Title: INEQUALITY, ACCESS TO SANITATION AND PUBLIC LAW LITIGATION IN BRAZIL

Authors: Ana Paula de Barcellos[1*], Ricardo Faé de Moura[2,3], Marcia C. Castro[2]

[1] Law School, State University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

[2] Department of Global Health and Population, Harvard School of Public Health, Boston, MA, USA

[3] Faculty of Medical Sciences, Santa Casa of São Paulo, São Paulo, SP, Brazil

* Corresponding author: Av. Rio Branco 125 – 21 andar, Centro, Rio de Janeiro, RJ, Brazil, 20040-006. Phone: 55-21-99941-5407. Email: anapauladebarcellos@gmail.com

Running Title: Sanitation and Public Law Litigation in Brazil

Acknowledgements: APB thanks the support from State University of Rio de Janeiro Law School and acknowledges the Takemi Program, Harvard School of Public Health. RFM was supported by a fellowship from the Science Without Borders Program, CAPES, Brazil. MCC thanks the support from the Department of Global Health and Population, Harvard School of Public Health. The authors declare they have no actual or potential competing financial interests.

Abstract

Brazil is unlikely to meet millennium goals of sanitation access. In 2012, 45.4% of the households had access to sanitation, with significant regional inequality in coverage. Courts and public law litigation could be useful to reduce the sanitation deficit, given a unique institution of the Brazilian legal system, the Public Prosecutors Office, which has the goal of protecting public interest. Boolean analysis was applied to assess if court orders (2003-2013) were issued in areas with the highest deficit of sanitation, and thus possibly contributing to reduce local inequalities in access.

Results showed a disconnect between litigation and demand for sanitation, and indicated that areas that were better off in various social and economic indicators were the ones receiving attention, contributing to further exacerbate regional inequalities. The paper suggests reflections on how public interest litigation could target the most in need.

Introduction

"Sanitation is a cornerstone of public health" said the World Health Organization (WHO) Director-General Dr. Margaret Chan. Access to proper sanitation improves human health and well-being and contributes to reductions in the burden of diseases such as diarrhea, cholera, schistosomiasis, and trachoma, especially among children (Fewtrell et al. 2005; Montgomery and Elimelech 2007). Combined, proper access to water, sanitation and hygiene could prevent at least 9.1% of the global disease burden and 6.3% of all deaths (Prüss-Üstün et al. 2008). There is international consensus that promoting equitable access to basic sanitation services would reduce child mortality, improve overall health and education outcomes, reduce poverty, and contribute to sustainable development (United Nations 2005). Moreover, access to both water and sanitation was explicitly recognized as a human right by

the United Nations in 2010 (United Nations 2010). Yet, access to sanitation is inequitably distributed and an estimated 2.5 billion people worldwide lack access to basic sanitation (Lancet 2014).

The Millennium Development Goal (MDG) 7, target C, set the aim to halve the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015 (United Nations 2005). However, in 2010 UNICEF stated that, although significant progress had been made, evidence suggested that achievements had often not reached those who were mostly in need (UNICEF 2010). As of May 2014, the world has met the access to safe drinking-water target, albeit with uneven progress across regions and socioeconomic groups. The target to improve access to basic sanitation, however, was not met: in 2012 about 2.5 billion had no access to improved sanitation (with 40% of those still practicing open defecation), and access in urban areas is deteriorating due to rapid and precarious urban expansion (WHO 2014).

In Brazil, target C of MDG 7 is not likely to be met with regards to sanitation, despite increases in the percentage of people with access to an improved sanitation facility: 53% in 1990 and 77% in 2012 (Neri and Osório 2014). In 2012, 45.4% of the households in the country had access to sanitation services, and the cost to achieve complete coverage of access was estimated at 7.4% of the national GDP (Trata Brasil 2014). These increases had important environmental and health impacts (Lancet 2014; Barreto et al. 2007), but access to sanitation in Brazil shows marked regional and socioeconomic inequalities, with the northern portion of the country and poor people lacking the proper facilities, mirroring inequalities observed in other social and health-related indicators (Mejia et al. 2003; Saiani and Junior 2010). Regionally, in 2010 the deficit in sanitation services for the North and Northeast regions was, respectively, 86.0% and 66.0%, while in the Southeast region the deficit was 18.9% (Saiani and Galvão 2011). Disparities between urban and rural areas also exist. In

2013, 67.1% of the urban households in Brazil had access to sanitation; in rural areas the coverage was only 4.6%. Further, 90.8% of urban households in the Southeast region had access to sanitation, against only 18.2% in the North region; rural households in those regions had coverage of 13.7% and 0.6%, respectively.

