

Marginality in the Perfect City: Can Curitiba Overcome Brazil's Social Inequality?

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Introduction

Brazil is the eighth largest economy in the world today, classified by the World Bank among the upper middle-income economies, but 22 percent of its total population and 14.7 percent of its urban population live below the national poverty line. If international poverty lines are considered, world development indicators show that 8.2 percent of the population lives with less than \$1 a day and 22.4 with less than \$2 a day (World Bank, 2005). Considering that Brazil's urbanization rate has reached 83.3 percent in 2006 (IBGE, 2007a), these numbers are staggering. Brazil's wealth is concentrated in the Southeast and South regions, where the largest cities are located and where the rates of urbanization are higher (Tables 1 and 2).

Table 1: Resident Population in the South and Southeast Regions of Brazil, 1960-2007

Regions	Resident Population					
	1960	1970	1980	1991	2000	2007
South	11,753,075	16,496,493	19,031,162	22,129,377	25,107,616	26,733,595
Southeast	30,630,728	39,853,498	51,734,125	62,740,401	75,412,411	77,873,120
Brazil	70,070,457	93,139,037	119,002,706	146,825,475	169,799,170	183,987,291

Source: IBGE. 2000 Census (Censo Demográfico) and 2007 Population Count (Contagem da População).

Table 2: Urbanization in the South and Southeast Regions of Brazil, 1960-2000

Regions	Percentage of Population in Urban Areas (%)				
	1960	1970	1980	1991	2000
South	37.10	44.27	62.41	74.12	80.94
Southeast	57.00	72.68	82.81	88.02	90.52
Brazil	44.67	55.92	67.59	75.59	81.23

Source: IBGE. 2000 Census (Censo Demográfico).

The six largest Brazilian states, São Paulo, Minas Gerais, Rio de Janeiro, Bahia, Rio Grande do Sul and Paraná comprise more than 60 percent of the country's total population (IBGE, 2001). The state of Paraná joined the top-six group in the 1990s, while the top five have occupied that ranking since 1940. Rural exodus deeply affected the state of Paraná in the 1970s. The substitution of agriculture by livestock, the advancement into capital-intensive crops for export, and the eradication of coffee plantations by the "black frost" of 1975 caused the displaced labor force to move en masse to urban centers. During the 1970s, the urban population of Paraná's capital, Curitiba, doubled, going from 550 thousand to 1.1 million. In that decade, Curitiba had the highest growth rate of all Brazilian capitals—5.34 percent per year, while the state of Paraná had the lowest rate of all states—0.97 percent per year. By 1980, migrants constituted 30 percent of the total population of Curitiba. Growth rates for both the state of Paraná and the city of Curitiba declined even further between 1980 and 1991; however, this was a result of a national trend since, relative to other states, rates have remained constant.

Not unlike other countries in the world at the same stage of development, Brazil has seen a constant increase in urban population and consequent decrease in rural population. The prevailing global trend is increased urbanization; however, Brazil's urbanization rates are some of the highest among developing

countries, approaching and sometimes surpassing rates in developed countries. For instance, Australia and New Zealand are 85 percent urbanized, the United States is 78 percent urbanized, and Japan and Taiwan are 77 percent urbanized. The percentage of population living in urban areas in the Philippines, Pakistan, India, and China is 42, 35, 26, and 22 percent respectively (World Bank, 2000). Today, more than 80 percent of the Brazilian population lives in urban areas. The urbanization rates for the South region and for the state of Paraná parallel the national rates, fact that has only been observed after 1980 indicating a more intense urbanization process in the past 20 years (Table 3).

Table 3: Percentage of Urban and Rural Population for Brazil, the South Region and the State of Paraná, 1940-2000

Area		1940	1950	1960	1970	1980	1991	2000
Brazil	urban	31	36	45	56	68	75	81
	rural	69	64	55	44	32	25	19
South Region	urban	28	29	38	45	63	74	81
	rural	72	71	62	55	37	26	19
Paraná	urban	24	25	31	36	59	73	81
	rural	76	75	69	64	41	27	19

