SEVEN publicações acadêmicas & HOME PUBLISHING BRAZIL

Environmental education and basic school sanitation: a look at the sustainable schools in the river Salgado hydrographic region

Crossref doi 10.56238/homeinternationalanais-029

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Keywords: Environmental Sanitation, Sustainable Schools, Hydrographic Region of the Salgado River, Ceará.

1 INTRODUCTION

Urbanization has a close relationship with basic sanitation. Cities were increasing, however, sanitation infrastructure did not follow this process. In addition, public health conditions are directly related to the existence and efficiency of basic sanitation services, so that it is fundamental for environmental health, since it is composed of sewage services, drinking water supply, waste management solids and urban drainage. Such services mitigate the anthropic impacts generated in the context of hydrographic basins. Schools, while training individuals, should strive for environmental education mainly in practice, through their physical spaces in the sustainability bias, having a structure aimed at minimizing environmental vulnerability by adopting minimally adequate sanitation structures, with beneficiaries not only those who are part of the school, but also the surrounding society and the environment. Concerning the concept of adequate sanitation, one can consider what is defined by the National Basic Sanitation Plan, which made a new adoption regarding the characterization of suitability with a view to universal access to basic sanitation services. When care is provided without discrimination or legal, economic, physical or cultural barriers, it is adequate, on the other hand, if it is unsatisfactory, temporary, which compromises human health and the quality of the environment and its surroundings, it is precarious or is considered unattended (MELO and GALVÃO JÚNIOR, 2013, p.50). It is in this context that sustainable schools are associated with basic sanitation, bringing the focus of Environmental Education and this work sought to analyze the physical space, within the scope of the 75 state schools in the Hydrographic Region of Rio Salgado, in Ceará, regarding the provision of services. sanitation services, with emphasis on sanitary sewage, drinking water supply and solid waste disposal

2 METHODOLOGY

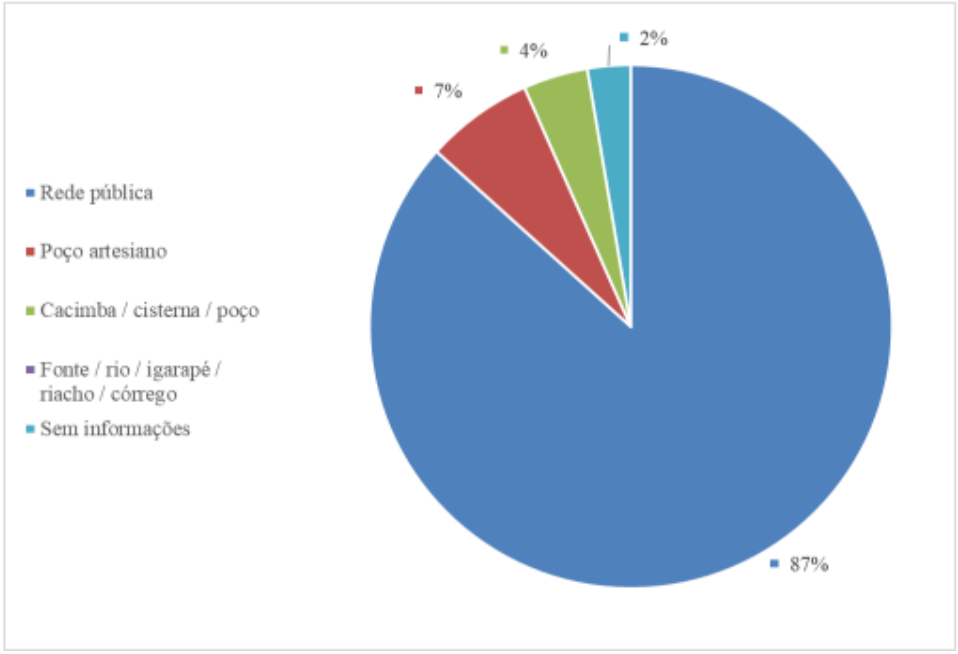
The method chosen for analysis was proposed by Quivy; Campenhoudt (1998) which presents seven steps, namely: 1: The starting question; 2: The exploration; 3: The problem; 4: The construction of the

analysis model; 5: Observation; 6: Information analysis; 7: The conclusions. A database from the Diagnosis of the Pact for Basic Sanitation of Ceará, from the year 2020, was used.

3 CONCLUSION

In a context in which the Rio Salgado Hydrographic Region, with 23 municipalities, presents high levels of service with drinking water and low levels of service regarding sanitary sewage, for the urban environment, as well as public consortium solutions for solid waste management, a very efficient solution in the State, the results showed that 89.3% of schools in the Rio Salgado Hydrographic Region had, in 2020, service suitable for the three types of services evaluated. For water supply, it is possible to see in Figure 1 that the majority had adequate provision, since it was done through the public network, well and well.

