**USE OF THE GEOGRAPHICAL INFORMATION SYSTEM (GIS) FOR THE SUSTAINABLE MANAGEMENT OF GEORESOURCES: CASE OF THE “DORSALE CALCAIRE”, MOROCCO**

Ghizlane Fattah, Fouzia Ghrissi

*Civil, hydraulic and environmental engineering laboratory, Water treatment and reuse structure, Mohammadia School of Engineers, Mohammed V University in Rabat, Morocco*

**Abstract:**

The Tangier-Tetouan region has become in a few years the 2nd economic pole of the Kingdom of Morocco, thanks to the major structuring projects carried out in the various sectors. This socio-economic development is accompanied by a strong demand for construction materials, which requires a continuous search for new sites to meet the needs of the projects, which are in progress, as well as other scheduled [1-2].

As one of the main rocks used in construction, limestone is an excellent source of crushed stone for the production of aggregates and cement [3-4].

This work aims to provide a quarry management plan, exploiting the rock of the « Dorsale calcaire », compatible with sustainable development in order to meet the needs for construction materials while respecting the environment. The selection of appropriate sites is carried out by evaluating the potential in limestone deposits using GIS with weighted analyzes. Many environmental, social and economic factors are taken into account in order to prevent conflicts between land users. The combination of these critical elements resulted in a map in which the areas favorable to the exploitation of materials are classified according to their degree of risk [5]. In terms of conclusion, only the limits of the « Dorsale calcaire » can be exploited with a medium risk, while the central part of the ridge presents a danger for water resources and vegetation cover.

**Keywords:** Quarry management plan, construction materials, GIS, « Dorsale calcaire », Morocco.

**Reference**

1. Achelhi, H., Bennouna, M., & Narjisse, L. (2015). La variation de l’importance des barrières à la relance par l’innovation au Maroc: Cas de la région de Tanger-Tétouan.

2. Peraldi, M. (2007). Economies criminelles et mondes d’affaire à Tanger. Cultures & Conflits, 68, 111–125.

3. Dellero, H., & El Kharim, Y. (2017). Exploitability of construction materials in the calcareous dorsal of the Haouz Mountain range in the region of Tangier-Tetouan, Morocco. Journal of African Earth Sciences, 129, 330–337.

4. Griffon, J. C. (1962). La dorsale calcaire au sud de Tetouan (Maroc) [PhD Thesis].

5. Salaheddine, A. (2016). Cartographie par SIG des géo matériaux destinés au génie civil: Région d’Oujda, et étude de cas.