

Project Name Brazil-Recife Urban (@)

Region Latin America and Caribbean Region

Sector Urban Development Adjustment

Project ID BRPE49265

Borrower(s) ESTADO DO PERNAMBUCO

Implementing Agency  
 Address MUNICIPALITIES  
 Fundação de Desenvolvimento Municipal (FIDEM)  
 Rua do Riachuelo 105, 9o Andar,  
 CEP 50050-400, Recife, PE, Brazil  
 Contact Person: Barbara Kreuzig  
 Tel: 81-421-28-13  
 Fax: 81-222-07-93  
 Email: fidem@fisepe.pe.gov.br

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#### 1. Country and Sector Background

Background. Located in the northeastern region of Brazil in the state of Pernambuco, the RMR is the fourth largest metropolitan area in Brazil with a population of approximately 3.1 million distributed among 14 different municipalities - the largest of which are Recife -1.35 million, Jaboatão dos Guararapes- 458,000 (urban) and Olinda - 350,000. Contagem da população 1996, IBGE. Recife and Olinda are 100% urban. Together these three municipalities contain approximately 72% of the population of the RMR. The RMR is the most important commercial and service center in the northeast region of Brazil, and generates about 76% of the GDP of Pernambuco. However, more than half of the working population above the age of 15 is employed in the informal sector. Of the informal sector workers, 47% earn one-half of a minimum salary, 54% earn one minimum salary or less and 77% earn two minimum salaries or less. The RMR presents a rich-poor spatial dichotomy with higher income neighborhoods located along the coastal axis, while low-income ones follow an inland parallel axis, along federal highway BR-101, the Beberibe and Capiberibe rivers. Roads connecting these two axes are also occupied mostly by lower income households. These low-income areas, commonly referred to as favelas, are home to 40% of the RMR population or 1.2 million people. They are characterized by their location (often in environmentally sensitive or high risk areas); makeshift, self-built housing; irregular development patterns; lack of basic urban services such as water, sanitation, solid waste collection; lack of physical and social infrastructure; and insecure land tenure. The origin of these settlements has typically been a product of rapid rural to urban migration against a backdrop of limited access to land and housing due to market and government failure. This has led to the creation of vast tracts of illegally squatted (mostly on public lands) or illegally subdivided (typically private) settlements. Failure of the

state to enforce property rights ex ante, and then the failure to recognize these settlements as legitimate ex post, and the subsequent lack of public investment in collective goods (for a variety of reasons) in these areas, have conspired to at once facilitate their proliferation and to make for poor living conditions. Today, rural to urban migration has slowed and much of the increase in the squatter settlement population arises in large part from natural population increases and new household formation. By 2015, the population of the RMR is projected to increase by an additional 350,000. The vast majority will be poor. And, ceteris paribus, these new urban poor will continue to seek housing solutions through informal means. In the older, denser settlements, any remaining vacant land will be occupied. In addition, households will increase the density of existing settlements by building upwards (i.e. adding second and third stories to existing housing). In the newer and more peri-urban settlements, vacant lands will be squatted, extending the urban boundaries. Such unregulated, unplanned growth makes the provision of infrastructure and services a difficult task at best. It is a conflict between the need for land and shelter (private goods), which is typically secured first, and services and infrastructure (collective goods), the latter usually supplied ex-post without the benefit of adequate planning, and at considerable financial, social and environmental cost. The dismal living conditions in the favelas and irregular urban settlements in the RMR are among the worst of any major metropolitan region in Brazil. This may be in large part due to the fact that urban services are generally poor throughout the RMR, not only in low-income areas. Water, sanitation, solid waste collection, transit networks and transport are generally inadequate regionally, but the situation is especially poor in the low-income areas. Some statistics highlight the gravity of the situation: Water. Water is supplied by the aquifer as well as from a complex of large and small dams located in various small watersheds and from the larger Capiberibe and Beberibe rivers. UFW is very high and supply is usually very intermittent. Overall water supply coverage is 89%, falling to 76% in the poor areas. In the higher income areas of the RMR, households resort to self-supply, drilling directly to the aquifer, resulting in an estimated two thousand wells, which pose at once a loss of revenue for the utility, a potential environmental problem, and an inefficient aggregate solution for water production. What's more, the sustainability of this situation is questionable given the rapid rate which the aquifer is declining. Currently, the RMR, due to exceptional climatic conditions, is living through a particularly serious water shortage crisis. In times of "normal" service levels, service in low-income areas is very poor with only 24% of residents in informal settlements receiving water on a daily basis. Sanitation. The situation of sewerage is more dramatic. Overall coverage is around 36%, falling to 7% in the poor areas. In Recife and Olinda (in wealthier areas), though sewage is removed from the lots, it is discharged into open canals running along the main avenues, which overflow during severe rains. In turn, these canals discharge, without any treatment, into the river systems of the two municipalities. In the RMR, only an estimated 20% of total sewage is treated, the four existing treatment facilities presenting severe operational problems. As a result, the heavily contaminated river system affects the quality of the water along the coast, especially the northern coast, from Olinda onwards. These problems are further complicated by the poor management of solid wastes. In the RMR, 20% of solid wastes are disposed of informally, most often in drainage and sewage canals. This is

