women and children are the most affected by water supply problems. The issue sometimes is not affordability but availability, as very often poor households pay more for informally and poorly provided services than higher income families connected to formal systems. (Left photo: Liliana Marulanda Montes, 2012; Right photo: Eva Ringhof, 2016)
Three water kiosks were built in three bags of Bayankhongor Aimag, funded by the local aimag government, planned, implemented, and operated by the community and members of community-based organizations. (Source: Kleinschroth, 2011)

Box 14: Planning and implementing community-driven development in Mongolia

The 5-year Community-Driven Development for Urban Poor in Ger Areas Project was supported by the Japan Fund for Poverty Reduction, ADB, the Mongolian Government, and the German Development Cooperation. The project was designed through a participatory process involving stakeholders, particularly the poor. Its objective was to empower local communities through increased participation in local governance and involvement in the design, implementation, and management of community demand-driven infrastructure and income-generating projects in selected ger [low-income Mongolian-type tent housing settlements] areas. During the development of the project, the community cooperated with engineers and architects to follow national standards. In total 314 subprojects were implemented in the three target areas, including 50 for income generation, 21 for livelihood improvement, and 112 aimed to improve the living environment. In accordance with the implementing model, the community groups initiated the projects, made the proposals by themselves, and implemented them or supervised their implementation. (Source: ADB, [no date]; and Kleinschroth, 2011)

2.3.4 Step 4: Objectives for poverty reduction and inclusive indicators

Within the framework of the proposed sector or project, develop objectives and indicators for poverty reduction and gender equity, indicators can be both quantitative and/or qualitative. They should be easily measurable within the boundary of the PFS, and specific enough to be maintained in subsequent stages. Objectives can be general for the whole project, and specific for each component.

The objectives, indicators, monitoring mechanisms, and assumptions and risks for poverty reduction should be part of or integrated into the design and monitoring framework for the project. Mitigation measures to respond to risks should be agreed upon and included in the report, as indicated in Table 1.4

2.3.5 Step 5: Specific design features to ensure pro-poor impacts

The ultimate goal of the situation, stakeholder, and needs analysis is to influence project design to be sensitive and relevant to the needs of the target groups. The PFS is expected to show in which ways a project has been specifically designed to ensure pro-poor impacts and to be gender sensitive. This should be done per PFS, where necessary breaking it down to subprojects to discuss pro-poor components. Pro-poor design features can include geographical targeting, household targeting, ensured affordability through fee adjustment or subsidies, design adapted to needs of the poor, involvement of the informal sector for job creation, etc. This step allows key pro-poor components to be given special attention in the subsequent project chain.

For projects to contribute to poverty reduction and social inclusiveness, the 5 A’s must be pursued: availability, accessibility, affordability to the poor, acceptability by them, and adaptability for them.5

4 A classic impact chain or other similar method can be used to fill out Table 1.
5 See Annex 1 for a detailed discussion on the 5A’s Model.
Table 1: Objectives and Indicators: Design and Monitoring Framework

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE INDICATORS/ TARGETS</th>
<th>DATA SOURCES/ MONITORING MECHANISM</th>
<th>ASSUMPTIONS AND RISKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved living conditions in slums</td>
<td>Improvement of infrastructure in identified low income areas to benefit approx. 670.00 HH (water supply, sanitation, drainage by 2020) Improvement of infrastructure in other areas to benefit approx. 85.000 LIG by 2020</td>
<td>Feedback from NGO implementing the community mobilization</td>
<td>Availability of capable and committed NGO Effective community mobilization program</td>
</tr>
<tr>
<td>Improved living conditions in other income areas</td>
<td>Establishment of approx. 3.300 neighborhood societies (1 per 25-30 HH for O&amp;M of community facilities, regular collection of charges by 2017 Post-project sustainability of 70% consumer societies</td>
<td>Progress reports Project monitoring reports Independent evaluations</td>
<td>Delay in establishment of community neighborhood societies Beneficiaries contribute to costs &amp; effectively maintain improvements</td>
</tr>
<tr>
<td>Equity and vulnerability</td>
<td>3 women/other disadvantaged persons to be managers in each of the 3.300 neighborhood societies established by 2020 200 women/disadvantaged persons to be trained for O&amp;M of community facilities</td>
<td>Project reports Independent evaluations Project reports Independent evaluations</td>
<td>Unwillingness of some women and other disadvantaged persons to become managers Trainees pass on their knowledge to others</td>
</tr>
</tbody>
</table>

The PFS should present an argument for how this has been considered and why the proposed (technical) option will be beneficial for the poor.

