

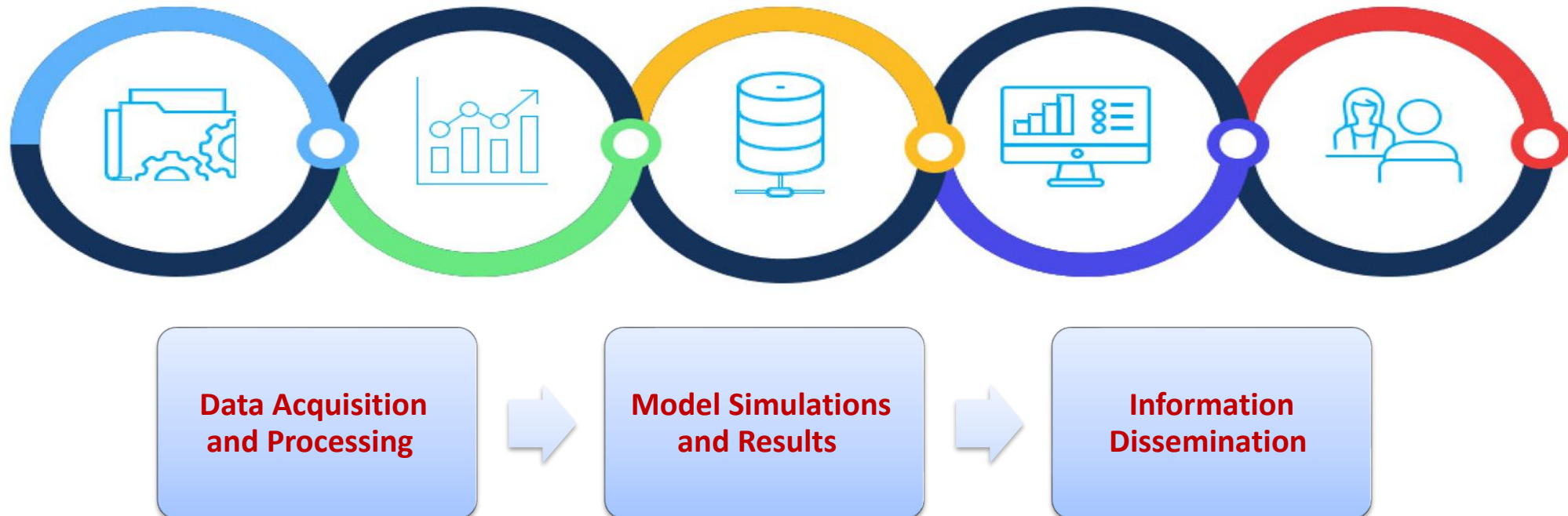
# **The Integration of Remote Sensing and GIS Applications In Flood Management for Alexandria City (A Case Study)**

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**21<sup>ST</sup> INTERNATIONAL OPERATIONS & MAINTENANCE  
CONFERENCE  
IN THE ARAB COUNTRIES**

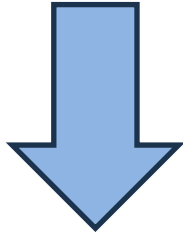
## Introduction :

- ✓ **Digitalization is a process for business development, where digital solutions are used for automation and innovation .**
- ✓ **The use of data as an asset to optimize performance and activate before an incident occurs is becoming increasingly important for water companies.**