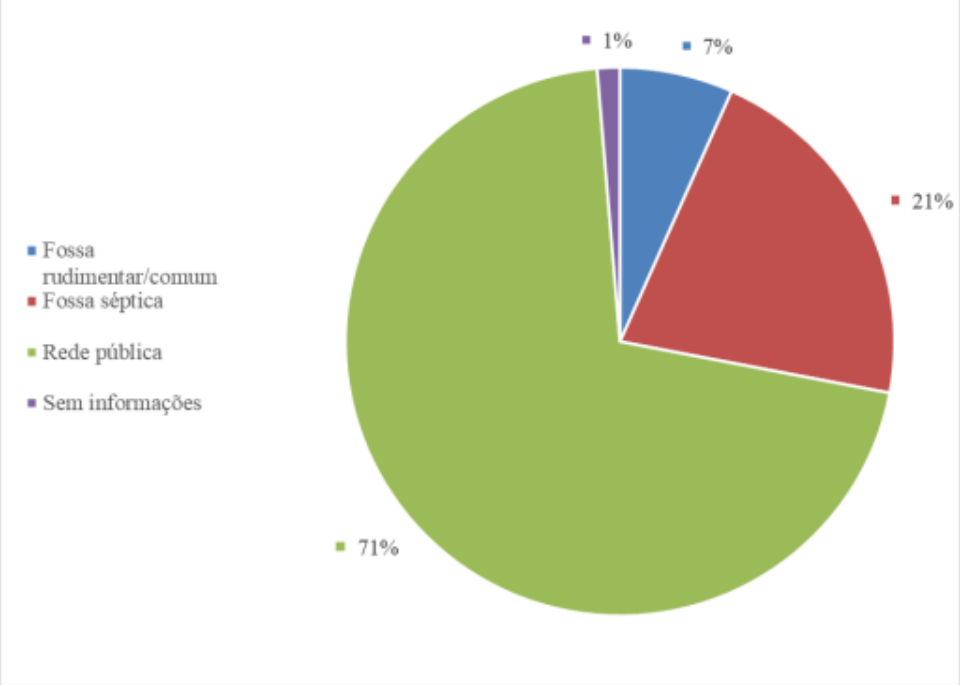
Figure 1 — Forms of water supply for state schools in the Salgado River Hydrographic Region, in 2020



Source: Prepared by the authors (2022).

It should also be noted that in order to achieve effective adequacy, supply through the distribution network, from the well, spring or cistern must be internally channeled and without interruption. Likewise, for well and cistern forms, there must be prior treatment before consumption, that is, disinfection or undergoing adequate treatment to reach potability standards. For sanitary sewage, with schools having the options of rudimentary/common cesspool, septic tank or public network, most managed through the public network and septic tank, both are characterized as adequate, as seen in Figure 2.

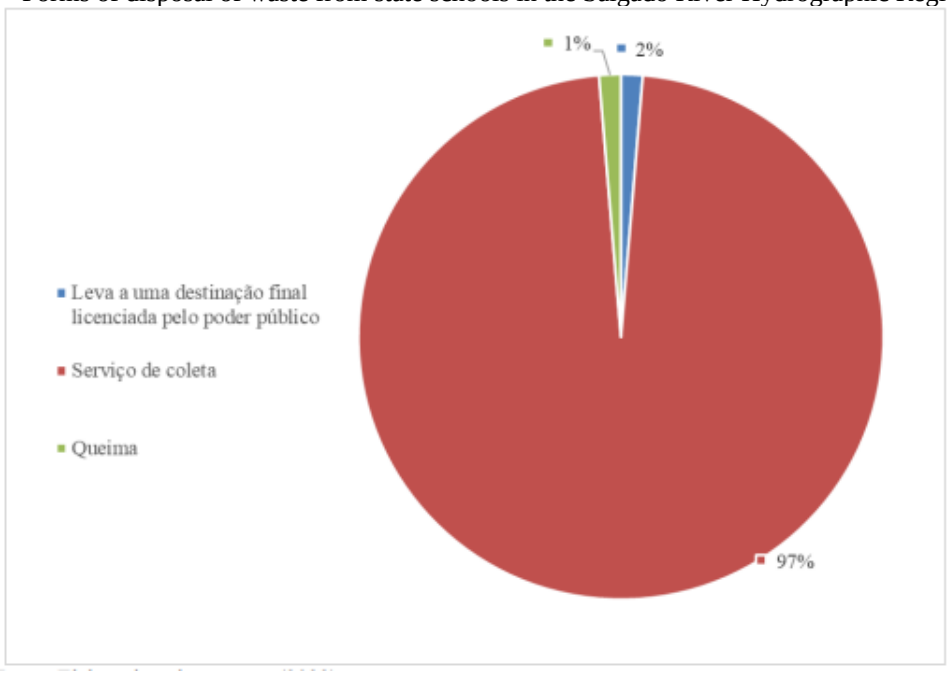
Figure 2 — Ways to remove sewage from state schools in the Salgado River Hydrographic Region, in 2020



Source: Prepared by the authors (2022).

However, the schools that answered to carry out the sewage through the rudimentary/common cesspool, which represent 7%, are not in adequacy, since this solution when it does not offer the proper waterproofing, as the sewage contained therein can cause contamination of the soil and the water table, thus affecting a possible supply of water when provided by a well and needing to strive to treat the water before consumption. Concerning the disposal of solid waste, the forms of management by the schools could vary between the regular public collection service, burning or a licensed destination, as seen in Figure 3, most were adequate, as it was done by collection public or led to a licensed final destination.

Figure 3 — Forms of disposal of waste from state schools in the Salgado River Hydrographic Region, in 2020



Source: Prepared by the authors (2022).

It can be concluded that, in terms of physical space, the schools are in line with the purposes of the Sustainable Schools theme, which is an inherent theme in Environmental Education. The main effects of school suitability are in the transition to socio-environmental sustainability in the territory of the Rio Salgado Hydrographic Region and in helping the school community understand the importance of schools becoming sustainable educational spaces.

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