Consideration of alternative design options

The PFS should discuss design options that would increase benefits to the poor. Different approaches to geographical targeting of an intervention must be explored and discussed (i.e., whom does it reach?). Affordability must be discussed when there is a danger that the access of the poor to services will be limited as a result of the project because of the pricing of goods and services. Different means of service delivery (such as different modes of public transport in the case of a transport project) should be explored.

2.3.6 Step 6: Assessment of expected impacts

For each component/subproject of each PFS, an assessment of impacts on poverty reduction, envisaged with the proposed pro-poor features, should be made.

The descriptive assessment should discuss expected direct positive impacts on the poor from the proposed project, both qualitative and quantitative. Care should be taken to avoid overstating the expected benefits. Most comprehensive urban infrastructure investments will, to varying degrees, lead to general improvements in overall economic

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6 For a detailed discussion of the impacts assessment, see the 2016 CDIA Checklist for Pro-Poor and Socially Inclusive Urban Infrastructure Development
development, which in turn will/could benefit the population at large. It is also assumed that most investments will generate employment opportunities in the short term as part of their implementation. While important, these indirect or temporary impacts are not the main focus of CDIA’s impact assessment, which concentrates on direct impacts on poverty reduction through addressing the key infrastructure-related poverty concerns in partner cities.

2.3.7 Step 7: Safeguarding of negative impacts

CDIA aims to avoid negative impacts to the extent possible and to minimize/safeguard negative impacts where unavoidable. The PFS should discuss options for mitigating negative impacts as a first step, and, where negative impacts are inevitable, look at safeguarding these through (i) resettlement processes, and/or (ii) environmental safeguards or other compensation entitlements. The discussion of negative impacts and the agreed-upon safeguarding measures should be part of the PFS process.

In cases of safeguards/resettlement being carried out by the client city or another partner, the PFS should review and assess the appropriateness of these plans, and indicate possible impacts and implications for the financial viability of the investment. Costs of safeguards (especially relocation) must always be included in the economic and financial analysis of the project.

At the PFS stage it is also important to flag issues that will need to be studied further in the feasibility study. This flagging should include a clear description of such issues, the implications that these could have on the financial feasibility of the project/component, and what is then recommended for the feasibility study stage.

Negative impacts may particularly occur with infrastructure investments when the poor are not the direct or even indirect target beneficiaries, or when they are subjected to involuntary relocation. The most common negative impacts of infrastructure projects on the poor are the loss of assets, jobs, and livelihoods. The following aspects and safeguards need to be looked into and described:
2.3.8 Step 8: Risk analysis and risk management

The PFS should discuss social aspects that could jeopardize project implementation and impacts, and propose how these can be managed and mitigated. Mitigation measures should be included for each risk identified.

2.3.9 Step 9: Financial considerations for pro-poor and inclusive features

The PFS should explore costs and budgetary provision for the implementation of the pro-poor features included in the project. This issue should be discussed with relevant stakeholders through a transparent process. Detailed information can be found in Section 3.

- **Negative impacts on safety.** Widening of roads and simultaneous creation of narrow sidewalks may encourage more speed on roads and an increase in accidents; informal modes of transport may be marginalized or pushed out.

- **Negative environmental impacts.** Occupation of fringe land can trigger increased vulnerability to disasters like floods, increased noise, air pollution, etc.

- **Resettlement and relocation as part of the project impacts.** Participatory on-site and in-city relocation approaches that do not disrupt the proximity between living and working environments, nor the social links and networks of the poor, are recommended. Reasons for relocation need to be thoroughly analyzed, since in many instances, proper relocation tends to be more expensive and disruptive than on-site upgrading. If relocation is unavoidable, voluntary relocation should be sought by offering adequate compensation so that the situation of affected households will not be worsened.

- **Negative impacts on formal or informal employment.** Loss of employment or restrictions on small business operations, which are often the case when service delivery is formalized, and increased distance to work opportunities caused by resettlement or relocation mean increased transport costs.

- **Negative impacts on assets and access to services.** Consequences of relocation are seen in reduced access to land, housing, green areas, infrastructure, and social services. In settlement upgrading and urban revitalization projects, gentrification can be caused by the application of higher standards than those affordable to the poor, resulting in higher income groups moving in. Increased demand for services in industrial areas, for instance for water and electricity, may result in shortages of those services in low-income residential areas.

