

# Solid Waste in Municipalities of Agreste Pernambucano: Environmental Education Issue

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## ABSTRACT

The homo sapiens that dominates occupying actions on earth should be a citizen with socio-environmental responsibility; their omission and neglect reverberate throughout the ecosystem. To achieve the balance between different ecological systems there is a global consensus for sustainable development, it is strongly anchored in environmental education with government support. The objective of this research was to evaluate the knowledge and actions about the A3P and the significance of the 5Rs of sustainability, together with 20 public managers from two municipalities in the Agreste region of Pernambuco, using questionnaires with closed questions. From a total of respondents 100% (n20), they reported that they did not know information about the A3P Environmental Agenda. 70% (n14) reported that cities are not adequately prepared for solid waste to dispose. These information obtained in the research demonstrates that although there is a figure of the environmental manager, it is often not able to fulfill the goals in the governmental sphere.

Keywords: environmental education, waste, consciousness

## Introduction

The relationship between the human being and the environment began millions of years ago, with nature being modified slowly due to the small number of inhabitants on the planet and did not exit techniques available that would allow for accelerated changes. From the rapid growth of the human population, combined with globalized industrialization, the environmental impacts caused from new technologies have also placed the health of the planet and, and consequently, of the men and animals themselves at risk. The degree of injury is dependent on the amount of use, on the exposure time and the toxicity of these products in the environment.

The generation of waste grows at the same rate as consumption increases. The more goods are purchased, the more natural resources are consumed and more garbage is generated. This situation is more serious in developed countries, because they are the ones that generate the most

garbage. From Rio92, the theme of the environmental impact of consumption emerged as a matter of environmental policy related to sustainability proposals. It has become clearer that different lifestyles contribute in a different way to environmental degradation (BRASIL, 2005).

Inadequate waste management, along with its excessive production, causes numerous diseases, sanitary problems related to pollution of water sources, silting rivers and streams, manhole clogging, air pollution, among others. In addition, waste management has become a major problem due to the lack of public awareness and information about its management. In this aspect, environmental education becomes fundamental for a better management of these residues and with that, the reduction of damages, creating an environmental culture for the adequate destination of the residues in the different rural and urban societies (BRASIL, 2014 and GUSMÃO, 2000).

The issue of solid waste becomes a center of attention worldwide because it reflects a significant negative impact on the environment and,

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therefore, the target of public policies in the contemporary scenario. Thus, in the State of Pernambuco, the Environmental Agenda in Public Administration (A3P), refers to the intention of the public policy supported and developed by the Ministry of Environment (SEMAS, 2012).

The A3P in the state of Pernambuco was instituted by Decree No. 33,528, of June 8, 2009, since 2011, the State Secretariat for Environment and Sustainability (SEMAS) will coordinate the A3P Program Management Committee. At the state level, the Pluriannual Plan of Action (PPA) of the State of Pernambuco was instituted through Law 15.703/2015, for the period between 2016-2019, seeks to valorize the environmental dimension of development with a good solid waste management and, through sustainability, create actions to protect the environment, and strengthen environmental policy, preserving areas with clean energy generation and treatment of solid waste (PERNAMBUCO, 2015).

The Solid Waste Management and Development of Productive Arrangements Program proposes not only the implementation of the State Solid Waste Management Plan, generating productive activities such as reuse and recycling, enabling actions to promote the quality of life of the population of Pernambuco (SEMAS, 2012).

The intention of the public power reflected in the National Solid Waste Plan (PNRS), established by Law 12305 of August 02, 2010, is understood through instruments that aim to combat problems in the social, economic and environmental dimensions, related to management and improper disposal of solid waste. Through the environmental education process the 5R's policy is used (reduce, rethink, reuse, recycle and reject), as a guideline in search of sustainable consumption (BRAZIL, 2010).

It is necessary, to the subject in study, the reflexive conduct about education for sustainability because we understand the sustainability as a process of behavior change in its broadest form, concept and definition. Therefore, in the view of Gadotti (2008) sustainability calls for a dynamic process between individuals and the environment, seeking a constant climate of harmony and environmental balance.

On the other hand, education resides in a social process, which is responsible for providing deep changes in people's way of life. It is a condition inseparable from the growth and development of any society. In all versions of Brazilian constitutions education has always participated in the premises of public policies, as it represents a tool for social and environmental transformation.

