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SWEET WATER PROGRAM – PAD AND SUSTAINABILITY: DEVELOPMENT ACTIONS IN THE BRAZILIAN SEMIARID REGION

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ABSTRACT

The main objective of this article is to analyze the actions of the Sweet Water Program – PAD in the development of the Brazilian semi-arid region. Initiatives such as the Sweet Water Program, which promote the sustainable use of water, directly contribute to combating the effects of climate change. It is an effort by the government to internalize such concerns, disseminating good practices in the sustainable use of water. This isanexploratory, descriptivestudywith a qualitative approach, bibliographical and documentary. Given what was exposed about the Sweet Water Program - PAD as an instrument of the public policy of access to water. Regarding the experience in the semi-arid region, it found positive points arising from the presence of the program in the rural community, mainly in the supply of good quality drinking water throughout the year, not depending on the seasonality of the rains or the supply of water trucks in periods of prolonged drought. The program's action, in addition to presenting itself effectively in the provision of water resources for the community, therefore, responds to the positive socio-environmental and socio-economic aspects for the rural territory.

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INTRODUCTION

The environment is the greatest asset that humanity can possess and there are countless problems related to this asset that we face today, such as lack of water, pollution, deforestation, fires, among others. For this reason, it is necessary to develop actions aimed at preserving and restoring the environment. As well, it is necessary to encourage citizens to become conscious consumers, since the exaggerated consumerism that today in society is one of the determining factors for environmental problems to become increasingly complicated (LAVOR et al., 2021). Factors such as the growing scarcity of water on a global scale and the consequences of urban agglomerations are becoming increasingly worrying factors in environmental, economic and social terms (BAGATIN et al. 2014). The water crisis is currently a reality whose understanding is scarce without due attention to both its political history and environmental determinants. Thus, from the mid-20th century, access to sanitation and water became central themes in international scenarios, along with a policy of accelerated economic growth (ARSEL, HOGENBOOM, PELLEGRINI, 2016). This situation initiated a predatory process of natural resources, with ecological consequences in such a way that it led to a deep-water crisis, especially with regard to the overexploitation and scarcity of this resource (CANTILLANA, 2020). Water is one of the fundamental natural resources for different human activities and for survival itself, although many say that they understand that the natural water cycle alone makes its recovery, in fact what we are witnessing and are observing is not happening this natural water cycle, having observed that some factors are interfering in this hydrological cycle (BELCHIOR et al., 2021).

Bringing this reality to the national scene, although Brazil has an average of 12% of the fresh water available on the Earth's surface, there is a very uneven territorial distribution of this resource. The country has historical and geographical characteristics that explain the visible contradiction between having one of the most extensive water reserves in the world and, even so, facing serious problems of scarcity. In this sense, it is not easy to guarantee access to water for all, mainly due to the need to expand its offer, which points to the lack of infrastructure reinforcement, supply and use of new sources (CGEOB, 2018). Among the Brazilian regions, the Brazilian semi-arid region is included, notably known as the driest region in Brazil. Delimited for the last time through Resolution No. 115 of 2017 by the Superintendency for the Development of the Northeast – SUDENE, the Brazilian Semi-Arid region covers a total of 1,262 municipalities, spread over 9 states in the Northeast and 1 in the Southeast (Minas Gerais), where more than 25 million people (SUDEME, 2017; FARIAS, NETO, VIANNA, 2020). Translated into data, the size of the Semiarid makes up a total of 57% of the Northeast, which accounts for 40% of this Northeastern population. In the semiarid region, the average annual rainfall is less than 800 millimeters (CASTRO, 2011). Given these characteristics, the region over the years has been receiving the action of various public policies that seek to minimize and even solve the effects of droughts and droughts, with actions that seek to promote a greater supply of water and meet the demands water resources in the region (FARIAS, NETO, VIANNA, 2020). For Campos (2014), these actions in response to droughts and droughts became State policy after the great drought (1877-1879), which the catastrophic impacts on the social fabric imposed on the public power the adoption of policies on the subject (FARIAS, NETO, VIANNA, 2020). One of these actions is the Sweet Water Program – PAD, which is an action of the Federal Government, coordinated by the Ministry of the Environment in partnership with municipal, state and federal institutions and civil society. The PAD seeks to establish a permanent policy of access to quality water for human consumption, incorporating various environmental, social and technical precautions in the recovery, implementation and management of saline and brackish water desalination systems (BRASIL, 2022). The PAD focuses on reducing vulnerabilities in relation to access to water in the semi-arid region, the Sweet Water Program in the view of Oliveira et al., (2020) is considered a measure of adaptation to climate change. Some studies indicate that climate variability in the region may increase, accentuating the occurrence of extreme events (more severe droughts) with direct consequences on water availability. In this sense, the main objective of this article is to analyze the actions of the Sweet Water Program in the development of the Brazilian semi-arid region. Initiatives such as the Sweet Water Program, promote the sustainable use of water, directly contribute to confronting.

