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THE SUSTAINABLE CONTRIBUTION: CONSUMPTION AND ACCESS TO FRESH WATER

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INTRODUÇÃO

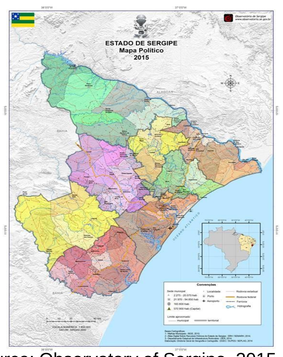
In recent decades, fresh water shortages have become a concern for society; Becoming a threat to the sustainable development of human society. Thus, the issue is being debated in the global context, and more and more action is expected from public managers on how to use and reuse water. Thus, the study sought to find the sustainability index in relation to freshwater issues, as a way to demonstrate the reality in the municipalities of Sergipe.

For this, the variables were defined and adapted the methodology based on the studies of Martins, et al. (2008); Waquil, et al. (2007); Sepúlveda, (2005). In this context, the variable can be positive or negative. It is understood as positive when it contributes to the dynamics of valorization and consumption of water correctly, but the negative is used when the variable presents aspects that do not value the dynamics of water use and consumption in a balanced and sustainable way, better saying within the Standards determined by the United Nations (UN).

However, what refers to the development patterns were placed on the scale, represented by colors, according to the local sustainability scenario. The closer to 1 is to the index value, the greater the sustainability. Thus, the identification of the state of each dimension worked in the municipalities of Sergipe is based on the study: critical, alert, acceptable and ideal.

AREA OF STUDY

Covers the State of Sergipe, located in the western part of Northeastern Brazilian Region, between Parallels 9° 31 ' 54 "and 11° 34 ' 12" South latitude and meridians 36° 24 ' 27 "and 38° 11 ' 20" West longitude. With a land area of 21,094 m2 is the smallest Brazilian State in territorial dimensions, limiting to the North with the State of Alagoas; to the South and the West with the State of Bahia in the North and East by the Atlantic Ocean. The State occupies a coastal strip with 120 km wide and 163 km long (ATLAS, 2013).



Source: Observatory of Sergipe, 2015.

THEORETICAL FRAMEWORK

In 1987, the World Commission on Environment and Development (WCED) coined the definition of sustainable development that would become classic to design a development model that considers the three dimensions: economic, human and environmental. In this perspective, the environmental dimension of sustainable development requires the balance between protection of the physical environment and its resources, and the use of these resources in order to allow the planet to continue to support an acceptable quality of life.

According to Sachs, "[...] sustainable development obeys the dual ethical imperative of solidarity with present and future generations, and requires the specification of criteria of social and environmental sustainability and economic viability" (2008, 36).Thus, for the author, economic growth must generate positive responses on the social and environmental side, only he considers that there is development. In other words, sustainable development results in favorable outcomes of everyone's action combining culture, economy, environment, and social aspects with the living conditions of locals locally.

Furtado et al (2010) points out that it is necessary to consider both the endogenous factors that consist in the capacity of the actors to articulate local potentialities and advantages with the conditions of the external context, directly impacting the transformations of reality. In this perspective, the use of indicators emerge as a fundamental tool in the complex task of measuring such a comprehensive social phenomenon, allowing to observe it under its various aspects and dimensions, tangible and unattainable.

To that end, Farfus et al define indicators as "... essential tools to guide action and subsidize the monitoring and evaluation of progress" (2010, 104). And still have a vision "[...] more details on the diagnosis and identification of coordinates for decision making. Thus, through the indicators we can ascertain situations of alertness between the variables in order to make decisions and effective actions of the reality of a given municipality.

MATERIALS AND METHODS

Through the application of the methodology for analysis and calculation of the index of municipal sustainable development and the adaptation of the classification proposed by Martins and Candido, it was verified through the sustainable development indexes among the municipalities their bottlenecks through the crossing of the extracted variables . Table 1 below shows the variables used, the research source and year made available by the bodies responsible for their collection, and their relationship with the context researched.

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Table 01 - Variables

VARIABLES	SOURCE / YEAR	RELATION SHIP
WATER QUALITY (%)	SNIS/2011	Positive
Compliance index of the amount of Residual chlorine sample	SNIS/2011	Negative
Incidence of residual chlorine analysis nonstandard	SNIS/2011	Positive
Compliance index of the amount of samples-turbidity	SNIS/2011	Negative
Incidence of non-standard turbidity analysis	SNIS/2011	Positive
Compliance index of the amount of total coliform samples	SNIS/2011	Negative
Impact analyses of total coliforms nonstandard	SNIS/2011	Positive
Average consumption per capita water (l / room / day)	SNIS/2011	Negative
ACCESS TO WATER SUPPLY (%)		
General distribution network	IBGE/2010	Positive
Well or Spring	IBGE/2010	Negative
Another	IBGE/2010	Negative
Source: Secondary Collection		

Therefore, after the definition of the variables, data collection, tabulation using Microsoft Excel software, became the variables collected in indexes, for presenting different measures unit. The variable is seen as positive when helps with recovery and growth dynamics of the municipalities, since the negative is used when the variable presents aspects that don't value the growth dynamics of the studied municipal districts.

The formulas used below:

Positive relationship: I = (x – m) / (M – m) **Negative relationship:** I = (M – x) / (M – m)

Onde:

I – index calculated for the municipality examined;
x – value of each variable to the municipality;
m – minimum value of the variable identified in the State;
M – maximum value of the variable identified in the State.

Then applied the calculation to find the index of each variable by using the arithmetic mean between the variables by municipality. Being thus demonstrated the performa in relation to classification and representation of indices in sustainability levels (Figure 2).

Figure 2 - Classification and representation of indices at levels of sustainability

Critical	Alert	Acceptable	Ideal
0-0,2500	0,2501-0,5000	0,5001-0,7500	0,7501 - 1

Source: adapted Martins and Candide (2008)

ANALYSIS OF THE DATA

In the State of Sergipe, it was verified that more than 64% of the municipalities showed a critical state in relation to the index of conformity of the quantity of residual chlorine sample, presenting health risks to the individuals and 36% acceptable in relation to the standard established by the indexes. Which compromises the quality of life of the population. Regarding the residual quantity of chlorine out of the standards, about 20% of the municipalities present critical and alert indices, showing that chlorine use is above that allowed for humans.

The other 80% in an acceptable level for human use, which does not exempt care when used. Access to the water supply system in Sergipe presents a good index in the general context, showing some critical situations, such as the municipalities: Pacatuba, Pedrinhas, Tomar do Geru and Umbaúba, which present rates of 0.000 in relation to the water supply.

In Sergipe, municipalities have good indices of average per capita consumption, 73% with ideal and 20% acceptable and 7% critical. Already, in the municipality of Carmopolis we find a large discrepancy, a city with small standards, presents a 0.000 index, in which its per capita consumption is 176.4 liters inhabitants day, well above the national average that is of 166.30 and Of the State of Sergipe that is 123.00 liters / day (data released by the National System of Basic Sanitation Information of the Ministry of Cities).

CONCLUSION

However, the indexes of Sergipe in municipal sustainable consumption, access and healthy conditions of fresh water consumption, still has some warning signs that society must get collect effective actions of managers, on the results you can see models of managements closed without worrying about local demands. Given this scenario shows the need to set up a model important for sustainable local development process, enabling the integration management society-environment, while open space in search of a better living condition.

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