According to the 2010 Population Census, only 28.5% of Brazilian municipalities had sewage treatment systems, and sewage collection systems were available in only 55.2% of municipalities (IBGE 2011). Brazilian Law qualifies sanitation as a public service since the 1970's and the 1988 Constitution described it as a mandatory service to be provided by the local government. However, more than 30 years after legal provisions were enacted, expenditure on sanitation makes up a consistently low percentage of GDP, ranging from 0.13% in 1996 to 0.09% in 2005, and the percentage of the total federal expenses applied to sanitation investments varied from 0.31% in 1994 to 0.15% in 2005 (RIPSA 2008).

Economic development *per se* will not overcome the sanitation deficit nor increase access in the most needed areas; in fact, it can make the deficit and the inequality even worse (Saiani et al. 2013). Judicial intervention through public law litigation could be a mechanism to reduce the deficit. In Brazil, the legal framework in place does not allow home owners to ask for sanitation services in Courts, but it does allow Public Lawyers, Environmental Agencies, and Public Prosecutors to do so. The Public Prosecutors Office, an institution unique to the Brazilian legal system, has the main goal of protecting the public interest (e.g., criminal prosecution, environment and other diffuse and collective interests, rights of Indigenous populations, and human rights related to issues such as health, education, and housing), mostly through litigation (Brasil 1988). Public Prosecutors are functionally independent, and thus it is common that they file lawsuits against the government, despite being a public institution. While not all municipalities have a Public Prosecutor's Office (about half of the municipalities have an office), each branch acts on a set number of

municipalities in order to provide full geographical coverage. No standard operational protocol exists regarding how prosecutors should prioritize actions they pursue.

Previous research has shown that from January 2003 to March 2013, at least 258 court orders were issued addressing sanitation rights, and 85% of those were filed by Public Prosecutors. These court orders referred to lawsuits filed from 1990 to 2012. The requests may encompass different provisions, such as the expansion of the sewage collection systems for a neighborhood, or the construction of a sewage treatment plant for public buildings or for a whole city, among others. Courts have granted 77% of these requests, and only 4% of those have been fully implemented (meaning that the sanitation construction has been finalized). The other 23% of the requests were initially not granted but plaintiffs can file an appeal. Thus, although shy in numbers, slowly and clumsily, enforcement is taking place (Barcellos 2014).

In 2010, Brazil had 5,565 municipalities and in 71% of them less than half of the households had access to improved sanitation (IBGE 2011). Considering the very small number of court orders (only 258) addressing the issue, one could question if the Courts are effectively improving the sanitation conditions of those most in need. When and where judicial interventions occurred and whom they benefited depend mostly on the public law litigator's priorities.

This paper addresses those issues and evaluates if there is a direct connection between sanitation needs and litigation in Brazil. We assembled data from Population Censuses regarding access to improved sanitation by municipality, in order to identify areas most in need for services, and to assess the extent to which court orders were issued in those areas. All information was geocoded in order to assess the existence of regional differences. Our results showed that based on the court orders that were issued (positive or negative) probably no lawsuits were filed in municipalities with the largest sanitation gap, highlighting a rarely

discussed subject: the priority targets elected by public law litigators and how they decide over them. This is particularly important to Public Prosecutors in Brazil, as they are public officials, publicly funded to promote human rights, and thus should follow an informed and accountable process of setting priorities. Our analysis points out to the need of establishing protocols for priority setting, and of increasing the visibility of the Public Prosecutor's role to the population as a way to empower communities.

