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Inclusive governance: New concept of water supply and sanitation services in social vulnerability areas

E.F. Guimarães [a, *], T.F. Malheiros [a], R.C. Marques [b]

[a] Universidade de São Paulo, Brazil
[b] Universidade de Lisboa, Portugal

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ABSTRACT

This paper deals with the water access focusing on the impact it has on a vulnerable population. The proposed approach aims at capturing the exclusion conditions of people, and is implemented through stakeholder dialogues to raise social control. The innovation approach was built supported on case studies and participatory processes tested for communities in Brazil. Water and Sanitation access durability is given by the institutionalization of services for the poor, which is achieved through adequate capacity building and transparency. Two essential dimensions were designed to monitor the right to access to water and sanitation services: *inclusive governance* and *inclusive access*.

1. Introduction

The Millennium Development Goals (MDG) set in 2002 proposed to halve, by 2015, the proportion of people without access to improved drinking water and sanitation. Several efforts have been made worldwide to accomplish this target, as in the case of the water supply and sanitation (WS&S) services in Brazil. The National Plan for Water and Sanitation – PLANSAB for 2014–2033 proposes the means to attain this aim, including the role of stakeholders' participation, as well as the social instruments and the subsidization required (see Pinto et al., 2015).

According to the literature (see Marques, 2010), countries deal differently with the universal access to WS&S services. Most of them address the issue in their laws, and vary in the way they are set. For example, in Europe, in countries such as Italy, France and the Netherlands, the universal service is compulsory and defined in legislation, but in many others the WS&S services are free to decide on the goal of universal access.

There is a number of mechanisms that are already being used to achieve universal access in essential public services, some of them based on aspects of technological development, others on governance and social participation, and there are also those of economic character. But for the context of the WS&S universal access to the population in vulnerable situations, the choice of a mix of mechanisms is different. For example, the impact in terms of coverage of the subsidization for providing WS&S has stronger externalities related to public health, environmental and social goals, making this a subject of fundamental importance in the definition of public policies for poor settlements (Kayaga and Franceys, 2007). These aspects influence the balance between funding and investments for providing WS&S with universal access and, consequently, the business model to guarantee the right of access to these services. Therefore, it is important to assess the impacts in areas of social vulnerability as input in the financial viability studies.

The technological approach is also a key aspect to be considered. On the one hand, in many countries in Africa and Asia, the citizens use pre-paid meters, yard taps, water kiosks, water tanks, and other types of water supply in which the user will get water and take it home in buckets; and sanitation is still frequently provided by public latrines (WSUP, 2011). But, on the other hand, in countries like Brazil, the users, in general, have demanded direct connections to their houses by means of piped networks, even in slums and isolated communities.

The concept of universal access is dynamic, as presented in Fig. 1, and varies according to the increasing maturity levels of different stages of claim for better services.

When planning for the most suitable and sustainable approach,

* Corresponding author. Rua Costa Carvalho, 300, São Paulo, CEP.: 05429-900, SP, Brazil.
E-mail addresses: feche.guimaraes@gmail.com (E.F. Guimarães), tmalheiros@gmail.com (T.F. Malheiros), rui.marques@tecnico.ulisboa.pt (R.C. Marques).

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Fig. 1. Ontology of universal access to WS&S.

there are clearly different technical and social understandings among the network of stakeholders in WS&S related to the provision of universal access in slums. They bring to light different visions and conflicts. At the end, these controversies highlight the reasons why the traditional mechanisms have been unable to answer properly the present challenges. The context brought by the demand for universal access provision run into legal conflicts, such as property rights (land tenure) versus basic rights (health and survival).

Since the relevant economic development that took place in Brazil at the end of the last century, the country has suffered a disorderly growth in urban areas which intensified the need for WS&S services for socially vulnerable people, often located in irregularly occupied areas. The questions that may arise in this context are: to what extent are these citizens included in the public policies? Is the water services management system prepared to attend them? The challenges of urbanization require innovative mechanisms capable to meet the demands for essential services to populations in vulnerable contexts. For the measurement and visualization of this scenario it is necessary to find innovative concepts, indicators and governance tools able to capture the exclusion of basic conditions of human rights.