METHODOLY

This is an exploratory, descriptive study with a qualitative approach, bibliographical and documentary. According to Poupart et al., (2008) qualitative approach research refers to an area that seeks to examine and clarify the most complex issues that appear throughout the research, it details the particularities of human behavior, its data analysis is more in-depth with regard to practices, customs and propensity to certain behaviors. Exploratory research is guided by carrying out a project that aims to better identify or conduct a survey about a fact or phenomenon, most of the time it portrays new visions and concepts, which have little or no knowledge in the literature, in this way, it offers subsidies for the studies carried out later to be produced with greater propriety (MARCONI; LAKATOS, 2017). The research used the Scientific Electronic Library Online (Scielo) and Google Scholar databases, in the period of January 2022. The sample consisted of journals indexed in these databases, through the articles published in them. To collect the material, it is still necessary to emphasize the use of the descriptors: Sweet Water, Dry, Coexistence and Sustentabilidade Program, in addition to the Boolean operators AND and OR. As inclusion criteria for sample selection, studies that were available and free, written in Portuguese, stood out. Incomplete studies that do not address the main theme and duplicates were excluded from this sample. The type of studies used were primarily articles, followed by monographs and theses that could promote this work. In addition, it used institutional documents from the states of the region and the northeast, and documents from the federal government in relation to the actions developed by the Sweet Water Program.

Sweet water program in Brazil: Under the scrutiny of water policy and management in regions of the northeastern semi-arid region, the evidence of drought is not uniquely and directly characterized as the cause of such serious panoramas of inequalities, especially when compared with the rest of the country or places in the region with greater supply of water resources. To this end, the struggle and challenges regarding water management in the midst of drought also converge with the desire to reduce regional inequalities and, concomitantly, with alternatives for sustainable development. Having assimilated superficial and preliminary aspects about the competence, the policy and the management of water resources, we pay attention to one of the several programs implemented to achieve these premises, that is, the Sweet Water Program. Knowing the major problems faced mainly by the Brazilian semi-arid region, such as the long dry season, river pollution, and brackish water in most wells, the Public Power sought to develop actions to guarantee the supply of quality water. Thus, in partnership with ministries and several other federal, state, municipal and civil society institutions, the Sweet Water Program began to be developed in 2003 and, in 2004, it was launched. The Sweet Water Program has as its basic premises the commitment of the Federal Government to guarantee the population of the Semiarid region access to good quality water. Ministry of the Environment), in partnership with around 200 federal, state and municipal institutions and civil society, serving mostly people from rural areas in the Brazilian semiarid region. The purpose of the program is to provide water for human consumption from the sustainable use of underground springs, incorporating environmental and social care in the management of desalination systems (FAPESQPB, 2019). This program confirms the commitment of a public policy for the sustainable use of water and the guarantee for human consumption, with technical, social and environmental care in the execution. In addition, priority is given to the recovery of water desalination systems, because, according to previous programs, it was

realized that only the installation and recovery of desalination is not enough, but planning the management of the execution of this system. In the strategic action plan of the federal government, through the Ministry of the Environment, within the scope of the State of Paraíba, at the beginning of the PAD in 2004, the implementation of 93 systems in 41 municipalities was foreseen, with the potential to reach about 37 thousand people, directly, mobilizing the contribution of resources in a budget of R$ 22,036,629.57 (BRASIL, 2020). Also according to the Research Support Foundation - FAPESQ (2019), from the State of Paraíba, by the end of 2018 there were 50 desalination systems in operation, which covered about 27 municipalities, benefiting 4,257 families and 16,052 people through their water source, directly. In 2020, in new information published by the Government of the State of Paraíba, it was pointed out that, the action of the Sweet Water Program in the partnership between the State and the Federal Government, inaugurated more 40 desalination systems in 27 municipalities of the Agreste and Cariri of Paraíba, benefiting directly 8,705 people from 2,580 families.

Compulsing the objective data and the published news, it is noted that, although with a delay of about 1 year, 90 of the 93 systems were implemented, covering 54 municipalities, 12 more than was initially stipulated. However, considering the people directly benefited, it can be seen from the action that only 24,757 people were directly benefited, well below the announced target of 60,000 people. Although it is a federal program in agreement with state structures, it is asserted that the participation and performance of junior entities are not excluded, even by constitutional force. It is noted that art. 225 of the Federal Constitution expresses the responsibility of the public power, regardless of its level, to preserve and defend the environment in collaboration with collective actions, including the possibility of the Municipality to establish local public policies for the completeness of the same purposes (LEITE et al., 2012). When faced with massive investments in infrastructure to combat drought by the PAD, transmuting into a public policy of a permanent nature, the establishment of follow-up, maintenance and monitoring actions are essential to guarantee the availability and quality of water supplied by the system of desalination. Therefore, the approximation of the participation of the municipal Public Power, including, with administrative resources already existing in secretariats such as Health and Agriculture, can enable greater efficiency and achievement of social and economic objectives for its development.