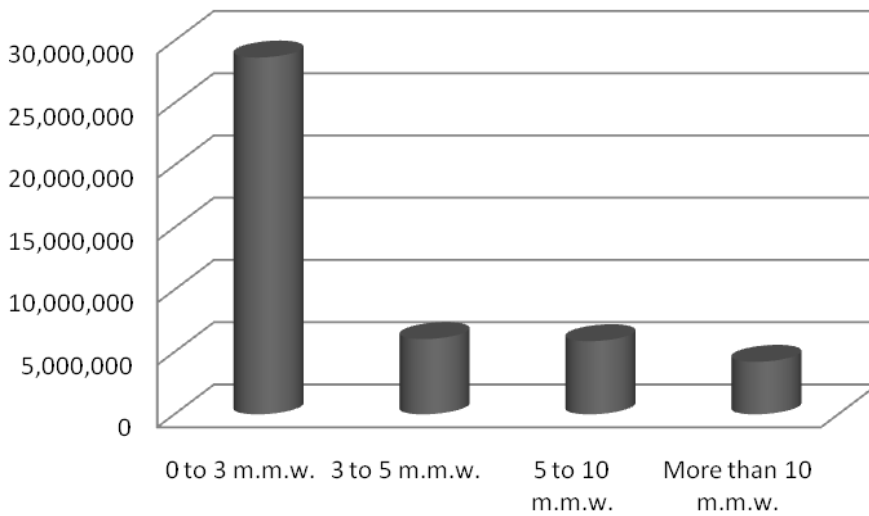
Sources: IBGE. 2000 Census (Censo Demográfico).

In 2000, the Metropolitan Region of Curitiba concentrated 28.5 percent of Paraná's total population and 32.4 percent of the state's urban population (IBGE, 2001).

The Urban Poor

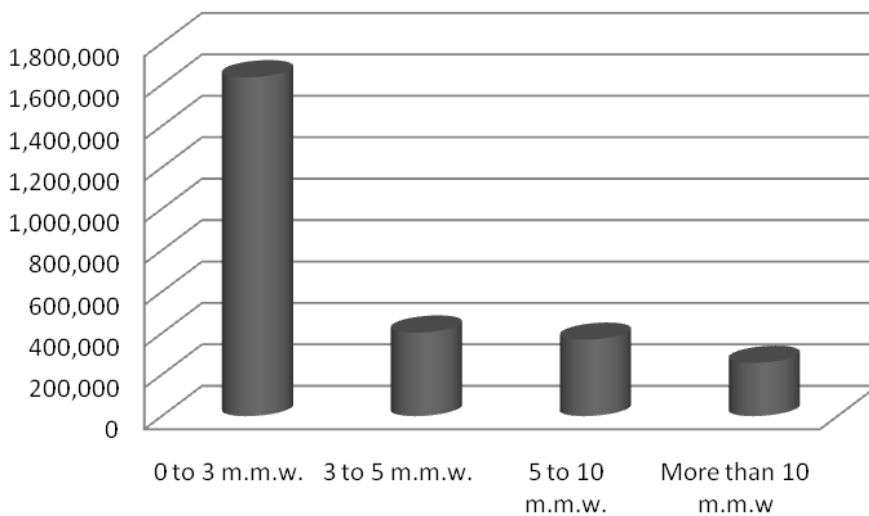
One of the most telling indicators of urban poverty is the number of families living in substandard conditions in urban areas. The housing deficit estimates in Brazil vary depending on the criteria and methodology used for the calculations. Studies indicate the housing deficit ranges between 6.5 and 7.2 million housing units (João Pinheiro Foundation, 2001, 2005; Macedo et al., 2007). Most of the deficit directly affects lower income populations, particularly because 64 percent of the Brazilian households earn less than three monthly minimum wages (Figure 1).

Figure 1: Number of Brazilian Households by Income Level, 2000



This appalling situation is no longer the privilege of large metropolitan centers. In the state of Paraná—the sixth most populous state of the Union—not only the metropolitan region of its capital, Curitiba, but also medium-sized cities throughout the state are experiencing a growing number of informal settlements in the periphery of their urban centers. The income distribution in the State of Paraná is worse than in the country as a whole: while 17 percent of all Brazilian households earn less than one minimum wage, in Paraná that number is 33 percent. Most housing assistance programs target households making up to three minimum wages; Paraná fares better when compared to the nation: 61 percent of households in the state would qualify for assistance programs, compared to 64 percent in Brazil (Figure 2).