Workshops carried out with key stakeholders favored the identification of the key singularities of the exclusion mechanisms present in the provision of WS&S to vulnerable populations. The role of communities and partnerships was particularly highlighted.

This paper aims at proposing an approach to push WS&S universal access in poor settlements for the Brazilian context considering the experiences of the Empresa de Saneamento do Estado de São Paulo – SABESP (São Paulo State Water and Wastewater utility) in the State of São Paulo.

For this purpose, a qualitative methodology was adopted for data collection, which identified the WS&S sector practices in SABESP; documental research was carried out inside SABESP, newspapers, journals and reports on universal access in vulnerable areas in São Paulo Metropolitan Area; questionnaires and field observation on the case study were also used (Denzin, 1970; Quivy and Van Campenhoudt, 2003). The discussions were subject of social and technical mapping controversies based on the Actor-Network-Theory (Latour, 2012).

2. Innovation in WS&S to vulnerable settlements

The business model provides the boundaries for value creation, processes and governance of an organization. The collaborative processes contribute to add value to services, improve the management of intangible assets, and develop business performance to predict future problems (Bhatt, 2001; Bose, 2004).

In this sense, the innovation can be implemented in terms of the results and/or regarding the process that comes from the ability to deal with organizational requirements and decision-making (Santos et al., 2012; Crossan and Apaydin, 2010). Some factors such as the methodology, specific market service, internal processes and corporate priorities will lead to innovation. The main factors for decision-making are: innovation environment with internal links and links with the environment in a governance structure. Thus, the main approaches go through the strategy, structure, resources, human and cultural factors and processes (Christensen and Overdorf, 2000).

The corporate strategy, business model and business plan are fundamental to define the boundaries of the company, for value creation, internal organizational structure and governance for the composition and continuity of a business model (Delmar and Shane, 2003; Honig and Karlsson, 2004).

The principles that serve as basis for good governance practices are, among others, transparency, fairness, accountability and corporate responsibility. Thus, proper governance allows creating mechanisms of control and business monitoring, not only by managers but also by shareholders, making it possible to identify and solve conflicts at different decision making levels (World Bank, 1992; Malacrida and Yamamoto, 2006).

Tools for good governance of regulators, municipalities and utilities are required to cover marginal situations and to focus on efforts and resources in order to protect the most vulnerable users and enable the WS&S universal access. These governance practices should guarantee the streamlining of the resources for this purpose, at the same time provide powerful and clear signals about the strategy to address low-income population (OECD, 2008; WHO & UNICEF, 2013).

Experiences of some countries in Africa with similarities to the urban development in Brazil, such as Senegal and South Africa, demonstrated that a new paradigm is being built based on collaboration. Therefore, there is a growing number of partnerships being established between operators of water utilities, municipalities, community based organizations (CBO), non-governmental organizations (NGOs) and public-private partnerships (PPPs). This innovation has been able to lever efforts to provide universal access to services for low-income communities (Brocklehurst & Jan 2004; Cross and Morel, 2005).

The same paradigm in South America, in countries such as Argentina, has resulted in increased access to WS&S to several tens of thousands households in areas of social vulnerability and reduced the frequency and severity of waterborne diseases in children (Almansi et al., 2003; Galiani et al., 2007). Conventionally, low-income users have been seen with low ability to pay for better and more appropriate services (Asia, 1999). At the same time, low-income users have often demonstrated substantial willingness to pay (WTP) more commonly for WS&S (Brocklehurst and Evans, 2001). In fact, in most developing countries the poor pay much more for water than the rich people (see Davis et al., 2008; Amankwaa et al., 2014). Anyway, it is expected that WTP should motivate or flag operators to expand their services to vulnerable areas. This is relevant because the poor users dominate the economy of the low-income countries and consequently their inclusion contributes to a cost recovery regime based on efficiency, effectiveness and sustainability.

