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Analysis of Plans, Programs and Policies to Combat Desertification in the State of Ceara – Brazil in the Period 2004 to 2012¹

RODRIGUES, Maria Ivoneide Vital ^a, LIMA, Patricia Veronica Pinheiro Sales^a, BEZERRA, Francisco Gilney Silva ^b, BEZERRA, Karine Rocha Aguiar^b,

^a Federal University of Ceará, Brasil, Brazil

^b Instituto Nacional de Pesquisas Espaciais

Abstract – According to the State Program of Action to Combat Desertification and Mitigate the Effects of Drought (PAE/CE), the State of Ceara-Brazil has three centers configured with Areas Susceptible to Desertification which are the Hinterlands of Inhamuns, the Hinterlands Irauçuba and Center North and the Hinterlands of Medium Jaguaribe, encompassing twelve municipalities and covering a total area of 26,432,65km². It is known that the problem of desertification in State of Ceara acquired more notoriety from the Arid Project which subsidized actions such as the elaboration of the National Program of Action to Combat Desertification and Mitigate the Effects of Drought. Since then, although with a smaller intensity than expected, noted that strategies to combat the phenomenon is being implemented in the State. In this context, the objective of this study is to conduct a systematization of the major Plans, Policies and Programs (PPP) in the State of Ceara in the period from 2004 to 2012. To this end, documentary and bibliographic searches were carried out. The systematization was made taking as parameters: objective of intervention, implementation year, managing agency, participation of society, geographical area, obstacles faced and benefits from the results obtained. It was found that the low participation, the supervision of PPP and reduced integration between policies are factors that limit the implementation and the control of actions.

Keywords – *Environmental crisis. Government intervention. Political action*

1. Introduction

The state of Ceara, located in Northeastern Brazil, has 92% of its territory entered into the Semi-Arid Tropics, has an economy based in primitive, predatory and extractive models of the natural resources, thus making it susceptible to desertification. With this operation, without awareness of preservation, Leite et al. (1994:3) found that about 15,128,8 km², accounting for 10.2% of the total territory of Ceara, are under a dangerous desertification processes. It is known that an integrated and coordinated information and systematic observation, based on appropriate technology and global, regional, national and local plans is essential for understanding the dynamics of the processes of desertification and drought and this system is also important to develop appropriate measures to deal with desertification and drought and improve the socio-economic conditions (UNCED, 1992:185). With this systemic thinking, Rodrigues (2006:8) studied the various factors that cause

the phenomenon of desertification and found that thirty-one municipalities in the state of Ceara are on a high level of susceptibility to desertification, encompassing an area of 33,969km², corresponding to 22.82% of the total area of the state. With this scenario, given the gravity of this serious environmental problem that affects the territory of Ceara, it is essential to development of Plans, Programs and Policies (PPP) which cause significant actions that can help combat the phenomenon of desertification. It is good to consider that these PPP should be based on Chapter 12 of Agenda 21 - a document prepared in the United Nations Conference on Environment and Development - which has the following programs:

- Developing and strengthening integrated development programs for poverty eradication and promotion of alternative livelihood systems in areas prone to desertification;
- Development of anti-desertification programs and in-

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tegrating them into national development plans and national environmental planning;

- Development plans for drought and schemes to mitigate the results of drought, devices that include self-help for drought-prone areas and designing programs to address the problem of environmental refugees (UNCED, 1992:184).

Following these recommendations, the state of Ceara developed actions to study and clarify the phenomenon of desertification in its territory. Thus, from the 90s of the twentieth century, several researchers have tried to identify the causes, consequences and intensity that this serious environmental crisis generated in an area or region. Among the most diverse works produced can be emphasized:

- In 1992, when it happened, in Fortaleza, the International Conference on Climate Variations and Sustainable Development (ICID) began studies on the issue of desertification in the state of Ceara, with the participation of the Fundação Cearense de Meteorologia e Recursos Hídricos do Estado do Ceara (FUNCEME) that detected through satellite images, areas with obvious signs of degradation susceptible to desertification;
- In 1994, the Conference National and Latin American Seminar on Desertification (CONSLAD) and preparation of actions to combat desertification which continued until 1998, however, some actions have not obtained the expected results and others have not been implemented due to bureaucratic obstacles at both federal and state levels;
- In 1995, development and implementation of the Project Arid coordinated by Department of Planning and FUNCEME that was responsible for research on natural resources. This project aims to mitigate the impacts of desertification adopting strategies to implement the Sustainable Development;
- In 1995, the Federal University of Ceara, in partnership with german research institutions, implemented the Waves Program that had as its main objective to study the degradation/desertification in production systems

in semi-arid region of Ceara in trying to establish the scientific basis for formulating strategies economic and ecological sustainable development in semi-arid territory of Ceara;

- In 1998, the state government of Ceara represented by the Superintendência Estadual do Meio Ambiente (SEMACE) convened a multidisciplinary group with the purpose of preparing the State Plan to Combat Desertification, thus demonstrating a commitment to environmental problem;
- In 2003, the Programa Selo Município Verde, in order to assign certification will recognize that environmental policies successful in improving the quality of life of the municipal population; to achieve this certification, the municipality shall, among other things, create Conselho Municipal de Defesa do Meio Ambiente (CONDEMA) that aims to establish the basic guidelines of municipal policy environment, establish standards for the prevention, control and environmental monitoring and propose plans, projects and expansion and sustainable development of the municipality.

But the state of Ceara not stopped developing actions to combat desertification phenomenon, because it recognizes the seriousness of the environmental problem into its territory and its population. So, faced with this situation, this research aims at a systematization of the main Plans, Programs and Policies (PPP) in the state of Ceara in the period from 2004 to 2012. Therefore, there were documentary and bibliographic research. The systematization was made following as parameters: objective intervention, year of implementation, managing agency, society participation, geographic area served, obstacles faced and results.

2. Results and Discussion

This section is intended to present the plans, programs and policies (PPP) elaborated in the state of Ceara in the period from 2004 to 2012. We analyzed ten main PPP related to the prevention and combating of desertification and are exposed in table 1.

Table 1: Plans, Programs and Policies (PPP) to combat desertification in the state of Ceara – Brazil in the period from 2004 to 2012. Source: Adapted from CEARA, 2010.

a. PROÁGUA SEMIÁRIDO	
Year of implementation	2008 – 2011
Objective	Contribute to improving the quality of life of the population, especially in less developed regions of the country, through planning and management of water resources simultaneously with the expansion and optimization of water infrastructure, to ensure the sustainable supply of water in adequate quantity and quality for multiple uses.
Management agency	Secretaria Estadual dos Recursos Hídricos
society participation	No Information
geographic area served	State of Ceara

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Table 1 – Continued from previous page

b. PROGRAMA DE COMBATE À POBREZA RURAL – PROJETO SÃO JOSÉ	
Year of implementation	2008 – 2011
Objective	Implement actions for sustainable rural development, contributing to rural poverty reduction, strengthening participatory strategy and increasing the integration of all actors involved in the process.
Management agency	Secretaria Estadual de Desenvolvimento Agrário
society participation	No Information
geographic area served	It operates in 177 of the 184 municipalities in Ceara, with priority for the 40 lowest index of Social Development - IDS.
c. PROJETO CRÉDITO FUNDIÁRIO	
Year of implementation	2008 – 2011
Objective	Develop new model of agrarian restructuring, in which landless laborers and smallholders, through their associations, negotiate land acquisition directly with landowners getting reimbursable financing for land acquisition and non-reimbursable financing for investment in infrastructure and productive.
Management agency	Secretaria Estadual dos Recursos Hídricos
society participation	No Information
geographic area served	Every State of Ceara, with the exception of the cities of Fortaleza, Maracanaú by Eusebius and to count on the rural population and have a negligible economic vocation with potential for industrial development.
d. PEACE – Programa de Educação Ambiental do Ceara	
Year of implementation	No Information
Objective	Promote internalization, the discipline and the strengthening of the environmental dimension in the educational process, in order to prevent and stop the negative impacts on the environment, contributing to improving the quality of life in the state of Ceara and improvement of process interdependence Nature Society, necessary the maintenance of life on Planet Earth.
Management agency	Conselho de Políticas Públicas e Gestão do Meio Ambiente
society participation	No Information
geographic area served	State of Ceara
e. PROGRAMA DE GERENCIAMENTO E INTEGRAÇÃO DOS RECURSOS HÍDRICOS DO CEARA	
Year of implementation	No Information
Objective	Larger supply and guarantee water for multiple uses and increase the management efficiency of the integrated system, promoting the efficient use of multiple and participatory management of water resources.
Management agency	Secretaria Estadual dos Recursos Hídricos
society participation	No Information
geographic area served	State of Ceara
f. PROGRAMA DE DESENVOLVIMENTO HIDROAMBIENTAL	
Year of implementation	2000 – 2008
Objective	Promote sustainability of water resources of the State of Ceara.
Management agency	Secretaria Estadual dos Recursos Hídricos
society participation	No Information
geographic area served	Municipalities of Pacoti, Palmácia, Canindé, Paramoti e Aratuba.
g. PROGRAMA DE CONVIVÊNCIA COM A SECA	
Year of implementation	2008 – 2011
Objective	Increase the water security and food security of the state population.
Management agency	Secretaria Estadual dos Recursos Hídricos
society participation	No Information
geographic area served	152 municipalities in the period from 2007 to 2009, covering 100% of the cities most affected by the drought