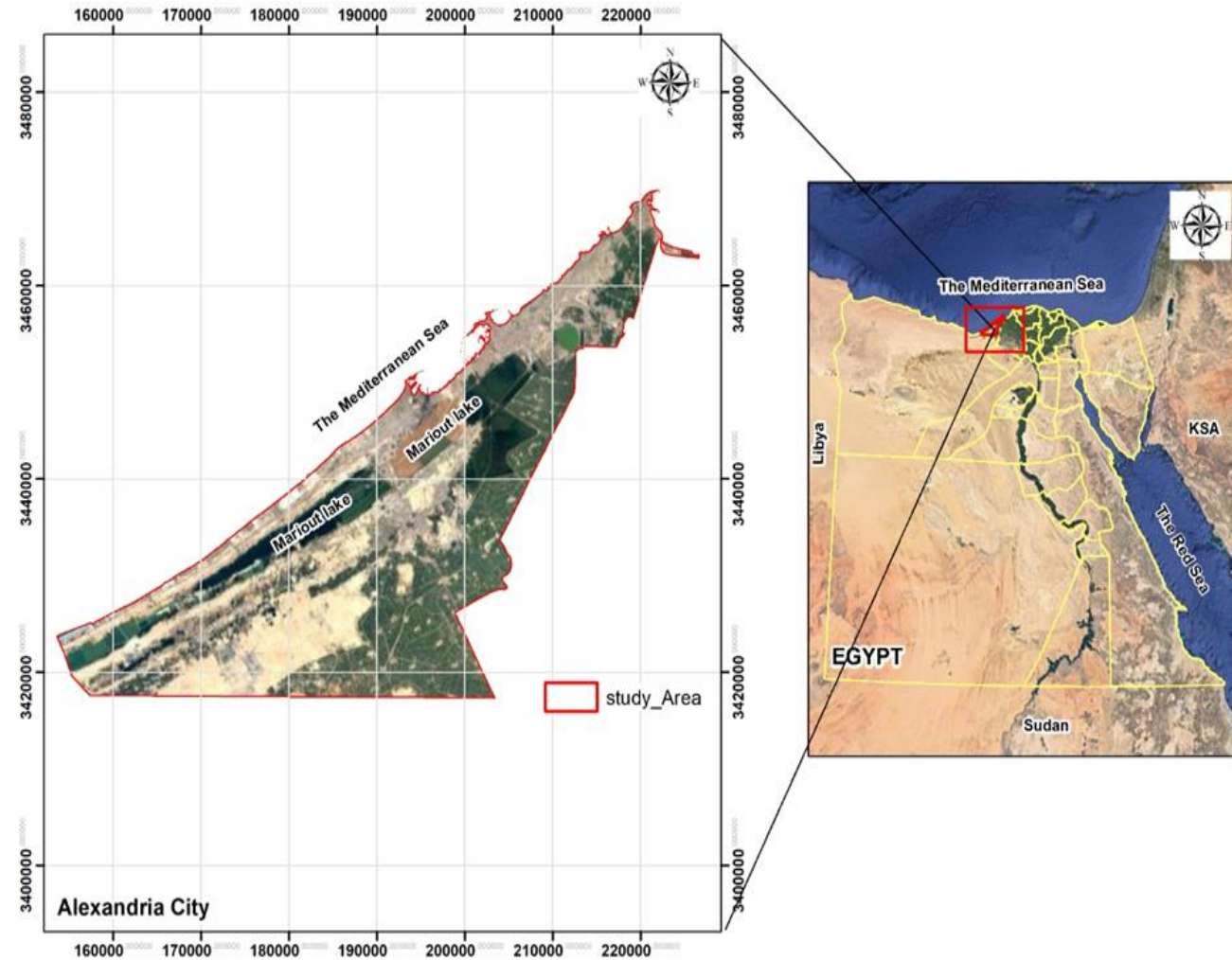


# The Case Study –Alexandria City

One of the significant outcomes of my PhD thesis was a workable model to assist decision makers to define priority plans for flood resilience