According to the Brazilian Census 2010, nearly 3 million households occupied by 11 million people are located in more than 6 thousand slums or other illegal settlements ('favela' is the Brazilian Portuguese term for these areas) in Brazil. Of these, 59.4% of the population lives in 9 metropolitan areas, which include São Paulo, Rio de Janeiro, Salvador and Belém as the largest ones. It is noteworthy that the majority occupies the banks of streams, rivers or lakes/ponds (IBGE, 2011). Studies on migratory dynamics of the country show that from small municipalities to the metropolitan areas, individuals still move towards slums, and an increase of

about 6% is estimated to have taken place over the past 10 years (IPEA, 2013).

In this scope, the Brazilian WS&S national plan faces several key barriers beyond the financial one. The legal barrier hampers the universal service (or universal access to services) in slums and in peri-urban areas, generally, in all the states. Official statistics consider only the consolidated (formal) household settlements to measure the achievement of targets; operators will only enter a certain area aiming at the goal of universal coverage when the area becomes legal. Thus, the illegal neighborhoods in urban areas and their borders are not accounted in the official indicators and plans of the country, municipalities and utilities.

Universal access must be the main aim of the public policy and turn itself into the backbone of the WS&S development in urban areas in developing countries. Therefore, there must be transparency in the indicators and their evolution, favoring the monitoring by the different stakeholders, such as the utilities, municipalities, national or regional governments, associations of customers, regulatory agencies, community leaders, financing agents, managers, workers and citizens. Information is a strong leverage point to intervene in a system (Meadows, 1997).

There are several studies on performance evaluation and benchmarking of the WS&S sector across the world which highlight the importance of the use of indicators to improve performance of essential public services (Berg and Corton, 2007; WOP, 2011; Berg and Marques, 2011). There are also several studies on the theme of WS&S provision for the poorest populations (see Mugisha, 2007; Ndlovu, 2011; Mbuvi et al., 2012) and indicators of health and WS&S (Andreazzi et al., 2007; Kayser et al., 2013).

The WS&S utilities operate formally and informally in illegal areas, where the slums exist. The Brazilian Constitution, in Article 5, Fundamental Rights and Guarantees, grants the inviolable right to life, freedom, equality, safety and property to Brazilians and foreigners living in the country. The WS&S, legally grounded on the Constitution principles, are often pushed by the communities to serve customers in areas of invasion or illegally occupied, which is the case of various slums of the country. However, the WS&S utilities are prohibited of bringing infrastructure services to illegal areas. In a country with the characteristics of Brazil, with very high rates of urbanization and poverty, it is almost unavoidable to have settlements on the outskirts and, in many cases, merged with the legal city.

In Brazil, there is information and available data on the WS&S coverage in legal areas. However, this data lacks adequate indicators to measure the differences in the management and in the user's situation in poor areas in comparison with the non-poor areas. Even the recent WS&S municipal plans and the operation contracts signed between municipalities and WS&S utilities have not adequately considered or included this information (MPO and IBGE, 2008; Guimaraes et al., 2014; Honig and Karlsson, 2004).

Barbosa (2010) presented the management model made up of institutional arrangements to meet the need for universal access to WS&S in irregular areas. The cooperation between the public defender of State and public prosecutors would allow legal settlement areas and subsequent installments of debts and implementation of social tariffs. In addition to these issues that need to be addressed in different ways, social tariffs (defined by criteria established thirty years ago) do not keep any relation to the real needs of the citizens that have suffered several changes in housing and social habits (Wichelns, 2013).