Methods

Data sources

Data utilized in this analysis were obtained from multiple sources, and were aggregated at the municipal level – until 2010 there were 5,565 municipalities distributed across 26 states and one federal district (Brasília, the capital), and 5 regions. Data on court orders issued from January 2003 to March 2013 and the respective year when the lawsuits were filed were extracted from the website of each State and Federal Court of Appeals, with the exception of two states that did not have online data for the period analyzed. In the cases when the date of filing the lawsuit was not available, it was estimated that filing took place 18 months prior to the time when the first Court order was issued. Since there is no database that records all lawsuits that have been filled, court orders were used as a proxy for the existence of lawsuits. From the websites of the State and Federal Public Prosecutor's Offices we obtained information on the location of branches by municipality in order to appraise if the lack of an office could be a barrier for increasing the visibility of those areas most in need for sanitation.

Information on the percentage of households with access to sewage collection, and on total population was obtained from the 1991, 2000 and 2010 Population Censuses. We included the three censuses to cover the estimated time period when the lawsuits were filed.

From the Brazilian Superior Electoral Court we assembled information on the political party governing the municipality, state, and the country, in an attempt to evaluate if municipalities whose mayor was affiliated to the same political party of state governor could facilitate sanitation rights litigation. Municipal gross domestic product per capita (GDP per capita) was obtained from the Brazilian Institute of Applied Economic Research (IPEA), and is an indicator of municipality's wealth. We also obtained data on the municipal Human Development Index (HDI), extracted from the Human Development Atlas (UNDP et al. 2013), as a proxy for the municipality's standard of living. Although the Multidimensional Poverty Index (MPI) would be a better index for that purpose (Akire and Santos. 2010), it was not available at the municipal level for Brazil.

A map of Brazilian municipalities was created using files downloaded from the IBGE website (http://downloads.ibge.gov.br/downloads_geociencias.htm). All spatial information was projected using WGS 1984 UTM Zone 22S, which is the central longitude Universal Transverse Mercator band in Brazil. Map design and management was conducted in ArcGIS 10.2 (ESRI; Redlands, CA).

Analytical approach

We began by measuring non-spatial descriptive statistics for all variables. In order to appraise inequality in the access to improved sanitation we calculated the concentration index (Wagstaff 2000; Wagstaff et al. 1991), considering the municipality as the unit of analysis, the municipal Gross Domestic Product (GDP) as an income-related indicator, and the number of households with access to improved sanitation as the health variable. The concentration index ranges from -1 to 1, with a value of -1 indicating that access to sanitation is concentrated amongst poor micro-regions (or those with the lowest GDP), and a value of 1 indicating that access to sanitation is concentrated amongst rich micro-regions (or those with

the highest GDP). All calculations were performed in Excel (Microsoft, Seattle, WA, USA), and STATA v.11 (Stata Corp., College Station, TX, USA).

Spatial variation in the proportion of households with access to improved sanitation by municipality (as recorded by Population Censuses) was assessed through the use of the $G_i^*(d)$ local indicator of spatial association (Getis and Ord 1996). Considering the varying size of the municipalities in Brazil, a first-order queen neighborhood definition was utilized and therefore only municipalities sharing borders were considered neighbors. All results were corrected for multiple and dependent tests utilizing the false discovery rate control procedure (Castro and Singer 2006). Data management was done in Stata 11 (Stata Corp.; College Station, TX, USA), and spatial analyses were conducted in GeoDA (Anselin et al. 2006).

Boolean analysis was applied in order to identify overlap (or the lack of thereof) between the 258 court orders and the municipalities that tested significant for clusters of high or low proportion of households with access to improved sanitation. Additional variables described above were utilized to summarize the overall profile of municipalities targeted and not targeted with court orders, in light of levels of access to sanitation.

Results

Based on Census data, the percentage of municipalities with no access to improved sanitation was 58.5% in 1991, 19.3% in 2000, and 7.4% in 2010. The median municipal percentage of households with access to improved sanitation was 0%, 5.9%, and 16.4% in 1991, 2000, and 2010, respectively. Access to sanitation presented inequalities both between and within regions; better access to sanitation was observed in the Southeast region, while the worst coverage was in the North (Table 1). This regional pattern is also clear in Figure 1. Significant clusters of high access to improved sanitation were concentrated in the southern

portion of the country (with some municipalities consistently showing significant high access to sanitation over all the three census years analyzed), while significant clusters of low access were observed in municipalities located in the northern part, a pattern that reflects historical regional inequalities in Brazil: the South and Southeast regions regularly have better outcomes, the North and Northeast regions often lag behind (Hoffmann 2000; Medici and Agune 1994; Rocha 1998). Indeed, the concentration index was 0.8958 (standard error (SE) = 0.0087) in 1991, 0.8681 (SE=0.0086) in 2000, and 0.8509 (SE=0.0084) in 2010, indicating that: (i) there was a large concentration of access to sanitation in municipalities with better GDP; and (ii) the improvements in the provision of sanitation during the past three decades, albeit with positive impacts in people's health, had a marginal contribution to reduce inequalities in access.