especially a problem in the favelas. Drainage. Drainage is complex and critical in the RMR, demanding both a systemic approach and a site-specific one. The drainage system of the RMR has 66 main channels, 92 km long, representing a low drainage channel-to-area ratio (0.44 km of channels per km<sup>2</sup> of surface area). It runs through sedimentary plains with low gradient and hills highly prone to erosion, both encroached on by illegal human settlements, leading to the reduction of river and channel beds and to the impediment of water flow. This situation carries high risks of an eventual large (not necessarily exceptional) flood, in particular for the population of the Beberibe river basin. Access and Transport: A lack of street paving and rational street layouts make access of motorized transport difficult, impacting access to mass transit and thus formal sector employment, entry of service vehicles like sanitation trucks and emergency police and fire services. In the informal settlements, 36% of the residents do not have access to mass transit. Government Strategy: The upgrading of slums and the provision of services involves several state agencies as well as agencies from 14 municipalities in the RMR. This requires extensive coordination at the metropolitan level. The shelter situation of the poor and the virtual breakdown of urban systems provision in the RMR reflects more than the scarcity of resources for investment, or of income to pay for services but also largely reflects the poor management of public resources and the failure of government to plan, regulate, enforce property rights, invest appropriately, and define transparent and fair subsidies for the urban poor. The government strategy has been to address these multi-sectoral issues in an ad hoc and mostly uncoordinated manner as is illustrated below. Formal Housing. In the RMR, federal, state and municipal agencies have had a number of housing programs concentrating on the production of costly formal sector housing (such as programs led by COHAB, now EMHAP) cum slum clearance. These programs have proved to be both inequitable and unsustainable. Formal housing solutions fail to meet the preferences of a large number of poor as these programs place emphasis on the quality of the housing, making the judgement that a finished house with full services is what is needed. Such finished housing is typically beyond the capacity of most of the poor to pay and this supply-side approach ignores the demands of the poor who, generally speaking, are seeking land with a suitable location, and are willing to build their housing unit progressively over time, and to acquire the necessary services as they become available. A broader approach of sites and services, sites without services, housing kits and urban upgrading would be more appropriate for the vast majority of the urban poor. At least some of these options have been tried in programmatic form, but not at the metropolitan level, and not at any large, comprehensive scale. Upgrading solutions. From the mid-eighties on, the Municipality of Recife initiated the implementation of a slum upgrading program of considerable success, the Plano de Regula o das Zonas Especiais de Interesse Social (PREZEIS), which defined the legal process for regularizing land tenure, and promoted installation of integrated infrastructure, together with community consultation and participation. Also, around this time the GSP, through COHAB, developed a program of regularization of land tenure, which provided around 50.000 titles to the population of the RMR. Both PREZEIS and the COHAB titling program have the ingredients with which to establish a larger infrastructure-based poverty alleviation program. However, these programs have lacked other ingredients which impeded a larger impact, such as: (i) too small a spectrum of "quasi-housing solution," in particular, no

attention being given to programs oriented to new housing demand (upgrading programs usually limit themselves to the current stock of housing and pay no attention to new demand); (ii) lack of effective, agile sector policies, in particular for water and sanitation (introduction of private sector participation, control of UFW, pricing policies), and the protection of the environment; (iii) a failure to endow these efforts with a true program character, including the definition of goals, adequate resources, long-term time-horizon, monitoring and evaluation, cost-recovery and subsidy policies; (iv); a lack of exposure to public scrutiny; and (v) a limited amount of coordination with other stakeholders. This latter point is critical, as a number of actors must be engaged to adequately address the slum problem. This includes, but is not limited to, the water and sanitation, drainage and transport sectors.