Figure 2: Number of Households in the State of Paraná by Income Level, 2000



Curitiba and Its Metropolitan Region

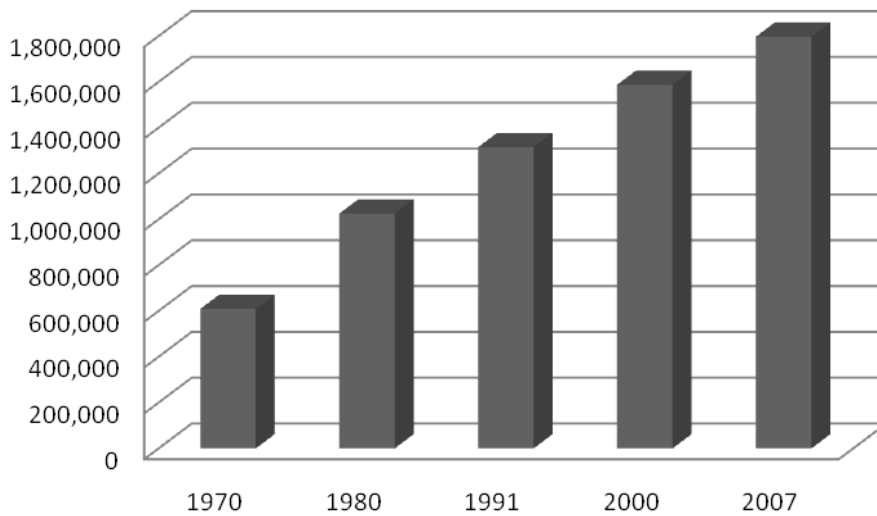
Curitiba, founded in 1693, is Brazil's eighth-largest city (IBGE, 2001). The capital of the state of Paraná—one of Brazil's wealthiest states—since 1854, Curitiba is its primate city, concentrating 17 percent of the state's population. The municipality of Curitiba has a total area of 430 square kilometers, and almost two million inhabitants (IBGE, 2001). The metropolitan region of Curitiba, with a total population of 2.8 million (IBGE, 2001), was one of nine metropolitan regions implemented by the second National Development Plan (II PND). Today, it comprises 26 municipalities (Figure 3). The Metropolitan Region of Curitiba is highly urbanized, with 92 percent of its total population living in urban areas (IBGE, 2001).

Figure 3: Metropolitan Region of Curitiba



Curitiba experienced accelerated urban growth in the 1970s and 1980s; its population doubled between 1970 and 1991 (Figure 4). Demand for the growing labor pool was created through massive incentives given to industries to locate in Curitiba. Nonetheless, as with so many other fast-growing cities in developing countries, Curitiba became haunted by poverty. Recent estimates of the number of people living in substandard housing fluctuate between 10 and 15 percent of the total population in this model city (COMEC, 2006; Macedo et al., 2007).

Figure 4: Resident Population for the Municipality of Curitiba, 1970 to 2007



Curitiba alone concentrates 57 percent of the total urban population in the metropolitan area and together with 10 other abutting municipalities, namely, Almirante Tamandaré, Araucária, Campina Grande do Sul, Campo Largo, Colombo, Fazenda Rio Grande, Pinhais, Piraquara, Quatro Barras, and São José dos Pinhais, clusters over 90 percent of the total RMC population. The RMC contained 11.85 percent of the state’s population in 1970 and 28.5 percent in 2000 (IBGE, 2001). In absolute numbers, that is an increase of 1,850,360 inhabitants in the region’s urban areas in that period. With the average family being 3.25 persons, this increase in population means a demand for about 570,000 dwellings.

As in all other metropolitan regions of Brazil, the RMC has experienced higher growth rates in the periphery than the core. The RMC was among the metropolitan regions with the highest growth rates in the 1990s and most of the recent growth has occurred in the outskirts of the city (Table 4). Curitiba today is 100 percent urban, and the municipalities surrounding it are the ones absorbing new population. Thus, the periphery, which comprises the other 25 municipalities in the Metropolitan Region of Curitiba, has had the highest growth rates ever: 5.12 percent.

Table 4: Resident Population and Growth Rates for Brazilian Metropolitan Regions, 1991 and 2000

Metropolitan Regions	Resident Population		Growth Rate (%)
	1991	2000	1991-2000
Belém	1,332,840	1,795,536	3.37%
Fortaleza	2,307,017	2,984,689	2.90%
Recife	2,919,979	3,337,565	1.50%
Salvador	2,496,521	3,021,572	2.14%
Belo Horizonte	3,436,060	4,819,288	3.83%
Vitória	1,064,919	1,425,587	3.29%
Rio de Janeiro	9,814,574	10,894,156	1.17%

São Paulo	15,444,941	17,878,703	1.64%
Curitiba	2,057,578	2,726,556	3.18%
Porto Alegre	3,027,941	3,658,376	2.12%
Total	43,902,370	52,542,028	2.02%

Curitiba fares well in terms of average monthly income if compared to national rates; nonetheless, 55 percent of the population still earns less than five minimum wages, which would be considered low to moderate income (Table 5). As a whole, the RMC fares worse, with 83 percent of its population earning less than five monthly minimum wages. According to the 2000 Census, the average income for the RMC was five monthly minimum wages, while the average income for the city of Curitiba was 6.1 monthly minimum wages.