While widened roads may cater to more vehicles, it may also be a disadvantage to pedestrians when no sidewalks are constructed for them. As seen in Old Delhi, pedestrians have to share the streets and roads with motor vehicles. (Photo: Beverly Lumbera, 2016)
SECTION 3
LINKING PRO-POOR URBAN INFRASTRUCTURE PROJECTS TO FINANCE

KEY QUESTIONS
What is an economically and financially viable project?
How can we improve the financial viability of pro-poor infrastructure investments?
What are the financing options?

3.1 WHAT IS AN ECONOMICALLY AND FINANCIALLY VIABLE PROJECT?

Financially viable projects are those that ensure full cost recovery. Bankable Infrastructure projects are projects that have high commercial potential through a strong revenue stream or repayment scheme to the Private Sector plus allowing them to earn a reasonable return. Economic viability can be demonstrated through a cost-benefit analysis\(^7\) of estimated costs versus economic (and other) benefits and impacts (Figure 6).

- **Economic analysis.** As a rule of thumb, infrastructure projects are usually pursued on the basis of economic viability by the public sector. An economic analysis will measure the overall benefits that can be achieved by the project and the socioeconomic impacts on beneficiaries and society at large. The economic viability of a project involves computing the economic internal rate of return or the net present value from a stream of incremental benefits and costs attributable to the project over its useful life. The economic analysis involves (i) determining the economic viability of the project; (ii) testing the impact of changes in key input variables on their viability; and (iii) analyzing the distribution and impact of economic benefits brought about by the investment to various stakeholders, particularly the poor.

- **Financial analysis.** As conducting financial viability assessments imposes a cost on tenderers and the entity, assessments should be commensurate with the scale, scope and relative risk of the proposed project. One measure to establish the commercial potential of a project, may be through a willingness-to-pay survey which will be an input to determining the tariff affordability for a revenue-generating project. This analysis will determine the project financial returns and the costs for users. It takes into account willingness and ability to pay for the infrastructure and services. On the other hand, for projects that are pursued through project financing such as public-private partnership (PPP) projects the indicator usually evaluated is the project IRR or the financial internal rate of return (FIRR).

The FIRR is the interest rate at which the net present value of the revenues generated by the project is equal to zero. A proposed project is considered financially viable if the computed FIRR is at least equal to the weighted average cost of capital that is used in financing it. The Private Sector usually decides to pursue a project once his shadow bid shows that the FIRR is greater than the WACC.

For nonrevenue-earning projects such as urban roads, drainage, and flood control or protection, the financial analysis may focus on the project owners’ financial capacity to meet the recurrent costs of operating and maintaining the constructed facilities in a sustainable manner. For an income-generating project, costs of operation, maintenance, and capital should be covered by its revenues.

To enhance affordability to the poor, any government- or private sector-initiated project needs

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7 Cost-benefit analysis is one of many approaches to assess project economic and financial viability.
Section 3

4.1 How can we improve the financial viability of pro-poor and inclusive infrastructure investments?

The following are tips to improve the financial viability of pro-poor and inclusive infrastructure investment projects:

- Determine realistic project costs that include long-term operation and maintenance, realistic capital cost, asset depreciation, and social objectives.
- Involve beneficiaries of all income levels in consultations to formulate the project and to validate the design, project cost, and users’ willingness and capacity to pay, especially the poor.
- Design transparent mechanisms to enhance the payment capacity of the poor, if required. Where possible, cross-subsidy mechanisms should be built into the project design to spread the burden among higher and lower income groups and businesses concerned.
- Demonstrate the viability of the proposed facilities and services by designing a realistic cost recovery mechanism, including setting appropriate levels of tariffs, incentives, and a sustainable tariff collection mechanism.
- Identify risks as early as possible during the project formulation to consider the elements of cross-subsidy, dedicated grants, special revenues, general grants, or other credit-enhancing mechanisms within the financing scheme.