In Brazil, the expansion of the universal access is grounded on adherence to the legal system of land property rights. In compliance with the law, the actions for the WS&S universal access, from the company's juridical understanding, must be preceded by legalization and urbanization of the area. In the referral programs to achieve universal service in vulnerable and poor areas, the principles and goals of the resettlement landmark begin by: "providing adequate housing to the population in terms of infrastructure, security and comfort" and are followed by "promoting a significant improvement in local WS&S conditions." (Torres, 2004). This practice explains why the goals set include only regular areas. This is the matrix that establishes the universal access to the WS&S. Only after land tenure situation is solved, should the goals and indicators of strategic planning be defined by the companies and governments for those areas.

Therefore, poor areas are clearly excluded from policies, management systems and targets of decision-makers, and no indicator system has been institutionalized yet to capture the real scenario of WS&S access conditions in illegal areas.

The topic of the user from household at the social levels, and how pro-poor WS&S access is to be considered, has not yet brought clarity and public policy solutions.

3. Results and experiences in São Paulo

3.1. Overview

The SABESP experiences in the State of São Paulo will be used to illustrate the troublesome access to WS&S in the vulnerable settlements and to point how they can be handled.

SABESP Company is one of the largest WS&S providers in the world, with a mixed (stocked) capital company responsible for water supply and wastewater collection and treatment in 363 municipalities in the State of São Paulo. Currently, 27.7 million people have access to drinking water supply and 20.6 million to wastewater services. It employs about 15 thousand of people. The São Paulo Metropolitan Region represents 72% of the total billed water volume. The water production capacity was 76.3 m^3/s in 2013 (SABESP, 2013a).

3.2. Regular areas

The company's major challenge in regular areas has been to encourage the connection of users in low income areas of the WS&S system. For this purpose, a partnership between the State of São Paulo Government and SABESP Company was established by law, which provides the household connection for free to low-income customers aiming at universal access and improvement of the environment.

The State program "Se liga na Rede" (Connect to the Network program) is a cooperation agreement of the SABESP with the State Government, which includes the following points: the choice of the intervention areas are decided by both (State and SABESP); the connection is free to the user (the payment is 80% by the State and 20% by SABESP); there are technical visits to the community users to sign a term of adherence to the program, and a mandatory scheduling and execution of the work within 8–12 days. According to SABESP, they took two lines to identify households that benefit from the program: (1) by analyzing the users' information system for geo-referenced information; (2) by applying questionnaires for mapping socioeconomic users to identify the reasons why the customer was not connected to the WS&S and perceptions about the WS&S quality where the customer lived. Furthermore, a dedicated phone line to communicate to the "Connect to the Network" program was implemented (SABESP, 2013; Guimarães, 2015).

The program hired women from the communities to talk with the residents to sensitize them to connect to the network. With the salary these women had received during the program: 35% of them started to pay their children's school expenses; 47% of them invested in their homes; 35% said their quality of life improved; 22%

started to study again; 4% invested in buying a car (SABESP, 2013; Guimarães, 2015).

The main findings of a research about the program were that 54% of the users had an education level of elementary school, 86% received up to 3 minimum wages per month (about 600 US$, 2014) and they showed themselves willing to support the program (89%). Furthermore, they seemed to be sensitive to the problems caused by no access to WS&S, such as the proliferation of insects, mosquitoes and rats, and dirt in the street. 74% of the households inquired were interested in receiving more information about wastewater treatment, and they did not know about the procedure for performing the connection to the WS&S. 40% were not connected and from these 23% did not connect due to the cost of connection. On observation in situ it was found that wastewater was predominantly discharged into the stream (51%) and that only 14% were connected to the WS&S and the remaining used pits or other non-conventional means (SABESP, 2013; Guimarães, 2015).

