

**Modeling of flow dynamics on catchment area Rufisque consideration of climate change application to structural design of hydraulic evacuation of rainwater.**

In a context of climate change (CC), the statistical analysis of historical precipitation, to detect a recent trend, and simulation of future trends in climate models, posing real challenges, events so-called extreme precipitation being localized and, by definition, rare. However, we understand the importance to consider the impact of CC on the recurrence of extreme events in urban drainage. Thus, in the hypothetical case where an event of recurrence once every ten years would occur every five years from now, the damage may be associated with such an event would be likely to occur twice as often. In this context, a risk that, at first, was considered acceptable, could become unacceptable.

The work conducted as part of this study is a contribution to the assessment of surface water resources in the area of Rufisque. From topographic maps at 1/50000, scanned, digitized and geo-referenced, we identified and delineated 10 watersheds using ArcView. Morphometric characteristics of these basins have been determined. A principal component analysis was performed on these characteristics. Groupings between stations have been identified through this process. Statistical analysis of rainfall series at monthly and annual basis was performed using the software KHRONOSTAT the period from 1920 to 1993. The EPA SWMM hydrologic model is a conceptual model of distributed event-or DC is developed by Division of Water Supply and Water Resources of the United States Agency for Environmental Protection National Research Laboratory Management risk was then used to calculate for each basin and to scale daily runoff, evapotranspiration, and infiltration. The ten year rate was estimated for each watershed, the flow of the project was concluded by the formula of the CIEH. The objective of this project which deals with hydrological modeling is to understand and describe the formation of urban runoff, to propose scenarios for stormwater management on the example of some selected urban basins in Senegal.

The study will take advantage of recent advances in defining the "standard models" to examine a wide range of adaptive strategies to flooding including storm water management and mobilization of resources through development.