International Center for Research and Policy on Childhood - CIESPI

Pontifical Catholic University of Rio de Janeiro - PUC-Rio

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EARLY CHILDHOOD, SANITATION AND ZIKA VIRUS

Brazilian low-income communities face Zika with appalling sanitation.
Huge challenge for the Olympic city of Rio de Janeiro

The **International Center for Research and Policy on Childhood** at the Pontifical Catholic University of Rio de Janeiro (CIESPI at PUC-Rio), is dedicated to engaging in research studies on, and social projects for, children, young people and their families and communities. Its purpose is to support the development and implementation of policies and practices for children and young people that contribute to their full development and the promotion and defense of their rights. CIESPI is particularly concerned with children growing up in contexts of vulnerability including poverty.

Rio de Janeiro, March 2016

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INTRODUCTION

The worldwide alarm at the spread of the Zika virus is mirrored in Brazil which is the world epicenter of the current outbreak of the virus. Correlational and virologic evidence is accumulating rapidly of the connection between the Zika virus and the increase in the incidence of microcephaly in newborn babies in Brazil[1].

The key facts laying Brazil open to this terrible threat are the lack of proper sanitation for large segments of the population and the abundance of breeding grounds amid piles of garbage for the mosquito species Aedes. Such conditions also open residents, especially young children, to a host of other health hazards, like malnutrition associated with infectious and parasitic diseases.

THE SANITATION CONDITIONS OF LOW-INCOME HOMES IN BRAZIL

Newly available data show that between 2004 and 2014 the percent of children aged 0-8 in Brazil living in homes without access to a main sewage system or a septic tank only decreased slightly from 54% to 44% leaving almost 11 million of these children living in such households[2]. In 2014, there were almost 5 million children 0-8 years living in homes without mains water supply and 3 million in homes without garbage pick-up. This is the most recent data available and comes from the Brazilian Census Department´s annual household survey[3].

Table 1 shows the number of children 0-8 living in households in Brazil without each of the three basic sanitation amenities.

Table 1: Population of children in Brazil, aged 0-8, 2004 and 2014, living in households without (millions):

	Main sewage supply		Mains water supply		Garbage pick-up	
	2004	2014	2004	2014	2004	2014
Number	15.7	10.9	8.0	4.7	6.2	3.2
(%)	54.3	43.9	27.6	19.0	21.3	13.1

Developed by Data Zoom/Department of Economics, PUC-Rio, for CIESPI
Source: PNAD 2004 and 2014 (IBGE)

Different regions of Brazil (known as Grand Regions) fare very differently. Table 2 for 2000 to 2010 shows the poorer condition of homes in the North and Northeast regions, and while water supply and garbage pick-up in those two regions improved over the decade, mains sewage supply worsened in the North in percentage terms and barely improved in the Northeast.

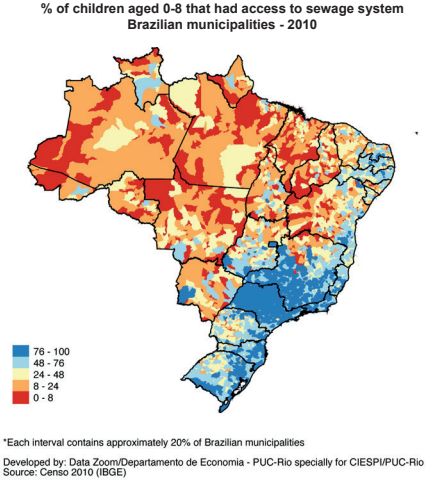
Table 2: Children aged 0-8, 2000 and 2010, living in households without (by grand regions, millions):

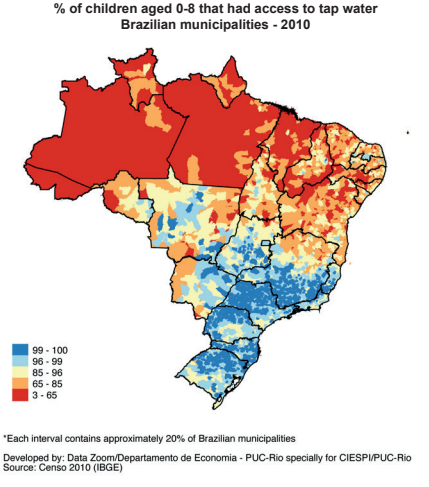
		Main sewage supply		Main water supply		Garbage pick-up	
		2000	2010	2000	2010	2000	2010
Number	North	2.1	2.1	1.7	1.1	1.6	0.9
	Northeast	6.4	4.9	4.6	2.1	4.5	2.5
	Southeast	2.7	1.7	0.9	0.4	1.5	0.6
	South	1.7	1.1	0.3	0.1	0.8	0.3
	Center-West	1.4	1.1	0.4	0.2	0.5	0.2
(%)	North	72.9	74.5	59.1	38.4	52.6	34.1
	Northeast	69.8	61.9	50.1	26.4	48.5	31.2
	Southeast	23.9	17.3	7.9	4.2	13.4	6.2
	South	41.8	32.2	7.2	2.8	18.6	8.9
	Center-West	65.0	53.9	17.6	7.5	22.3	11.7

Developed by: Data Zoom/Department of Economics, PUC-Rio, for CIESPI
Source: Brazilian Census 2000 and 2010 (IBGE)

The maps show the geographical differences in sharp relief. In the first map which tracks access to sewage systems, the blue areas are municipalities where between 76-100% of children aged 0-8 in 2010 lived in households with access to sewage systems and the red areas municipalities where 0-8% of children aged 0-8 lived in households with such access. Each class interval in the key to the map contains approximately 20% of Brazilian municipalities.