<table>
<thead>
<tr>
<th>ESTIMATED PROJECT COST</th>
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<tbody>
<tr>
<td>Component</td>
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<tr>
<td>Component 1</td>
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<td>Component 2</td>
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<tr>
<td>Component 3</td>
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<tr>
<td>Estimated Cost</td>
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<table>
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<tr>
<th>COST BENEFIT ANALYSIS</th>
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<tr>
<td>Economic Rate of Return</td>
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<tr>
<td>Estimated capital cost</td>
</tr>
<tr>
<td>Operation and maintenance cost</td>
</tr>
<tr>
<td>Benefit streaming (Cost of avoiding damage)</td>
</tr>
<tr>
<td>Revenue streaming</td>
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<tr>
<td>For 30 years</td>
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IF COST-BENEFIT RATIO EQUALS AT LEAST 1 = VIABLE

<table>
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<tr>
<th>FINANCING PLAN</th>
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<tbody>
<tr>
<td>Financer</td>
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<tr>
<td>Local Government</td>
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<tr>
<td>National Government</td>
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<tr>
<td>Other potential financer(s)?</td>
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<tr>
<td>100%</td>
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</table>
formulation process and build institutional financial and operational safeguards to manage them.

• Seek affordable financing sources. Be creative and proactive to combine resources from various local and national sources.

• Where feasible, the engagement of private sector participation, e.g., in the form of PPPs, should be considered. Public and private investors will have their own criteria and procedures for project finance. Hence, any PPP will need to be geared towards fulfillment of these requirements and criteria, and will need to seek a “win-win” situation for all stakeholders.

• If it is foreseen that international financing will be sought, make sure that the planned project can be accommodated within the country strategy agreed upon between the international financing organization and the national government.

4.2 WHAT ARE THE FINANCING OPTIONS?

4.2.1 Conventional public sector financing

• Using own funds. The preferred option to fund a pro-poor project is to find funding opportunities within the city first. This means that the financial management will be done within the local administration’s domain, which will allow flexible utilization of funds under the city’s control. Every city has revenue-generating mechanisms in place to pay for public services and other communal activities. Where these are enforced, some of the revenues could be utilized to fund pro-poor projects. Sources of conventional financing are internal revenues, user charges, municipal bonds, and donations.

— Internal revenues. A key source of funding for pro-poor projects is local taxes from land and private properties and from construction permits and land use modifications; business permits; and, in some cases, value-added taxes on local goods and services. These internal revenues usually represent a hugely underexploited potential, particularly the land-based taxes. Income from land taxes, commercial taxes, betterment levies, etc. should be collected on a regular basis and in the total amount (the actual efficiency of collection varies across localities).

— User charges. The aim should be to set user charges for city services, often managed by public sector-owned service corporations, as close as possible to the actual costs, including capital investment and operation and maintenance costs. In case wide coverage of service and a high degree of payment of user charges can be achieved, opportunities will exist for service expansion reaching out to those communities that are underserviced and marginalized.

— Municipal bonds. To raise funds from the domestic capital market for financing of infrastructure or other urban investments, municipalities can issue municipal bonds (Box 15).

— In kind contributions/donations. Provision or lease of land or other assets free of charge by the city, the national government, or private donors (e.g., community or religious groups) can facilitate project start-up and implementation.

4.2.2 Private sector resources: Corporate and business sectors, and community contributions

• Public Private Partnerships. Financing the project, or parts of it, through PPP schemes is an important option. In a PPP, a private individual or company that is motivated by commercial interests supplies a public service (e.g., waste collection, water provision) under a fixed concession period and thereby is allowed to earn a reasonable return from either user fees or availability payment. A decision to undertake a PPP project is usually undertaken once a Value For Money Analysis shows that risk transfers between private and public sectors shows net efficiency gains. In a PPP, both the private and public sector puts in significant resources in ensuring that the project will be sustainable and viable. Before entering into a PPP, cities need to ensure that the basic principles that make PPPs effective
are understood, respected, and applied by all involved partners. This implies that the private partner must be motivated to perform based on a pre-agreed-upon criteria; and the public partner will oversee the overall performance against agreed-upon parameters (potentially utilizing participatory monitoring) (Box 16). Should there be a need, the public sector may also regulate the private sector or offer a subsidy or viability gap funding to improve the commercial aspect of the project.

- **Commercial loans.** If the local government has stable sources of revenue that can be demonstrated by means of robust balance sheets, borrowing from national or international financial institutions can be considered. In most countries of Asia, financing through international or bilateral sources can be obtained only through sovereign debt, i.e., national government-secured loans. However, in the People’s Republic of China, subsovereign borrowing from international financial institutions has started and is likely to expand. In many countries there exist national and subnational financial institutions that extend local currency loans to cities and towns.

