ABSTRACT

This paper is one detailed research of the major river basins of the Romanian North Dobrogea, Taita River Catchment. The Taita River has a catchment size of about 591 km² and is flowing into the Black Sea through Topraichioi Lake after 57 km. Upstream it has an elevation about 240 m height and 0 m at downstream (the reference is the Black Sea). The complexity of this research study is given, on the one hand, by the descriptive side of the natural aspects (geological, morphological, climatic aspects, hydrology and the soil) and, on the other hand, by the practical side, boosted by the information system processing of data. This study presents the theoretical concepts concerning the hazards and the risk, which, for a better interpretation of the impact of these phenomena, are supplemented by the maps, graphs and photographs.

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**INTRODUCTION**

The objectives of this research are to delineate and to identify the catchment areas with the problems, finding the solutions to prevent and combat the risk and decrease their impact on natural and human components.

In the first part of this chapter we present some important definitions of the hazard, risk and vulnerability, the risk analysis and classification and a short presentation of the geomorphological, climatic and hydrological risk phenomena.

This chapter continues with a study case on the Taita Catchment, from Dobrogea region of Romania. This paragraph presents the description of Taita Catchment, the geomorphological, climate and hydrological risk phenomenon and processes in Taita Catchment, the analysis of the phenomena and processes of risk and the identification of vulnerable zones in Taita Catchment.

This study ends with some solutions and recommendations, concerning the risk prevention methods in vulnerable areas (Flood prevention and control, structural and nonstructural measures) and some conclusions.

**CONCEPTUAL FRAMEWORK FOR HAZARD, VULNERABILITY AND RISK**

**Definitions**

**Definitions of the Hazard**

The unexpected natural processes and phenomena, which retain the randomness and manifests as random are included in the hazard sphere. In American literature, the “hazard” term designates only the exceptional natural phenomena with a high potential risk. Based on these considerations, in English language the “hazard” term was longtime considered as the French language equivalent of the “risk” term (Armaș, 2006).

The United Nations/Strategy for Disaster Reduction (UN/ISDR, 2009) defined a natural hazard as any natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption or environmental damage.

The hazard is viewed as the probability of the rapid change in a state or in a stable condition. Always the hazard represents a threat, not an event itself (Grecu, 2008).
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