Assessment and mapping of flood hazard areas using a spatial modeling (GIS): Application in Gabes zone, Southeast Tunisia

Dhekra SOUISSI [1], Lahcen ZOUHRI [2], Mohamed Haythem MSADDEK[1], Salma Hammami[1], Adel ZGHIBI[1], Mahmoud DLALA [1]

[1] UR13ES26, Department of Geology - Faculty of Sciences of Tunis, 2092 Tunis El-Manar – Tunisia,
[2] AGHYLE, SFR Condorcet FR CNRS 3417, UniLaSalle-Beauvais Polytechnic Institute (France).

Res 2 Prac

PAUWES

RESEARCH 2 PRACTICE FORUM 2018

ENERGY, WATER SECURITY AND CLIMATE CHANGE IN AFRICA

16th - 18th APRIL, 2018
TLEMCEN, ALGERIA

African Union Commission | Federal Ministry for Economic Cooperation and Development | Federal Ministry of Education and Research | Supported by: giz | DLR Projektträger | DAAD

Pan African University Institute of Water and Energy Sciences | UNITED NATIONS UNIVERSITY UNU-EHS | Center for Development Research Zentrum für Entwicklungsforschung University of Bonn | ITT Institute for Technology and Resources Management in the Tropics and Subtropics | Res 2 Prac