- **Services of pro-poor-oriented financial intermediaries.** Some national financial institutions have developed pro-poor financial mechanisms and services through resources harnessed mainly from the savings of the urban poor. These organizations provide “savings and credit” programs such as revolving funds and microcredits, etc. that can be used as a catalyst for community members to pay for improvements or to improve small-scale infrastructure, housing, and/or the socioeconomic situation of community members (Boxes 17, 18).

- **Contributions by private stakeholders.** There is the possibility to leverage financial resources from private sector stakeholders. This was the case in Ahmedabad, India, during the pilot phase of the Slum Networking Project, where one-third of the funds were provided by business corporations; and in Manila with the Step-Up Project with contributions, motivated through corporate social responsibility, from the corporate members of Philippines Business for Social Progress. Even if

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**Box 15: Capital markets as potential funding sources for inclusive infrastructure investments**

“Ahmedabad [India] raised $89.5 million between 1998 and 2006 through four municipal bond issues for the domestic capital market. The Karnataka Water and Sanitation Pooled Fund of the Greater Bangalore Water and Sewerage Project used a USAID credit guarantee to raise more than $23 million, leveraging $29 million in domestic capital for each dollar provided. Domestic capital markets are potential funding sources for inclusive urban infrastructure.” (ADB, 2011). Nevertheless, experience also shows that these types of investment projects will have limited success if the revenue base is not healthy and if the systems and mechanisms such as efficient project management that reduce time delays and cost overruns are not in place. Other factors such as the politics of municipal elections and minimal stakeholder involvement were mentioned as the main causes that contributed to the failure of the Singali’s Public-Private Partnership for Water Supply Project in India. (Source: Urban Infrastructure India, Chapter 5: Developing Commercially Viable Infrastructure Projects; Photo: Eva Ringhof, 2016)

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**Box 16: Partnerships for affordable pro-poor infrastructure and services**

Willingness to pay and cost recovery are paramount issues for private sector participation in pro-poor infrastructure investments. Maynilad Water Services and the Manila Water Company, both concessionaries for operation of water services in Metro Manila, Philippines, extended services to slum areas, partnering with community organizations, NGOs, and small-scale private service providers. (Source: ADB, 2011)
the partnership between the government and the private sector in Ahmedabad lasted only 2 years, the experience provided insights and valuable lessons for exploring ways to build such alliances for slum improvement.

Cash and in-kind contributions by the community can also be blended with this approach. In the aforementioned Ahmedabad Slum Networking Project, the beneficiaries contribute one-third of the cost of the on-site infrastructure. Beneficiaries can contribute labor or land, as often practiced in infrastructure improvement or land readjustment schemes. There is always an element of savings when the project can combine resources of the partners and stakeholders.

### 4.2.3 Specialized funding through national and international organizations and donors

- **Choices of financing.** Specialized national and/or international financing of a project by national or international organizations and donors is an option that should also be considered. Most of these financing mechanisms have stringent regulations and often require some time to be set up and to be effective. Usually, financing by international financing institutions cannot be channeled directly to cities, but rather via the central government.

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**Grant funding from donors, both national and international multilateral donors.** Bilateral funds are channeled mainly through special assistance agencies in the donor countries. Development agencies such as German Technical Corporation, the United Kingdom's Department for International Development, the Australian Agency for International Development, the Swedish International Development Cooperation Agency, and many others can also provide sector-specific support programs, which differ from country to country and which can be looked up via the websites in Annex 3.

Some organizations provide special (sector) grants such as the United Nations Development Programme's Innovative Project Grants, or climate funds (e.g., Asian Climate Change

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Table 2: Typical project requirements by a large infrastructure financing institution

<table>
<thead>
<tr>
<th>Integrated as well as overarching sectoral approach</th>
<th>Economic sustainability</th>
<th>Social sustainability</th>
<th>Environmental sustainability</th>
</tr>
</thead>
</table>
| • Follow an overall systemic approach: e.g., focus on the entire solid waste management chain; i.e., no investment in improving waterways will be made available if unsound wastewater disposal is taking place further upstream. | • Economic and financial analysis.  
• City must ensure introduction of infrastructure usage tariffs that at least cover operation and maintenance costs with the overall goal of full cost recovery.  
• Institutional improvements of city agencies to increase efficiency.  
• Sizeable counterpart contribution by city (land acquisition, compensation, operation and maintenance of schemes, dedicated project staff, etc.). | • Tariffs must be socially acceptable.  
• Inclusion of informal sector workers in project concept is preferred.  
• Socially sound resettlement practices, where applicable.  
• Initial poverty and social impact analysis.  
• Summary poverty reduction and social strategy.  
• Gender plan. | • Preparation of an initial environmental examination or an environmental impact assessment demonstrating that the project has no negative impact on the environment.  
• Climate-friendly projects or projects mitigating climate change are preferred. |

