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Water potential and its associated problems in a semi arid mountain environment; case of Watershed in High Atlas (Morocco)

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ABSTRACT:

The rural Moroccan areas have a specific geosystem in terms of structure and Functioning. Its resources are strongly dependent to climate change and human interventions, making it a subject to a various natural hazards that hinder human development and cause redoubted socioeconomic consequences.

For this purpose, the study begons with an exploration of water resources determining hydrological and hydrogeological parameters to supply local populations of two regions in High Atlas. The shortage problems and the water excess are also discussed, in particularly water deficiencies and droughts that often rampant alternately with devastating floods; and all problems associated to these extreme events.

Proposals for rational distribution of the available water as well as mobilization facilities, collection or floods prevention are given in a view of a good integrated water resources management. This management should be made taking into account the various socio-economical and environmental interests.

We used a geographic information system (GIS) through a software solution to analyze the geological and hydro-geomorphological for each basin. Then we were interested by hydropluviometriques data that we treated at different time (monthly and annual) to study the rainfall-runoff relationship and to optimize water resources management.

Furthermore, the study of integrated basin management has aimed to water supply, control of its quality and risk management that will be associated to the quantitative aspects of the flow. This after we did establish an observation of the water situation in the study areas and an identification of potential problems related to water.

The study ultimately led to a comparative analysis on the qualitative and quantitative water plans for two watersheds in the High Atlas, with implications of the general uses of these waters, their management and their governance.

***KEYWORDS**: Watershed, Water Management, Hydrology, Flood.*