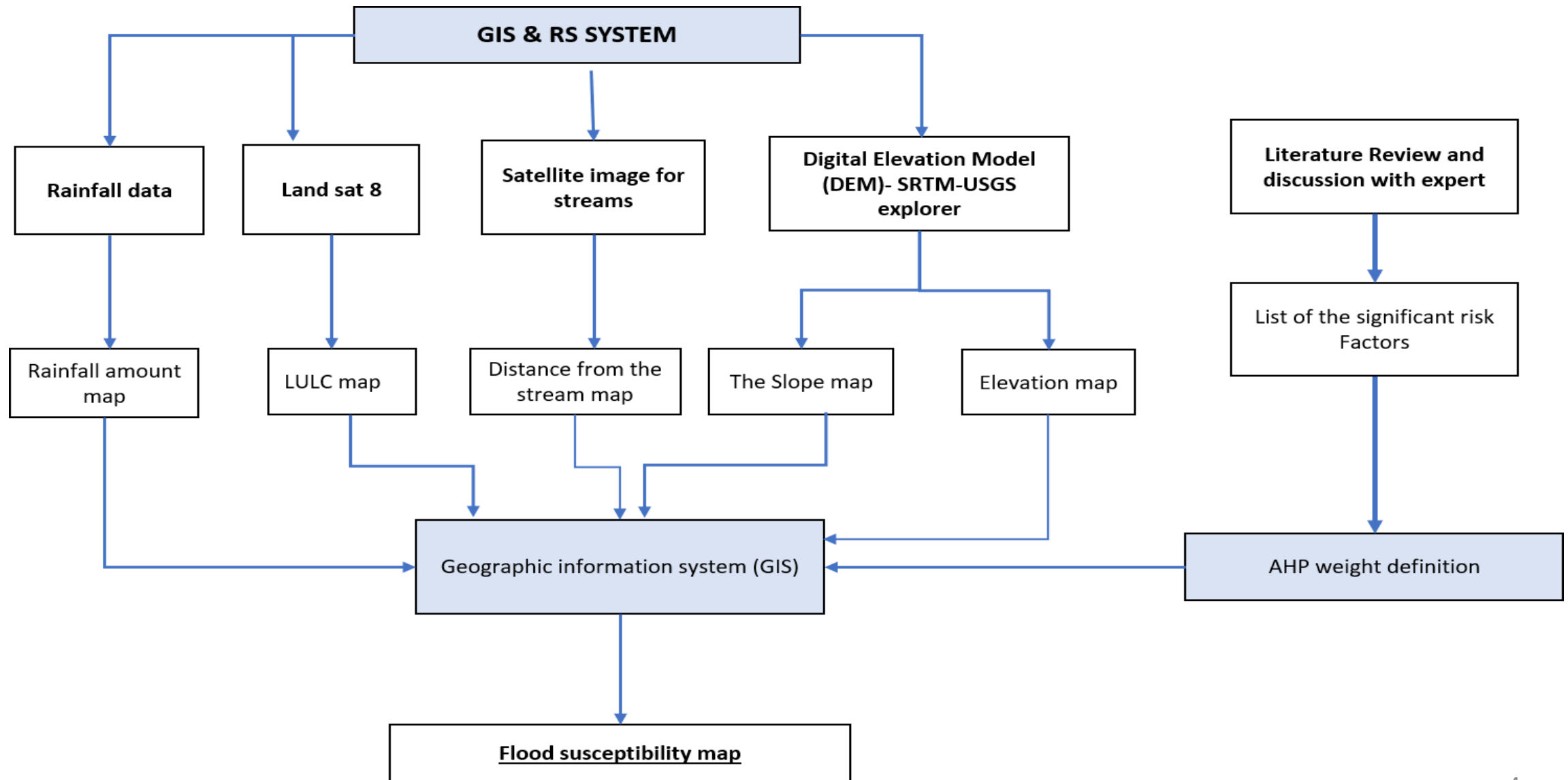


**Developing a flood susceptibility mapping for Alexandria city.**

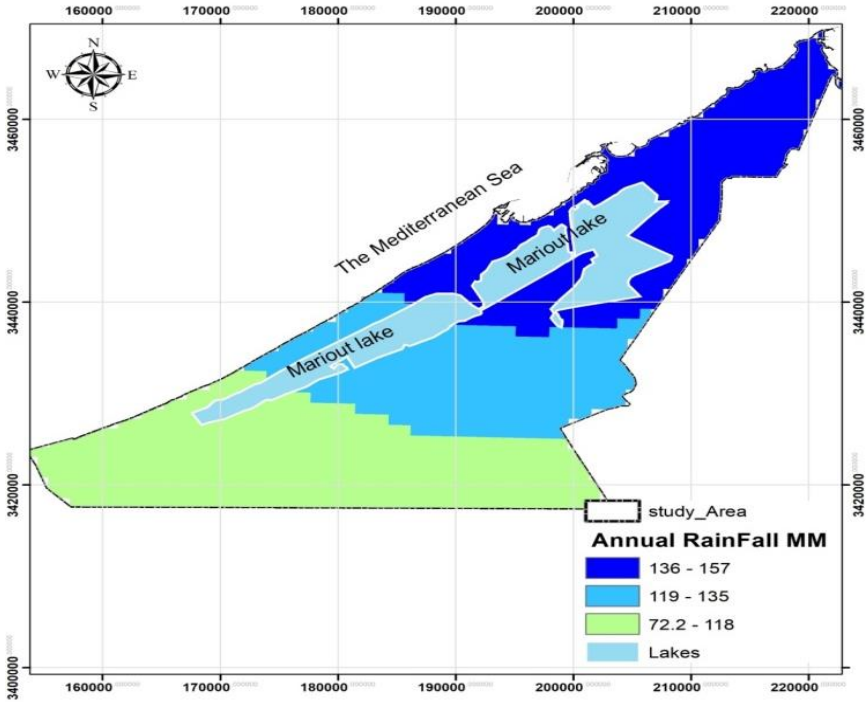