Table 5: Household Income in the Municipality of Curitiba and the Metropolitan Region of Curitiba, 2000

Average Income	Curitiba		Metropolitan Region of Curitiba	
	Number of households	Percentage of households	Number of households	Percentage of households
0 to 3 m.m.w.	174,468	37.03	199,014	62.89
3 to 5 m.m.w.	84,790	18.00	61,063	19.29
5 to 10 m.m.w.	104,518	22.18	41,625	13.15
More than 10 m.m.w.	107,385	22.79	14,769	4.66
Total	471,161	100.00	316,471	100.00

Source: IBGE. 2000 Census (Censo demográfico)

Planning the Perfect City

Curitiba, as most cities developed during colonial times in Brazil, has its planning rooted in the French tradition. An orthogonal grid devised by a French sanitation engineer was imposed in the mid-1800s and in the 1940s the first urban plan was developed by the French urbanist Alfred Agache, based on the plans he had developed for two other Brazilian cities, Rio de Janeiro and São Paulo. The plan for Curitiba took two years (1941-1943) to be developed. It suggested a radial road system departing from downtown and leading social and commercial activities to structured secondary centers, defining the orientation of the city's internal connections as well as its linkages with other important centers in the State, along the coast, and to neighboring States. Economic problems and the intense and rapid growth of the city prevented the plan from being implemented exactly as conceived; however, some of its major elements still remain.

The Agache Plan oriented development until the early 1960s, and in 1966 a Master plan designed by architect Jorge Wilhelm from São Paulo, was approved. Wilhelm's plan proposed transport-based axes, concentrating along the northeast-southwest axis, along which there would be dense development thus directing the future physical growth of the city. A series of plans originated from revisions to the original

plan and for the last 30 years Curitiba has been continually and effectively planned. Unfortunately, early plans addressed only the municipality of Curitiba. Planners did not envision what the unparalleled growth within these political borders would do to the surrounding—unplanned—area. Rapid growth in the city's periphery resulted in a scattered pattern of land use and conurbation with the surrounding municipalities. Hence, the Plan for Integrated Development (PDI—Plano de Desenvolvimento Integrado), a comprehensive development plan, was adopted in 1978 (IPPUC, 1985). This new plan was the first to include the 14 municipalities that then comprised the metropolitan region. The most recent version of the PDI developed by the metropolitan authority was adopted in 2006 (COMEC, 2006).

Curitiba's urban plans have always integrated land use patterns and their corresponding zoning regulations to road systems and mass transportation networks. Despite all the planning efforts, the intense and accelerated growth of Curitiba and its metropolitan region in most recent years has negatively impacted the quality of life of its citizens. Unemployment, homelessness, crime, violence, and traffic congestion are now part of everyday life in this once "most livable city in the world." Unemployment rates are lower than the national average, the housing deficit is estimated to be 80 thousand units, and the police force would have to be tripled to adequately serve the population and lower the statistics of an average 2.5 homicides and 20 car thefts per day.

Affordable Housing

The development plan for Curitiba demanded that housing issues be addressed within a comprehensive framework, that all housing be integrated to the urban infrastructure network, that it be diversified in form and type, and that it agree with the local landscape to harmonize with the environment (IPPUC, 1996). According to the 2000 Census, there were 729,232 households in the RMC. More than half, or 54 percent, earned less than six monthly minimum wages and 28 percent earned less than three monthly minimum wages. Only five percent of the total number of households earned less than one monthly minimum wage. The projected number of households for the RMC in 2005 was 878,478, of which 31 percent would be considered substandard (Macedo et al., 2007).

Virtually all low-income housing in the Metropolitan Region of Curitiba (RMC) is initiated by Cohab-CT, one of 40 housing authorities in Brazil and one of three in Paraná, linked to the federally funded Housing Financing System (SFH). This public-private company serves as the intermediary between applicant families and the Federal Savings Bank (CEF—Caixa Econômica Federal), the financing agency. Cohab-CT started operations in the late 1960s and today covers 7.5 percent of the state area (Cohab-CT, 1991).

