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Abstract

This paper will evaluate if Agenda 21 assumptions and goals for drinking water supply and sanitation were accomplished by Brazilian Government from 1992 to 2015. The procedures adopted are to analyze documents of environmental and infrastructure institutions and compare sustainable development indicators. Finally, it is possible to conclude that the Brazilian Agenda 21, regarding the topic of water supply and sanitation, has been improving since 1992. However, it is necessary more investments to achieve the goals of services in quantity and quality for all regions.

Key words: Agenda 21, Drinking Water, Sewage.

Introduction

- This paper will evaluate if Agenda 21 assumptions and goals for drinking water supply and sanitation were accomplished by Brazil from 1992 to 2015.
- The paper was motivated by the 25 years since the publication of the Agenda 21 baseline documents.
- The methodology adopted is to analyze the data provided by environmental and infrastructure agencies from the Brazilian government and sketch a diagnose of Brazil's situation regarding sanitation and drinking water supply.

2. Basis for actions on drinking water supply and sanitation in 1992

- Document "Brazilian Agenda 21: Basis for Discussion Document".
- Framework of water supply and sanitation services through sustainable development indicators.
- According to IBGE (2002), the percentage of residents of private households with access to water supply system was in the range of 90% for the urban population and slightly more than 10% in the rural area.

3. Evolution: from 1992 to 2015

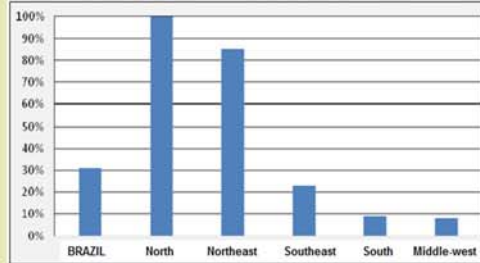


Figure 3 – Percentage of houses that experiences intermittency in Brazil and Regions North, Northeast, Southeast, South and Middle-West, from left to right (Ministério das Cidades, 2013).

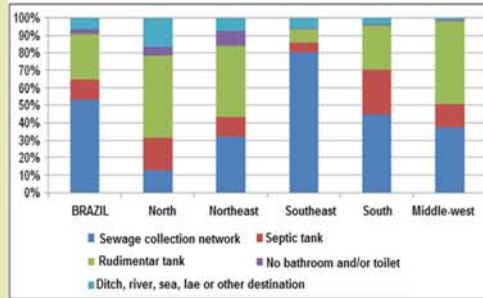


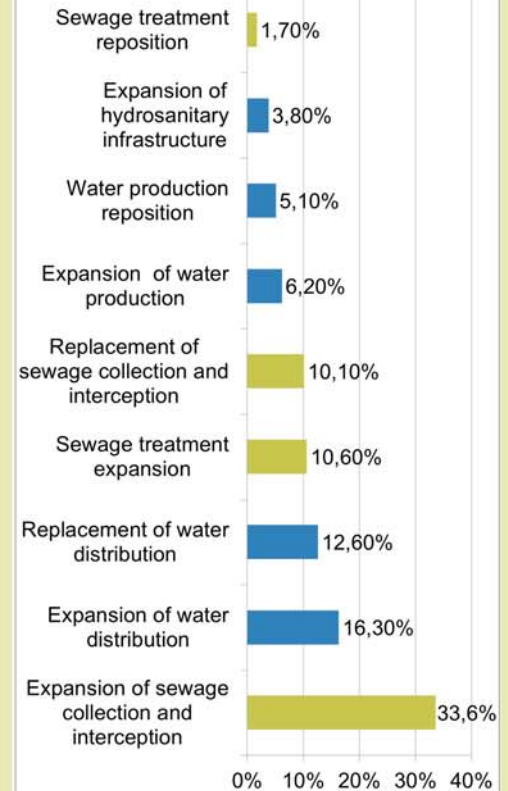
Figure 4 - Practices used to evacuate sewage, in percentage of population, by region and whole Brazil (Ministério das Cidades, 2013).

Table 1 – Investments in sanitation infrastructure in 2014, according to SNIS (information provided by sanitation services providers) (SNIS, 2016).

Region	Own Resources	Costly Resources	Non-expensive resources	Total	
	(R\$ mi)	(R\$ mi)	(R\$ mi)	(R\$ mi)	(%)
North	105.5	142.6	164.5	412.6	3.4
Northeast	835.8	195.1	1,065.9	2,096.8	17.3
Southeast	4,008.3	1,906.9	712.9	6,628.1	54.7
South	1,027.3	655.7	101.5	1,784.4	14.7
Middle-West	411.1	642.2	131.8	1,185.0	9.8
Brazil	6,387.9	3,542.4	2,176.6	12,106.9	100%
	52.8%	29.3%	18%		

4. How will be the future?

Nature of investment needs in expansion and replacement for drinking water (blue) and sewage services (green)



Conclusions

- The Global Agenda 21 topic on drinking water supply and sanitation was adequate to the Brazilian sanitation challenges.
- The amount of investment on sanitation have been increasing over the years. However, the deficit and inequalities between the regions are big and it needs to be overcome.

References

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