Alexandria City Location

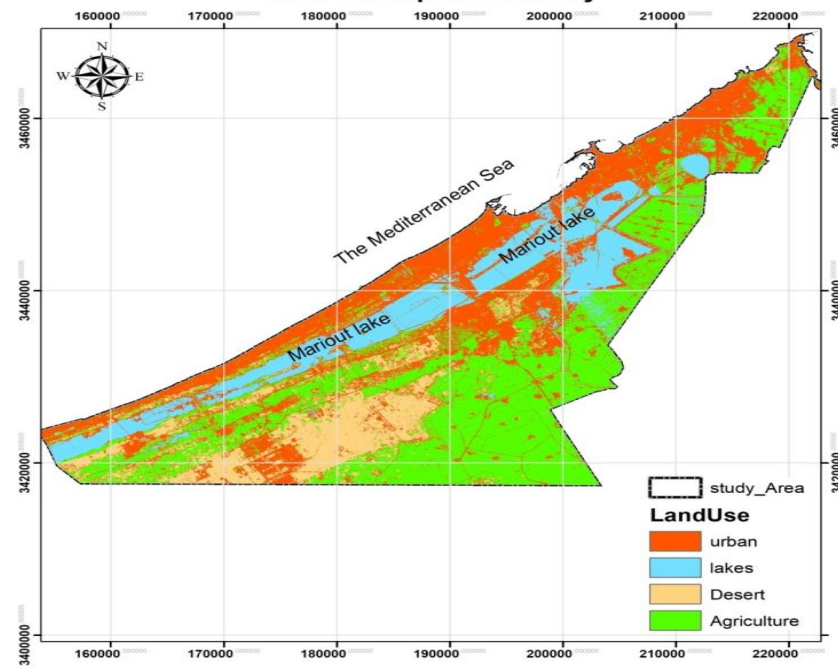
# Applicability of Integration of DT for Developing a Flood Susceptibility Mapping