Figure 1 also shows the municipalities where court orders were issued and highlights three important issues. First, municipalities that have a historical pattern of low access to improved sanitation were not targeted by public law litigations. Second, and in contrast, municipalities with much better access to sanitation (and higher GDP and HDI) had lawsuits filed for the purpose of enforcing sanitation rights. Third, the distribution of lawsuits reinforces the pattern of regional inequality in Brazil: the South and Southeast regions have more representation, while the North and Northeast regions remain neglected (despite being those most in need).

The 258 court orders issued between 2003 and 2013, covered 180 unique municipalities (143 municipalities had one single court order issued, 22 had 2, 9 had 3, 2 had 5, and 4 municipalities had 6 or more), and 35% were issued a negative decision, currently under appeal. Roughly a quarter of the court orders in each region were issued a negative decision, with the exception of the Northeast region (17%) and the South (27%). Of note is the fact that

no municipality that tested for a significant cluster of low access to sanitation, and for which a lawsuit was filed to claim sanitation rights, was issued a negative decision.

Regionally, of the total court orders 43.4% were issued in the Southeast region and only 7.6% in the North, a disparity if one considers where the lack of sanitation facilities (and thus the demand for legal action) is, as shown in Table 1 and Figure 1. In addition, 69.8% and 73.6% were issued in municipalities with GDP per capita above the municipal GDP state and national averages, respectively. Considering the significant clusters of access to improved sanitation, about one third of the court orders were issued in municipalities that significantly tested for a cluster of high access to sanitation, while only 8 court orders were issued in municipalities identified as clusters of low access to sanitation (thus, the majority of court orders were issued in municipalities not significant for clustering). Regarding the presence of a branch of the Public Prosecutor's Office, only 10.5% of the court orders benefited municipalities that did not have an office. Considering the HDI, 48.5% of the court orders benefited municipalities with an index below the national HDI. Taken together, these indicators expose a conflict between public law litigation and reduction of the inequality gap in access to sanitation facilities.

With respect to political representation, no evidence was observed regarding a possible coalition of municipal, state, and national representatives from the same political party that could eventually influence the Public Prosecutors' decisions. Of the 258 lawsuits filed from 1990 to 2012, 79% were observed in municipalities where the mayor and the governor had different political party affiliations, and 92% in municipalities in which the parties of mayors, governors, and the president of the nation were different.

Discussion

This paper assessed if sanitation court orders issued from 2003 to 2013 (corresponding to sanitation lawsuits filed from 1990 to 2012), were targeted to municipalities most in need of services. Results showed a disconnect between litigation and demand for sanitation, and indicated that municipalities that were better off in various social and economic indicators were the ones receiving attention, which contributes to further exacerbate regional inequalities.

Our findings raise prioritization issues. One could argue that the presupposition that Public Prosecutors should prioritize the most in need of sanitation services is not sound enough because the lawsuits that were filed did address real needs of the municipalities, even if not benefiting those most in need. However, three questions regarding inequality need to be brought to discussion. First, Brazilian Law has set a goal of inequality reduction; not only income inequality, but also in access to basic rights (both aspects being connected). Thus, one would expect that Public Prosecutors should guide their actions to these provisions (Brasil 1988). International organizations have also been concerned that public policies engaged in the promotion of human rights should prioritize the poor (Mestrum and Özden 2012). Second, a human rights approach for sanitation rights suggests that a lexical order must be observed in the initiatives, so that every person should have access to basic services before some groups receive enhanced services (United Nations 1966). Third, without a targeted initiative to prioritize their needs, the most marginalized are likely to be the last to benefit from any public policy, as suggested by the inverse equity hypothesis (Victora et al. 2000). Some of the results on the progress of countries towards achieving the MDGs corroborate this hypothesis (Human Rights Watch 2012).