**Water Supply and Sanitation:** A number of studies have been dedicated to the water and sanitation issues of the RMR. A Bank report (1998), *Pollution Management Priorities in Pernambuco*, proposes that absolute priority be given to the extension of water services and sewage collection and, once the two first priorities are met, to sewage treatment. For the latter, two options are considered, advanced primary treatment and the construction of a 6-8 km submarine outfall preceded by primary treatment. In the Bank report, the outfall is indicated to be the less costly alternative, depending on the results of an analysis of tidal and ocean currents. The GSP, with Bank financing, contracted an international consortium to prepare the *Projeto de Qualidade das Aguas e Controle da Poluição Hidrica das Bacias dos Rios Beberibe, Capibaribe e Jaboatão (PQA)*, which was published in June 1999. Among others, the PQA produced a Sewerage Study for the RMR which identified sewerage sub-systems (85), and treatment stations (16), ruling out the submarine outfall solution as more costly. The Programa Estadual de Desestatização (1999) mandated the privatization of COMPESA, opening the door to higher levels of investment in the sector (and eventually removing an existing trade-off between water/sewerage expansion and sewage treatment). BNDES has contracted the modeling studies for the definition of the nature of private sector participation in the water and sanitation sector in the state of Pernambuco. These studies will involve a mix of elements including assumptions with respect to the State's responsibilities with respect to COMPESA's debts and severance payments, alternative investment plans, approaches to treatment technologies, various levels of tariffs, use of concessional loans, etc. The Bank and the Pernambuco project team are integrated into the modeling process to ensure compatibility of the project within the structure of the pending privatization.

**Drainage:** Drainage is another priority for the region, particularly in low-income areas. The PQA also studied the issue of macro and micro drainage. These studies are being taken into account by the project preparation team as they prepare an urban structural plan for the Beberibe River basin, the geographic focus of the project.

**Road network and transport.** A project facilitating access to areas of high poverty has been proposed by the GSP and is expected to be financed by BNDES. It entails the creation of a corridor along the Beberibe river valley, over the Av. Kennedy-Estrada de Aguas Compridas-Estrada do Brejo (US\$100 million), which will link the northern coast (Olinda) to the BR 101 axis, through an area occupied mostly by the poor. The structural plan referred to above, which is being coordinated by FIDEM, is also addressing issues of transport and access and can ensure compatibility of the proposed road with the project and the needs of the poor residing in these areas. This is the coordinating

function that FIDEM fulfills.

## 2. Objectives

To improve the wealth and wellbeing of the urban poor in the Recife Metropolitan Region and develop the institutional capacity of state, local, private and civic entities to plan for, deliver and maintain basic shelter and urban services for the low-income in a coordinated and sustainable manner in the Recife Metropolitan Region (RMR). This effort will commence with a focus on improving the built environment of the low-income settlements of the Beberibe River Basin of Metropolitan Recife.

## 3. Rationale for Bank's Involvement

The sustained commitment on the part of the Bank ensures that the enabling environment will be created so as to develop the institutional capacity to prepare and carry-out a policy and program for intervention in low-income settlements in the RMR. Developing institutional capacity, introducing cost-recovery and land titling aspects to the project are all areas where the Bank will add considerable value to the project and to existing efforts such as the PREZEIS program. Endowing true program characteristics to nascent state and municipal initiatives will be the major value added of Bank support to this project. In that regard, the Bank brings a body of regional experience to this process (Guatemala, Venezuela and Colombia). The Guatemala experience, for example, demonstrated the capacity of communities to plan, execute and manage infrastructure and service investments without significant government intervention. Venezuela is the Bank's first large scale upgrading intervention in the region, and demonstrates the need for careful inter-institutional coordination, up-front planning and a long-term vision for the sector. It also demonstrates the benefits of using a geographic approach to interventions for purposes of targeting the poor, and for reaching impact on a large scale based on rational planning. By focusing not only on physical investments, but also understanding the importance of finding mechanisms to avoid slum formation and to rationalize land markets and legalize land tenure in low-income areas, this project goes a step further in ensuring the sustainability of investments than previous upgrading efforts in Brazil. Current sector work in the areas of land and housing markets will provide valuable policy advice so that the state and municipal governments can design housing policies which are more appropriate for the urban poor than the current ones. In addition, on-going work sector work in the area of financing urban infrastructure will assist in identifying sustainable sources of financing for these investments and facilitate cost-recovery. In addition, specifically considering the water supply and sanitation sector, the Bank will add valuable assistance to the State Government of Pernambuco in general, and the state water utility, COMPESA, in particular, over the coming twelve months as the structure of the contract for the privatization of COMPESA is developed. The Bank team will accompany the BNDES-financed consultancies, through the auspices of the State Government, which are to be undertaken to prepare the privatization process. The Bank team also intends to provide the state, through a PPIAF grant, with a team of international consultants, covering the legal, regulatory, financial and technical aspects of the privatization transaction, who are experienced in having gone through such a process elsewhere, in order to help guarantee that the best contractual/privatization arrangement is achieved for the State. This support is extremely important for three main reasons: (i)