Methodology

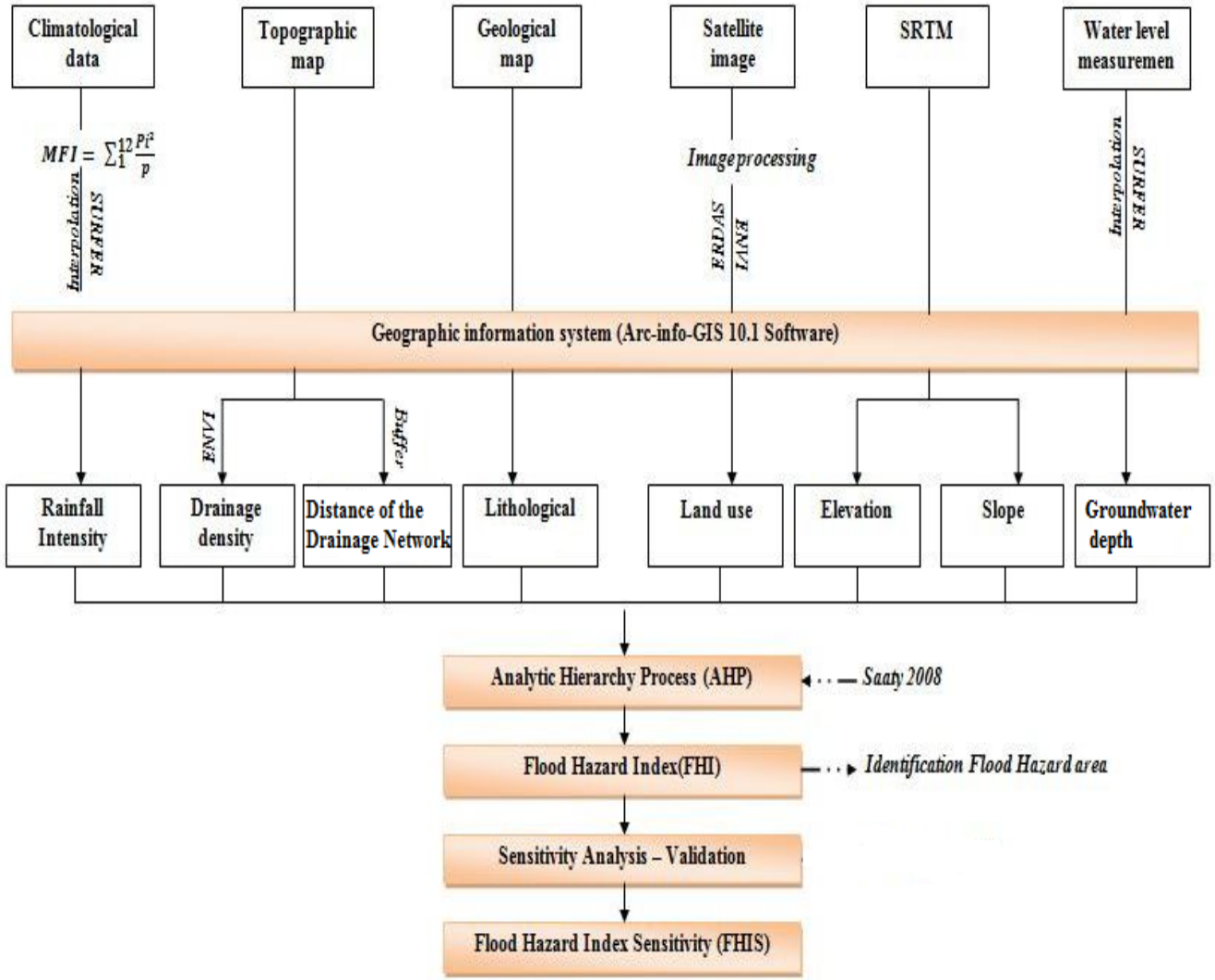

Fig. 1 Chart of the methodology adopted

Results

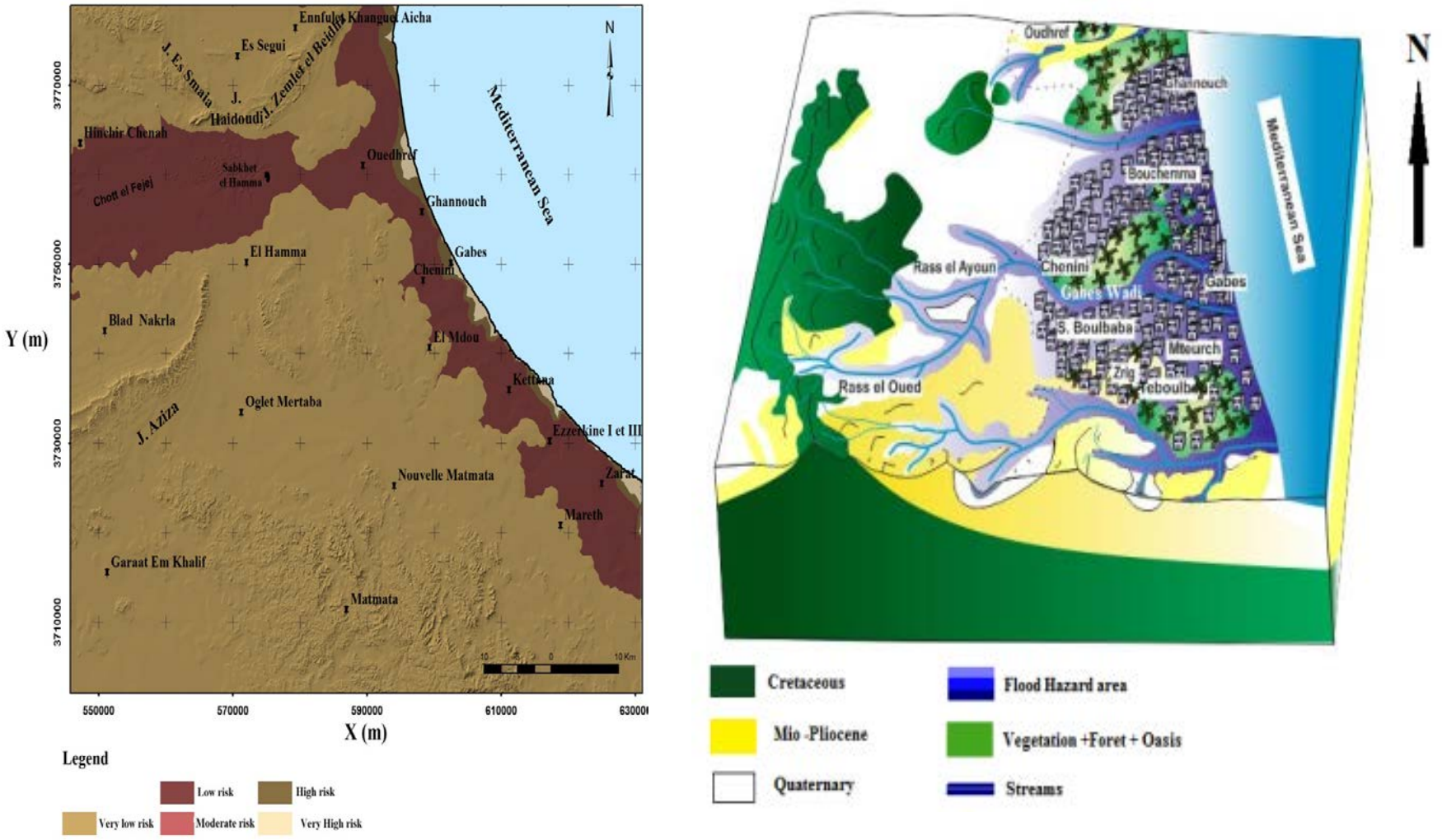

Figure 7: Flood risk map

Conclusion

❖The coupling of the spatial and stastical modelling allows that to identified and evaluate the flood hazard as well as a estimate the hazardous areas index.

❖ The estimation of the flood-hazard areas is a fundamental component of a flood management strategy. The proposed approach was applied to the Gabes in order to determine the areas and settlements in danger of flooding. The obtained results were validated by the raking method of Stillwell.

❖ This method we show that 15% of the total area and 75% of the urban area are flooded. Consequently, the methodology presented in this paper could become a useful tool for the prediction of potential flooding areas and for the better organization of a flood management plan.

Conclusion

❖ The coupling of the spatial and stastical modelling allows that to identified and evaluate the flood hazard as well as a estimate the hazardous areas index.

❖ The estimation of the flood-hazard areas is a fundamental component of a flood management strategy. The proposed approach was applied to the Gabes in order to determine the areas and settlements in danger of flooding. The obtained results were validated by the raking method of Stillwell.

❖ This method we show that 15% of the total area and 75% of the urban area are flooded. Consequently, the methodology presented in this paper could become a useful tool for the prediction of potential flooding areas and for the better organization of a flood management plan.

❖ The coupling of the spatial and stastical modelling allows that to identified and evaluate the flood hazard as well as a estimate the hazardous areas index.

❖ The estimation of the flood-hazard areas is a fundamental component of a flood management strategy. The proposed approach was applied to the Gabes in order to determine the areas and settlements in danger of flooding.

❖ The obtained results were validated by the raking method of Stillwell. This method we show that 15% of the total area and 75% of the urban area are flooded. Consequently, the methodology presented in this paper could become a useful tool for the prediction of potential flooding areas and for the better organization of a flood management plan.