The objective of this study was to investigate how solid waste is being treated inland and how important environmental education is related to social and environmental issues in the cities of wild Pernambuco, in compliance with the principles of the Public Administration's Environmental Agenda (A3P) of Ministry of the Environment

## Material and Methods

The methodology was a bibliographical research, descriptive and exploratory field with quantitative approach, using as a tool to apply a closed questionnaire containing 10 questions about the principal axes of the Environmental Agenda in the public administration (A3P), Meaning the 5Rs of sustainability about the principal axes of the Environmental Agenda in the public administration (A3P), Meaning the 5Rs of sustainability. Twenty response questionnaires were obtained between municipais managers, teachers of kindergarten and community health agents of dois municipalities of Agreste pernambucano.

The questions were applied to gather information about the knowledge of health, environmental education and environmental actions as for solid waste management in municipalities.

The data of this research were collected by the authors themselves, and later carried out bibliographical research by the Capes periodical the municipalities in time to raise awareness about the preservation and care of the environment in public spaces, in the period from April to May 2017.

## Results and Discussion

In the historical period in which we live the concerns with the diversity and complexity of the transformation processes of our planet, growing threats that directly affect the ecosystem by environmental risks and their damage. According to the major growth of environmental problems is of fundamental importance that society develop practical and effective mechanisms in conservation and preservation of environmental systems (PEREIRA; MEIRELES, 2012).

It was observed in this research after analysis of results, that of the total questionnaires applied (n20); 100% of the municipal managers, teachers, community health agents were unaware of the program objectives the A3P that is to sensitize the public managers to environmental issues; stimulate the incorporation of criteria for social management and environmental public activities; promote the economy of natural resources and institutional spending reduction and contribute to the review of production and consumption patterns and in adopting new sustainability benchmarks in the field of public administration.

The fact that the municipal managers do not know what is the A3P is rather worrying since it is understood that the municipality adopts the thematic axes. 1. Rational use of natural resources and public goods; 2. Proper management of waste generated; 3. quality of life in the workplace; 4. Awareness and capacity building; 5. sustainable Bids; as well as the issues related to axes: selective collection solidarity, daily consumption, energy efficiency, water and its multiple uses, maintenance

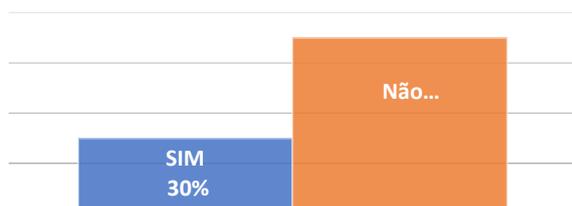
of the vehicle fleet, the main waste generated in public administration, and certainly the municipal Government of these municipalities of Pernambuco also not practicing politics of the 5R's of sustainability that are: rethink, reduce, reuse, recycle, refuse (BRASIL, 2009; PERNAMBUCO, 2015).

Highlights that the municipalities of Northeastern haven't adopted the use of Agenda A3P. It's hard to measure the consumption of products that generate significant environmental impacts and define any initiative for the introduction of environmental standards in the workplace. According to Moreira et al. (2016), there's still the aggravating as environmental sustainability in the Northeast is the historic occurrence of prolonged droughts, the reduction of spaces of time between a drought and other pollution and/or increasing contamination water springs, the diversion of watercourses or sources bus, the permanence of high land concentration and the expansion of irrigation practice conventional large and medium properties among others, have contributed to worsening the shortage of water and cause the emergence of conflicts over water. In the state of Paraíba, Pernambuco's neighbor.

We also observed that 100% of respondents believe that it is important for the implementation of an environmental agenda in the municipalities, that fact demonstrates There is a shortage of information about the actions of the environmental agenda in place, that are unaware of the Agenda 21 that was established at Rio 92 which is a process and instrument of participatory planning for sustainable development and which has as its central axis, aligning sustainability conservation environmental, social justice and economic growth and the Millennium Development Goals (MDGs): 1-Eradicate extreme poverty and hunger; 2-achieve universal primary education; 3-promote gender equality and the empowerment of women; 4-reduce child mortality; 5-improve maternal health; 6-combat HIV/AIDS, malaria and other diseases; 7-Ensure environmental sustainability; 8 - Stabilizer a global partnership for development (BRASIL, 2005).

Highlights that 70% (n14) municipal respondent's servers say that municipalities have been performing awareness/mobilization, in attention to the axis 4, on the proper disposal of waste generated which is the second main theme of the A3P, shown in Figure 1, below

Figure 1 - Research carried out by the municipality regarding the correct destination of the solid waste generated with the civil servants and civil society.