The service was then scheduled and performed by the local management team, informing the membership team on completing the work so that the customer was visited again, thus attesting to its satisfaction with the services provided. This step was validated with the signing of the receipt of services by the customer. Finally, it was held accountable to the State Government of São Paulo, through the 'customer dossier', a file composed of the income statement and adherence program; term of acceptance; disclaimer by property; passage permit; photographic dossier before and after; and costs of implementation. Overall, the results contributed to two corporate guidelines defined in the balanced scorecard (BSc) tool of the company: Environmental sustainability, quality and universal access. In business planning, specific goals were established for the target population of the program.

According to SABESP, the goal of the program is to perform 191,700 connections (customers), with direct results for about 800,000 people over 8 years. Investments are estimated at around US$350 million to achieve this goal. As mentioned, of this amount, 80% was financed by the Government of the State of São Paulo and the remaining 20% by the company (SABESP, 2012).

3.3. Dedicated indicators for slums with land tenure problems

In the Metropolitan Area of Baixada Santista, close to the capital of São Paulo, the proportion of people living in slums is 17.9% of the total population, corresponding to almost 300 thousand inhabitants (Emplasa, 2013).

The approach for pushing universal access on these areas was built based on two concepts: *Inclusive access* and *inclusive governance*.

The *inclusive access* was the result of the process carried out by SABESP, through integrated actions, in partnership with the other segments of society to serve the entire population of areas of social exclusion. Workshops and field activities led to the indicator for *inclusive access* to evaluate the effectiveness of the process, which was measured by the number of connections made in these areas divided by the total number of dwellings (Table 1).

For evaluating the efficiency of the process we developed the *inclusive governance* indicator. It was based on the understanding that *inclusive governance* is the appropriate process to ensure compliance with the granting authority's functions, utility, regulatory and government entities through institutional instruments and assigned responsibilities, including clear and detailed skills for all the actors involved in the inclusive universal access of WS&S, promoting social participation and enabling social control. The steps identified in public practice and policy workshops to guarantee universal inclusive access are: 1) periodic and permanent survey of people suffering from exclusion, 2) participatory planning; 3) durability of programs and projects; 4) budgetary resources; 5) annual analysis of positive and negative results and 6) annual process feedback. These steps are the stages for an *inclusive governance*. The setting of the inclusive governance degree of the community will consist of the definition of four ranges of values, between 0 and 1, to asses the process corresponding to a very unfavorable, unfavorable, favorable and very favorable inclusive governance (Table 2).

For this approach in Baixada Santista Region (SP – Brazil) the results achieved contributed for the construction of a comprehensive business plan for SABESP whose information subsidized participatory planning, socio-technical engagement and set goals for the areas of social vulnerability.

4. Discussion and concluding remarks

The inclusive approach for the WS&S system in poor areas is complex, with challenges mainly in the technical and social interface.

The first step to move on is to bring people from these different fields (technical and social stakeholders) to discuss and find out win-win solutions.

The challenge in reviewing WS&S practices for poor settlements is to come up with a framework that addresses the measurement of externalities and market failures considering sustainability in areas of vulnerability and providing evidence of the limitations on access to WS&S. In this scope, it is necessary to examine the obligations regarding human rights, the eligible population, the measurement of necessary subsidies and the economic and social mechanisms to ensure sustainable policies.

There is no perfect regulation or governance system, but a continuous improving system. Therefore, first the regulatory systems have to give transparency to the failures to move the governmental institutions and operators to include and institutionalize this theme.

Durability and improvement processes are also key pillars to keep stakeholders engagement.

Concerning the case of Brazil presented, for the local people in these poor areas durability meant that the project approach contributed to improved opportunities for professional and personal development. The government supported part of the costs, and it is expected that public health benefits will payback. No specific survey was carried out to map and evaluate savings of the public health services, although most of these communities are permanently attended and monitored by local community health agents. For the SABESP business planning, specific goals were established for the target population of the program. In this sense, the WS&S universal access in areas of vulnerability approach promoted changes in the management of the organization,

Table 1
Inclusive Access Indicator (IAI).

