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SOCIOECONOMIC AND TECHNOLOGICAL ANALYSIS OF RESIDENT POPULATION SURROUNDING THE SÃO GONÇALO PERMANENT PRESERVATION AREA IN THE MUNICIPALITY OF SOUSA, STATE OF PARAÍBA, BRAZIL

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ABSTRACT

The semiarid region of northeastern Brazil is home to a portion of the population that experiences deficiencies in socioeconomic and technological terms. The measurement and analysis of the deterioration of the region is fundamental to the planning of policies directed at these issues. The present study was conducted between December 6th, 2014 and May 9th, 2015, involving a sample of 38 families residing in communities surrounding the São Gonçalo Permanent Preservation Area in the municipality of Sousa in the state of Paraíba (northeastern Brazil). Data collection was performed using a formadapted from the methods employed by Barros, Chaves andFarias (2014), which was administered in interview form. The findings revealed that the region has a low level of social deterioration, but high levels of economic and technological deterioration. Thus, intervention on the part of the public authorities and organized civil society is needed for actions directed at solving local problems.

INTRODUCTION

The semiarid region of northeastern Brazil has unique environmental variation, in which the irregular rainfall, natural characteristics of the soil, deficiencies in terms of credit, the unpreparedness of the population and the lack of technical assistance limit livestock farming activities, the economic basis of which is family-oriented in most cases. Such factors contribute to insufficient development, resulting is a low standard of living among individuals who reside in this environment (Malvezzi, 2007).

The semiarid region continues to have social and economic indicators that demonstrate extreme poverty, with a large number of municipalities exhibiting a low human development index. There is an urgent need to address the frailties and demands of this region with regard to environmental, socio-cultural and political challenges (Sá *et al*., 2012). The development model adopted in the semiarid region of Brazil, which is based on the relationship between production and consumption, has led to increases in the degradation of natural resources, environmental pollution, levels of social inequality and the concentration of wealth. Thus, understanding the frailties of the region can contribute to changing the development patterns conceived for this region (Cândido *et al*., 2010). The aim of the present study was to evaluate the socioeconomic and technological situation of populations that reside near the São Gonçalo Permanent Preservation Area in the municipality of Sousa, state of Paraíba, Brazil.

MATERIAL AND METHODS

This study was conducted between December 6th, 2014 and May 9th, 2015 in the São GonçaloPermanent Preservation Area in the state of Paraíba, Brazil (6º 45' S and 38º 13' W). Thirty-eight heads of families in the study area were interviewed. Data were collected using a chart adapted from Barros, Chaves andFarias (2014) containing 50 indicators. Values ranging from 1 to 10 were attributed to each indicator, with higher numbers denoting greater degradation. Percentages of deterioration (y) were determined using the linear equation $y = ax + b$, in which y ranges from 0 to 100 (zero to 100% deterioration). Minimum x and maximum x' define the values of models a and$b$, respectively. Critical units of deterioration

were determined based on the linear equation using maximum and minimum codes as well as the significant value found in the region, such that deterioration ranged from zero to 100%.

RESULTS AND DISCUSSION

Demographic, housing, community organization and health variables were included in the social factor. Housing had the lowest slope (Figure 1), indicating little change in terms of deterioration. Community organization had the highest slope, as only one variable was analyzed. Thus, a lower change in the significant value indicated greater change in deterioration.

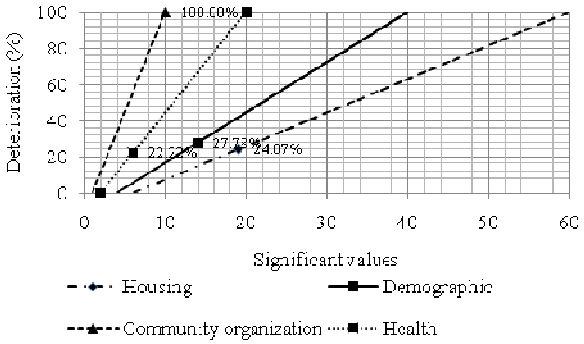

Figure 1. Deterioration of social factor variables

Housing, demographics and health were classified as having a low degree of deterioration, whereas community organization was classified as having a very high degree of deterioration. Health exhibited low deterioration (22.22%) for the social factor, resulting in a lower rate than that described by Abreu *et al*. (2011) for the municipality of Cabaceiras in the same state (deterioration on the order of 40.74%). Housing had the second lowest deterioration. The indicator that contributed to this result was "type of housing", as most individuals interviewed resided in adequate brick homes. Demographics exhibited deterioration of 27.78%, which is lower than the rate reported by Baracuchy (2003) for the micro-basin of PausBrancosCreek in the city of Campina Grande, Paraíba.