The 1980s were particularly difficult for people in need of housing because scarce resources limited the ability of agencies to start new investments, and the demand continued increasing despite growing construction costs and diminishing purchasing power. By the end of 1988, the housing deficit in Curitiba was estimated to be 61 thousand units (IPPUC, 1989), and there were almost 44 thousand households registered with Cohab-CT (Cohab-CT, 1991). At the time, Brazil had an estimated housing deficit of more than 10 million units. Of the families waiting in Cohab-CT's line, 58 percent earned less than three minimum wages, 26 percent earned between three and five minimum wages, and only 16 percent, conceivably the only ones to qualify for financing a conventionally built housing unit, earned more than

five minimum wages. Even if this daunting demand, Cohab-CT continued to devise alternatives to meet demand; by 1998, 26 percent of the registered households were in the lowest income bracket while the percentage of registered families earning between three and five minimum wages increased to almost 40 percent. The percentage of higher income households remained fairly stable, increasing only two percentage points to 34 percent (Table 8).

Table 8: Profile of Households Registered with Cohab-CT, March 2002

Household Income (in minimum wages)	Number of households			Percentage of households
	Curitiba	RMC	Total	
Up to 1 m.m.w.	1,772	332	2,104	3.35
1 to 2 m.m.w.	19,843	2,903	22,746	36.26
2 to 3 m.m.w.	15,022	2,152	17,174	27.38
3 to 4 m.m.w.	8,742	1,231	9,973	15.90
4 to 5 m.m.w.	4,306	475	4,781	7.62
5 to 10 m.m.w.	4,997	574	5,571	8.88
More than 10 m.m.w.	346	30	376	0.61
Total	55,028	7,697	62,725	100.00

Source: Cohab-CT, March 2002.

Registration in Cohab-CT programs must be renewed or updated by the prospective owners every year; the minimum waiting period is three years. Houses built or financed by Cohab-CT have an average area of 30 square meters, multi-family units have 50 square meters, and serviced lots 150 square meters (Cohab-CT, 1991). Self-help programs have been among the most successful housing programs in Curitiba since 1980; it is estimated that there are more than 12 thousand dwellings in the municipality that have been built by their owners. The first experiences with self-help in Curitiba were in favela relocation projects. The average savings for families choosing self-help is 40 percent over the cost of a traditionally built home.

Despite successful programs and efforts on the part of Cohab-CT, the demand for housing in the Metropolitan Region of Curitiba still is much higher than the supply and the number of applicants waiting in line has never subsided. Consequently, most low-income families occupy land illegally and form new favelas or enlarge and densify existing ones while they wait in line for a subsidized housing unit. Recognizing this phenomenon, Cohab-CT has attempted to integrate informal settlements into the urban context, using appropriate health and safety standards, and allowing access to public services and infrastructure. The increasing number of regularizations is also evidence of policy shifts and the enactment of new legislation, establishing the acceptance of failed relocations and the fact that informal but consolidated areas may be made viable and may be a solution for the affordable housing problem (Mangin, 1967).

Informal Settlements

Curitiba, despite its “First World” city label, has favelas scattered all across its landscape. The first favelas in Curitiba date back to 1970. The Research and Planning Institute of Curitiba (IPPUC—Instituto de Pesquisa e Planejamento Urbano de Curitiba) periodically conducts counts of units identified as land invasions and substandard units built on legal lots. In 1989, they concluded there were 24,578 housing units in the municipality that could be characterized as substandard housing (IPPUC, 1989); by 1997 there were an estimated 52,716 families living in 245 substandard areas. As a result of several urbanization and regularization processes, the number of families has decreased to 37,716, about 148,000 people, in 2000. Thus, in the city of Curitiba, eight percent of all housing units are located in substandard areas; the city comprises 87 percent of substandard units in the RMC (COMEC, 2006).

The trend to urbanize favelas over relocation of households has prevailed in urban areas. With very little vacant land left within the limits of the city of Curitiba, most invasions take place in other municipalities in the RMC. Some of these newly invaded areas are part of sensitive ecosystems, thus invasions not only present an immediate risk to the squatters, but also threaten the quality of life of the entire population of the metropolitan region. In 1992, the metropolitan planning agency, COMEC (Coordenação da Região Metropolitana de Curitiba), conducted a study to evaluate the magnitude of the invasion problem in the municipalities surrounding Curitiba and found that almost six percent of the population was living in areas that had been invaded. The count was repeated in 1997, this time including all 25 municipalities then comprising the RMC, and concluded that almost 11 percent of the urban population was living in informal settlements, about 250,000 people in 811 areas (COMEC, 1997). At the time, Curitiba comprised 52 percent of substandard units in the RMC (Table 9).