the success of the privatization of COMPESA is of central importance to guarantee the sustainability of the water supply and sewerage (WS&S) services in RMR, including those that are to be provided under the project, and to ensure that the project's approach is consistent with the Bank's current WS&S policy in Brazil with regard to reforming and improving the efficiency of state and municipal water utilities; (ii) particular attention will have to be paid in the privatization contractual framework to ensuring that incentives exist to improve and increase service provision to the poor, especially with regard to sewerage expansion, in RMR in general and in the Beberibe river basin in particular; and (iii) wastewater collection, treatment and discharge standards and targets need to be carefully analyzed and designed to ensure that the correct balance is struck between sewage collection, and primary, secondary and (eventually) tertiary wastewater treatment - over a rational time period which permits realistic tariff increases.

#### 4. Description

Infrastructure in low-income areas of Beberibe: This component will finance the provision of basic infrastructure in approximately 15 areas in the Beberibe River basin. This would also include resettlement housing and the piloting of land subdivisions to facilitate access to serviced sites in the Beberibe basin.

Metropolitan infrastructure: This component will finance infrastructure investments which are of a complimentary nature to the local investments to be made in the first component. Pending further analysis this would include the rehabilitation of the existing Peixinhos waste water treatment facility, improvements to the Aguazinha sanitary land fill and rehabilitation of the historic Peixinhos slaughter house for use as a recreation area

Institutional Development/Capacity Building and Management: This component will finance: preinvestment studies/projects of the fifteen sub-areas (\$3.7 mil); Institutional/Organizational development and Project Management including training and capacity building, equipping of 15 local development co-management offices, and technical specialists (\$10.6 mil); Project Management at the state and municipal level including, support at state agency level, staffing of 15 local offices, maintenance of 15 local office and municipal technical assistance (\$6.6 mil); Program coordination at the level of FIDEM (\$2.7 mil) and Community Development including community strengthening, environmental and sanitation education program and post-works installation social work (\$2.7 mil)

#### 5. Financing

	Total ( US\$m)
GOVERNMENT	45
IBRD	55
IDA	
Total Project Cost	100

#### 6. Implementation

The Borrower would be the State of Pernambuco. The loan would be guaranteed by the Federative Republic of Brazil. Loans and grants would be made from the State to the participating municipalities, for the

purposes of carrying-out the execution of all neighborhood level works, and for the development of rehabilitation action plans for the low-income communities. NGOs and specialized consulting firms, as well as the beneficiaries themselves, would be responsible for the development of the rehabilitation action plans, and the actual execution of works would be bid to private construction firms and/or executed directly by project beneficiaries. This process would be managed by the municipalities, with support from FIDEM. Municipalities would contribute 15% of the costs of the project from their own funds on a matching basis. FIDEM under the direction of SEPLANDES would be the state level agency responsible for the coordination, supervision, monitoring and evaluation of the project. It would also be the agency responsible for establishing policy direction, ensuring the delivery of technical assistance and capacity building to municipalities and other state agencies and would be the main interlocutor with the Bank on the project. State agencies would also play a role in certain aspects of the project execution. COMPESA, the state water company, or the private operator and/or regulatory body that replaces it, would be responsible for ensuring use of proper technologies, quality of work, etc. for investments in the water and sanitation sector. EMHAP, the state housing agency, would be responsible for the financing (through the project) and supervision of the provision of resettlement housing and the regularization of land tenure. CBHR, the state environmental agency, would ensure compliance of the project with all applicable environmental laws and regulations. Community co-management: Communities would be involved at every stage of the project, beginning with the Rapid Urban Diagnostic Process, or DRUP. This process then evolves in the formation of community co-management groups which will drive the process of determining priorities for investment, approving intervention plans, action plans, etc. This process is described and diagrammed more fully in the section of Participatory Approach. Currently, an institutional assessment and development of the institutional and implementation arrangements is being conducted. A more detailed description of these arrangements, and analysis of the capacity of the various stakeholders, will be presented in the final Project Appraisal Document. The following diagrams represent a schematic of the organizational structure for the various levels of the project:

#### 7. Sustainability

Sustainability derives from: (i) developing an inter- institutional and jurisdictional mechanism for planning and investing in the improvement of low-income urban settlements in the RMR; (ii) a clear cost-recovery and subsidy policy for infrastructure investments; (iii) a high level of community/beneficiary participation.