(Source: Adapted from Kreditanstalt Fuer Wiederaufbau, Chennai Sector Workshop, August 2011)
Additional official assistance is channeled from lending agencies to recipient countries through multilateral organizations. Other funding options could be to access donors’ small projects fund (basket financing), or to explore sectoral approaches where pro-poor development is ensured under the umbrella of adaptation to climate change, for example. A critical limitation of these resources is that they are available only for those programs listed in the strategy agreed to by the finance organization and the client country. Thus, projects need to find a niche within the country strategy in order to access these funds (Table 2, P.35).

- **Special purpose vehicles.** These can be formed to implement individual projects. They can be private or public sector entities. Their roles and responsibilities may be to design, finance, construct, operate, maintain, and/or collect user charges/tolls, sharing revenue with the respective government agencies and transferring the project assets to the concerned agency at the end of the concession period.

- **Making choices.** As explained above, a variety of options are available to finance infrastructure and basic services projects. Every financing option has its own requirements, and not all options will fit every type of project. City governments, possibly with the support of the national government, are encouraged to utilize their skills, creativity, and influence to set up innovative funding options, looking at locally available options first. Decision makers need to be innovative and proactive and consider bundling of revenue-generating (conventional) and pro-poor (mostly subsidized) projects.

When assessing financing of infrastructure projects, the following sequence regarding financing options should be considered:

- **First,** maximize conventional public sector financing within the city.
- **Second,** leverage communities and/or the private sector for financing.
- **Last,** seek specialized funding support from national and international financing initiatives.
The key principles in the design of pro-poor infrastructure projects are intended to guide the overall design process, and their recognition will determine how effective and relevant planned infrastructure will be for poor households and for poverty reduction.

The key principles are based on the 5-A Model. This model provides a structured framework for the use of the principles throughout all steps of the project formulation and design process. It covers Availability, Accessibility, Affordability, Acceptability, and Adaptability.

- **Availability** of services that are accessible to all, in formal and informal settlements, where the city poor live. Services provided need to be adequate in terms of quantity and quality.

- **Accessibility** of infrastructure services relates to physical location and access to specific infrastructure services.

- **Affordability** of services provided. This means that the resulting fees and tariffs are affordable to those low-income people who will benefit from improvements in the areas where the services will be provided, and thus are expected to pay for them.

- **Acceptability** relates to the balance between the standard proposed by the project design and the adequacy of the infrastructure and service standards.

- **Adaptability** means that the infrastructure investment needs to be adaptable to local needs and lifestyle circumstances. From the perspective

ANNEX 1

THE 5-A MODEL: KEY DESIGN PRINCIPLES TO ENSURE IMPACTS ON THE POOR BY INFRASTRUCTURE INVESTMENTS

There are various ways of financing infrastructure and basic services. In this photo, women are granted microfinance credit in India. (*Photo: KfW/Joachim Roettgers, 2006*).
Inclusive Urban Infrastructure Investments: A Guide for Municipalities

Throughout project formulation and design, special attention should be paid to the principles, gender issues, and the concerns of disabled people and other minority groups.

The 5-A Model: To ensure positive impacts on the poor with infrastructure investments

Step 1: City Poverty and vulnerability profile

- How is poverty manifested, and what are the key characteristics of urban poverty in the city?
- Who are the poor (gender-disaggregated data)?
- In which ways are they poor?
- Identify specific target groups by accurately understanding who is “poor” or most in need. What are the levels of income poverty (gender-disaggregated data)?
- What is the poverty level in percent by the city/country definition?
- Where are the poor? What is the geography of poverty?
- What are the key infrastructure challenges facing the poor (considering constraints and barriers to women’s and men’s participation in project activities and access to the benefits)? What are the priorities of the poor in the context of improved urban (infrastructure) services?
- What are key social and gender issues with regard to urban infrastructure development?
- What baseline information is available, and what is its quality?
- What are the existing urban poverty reduction strategies, or other plans and strategies, and their relevance to poverty reduction and inclusiveness through infrastructure investments? What do existing urban development strategies and plans say about urban poverty and the need for investments?
- What are ongoing initiatives of relevance (by the city or by other stakeholders)?
- Based on this analysis, what should the PFS
address to be relevant to poverty reduction and gender equality? What can be done to make the PFS more relevant?