Description	Metric	Frequency	Formulae
It aims to measure the connection rate to the piped network (of the concessionaire) of the dwellings in slums or other informal settlements	%	Yearly	Connection s of the dwellings in slums or other informal settlements/ Total Dwellings in slums or other informal settlements

Table 2
Inclusive Governance Index (IGI).

Description	Metric	Frequency	Formulae
It aims to measure the governance process which should assure the fulfilment of the inclusive access to the water and sanitation services, in order to promote the social participation and the stakeholders accountability.	Percentage (0 −100)	Yearly	$\sum_{p=1}^{30}\binom{6}{1}PR$
Weights			Weight (%)
1. Periodic and permanent counting of the population			20
2. Periodic participatory planning			20
3. Wide and continuous universalization program of these areas			20
4. Budgetary Resources			30
5. Analysis of positive and negative results			5
6. The feedback process			5
Total			100
Results (R)			Favorability
The establishment of the degree of governance in the community will occur with the definition of four ranges of values between 0 and 1. Four ranges were defined, with variations, according to results of the intervals obtained which characterize the inclusive governance into very unfavorable, unfavorable and favorable, very favorable			
Very unfavorable − Activity not initiated			0 to 0.25
Unfavorable − Activity initiated with completion of up to 50%			0.26 to 0.50
Favorable − Activity not completed, but with more than 51% and less than 75% of the expected X fulfilled			0.51 to 0.75
Very favorable − Completed activity or with more than 76% of expected X fulfilled			0.76 to 1.00

governance, economic and financial strategies.

For the regulatory context, the WS&S inclusive services approach has certain characteristics that justify the application of subsidy policies. Both the customers access to these services and the benefits related to the environment derived from sanitation provision. These mark the strong social character of the sector and the enormous impact it has on human development and resilience in society.

The indicators proposed during the project represent also innovation in the tools to address WS&S universal access. These indicators require partnerships among the different actors in this arena, to provide data plus their usage in the necessary planning processes. These indicators are aligned with the international agreements, such as SDG − Sustainable Development Goals.

The case studies presented demonstrated the high potential for this inclusive approach, that is much more proactive and objective oriented, avoiding stumbling in endless discussions on land tenure versus human rights.

In addition to this integrative approach, research efforts are needed in understanding the relationship environment − society within the sector, as well as political and management aspects in order to incorporate a strategic vision at the inequities most of the times absent in the business model of WS&S.

The WS&S political model must be able to accept challenges such as: lower costs of attendance and operation of the services, reduce the entry barrier (financial), develop innovative strategies to raise awareness and pay subsidies and promote civil society participation. It should conduct technical and cultural changes in companies, promote participation and strengthen the regulatory system to adjust intervention on the tariffs for the poor. On the other hand, the business model must be innovative and able to reorganize public services in order to create social benefits in a range of initiatives to generate economic value and environmental lessons with inclusion of the citizens.

The fact that utilities and regulators do not obtain data that might be relevant to take care of vulnerable population shows that policy should give focus to solve this gap to meet the goals of regulation concerning efficiency and social sustainability. In this sense, it was found that it is necessary to create a universal inclusive program for WS&S, adopting the inclusive governance tools that through itinerant local deliberative forums promote mediation services along with citizenship integration centers, which empower and allow the access to WS&S by the local community and encourage inclusive universal access.

