EVALUATION OF AGENDA 21 IMPLEMENTATION IN BRAZIL: CHAPTER 18 - PROTECTION OF WATER RESOURCES FOCUSED ON DRINKING WATER SUPPLY AND SANITATION CASE

Rafaelle Oliveira Baracho, Environmental Engineer1; Oscar de Moraes Cordeiro Neto, Dr.2
1Graduate Student, University of Brasilia, rafaelabaracho@gmail.com; 2 Professor, University of Brasilia


- This paper will evaluate if Agenda 21 assumptions and goals for drinking water supply and sanitation were accomplished by the 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.

4. How will be the future?

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

  - Sewage treatment repposition: 1.70%
  - Expansion of hydrosanitary infrastructure: 3.80%
  - Water production reposition: 5.10%
  - Expansion of water production: 6.20%
  - Replacement of sewage collection and interception: 10.10%
  - Sewage treatment expansion: 10.60%
  - Replacement of water distribution: 12.60%
  - Expansion of sewage distribution: 16.30%
  - Expansion of sewage collection and interception: 33.6%

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

<table>
<thead>
<tr>
<th>Region</th>
<th>Own Resources (R$ mi)</th>
<th>Costly Resources (R$ mi)</th>
<th>Non-expensive resources (R$ mi)</th>
<th>Total (R$ mi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>105.5</td>
<td>142.6</td>
<td>164.5</td>
<td>412.0</td>
</tr>
<tr>
<td>Northeast</td>
<td>835.8</td>
<td>195.1</td>
<td>1655.9</td>
<td>209.0</td>
</tr>
<tr>
<td>South-east</td>
<td>4008.3</td>
<td>1909.8</td>
<td>712.9</td>
<td>6.8</td>
</tr>
<tr>
<td>South</td>
<td>1027.3</td>
<td>655.7</td>
<td>1015</td>
<td>1.78</td>
</tr>
<tr>
<td>Middle-West</td>
<td>411.1</td>
<td>642.2</td>
<td>1318</td>
<td>11.1</td>
</tr>
<tr>
<td>Brazil</td>
<td>6387.9</td>
<td>3542.4</td>
<td>2176.6</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>52.8%</td>
<td>29.3%</td>
<td>18%</td>
<td>100%</td>
</tr>
</tbody>
</table>

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 has been increasing over the years. However, the deficit and inequalities between the regions are big and it needs to be overcome.

References