Regarding priority setting criteria, Public Prosecutors Offices are internally organized in teams who concentrate in topics (e.g., criminal prosecution, human rights, and environment). but there is no internal proceeding or general criteria on how to decide what their priorities should be. Public Prosecutors report that they usually act after receiving complaints from society. But there is no public information of all the complaints received, who presented them, which ones have triggered initiatives and why. In addition, even if poor communities lacking basic sanitation services could have correct information about the role of Public Prosecutors and the means to self-organize and bring their complaints, they may be too distant from the nearer Public Prosecutor, and the municipality where they live may lack a branch of the Public Prosecutor's Office, as our results indicated. In other words, the complaint-reacting criteria will probably concentrate the Public Prosecutors activity in other groups´ interests, not in those of the most in need, as has been reported to happen with Courts (Chieffi and Barata 2009; Silva and Terrazas 2011; Ferraz 2009; Ferraz and Vieira 2009).

Moreover, it is expected that Public Prosecutors visit all municipalities covered by the Public Prosecutor's Office where they work in order to identify issues that could benefit the community through litigation. However, the diversity of topics which the office oversees – criminal prosecution, children's rights, elderly rights, Indigenous rights, human rights in general, environmental, etc. – could result in passive actions. Without a standard protocol on priority setting, prosecutors are probably only able to respond to demands that are brought to their attention by individuals or community groups. This possibility, coupled with the fact that those most in need may not be empowered to claim for their rights (and may live in municipalities without a Public Prosecutor's Office) would contribute to the reduced number of lawsuits in the most underserved areas.

Through cooperation with institutions that produce and/or have access to information (e.g., universities, non-governmental organizations, and public agencies), Public Prosecutors

could be better informed regarding local needs, and thus better equipped to set priorities. For example, data used in this paper were collected by Brazilian public agencies and are freely available to anyone through institutional websites. Of note, however, is that a positive court order does not mean that access to sanitation will be available promptly to communities. The implementation of this kind of court order takes time, and it can take up to 20 years depending on the complexity of the project (Brasil 2012), requiring active monitoring effort from Public Prosecutors.

The data about court orders in Brazil have some limitations. First, two states did not have online records for the 10 year period analyzed, and did not allow access to paper records. Yet, it is unlikely that the profile of sanitation lawsuits from these states would be different than the one here presented (based on the remaining 24 states and the Federal District). Second, the search could not capture information about other activities Public Prosecutors could be carrying out to advance access to sanitation, apart from filing lawsuits (e.g., negotiations with public officials). Also, it was not possible to track lawsuits still awaiting a decision, but plaintiffs usually ask for preliminary injunctions, so it only takes some months, after the lawsuit is filed, for a positive or negative decision to be issued.

Conclusions

Although judicial intervention can be an important path to trigger debate over public health policies, this paper has shown that efforts of Brazilian Public Prosecutors to seek the promotion of sanitation rights are mostly concentrated in areas with already higher access to sanitation. Albeit with positive impacts, these actions fail to target those most in need and thus do not contribute to reduce the sanitation gap in areas with less coverage. These results suggest the need for an open debate regarding two important issues: (i) the possibility of

establishing priority setting guidelines for Public Prosecutors, and (ii) the need to create effective mechanisms that allow Public Prosecutors to reach out (on a regular basis) to communities they serve.

References

Fewtrell L, Kaufmann RB, Kay D, Enanoria W, Haller L, Colford Jr JM. 2005. Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis. The Lancet Infectious Diseases 5(1): 42-52.

Montgomery M, Elimelech M. 2007. Water and Sanitation in Developing Countries: Including Health in the Equation. Environmental Science & Technology January 1: 17-23.

Prüss-Üstün A, Bos R, Gore F, Bartram J. 2008. Safer water, better health: costs, benefits and sustainability of interventions to protect and promote health. Geneva:World Health Organization.

Lancet. 2014. Water and sanitation: addressing inequalities. Lancet 383: 1359.

United Nations. 2005. UNICEF Water, Sanitation and Hygiene Strategies for 2006-2015. New York:United Nations (UN).