Community organization contributed most to social deterioration (30.77%) (Figure 2). This finding is similar to data described by Ferreira *et al*. (2008) for the municipality of São João do Sabugi, Paraíba (30.98%), in which the food/nutrition diagnosis contributed most to this index.

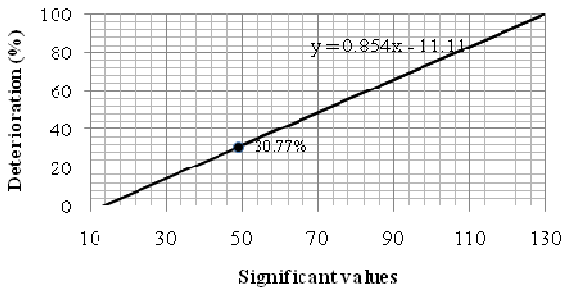

Figure 2. Deterioration of social factor

The social deterioration index indicates that at least half of the communities surveyed are in a state of deterioration. Franco *et al*. (2005) performed a socioeconomic and environmental diagnosis of a micro-basin in the municipality of Boqueirão, Paraíba and found 62.72% deterioration with regard to the social factor, which is higher than the rate encountered in the present study. Livestock and trade were classified as having a high degree of deterioration. Production and working animals were classified as having a very high degree of deterioration (Figure 3).

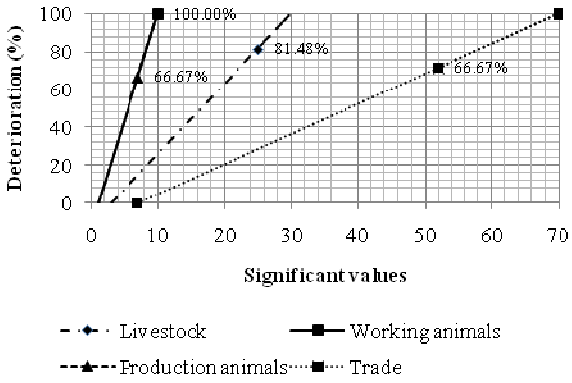

Figure 3. Deterioration of economic factorvariables

Indeed, working animals was the variable that contributed most to the high deterioration of the economic factor, as 100% of the families had no animals to assist in the activities developed on their properties. This was directly associated with production, as 71.1% of the rural producers had below average production, which made working animals unnecessary.The fact that 94.7% did not have pastures planted due to the scarcity of water also contributed to economic deterioration, as the lack of pastures compromises the health of both livestock and working animals during periods of drought. The items that most contributed to the high deterioration index with regard to trade were the fact that the majority of the population did not sell livestock or forest production and the properties had an income lower than the minimum monthly wage during the study period.Figure 4 illustrates the deterioration of the economic factor (75.93%). This is higher than the value reported by Ferreira *et al*.(2008) for the municipality of São João do Sabugi (63.33%), but lower than the value reported by Franco *et al*. (2005) for the municipality of Boqueirão (80%).

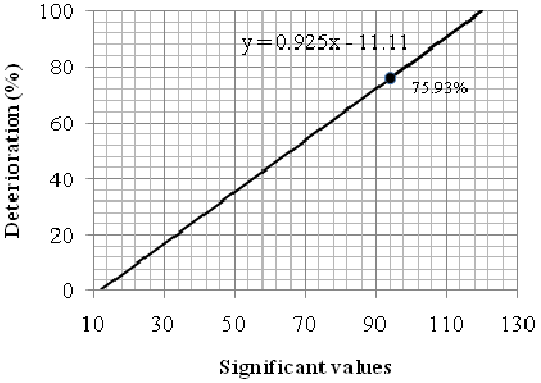

Figure 4. Deterioration of economic factor

Figure 5 shows deterioration of 77.78 and 66.67% for technology and rural industrialization, respectively. Both variables were classified as having high deterioration, giving technological deterioration a higher index than social deterioration. The indicators that most contributed to the high degree of technological deterioration were the fact that the majority of interviewees did not use any type of fertilization,