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h. PROJETO MATA BRANCA	
Year of implementation	2008 – 2011
Objective	Contribute to the preservation, conservation, sustainable use and management of biodiversity of the Caatinga biome in Bahia and Ceara, promoting the sustainable development of priority areas, with the participation of rural communities, living in social criticism, in areas susceptible to degradation.
Management agency	Conselho de Políticas Públicas e Gestão do Meio Ambiente
society participation	Yes
geographic area served	Municipalities of Crateús, Independência, Novo Oriente, Quiterianópolis e Tauá.
i. PROJETO DE ESTUDOS DE ÁREAS DEGRADADAS SUSCEPTÍVEIS AOS PROCESSOS DE DESERTIFICAÇÃO NO ESTADO DO CEARA	
Year of implementation	No Information
Objective	Classifying and mapping degraded areas susceptible to desertification processes in the municipalities of the state of Ceara, in 1:250,000 scale by analyzing physical and biological processes using geotechnology.
Management agency	FUNCEME – Fundação Cearense de Meteorologia e Recursos Hídricos
society participation	No Information
geographic area served	Municipalities of Jaguaribe, Jaguaratama, Jaguaribara, Alto Santo, São João do Jaguaribe, Iracema, Potiretama, Morada Nova, Limoeiro do Norte, Icó e Orós.
j. ZONEAMENTO ECOLÓGICO-ECONÔMICO DAS ÁREAS SUSCEPTÍVEIS À DESERTIFICAÇÃO-ASDs EM IRAUÇUBA/CENTRO NORTE E INHAMUNS	
Year of implementation	No Information
Objective	Investigate the processes of desertification and generate a legal instrument for territorial compatible with ecological, social and economical for areas susceptible to desertification (ASD) of Irauçuba / North Central and Inhamuns
Management agency	FUNCEME – Fundação Cearense de Meteorologia e Recursos Hídricos
society participation	No Information
geographic area served	Municipalities of in areas susceptible to desertification (ASD) of Irauçuba / North Central and Inhamuns.

After this explanation, it appears that the state of Ceará is following the actions and programs proposed by Agenda 21. Another highlight is the Law 14.198/2008 establishing the State Policy to Combat Desertification Prevention and which, among other actions, stimulates political management of natural resources to ensure the necessary territorial integration of such management actions to prevent and combat desertification. Thus, it is evident that the government of the state of Ceara, universities and civil society are concerned with environmental issues and seek to develop programs, plans and policies in an attempt to operationalize sustainable development models in the state.

3. Conclusions

It was found that the low participation, the supervision of PPP and reduced integration between policies are factors that limit the implementation and the control of actions. With the analysis of Plans, Programs and Policies (PPP) in the state of Ceara many documents have been prepared, and to reach their governance, are needed collaborative arrangements of a set of interconnected and diverse social actors. For Fatorelli and Mertens (2010), the integration of public policies include actions such as information

exchange, transparency and management of political conflicts, working together, synergies between policies and the use of common goals in the formulation stage.

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