#### 8. Lessons learned from past operations in the country/sector

Lessons from early and more recent efforts are incorporated into the project design concept. They include: ñ Community participation, from the outset in project design, is one way to ensure that the most appropriate infrastructure and service options are used. Community participation also facilitates cost recovery, accountability of government agents and ensures the sustainability of investments. Community participation is at the core of the project design. ñ Pursuing supportive policies such as developing a process of land tenure regularization and revision of urban development standards that allow for special exemptions in low-income areas, and incorporate them into the overall urban planning process can facilitate

the development of more affordable, secure housing options for the poor. Supporting the development of clear rules of the game for shelter and infrastructure investment subsidies for low-income areas, which take into account the true willingness and capacity of households to pay, and which minimize distortions in the markets, such as housing finance, for example are critical to sustainability and for lowering the bar of affordability. Decentralizing responsibility of investments to the lowest level possible, such as municipalities, increases accountability and typically improves service quality as a result. Decentralization of basic urban services and infrastructure provision poses several important challenges, the most urgent being the need to increase the capacity of local governments and agencies to manage these activities. Decentralization to private providers is another option, and presents challenges to the public sector in the form of regulation. Developing this capacity is incorporated into the project design. In recent years, many projects have demonstrated that the poor have a high willingness to pay and that at least partial cost recovery is possible from investments in low-income communities. Developing a cost-recovery strategy, combined with clear subsidies based on the nature of the good (public, private, semi-private) and willingness and capacity to pay is an explicit strategy of the project, and is critical to the sustainability of investments. Resettlement is an inherent element of any large-scale urbanization operation in the slums. Given the need to provide rights-of-way for infrastructure and to remove families located in high risk or environmentally sensitive areas necessitates resettlement. It is known from experiences not only in Brazil, but in other parts of Latin America as well, that resettlement will increase project costs, but when included within the overall envelope of slum consolidation, is about ½ the cost of pursuing a program of new housing construction for the poor, thus putting consolidation projects much more in line with the capacity of the poor to pay for shelter and service provision. In addition, recent experiences suggest that governments, often together with NGOs and specialized consulting firms, have become more adept at handling the resettlement process with technical capacity and social sensitivity. Resettlement in upgrading projects clearly benefits society as a whole as well as the individual recipient of the new home, and is distinct from resettlement in such projects as dam construction, where the beneficiary is clearly not the resettled family. Using appropriate technologies and standards does not necessarily mean using the lowest cost or most innovative technologies available. Rather, it means using technologies which best respond to needs of the end user, and at the same time fit with their capacity to pay for and use that technology. It is also known that the use of certain technologies often requires significant training and or information dissemination in the use and maintenance of the technologies, or their useful life will be greatly reduced. The project design takes this into account.

9. Program of Targeted Intervention (PTI) Y

10. Environment Aspects (including any public consultation)

Issues : Other: No major environmental impacts of the project are expected. On the contrary the project should actually improve the urban environment of the Beberibe river basin. That notwithstanding, the proposed upgrading activities could cause limited alterations to the environment that would minimize the benefits if not handled in a proper manner. Potential impacts pertain directly to the management of the

construction process (nuisance, dust and noise from construction activities, disposal of construction waste, increased traffic, timing of construction and pedestrian safety). Of additional concern is the long term management of solid and liquid waste in the area, and the need to control urban growth in environmentally sensitive areas along the Beberibe River Basin. The project presents an important opportunity for both developing an urban environmental management plan for the Beberibe River Basin and the environmental management of urban construction in cases of large-scale upgrading, which can later be extend to others areas of the RMR. Other: The project, through the consolidation of existing urban slums, the resettlement of families living in high risk areas and /or areas of environmental importance such as wetlands will have an overall positive impact on the environment and society.

11. Contact Point:

Task Manager  
M. Vitor Serra  
The World Bank  
1818 H Street, NW  
Washington D.C. 20433  
Telephone: (202) 473-8700  
Fax: (202) 522-3552

12. For information on other project related documents contact:

The InfoShop  
The World Bank  
1818 H Street, NW  
Washington, D.C. 20433  
Telephone: (202) 458-5454  
Fax: (202) 522-1500  
Web: [http:// www.worldbank.org/infoshop](http://www.worldbank.org/infoshop)

Note: This is information on an evolving project. Certain components may not be necessarily included in the final project.

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