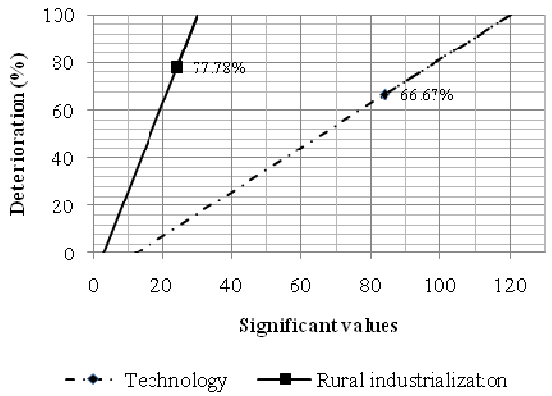

Figure 5. Deterioration of technological factorvariables

did not employ irrigation and did not have technical assistance. The indicators that most contributed to the deterioration of rural industrialization were the low level of development of activities to supplement the family income, such as craft production and the aggregation of value to raw materials through processing activities.The technological deterioration index (68.89%) was classified a high and indicated that more than half of the area studied is deteriorated in this regard (Figure 6).

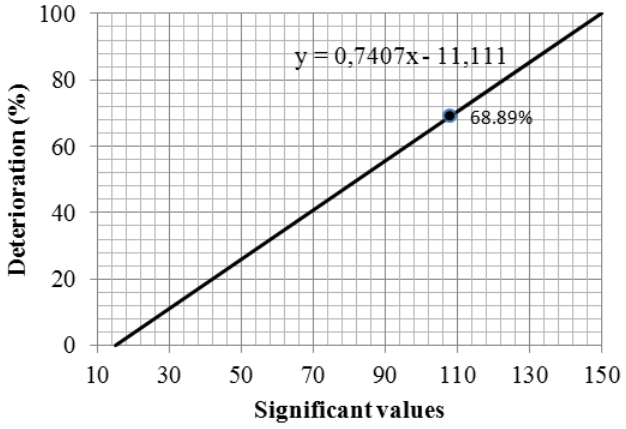

Figure 6. Deterioration of technological factor

Socioeconomic deterioration in the study area was 58.61% (Figure 7), indicating that, based on the methods employed, the area has a medium degree of socioeconomic deterioration.

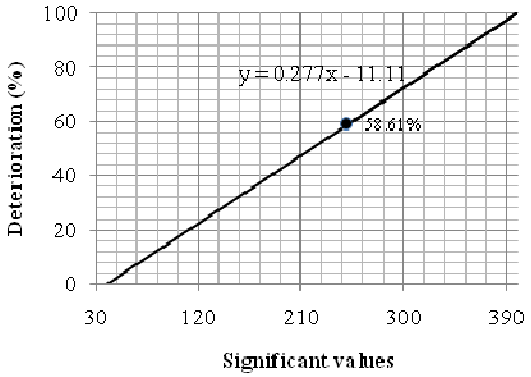

Figure 7.Socioeconomic deterioration

This finding is in agreement with data described by AlvesandAlves (2012) for rural settlements in the state of Paraíba (55.58%), but lower than the rate described by Ferreira *et al*. (2008) for the micro-basin of Serra Creek in the same state (37.96%).

Conclusion

The study area demonstrated a low degree of social deterioration due mainly to the low degrees of deterioration in terms of housing, demographics and health. However, the communities surveyed demonstrated high degrees of economic and technological deterioration, with more than 50% of the area compromised. These findings demonstrate a need for sensitization and intervention on the part of the public authorities and civil society for actions directed at solving the socioeconomic problems of the area, such as the use of technology in the development of income-generating activities on the properties and the establishment of community associations as means to assist in bringing advances to the region. Adequate production and commercialization of livestock products would have a positive effect on the local economy and would lead to significant improvements in social aspects. This process could be possible through the establishment of policies directed at technical assistance, the use of technologies to potentiate production and the rational use of natural resources on the properties.

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