United Nations. 2010. Resolution 64-292: The human right to water and sanitation. Fed Reg A/RES/64/292 (28 July 2010), available at http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292.

UNICEF. 2010. Social Protection: Accelerating the MDGs with Equity. UNICEF.

WHO. 2014. Millennium Development Goals (MDGs). Fact sheet N°290. Updated May 2014.World Health Organization. http://www.who.int/mediacentre/factsheets/fs290/en/ Assessed Oct 8, 2014.

Neri M, Osório R. 2014. V National Monitoring Report on the Millennium Development Goals. Brasilia:Brasil - Secretaria de Assuntos Estratégicos (SAE/PR). http://www.sae.gov.br/site/wp-content/uploads/Release-ODM-English-Final.pdf. Assessed September, 2014.

Barreto ML, Genser B, Strina A, Teixeira MG, Assis AMO, Rego RF, et al. 2007. Effect of city-wide sanitation programme on reduction in rate of childhood diarrhoea in northeast Brazil: assessment by two cohort studies. Lancet 370: 1622–1628.

Mejia A, Azevedo LGT, Gambrill MP, Baltar AM, Triche T. 2003. Água, redução de pobreza e desenvolvimento sustentável. (Série Água Brasil 4). Brasília:Banco Mundial.

Saiani CCS, Junior RT. 2010. Evolução do acesso a serviços de saneamento básico no Brasil (1970 a 2004). Economia e Sociedade Campinas 19(1): 79-106.

Saiani CCS, Galvão GC. 2011. Evolução das Desigualdades Regionais do Déficit de Acesso a Serviços de Saneamento Básico no Brasil: Evidências de um Incentivo Adverso dos Objetivos de Desenvolvimento do Milênio? In: 39° Encontro Nacional de Economia Foz do Iguaçu, Paraná: ANPEC.

Trata Brasil. 2014. Benefícios econômicos da espansão do saneamento no Estado de Rondônia. Porto Velho, RO:Trata Brasil; Exante.

IBGE. 2011. Atlas de Saneamento 2011. Rio de Janeiro:Instituto Brasileiro de Geografia e Estatística - IBGE.

Saiani CCS, Junior RT, Dourado JA. 2013. Déficit de acesso a serviços de saneamento ambiental: evidências de uma Curva Ambiental de Kuznets para o caso dos municípios brasileiros? Economia e Sociedade Campinas 22(3): 791-824.

RIPSA. 2008. Indicadores básicos para a saúde no Brasil: conceitos e aplicações. Brasilia:Rede Interagencial de Informação para a Saúde (RIPSA), Ministério da Saúde; Organização Pan-Americana da Saúde.

Brasil. 1988. Constituição Federal de 1988 (updated version: 2014). Fed Reg CF 1988, available at http://www2.camara.leg.br/atividade-legislativa/legislacao/Constituicoes_Brasileiras/constituicao1988.html/ConstituicaoTextoAtualizado_EC82.pdf.

Barcellos APd. 2014. Sanitation Rights, Public Law Litigation, and Inequality: A Case Study from Brazil. Health and Human Rights 16(2).

UNDP, IPEA, FJP. 2013. Atlas of Human Development in Brazil 2013.United Nations Development Programme (UNDP), Brazilian Applied Economic Research Institute (IPEA), João Pinheiro Foundation (FJP). http://www.atlasbrasil.org.br/2013/en/home/. Assessed January, 2014.

Akire S, Santos. M. 2010. Acute Multidimensional Poverty: A New Index for Developing Countries (Human Development Research Paper 2010/11). New York:UNDP-HDRO.

Wagstaff A. 2000. Socioeconomic inequalities in child mortality: comparisons across nine developing countries. Bulletin of the World Health Organization 78(1): 19-29.

Wagstaff A, Paci P, van Doorslaer E. 1991. On the measurement of inequalities in health. Social Science and Medicine 33(5): 545-557.

Getis A, Ord KJ. 1996. Local Spatial Statistics: An Overview. In: Spatial Analysis: Modelling in a GIS environment, (Longley P, Batty M, eds), 261-277.

Castro MC, Singer BH. 2006. Controlling the false discovery rate: a new application to account for multiple and dependent tests in local statistics of spatial association. Geogr Anal 38: 180-208.