The second map tracks access to a mains water supply. In this map, blue areas are municipalities where between 99 and 100% of children aged 0-8 lived in households with access to mains water supply in 2010 and the areas in red are municipalities where between 3 and 65% of children aged 0-8 lived in such households[4].





As with many problems in Brazil, children of color do worse than white children. Non-Brazilian readers should note that in Brazil, race and ethnicity are self-described in the census by skin color and that the largest group of non-white residents describe themselves as brown and a much smaller percentage as black.

Table 3: Children aged 0-8, in Brazil, 2000 and 2010, living in households by color, without (millions):

		Main sewage supply		Main water supply		Garbage pick-up	
		2000	2010	2000	2010	2000	2010
Number	White	6.0	3.8	2.4	1.0	3.3	1.3
	Black and brown	8.2	6.9	5.4	2.8	5.4	3.2
(%)	White	38.3	31.8	15.4	8.3	20.9	11.1
	Black and brown	59.4	51.4	39.1	20.9	39.1	23.7

Developed by: Data Zoom/Department of Economics, PUC-Rio for CIESPI
Source: Brazilian Census 2000 and 2010, (IBGE)

A LOCAL VIEW OF THE PROBLEM-RIO DE JANEIRO

Many Brazilian low-income communities grew up inside cities but outside urban infrastructures, meaning that they grew without basic street lighting, water, garbage, and sanitation systems. While the last decade has seen many urbanization programs aimed at bringing basic infrastructure to those communities, the figures in this bulletin show how much more must be done.

In Rio de Janeiro, the 2016 Olympic City, the large low-income community of Rocinha has an open sewer running through its alleys[5]. Bordering the road that will take Olympians to and from various Olympic sites, this community of over 100,000 residents will observe this international celebration of health and physical activity, burdened by conditions that threaten the well-being of all of its children. Community members have petitioned the city government for many years to remove this blight to no avail. Instead, the city is spending vast amounts of money on a cable railway in the community which residents see as a luxury compared to the problem of open sewers. As one resident, who lived next to an alley through which untreated sewage ran, recently said to the press, ´we live in the middle of permanent squalor´[6]. Ironically, in times of very heavy rains, a frequent occurrence in the summer months in Rio, that waste which flows through a regular system so overloads it that untreated water pours out onto the beach in the adjacent upper-middle class neighborhood of Sao Conrado.

In early 2016, the governor of the state, Luiz Fernando Pezao, announced a proposal to invite private sector companies to bid on installing and running water and sewage systems in 25 low-income communities including Rocinha with access to water provided by the federal water authority CEDAE. The project would include new taxation but with a promise to provide construction jobs to local inhabitants[7]. The proposal indicates the desperate nature of the situation since it recognizes the inability of the city to act on its own, and the inability of public sector actors to run sanitation systems particularly in the mountainous low-income communities. The likelihood of such a scheme being launched in a time of considerable cut-backs in federal, state, and municipal budgets is probably not high. Moreover, the governor´s scheme will involve a new tax and the experience of some Rio favelas that gained pipe water mains is that residents were unable to pay the mains to

home connection fee and, therefore, did not connect their homes to the new mains.

The rapid spread of the mosquitoes and viruses like dengue and Zika in Brazil is in part attributable to the long history of illegal and unplanned communities for the urban poor with lack of proper sanitation and water supply. The first so-called favela was settled in Rio by soldiers discharged from an internal war in 1897. But a century or more of neglect is now compounding the already high rates of tuberculosis, leprosy, and other diseases with a frightening modern disease which leaves the children and adults of Brazilian low-income communities even more in danger.

[1]See Wanderson Kleber de Oliveira et al., Increase in Reported Prevalence of Microcephaly in Infants Born to Women Living in Areas with Confirmed Zika Virus Transmission during the First Trimester of Pregnancy-Brazil, 2015, U.S. Centers for Disease Control, March 11, 2016, downloaded on March 15, 2016, at http://www.cdc.gov/mmwr/volumes/65/wr/mm6509e2.htm. The authors cite several threats to the validity of their findings.

[2]A major portion of CIESPI's work concentrates on the early childhood years and hence these data show the living conditions of children 0-8 years of age.

[3]The Brazilian Census Department is called the Brazilian Institute for Geography and Statistics (IBGE).

[4]These class intervals, e.g. 3%-65% seem strange. They appear strange because the distribution of certain resources in Brazil is so uneven that it is hard to capture them in map form without using the technique of using the range of percentages of e.g. children with access to mains water for each of the bottom through the top quintiles of municipalities on that particular variable. Each class interval on the map represents one fifth of municipalities. The range of percentages of children with or without a certain resource in each fifth depends on the real life situation in that group of municipalities.

[5]Rocinha, which lies close to the CIESPI offices, serves as a constant realty test for CIESPI's work. CIESPI staff has provided a variety of technical assistance to organizations in the community and community leaders regularly inform CIESPI's work.

[6]Elenilce Bottari and Renan Franca, Pezao quer Privatizar Forcecimento de Agua e Esgoto em Favelas, O Globo, January 17, 2016, p.13.

[7]Bottari and Franca, 2016.

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