Table 9: Resident Population in Informal Settlements in the Metropolitan Region of Curitiba (RMC), and Percentage of Urban Population Living in Informal Settlements, 1998

Municipality	Informal Dwellings	Persons per Dwelling	Population in Informal Settlements	Urban Population	Percentage of Urban
Adrianópolis	93	3.93	365	1,626	22.48
Agudos do Sul	n.a.	n.a.	n.a.	n.a.	n.a.
Almirante Tamandaré	4,785	4.27	20,432	72,768	28.08
Araucária	1,552	4.23	6,565	71,648	9.16
Balsa Nova	0	3.94	0	2,916	0.00
Bocaiúva do Sul	127	4.10	521	3,156	16.50
Campina Grande do Sul	584	4.24	2,476	25,331	9.78
Campo Largo	730	4.27	6,995	65,487	10.68
Campo Magro	1723	4.06	3,117	11,814	26.38
Cerro Azul	42	3.89	163	4,140	3.95
Colombo	6,253	4.19	26,200	153,974	17.02
Contenda	66	4.08	269	5,832	4.62
Doutor Ulysses	0	3.89	n.a.	536	n.a.

Fazenda Rio Grande	1557	4.29	6,680	45,590	14.65
Itaperuçu	572	4.26	2,437	9,798	24.87
Mandirituba	31	4.29	133	5,472	2.43
Pinhais	2,293	4.17	9,562	85,618	11.17
Piraquara	4,199	4.17	17,510	31,162	56.19
Quatro Barras	0	4.03	0	2,917	0.00
Quitandinha	0	4.08	n.a.	13,113	n.a.
Rio Branco do Sul	817	4.26	3,480	14,971	23.25
São José dos Pinhais	3,838	4.09	15,697	159,994	9.18
Tijucas do Sul	0	3.89	n.a.	1,746	n.a.
Tunas do Paraná	22	4.10	90	1,065	8.47
TOTAL	29,284	4.19	122,692	790,674	15.52
Curitiba	32,346	3.75	121,298	1,515,797	8.03
REGION TOTAL	61,630	3.96	243,997	2,301,471	10.60

Sources: COMEC, 1997; fieldwork, 1998 (tabulation by author).

The informal settlements that sprung up in Curitiba and other municipalities of its metropolitan area were not simply a result of massive rural-to-urban migration. They were products of national and regional inequalities due to the changing economic nature of nations and the lack of appropriate policies to mitigate the effects of change. As most informal settlements in large urban centers of developing countries, they may also have been products of the inability of governments to provide affordable housing to low-income families (Abrams, 1964; Turner, 1977). Informal settlements are the alternative for those too poor to participate in the formal market of planned and serviced housing. The manner in which these settlements materialize is similar across the majority of developing countries.

Conclusion

In the recent past, Brazil has initiated a decentralization effort, allocating resources and transferring funds directly to local governments. Programs under the responsibility of local authorities have the potential to reach the needy population more quickly and effectively, given their flexibility and opportunity for community participation. The difficulty presented by transferring all the control to the local level is the increased opportunity for, not only clientelist practices, but also corruption. By the same token, the experiences Brazil had with a more centralized structure – including a national housing bank – have proved that centralized control at the national level does not yield good results for the majority living in poverty and substandard conditions. A more equitable and transparent system could bridge the gap between the various levels of authorities and politics involved in the delivery of affordable housing, ensuring a better distribution of available resources and making sure the bulk of these resources benefit the users themselves.

A comprehensive approach is fundamental to mitigate urban problems caused by informal settlements in cities of developing countries. Regardless of the consequences to land markets or to the urban areas

within which informal settlements are being established, the fact remains that as urban populations continue to grow, so will the need for shelter. In addition to housing, issues of employment, crime, health and education are part of the minimum requirements for a more equitable society. Even all the progress and development observed in Brazil in the last ten years has not been sufficient to improve distribution of wealth. For as long as a select minority retains control of the bulk of Brazil's wealth, social problems such as informal settlements will continue to reveal themselves, marginalized populations will continue to suffer and marginalization will continue to make life, particularly in urban centers, less equitable and desirable.

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