Anselin L, Syabri I, Kho Y. 2006. GeoDa: an introduction to spatial data analysis. Geogr Anal 27: 93-115.

Hoffmann R. 2000. Mensuração da desigualdade e da pobreza no Brasil. In: Desigualdade e pobreza no Brasil, (Henriques R, ed). Rio de Janeiro:IPEA, 81-107.

Medici AC, Agune AC. 1994. Desigualdades sociais e desenvolvimento no Brasil: uma análise dos anos 80 ao nível regional. Ensaios, FEE, Porto Alegre 15(2): 458-488.

Rocha S. 1998. Desigualdade Regional e Pobreza no Brasil: A Evolução - 198/95 - Texto para discussão n° 567. Rio de Janeiro:IPEA.

Mestrum F, Özden M. 2012. The Fight against Poverty and Human Rights. Critical Report no. 11. Geneva:CETIM.

United Nations. 1966. International Covenant on Economic, Social and Cultural Rights. Fed Reg Resolution 2200A (XXI) of 16 December 1966, available at http://www.ohchr.org/en/professionalinterest/pages/cescr.aspx.

Victora CG, Vaughan JP, Barros FC, Silva AC, Tomasi E. 2000. Explaining trends in inequities: evidence from Brazilian child health studies. Lancet Vol 356: 1093-1098.

Human Rights Watch. 2012. Discrimination inequality and poverty: A human rights perspective.Human Rights Watch.

Chieffi AL, Barata RB. 2009. Judicialização da política pública de assistência farmacêutica e eqüidade. Cad Saúde Pública, Rio de Janeiro 25(8): 1839-1849.

Silva VA, Terrazas FV. 2011. Claiming the Right to Health in Brazilian Courts: The Exclusion of the Already Excluded? Law & Social Inquiry 36(4): 825–853.

Ferraz OLM. 2009. The right to health in the courts of Brazil: worsening health inequities? Health and Human Rights 11(2): 33-45.

Ferraz OLM, Vieira FS. 2009. Direito à Saúde, Recursos Escassos e Equidade: Os Riscos da Interpretação Judicial Dominante. DADOS – Revista de Ciências Sociais, Rio de Janeiro 52(1): 223-251.

Brasil. 2012. Termo de Referência para elaboração de planos municipais de saneamento básico. Procedimentos relativos ao convênio de cooperação técnica e financeira da Fundação Nacional de Saúde. Brasília:Fundação Nacional de Saúde (FUNASA), Ministério da Saúde (MS).

Table 1 – Access to improved sanitation and selected indicators by region, Brazil

Region	Year (*)	% households with access to improved sanitation		HDI (max,min)	Lawsuits with Court Orders issued in 2003-2013	
		Median	(max,min)		Approved	Denied (under appeal)
North	1991	0	(33.29, 0)	(0.562, 0.138)	2	0
	2000	0.16	(41.12, 0)	(0.654, 0.222)	11	5
	2010	0.53	(45.43, 0)	(0.788, 0.418)	2	0
Northeast	1991	0	(72.24, 0)	(0.576, 0.120)	2	0
	2000	1.43	(86.57, 0)	(0.694, 0.208)	25	4
	2010	6.56	(91.80, 0)	(0.788, 0.443)	17	5
Center-West	1991	0	(73.65, 0)	(0.616, 0.183)	1	0
	2000	0.64	(87.36, 0)	(0.725, 0.373)	8	2
	2010	1.33	(91.09, 0)	(0.824, 0.526)	2	1
Southeast	1991	43.68	(95.76, 0)	(0.697, 0.174)	16	3
	2000	60.78	(99.26, 0)	(0.820, 0.336)	56	15
	2010	70.25	(99.76, 0)	(0.862, 0.529)	14	8
South	1991	0	(70.97, 0)	(0.681, 0.208)	1	0
	2000	2.32	(83.37, 0)	(0.777, 0.377)	41	12
	2010	4.42	(92.59, 0)	(0.847, 0.546)	1	4

(*) Access to sanitation and HDI were calculated for the year indicated in the column, which refers to the year when the Population Census was conducted. Frequency of lawsuits was computed for time periods (1991-1999, 2000-2009, and 2010-2012).

Figure 1 – Clustering pattern of access to improved sanitation and court orders issued by municipality