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References

Almansi, F., Hardoy, A., Pandiella, G., Schusterman, R., Urquiza, G., Gutierrez, E., 2003. Everyday Water Struggles in Buenos Aires. WaterAid and Tearfund, London.
Amankwaa, E., Owusu, A., Owusu, G., Eshun, F., 2014. Accra's poverty trap: analysing water provision in urban Ghana. J. Soc. Sci. Policy Implic. 2 (2), 69–89.
Andreazzi, M., Barcellos, C., Hacon, S., 2007. Velhos indicadores para novos problemas: a relação entre saneamento e saúde. Rev. Panam. Salud Pública 22 (3), 211–217.
Asia, W., 1999. Willing to Pay but Unwilling to Charge: Do “Willingness to Pay” Studies Make a Difference? Field Note. DFID, England.
Barbosa, C., 2010. Pro-poor Incentives for Water and Sanitation Services Provision: a Case Study of Water Utilities in the State of Sao Paulo, Brazil. MSc Thesis. UNESCO-Institute for Water Education (IHE), Delft.
Berg, S., Corton, M., 2007. Water Utility Benchmarking for Managerial and Policy Decisions: Lessons from Developing Countries. International Water Association (IWA) Publishing.
Berg, S.V., Marques, R.C., 2011. Quantitative studies of water and sanitation utilities: a benchmarking literature survey. Water Policy 13 (5), 591–606.
Bhatt, G., 2001. Knowledge management in organizations: examining the interaction between technologies, techniques, and people. J. Knowl. Manag. 5 (1), 68–75.
Bose, R., 2004. Knowledge management metrics. Ind. Manag. Data Syst. 104 (6), 457–468.
Brocklehurst, C., Evans, B., 2001. Serving poor consumers in South Asian cities: private sector participation in water and sanitation. In: Overview Paper, Water and Sanitation Program South Asia, January.
Brocklehurst, C., Jan, J., 2004. Innovative Contracts, Sound Relationships: Urban Water Sector Reform in Senegal. Discussion Paper Series no. 1. The World Bank, Washington, DC.
Christensen, C., Overdorf, M., 2000. Meeting the Challenge of disruptive Change. Harvard Business Review, March-April.
Cross, P., Morel, A., 2005. A pro-poor strategies for urban water supply and sanitation services delivery in Africa. Water Sci. Technol. 51 (8), 51–57.
Crossan, M., Apaydin, M., 2010. A multi-dimensional framework of organizational