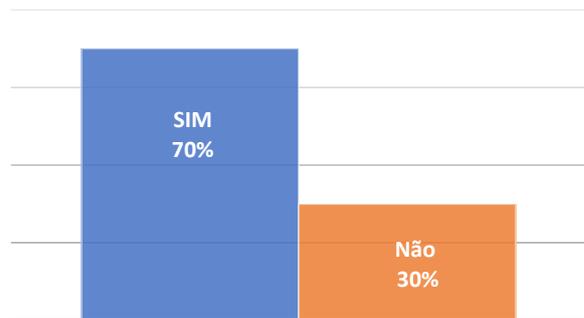


For an active participation of the people is necessary to first form them. Awareness occurs when the individual schools and to learn, we need each other and everything around us and education implies reflections, opening new possibilities of lived relations (KONDRAD MACIEL, 2013).

However, it is understood that it is not enough to just establish ideas for the establishment of a new human behavior, it is necessary an application study These ideas for that a real solution of environmental problems. Thus, the concepts structure the meaning to give to environmental education and forms of activity that takes from her and in which it dwells (VALETIN; SANTANA, 2010).

We observe the responses of interviewees contradiction, n14 (70%) responded that they do not have awareness regarding appropriate disposal of waste generated, at the same time, that 70% of people reported that the municipalities practice selective thematic collection related to the thematic axes of the A3P as demonstrates Figure 2.

Figure 2 - Practices of selective collection in the municipality



As a result of the rapid growth of these problems in the environment, solid wastes come from gaining prominence as a serious environmental problem of contemporary, and your inadequate management generates directly other important environmental impacts as in population health. According to the national solid waste policy (PNRS), law No. 12.305/2010, solid waste can be understood as:

"Material, substance, object or thrown resulting from human activities in society, whose destination is, you propose to proceed or if is obliged to proceed, in solid or semi-solid States as well as in containers and liquid gases whose peculiarities become infeasible the your or to demand technical or economically unviable solutions in the face of the best available technology (BRASIL, 2010, p.11).

The theme of solid waste is highlighted in the different areas of knowledge, and the need to respond to the demand for new approaches that make possible the discourse on the environmental issue, taking into account the education and training understandings of conscious subjects and the The possibility of the emergence of management techniques aimed at solving the most

varied problems caused by their accumulation (SOBARZO; MARIN, 2010).

Finally, it was observed that the municipalities' understanding of socio-environmental responsibility and related issues such as the eradication of poverty, the dissemination of environmentally sustainable technologies does not exist, notably that the fourth axis of the Agenda A3P (Awareness and Empowerment) is almost not practiced. In this way this perception becomes worrying, it is necessary that the municipalities seek to promote social and environmental responsibility as one of the essential elements for sustainable development. Sustainability can not

Be a subject only for seminars or production of reports, but rather a criterion to be inserted in all governmental activities, be they middle or end activities (BRASIL, 2009).

The discourse of a contemporary education has brought the emphasis of sustainable development as a guiding element of the actions in public politics in world-wide level. Notably, education for sustainable development aims at empowering society to act consciously in meaningful social change, considering the co-responsibility and participation of all.

According to Leite and collaborators (2015), the construction of a more efficient and realistic teaching practice contributes to the student's awareness, allowing him to perceive, evaluate and reflect on society and, above all, on his actions to transform. The environment in which it coexists. This practice corroborates Law 9.795 (BRASIL, 1999), which deals with the National Environmental Education Policy, which understands environmental education as the processes through which the individual and the community construct social values, knowledge, skills, attitudes, and competencies for the conservation of the environment, a common good of the people, essential to the healthy quality of life and its sustainability.

## Conclusions

The use of remote sensing techniques and data from the OLI - Landsat 8 sensor, it was possible to analyze the seasonal vegetative behavior through the Normalized Difference Vegetation Index (IVDN) with favorable values on ground cover in Remanso - BA municipality.

The changes in the values of IVDN in the region of Remanso-BA were strong and related to the intensity of the pluviometric volume, in which the months with the highest volume of precipitation resulted in higher indices, whereas in the dry months the indices were lower, with regard to the water needed to maintain the greenness of the native vegetation. The changes in the values of IVDN in the region of Remanso-BA were strong and related to the intensity of the pluviometric volume, in which the months with the highest volume of precipitation

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