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RAINFALL VARIABILITY IN SENEGALESE RURAL AREA: IMPLICATIONS ON WATER RESOURCES IN THE BOROUGH OF FIMELA

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Abstract

In Senegal, as in all West African countries, rainfall is marked by a sharp decline since the 1970s and by a great variability in both inter-monthly and intra-seasonal. Today the situation down and irregularity of rainfall, combined with strong population growth particularly in rural areas, poses the fundamental problem of access to water in sufficient quantity and satisfactory quality.

The main objective of this study is to characterize rainfall variability and to analyze its implications on water resources in the borough of Fimela. For the study of rainfall variability, monthly and annual data from the climate station of Fatick over period 1950 to 2007 and from the rainfall station of Fimela over period 1980 to 2007 were used. Analysis of the monthly and interannual averages of rainfall and other climatic elements has shown a decreasing trend and irregular rainfall from year 1972. The comparative analysis also leaves a deficit rainfall of less than 24% for the period 1972 to 2007. Hydraulic data from the direction of management and planning of water resources (DGPRE) and the local development plans (PLD), as well as information collected in the field, indicate that the character of rainfall in both randomness and deficiency has impacted heavily on the availability and quality of water resources. Moreover, the lack of rainfall has also caused the expansion of saline soils and degradation of plant cover which most affected component is the stand of mangroves.

Key words: rainfall variability, rural area, Senegal, water resources

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