development actionsisweet water programsemiarid: In Paraíba, through the State Secretariat for Infrastructure, Water Resources, Environment and Science and Technology (SEIRHMACT), it signed the IV National Pact for the Execution of the Sweet Water Program (PARAÍBA, 2019). From this point of view, substantiates the integrative participation of the municipal government in the management of the Sweet Water Program, especially for aspects of its potentialization in the pursuit of sustainability. In this context, it is inferred from studies on public policies enunciated by Moraes (2020) that, aware that the municipality is the local and immediate intermediary for the first responses to society in crisis and emergency situations, it is essential that organized civil society unites efforts, involve all sectors of society and develop solutions that promote the reduction of vulnerabilities in your city (OLIVEIRA et al., 2020). More objectively, the Sweet Water Program was implemented in the municipalities of Paraíba by the Federal Government in partnership with the state of Paraíba, adapting to the assumptions of access, quality and rights. Although relevant investments have been undertaken, and more are to come, considering the people directly benefited, it appears that only 24,757 were reached, which represents a result far below the announced target of 60,000 people (OLIVEIRA et al., 2020). In the State of Alagoas, specifically, the program is the result of a partnership between the Federal Government, together with state and municipal bodies and organized civil society. Therefore, it should be noted that the program is coordinated in Alagoas by the State Secretariat for the Environment and Water Resources - SEMARH, the secretariat has followed the program since its arrival in the State in 2005 (SOARES, 2019). The implementation of the program is present in several municipalities in Alagoas, among them Palmeira dos Índios, Santana do Ipanema (first benefited municipality), Igaci, Estrela de Alagoas, Cacimbinhas, among others. Some of the units are not in operation or partially functioning, not in their entirety as they should, thanks to poor management and lack of engagement from managers and the community, as it has a fundamental position to maintain the enterprise (SOARES, 2019). Since the beginning, the program serves around 1000 to 5000 people throughout the State of Alagoas, the information was cataloged from the Executive Summary State Plans of the ÁguaDoce Program 2010-2019, a document prepared within the scope of the Ministry of the Environment (SOARES, 2019). In the state of Bahia, this program has already benefited more than 160,000 people, including the systems implemented in the municipality of Ipirá. These systems are benefiting residents of regions that suffer most from the drought phenomenon and giving dignity to the population, which starts to use the natural resource water for its multiple uses, such as human supply, animal watering, psiculture, agriculture, among others (GOMES; BORJA, 2018). With the advance in the development of clean technologies, among which is desalination, the Brazilian semi-arid region, which is the most populous in the world, now has access to quality drinking water, thus giving them perspectives of a better, more dignified life (GOMES; BORJA, 2018). In Ceará, it is possible to verify that the project model used by the Sweet Water Program has been satisfactory, since the simpler standard system also covers sustainability and social mobilization and supplies the basic consumption needs of the beneficiary population. As for the configuration of the systems, with the current model it is possible to meet the demands still to be met by a large part of the semi-arid population if the PAD continues to develop (SILVA, 2018). In Rio Grande do Norte, according to Cavalcante Júnior (2021), around 68 communities benefited from the Sweet Water Program. The author points out that compared to other water supply strategies, such as the truck with a tank, the evaluated alternative presents better adaptation to local natural conditions.

CONCLUSION

Given what was exposed about the Sweet Water Program - PAD as an instrument of the public policy of access to water. Regarding the experience in the semi-arid region, it found positive points arising from the presence of the program in the rural community, mainly in the supply of good quality drinking water throughout the year, not depending on the seasonality of the rains or the supply of water trucks in periods of prolonged drought. The program's action, in addition to presenting itself effectively in the provision of water resources for the community, therefore, responds to the positive socio-environmental and socio-economic aspects for the rural territory. When observing the beneficiaries of the program, it was noticed the importance that it has, not only because it is focused on the provision of drinking water, as well as the creation of fish, because for the community before the program, it was a type of food that they did not they would have such easy access, mainly because they live in a place that has a small business and that does not always offer this type of fresh food. The desalination systems implemented by the program guarantee water quality, are responsible for benefiting society as a whole, in order to generate greater strengthening of sustainable development practices. For a greater potential of effectiveness of the Program, one perceives the pressing participation, closer and with greater integration, of the municipal administrations, although for that, legislative adaptations in the Municipal Chambers are necessary. Even so, legal responsibility remains within national policies when it comes to environmental preservation and ensuring people have access to drinking water.

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