Step 2: Stakeholder and Institutional Analysis

• With whom are the stakeholders involved?
• Who is/are the target group(s)?
• Who are the beneficiaries and who will lose out?
• What is the institutional landscape for urban poverty reduction?
• What are the different interests?
• What is the institutional arrangement to guarantee implementation and monitoring of pro-poor features?

Step 3: Assessment of needs and setting of priorities

On Assessing needs

• What is the current situation of the city’s poor with regard to the proposed intervention?
• Describe in more detail the levels of coverage (of the infrastructure/service).
• What are the needs of the target groups in relation to the project?
• How do other city development plans relate to the poor? What can be done to extend benefits to the poor?

On Assessing constraints

The analysis should identify the main factors that may limit access to services and equitable access to project benefits:

• What are the main challenges in accessibility, affordability, and usage of the proposed urban infrastructure?
• How are the poor currently using existing infrastructure? What is keeping the poor from reaching existing infrastructure and services?
• What are the obstacles for them to use existing infrastructure?
• What are important considerations in planning for new infrastructure provision?

• What are the potential constraints in accessing the proposed benefits and services? How will the project address them (considering constraints and barriers to women’s and men’s access to services)?

• What are the negative impacts of the project for the poor on the following?
  – Employment (formal/informal): loss or restrictions, proximity to work opportunities
  – Assets: land, housing, green areas, access to social services; increased need for services in industrial areas may result in shortages of the same in low-income areas
  – Safety: widening of roads may narrow sidewalks; more speed on roads may increase accidents, etc.
  – Environmental: increased vulnerability to disasters like floods

On Assessing capacity

Especially for projects intended to provide facilities or services to particular households or communities, it is also important to evaluate the likely ability of the households or communities to acquire, use, and maintain the proposed facilities or services:

• What are the citizens’ ability and willingness to pay for services, where applicable (consider gender and vulnerability issues)?
• What are the established and future social and cultural patterns/issues of usage?
• What issues might impact the ability to access services (e.g., connection fees, land issues, legal issues, cultural issues)?
• What are key gender issues that are likely to be relevant to this project?

Step 4: Objectives for poverty reduction and inclusive indicators

What are the desired objectives of the project?

• How can you measure the success of the project? What are your targets and specific indicators?
• How will you monitor the progress of the project? What are the documents that you need for monitoring?
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Step 5: Specific design features to ensure pro-poor impacts

- What is the design about?
- Is the design affordable, acceptable, accessible, and adaptable to the needs of the poor? If not, what can be done to adjust the design features?
- Are gender and minority groups’ needs and requirements considered?
- Are the requirements/interests of other partners considered?
- What design features can be included to maximize pro-poor impacts?

Step 6: Assessment of Expected Impacts

The assessment should answer the following questions:

- Who are the beneficiaries of the project?
- Are the poor benefiting from the project/component? If yes, What is the estimated number of families that will benefit?
- What are the pro-poor features and what are the major impacts expected from their implementation (consider gender and vulnerability issues, formal or informal employment, access to services, empowerment, etc.)?
- How relevant is the proposed project, and how will the benefits be distributed among the target groups (gender segregated when applicable)?

Step 7: Safeguarding of negative impacts

- What objectives, targets, and indicators are planned to measure progress against pro-poor objectives and expected impacts?
- What are the pro-poor project features? What indicators will measure them? How are they measured?
- What are the expected negative project impacts? What indicators will measure them? How are they measured?

Step 8: Risk analysis and risk management

- What are the different risks and assumptions that should be expected from the project implementation?
- How can the risks be mitigated?
- What are the concrete actions that can be done in order to mitigate them?

Step 9: Financial considerations for pro-poor and inclusive features

- What is the project cost and what are the sources of finance?
- What is the financial and economic viability?
- Is the balance among technical, socioeconomic, and financial dimensions acceptable to the partners?

ANNEX 3

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