innovation: a systematic review of the literature. J. Manag. Stud. 47 (6), 1154–1191.
Davis, J., White, G., Damodaron, S., Thorsten, R., 2008. Improving access to water supply and sanitation in urban India: microfinance for water and sanitation infrastructure development. Water Sci. Technol. 58 (4), 887–891.
Delmar, F., Shane, S., 2003. Does business planning facilitate the development of new ventures? Strateg. Manag. J. 24 (12), 1165–1185.
Denzin, N., 1970. Sociological Methods: a Sourcebook. Aldine, Chicago.
Emplasa, 2013. O fenômeno da mobilidade pendular na Macrometrópole do Estado de São Paulo: uma visão a partir das quatro Regiões Metropolitanas Oficiais. NEPO/UNICAMP. Available at: www.emplasa.sp.gov.br/.
Galiani, S., Rozada, M., Schargrodsky, E., 2007. Water Expansion in Shantytowns: Health and Savings. Inter-American Development Bank (IADB). Available at: www.idbdocs.iadb.org/.
Guimarães, E.F., 2015. Modelo de inclusivo para universalização do saneamento básico em áreas de vulnerabilidade social. PhD Thesis. School of Engineering of São Carlos, University of São Paulo.
Guimaraes, E.F., Coutinho, S., Malheiros, T.F., Philippi, A., 2014. Os indicadores do saneamento medem a universalização em áreas de vulnerabilidade social? Eng. Sanit. Ambient. 19 (1), 53–60.
Honig, B., Karlsson, T., 2004. Institutional forces and the written business plan. J. Manag. 30 (1), 29–48.
IBGE, 2011. Censo demográfico 2010. Aglomerados Subnormais. Primeiros resultados. Instituto Brasileiro de Geografia e Estatística (IBGE). Available at: www.ibge.gov.br/.
IPEA, 2013. Cidades em Movimento: Desafios e Políticas Públicas. Instituto de Pesquisa Econômica Aplicada (IPEA). Available at: www.noticias.terra.com.br/.
Kayaga, S., Franceys, R., 2007. Costs of urban utility water connections: excessive burden to the poor. Util. Policy 15 (4), 270–277.
Kayser, G., Moriarty, P., Fonseca, C., Bartram, J., 2013. Domestic water service delivery indicators and frameworks for monitoring, evaluation, policy and planning: a review. Int. J. Environ. Res. Public Health 10, 4812–4835.
Latour, B., 2012. Reagregando o social: Uma introdução à teoria do ator-rede. Edufba, Salvador.
Malacrida, M., Yamamoto, M., 2006. Corporate governance: information disclosure level and its relation with the stock price volatility on IBOVESPA. Rev. Contab. Financ. 17, 65–79.
Marques, R.C., 2010. Regulation of Water and Wastewater Services. An International Comparison. International Water Association (IWA), London.
Mbuvi, D., De Witte, K., Perelman, S., 2012. Urban water sector performance in Africa: a step-wise bias-corrected efficiency and effectiveness analysis. Util. Policy 22, 31–40.
Meadows, D., 1997. Places to Intervene in a System. University of Duke. Available at: www.center.sustainability.duke.edu/.
MPO and IBGE, 2008. Pesquisa Nacional de Saneamento Básico. Ministério do Planejamento Orçamento e Gestão (MPO) and Instituto Brasileiro de Geografia e Estatística (IBGE). Available at: www.ibge.gov.br/.
Mugisha, S., 2007. Effects of incentive applications on technical efficiencies: empirical evidence from Ugandan water utilities. Util. Policy 15 (4), 225–233.
Ndlovu, H., 2011. Developing and Testing Indicators for Pro-poor Water and Sanitation Benchmarking: Case Studies in Bulawayo and Pietermaritzburg. MSc Thesis. UNESCO- Institute for Water Education (IHE), Delft.
OECD, 2008. Peer review – Relatório final sobre governança regulatória no Brasil: Uma visão geral. Organization for Economic Cooperation and Development (OECD), Paris.
Pinto, F., Figueira, J., Marques, R., 2015. A multi-objective approach with soft constraints for water supply and wastewater coverage improvements. Eur. J. Oper. Res. 246 (2), 609–618.
Quivy, R., Van Campenhoudt, L., 2003. Manual de investigação em ciências sociais. Gradiva, Lisbon.
SABESP, 2012. Relatório de sustentabilidade. São Paulo State Water and Wastewater Utility (SABESP). Available at: www.saopaulo.sp.gov.br/.
SABESP, 2013. Governo lança programa que vai custear ligação de esgoto. São Paulo State Water and Wastewater Utility (SABESP). Available at: www.saopaulo.sp.gov.br/.
Santos, D.F., Basso, L.F., Kimura, H., 2012. A estrutura da capacidade de inovar das empresas brasileiras: uma proposta de construto. Rev. Adm. Inov. 9 (3), 103–128.
Torres, H.G., 2004. Segregação residencial e políticas públicas: São Paulo na década de 1990. Rev. Bras. Ciênc. Soc. 19 (54), 41–56.
WHO and UNICEF, 2013. Joint Monitoring Program for Water Supply and Sanitation. Progress on Sanitation and Drinking-water. World Health Organization (WHO) and United Nations Children's Fund (UNICEF), Paris.
Wichelns, D., 2013. Enhancing the performance of water prices and tariff structures in achieving socially desirable outcomes. Int. J. Water Resour. Dev. 29 (3), 310–326.
WOP, 2011. The state of African utilities: performance assessment and benchmarking report. In: Global Water Operators' Partnerships Alliance –United Nations Human Settlements Programme (GWOPA/UN-habitat), African Water Association (AfWA), and Water and Sanitation Program (WSP-Africa).
World Bank, 1992. Governance and Development. Washington, D.C.
WSUP, 2011. When Are Communal or Public Toilets an Appropriate Option? Water & Sanitation for the Urban Poor (WSUP). Available at: www.wsup.com/.