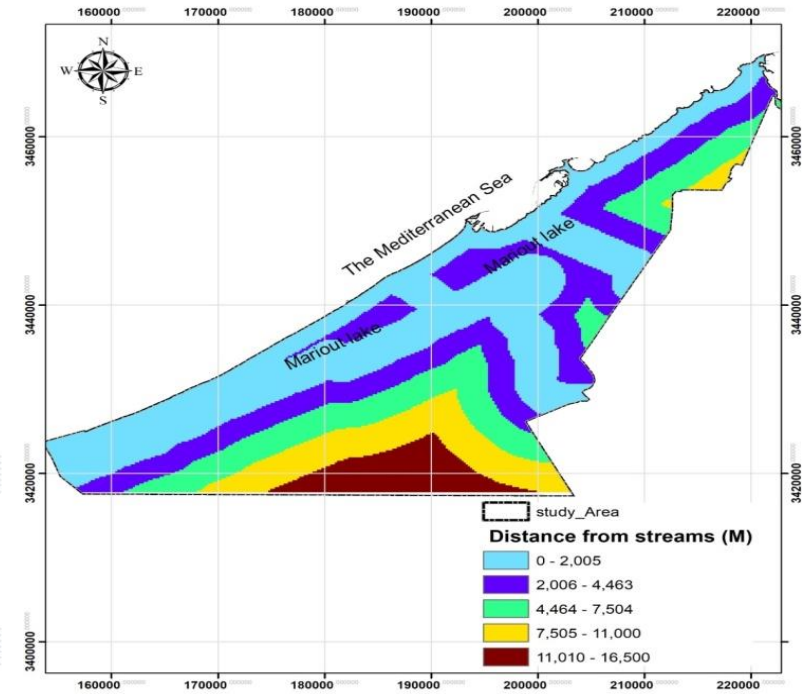
# GIS/RS Integration



**Rainfall Map**



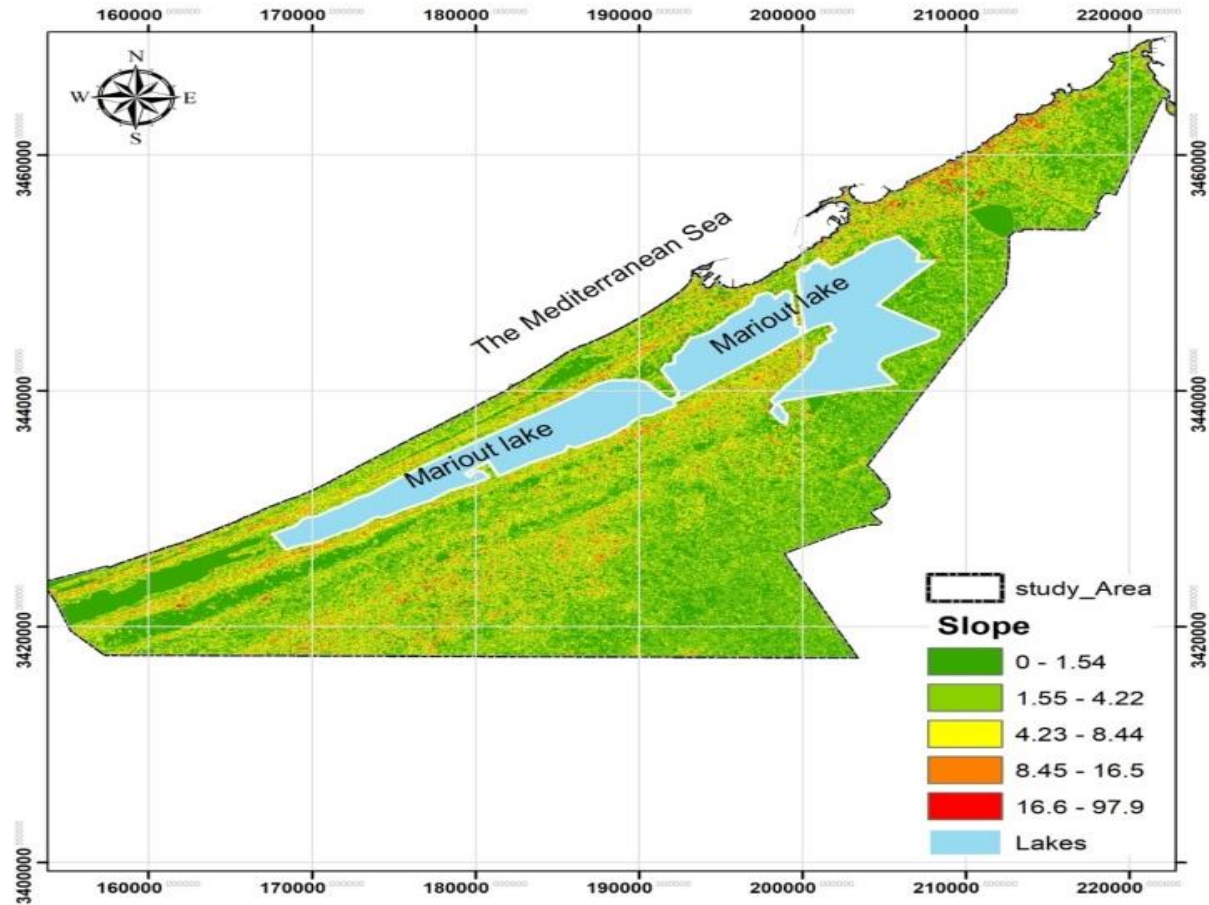
**Land use Map**



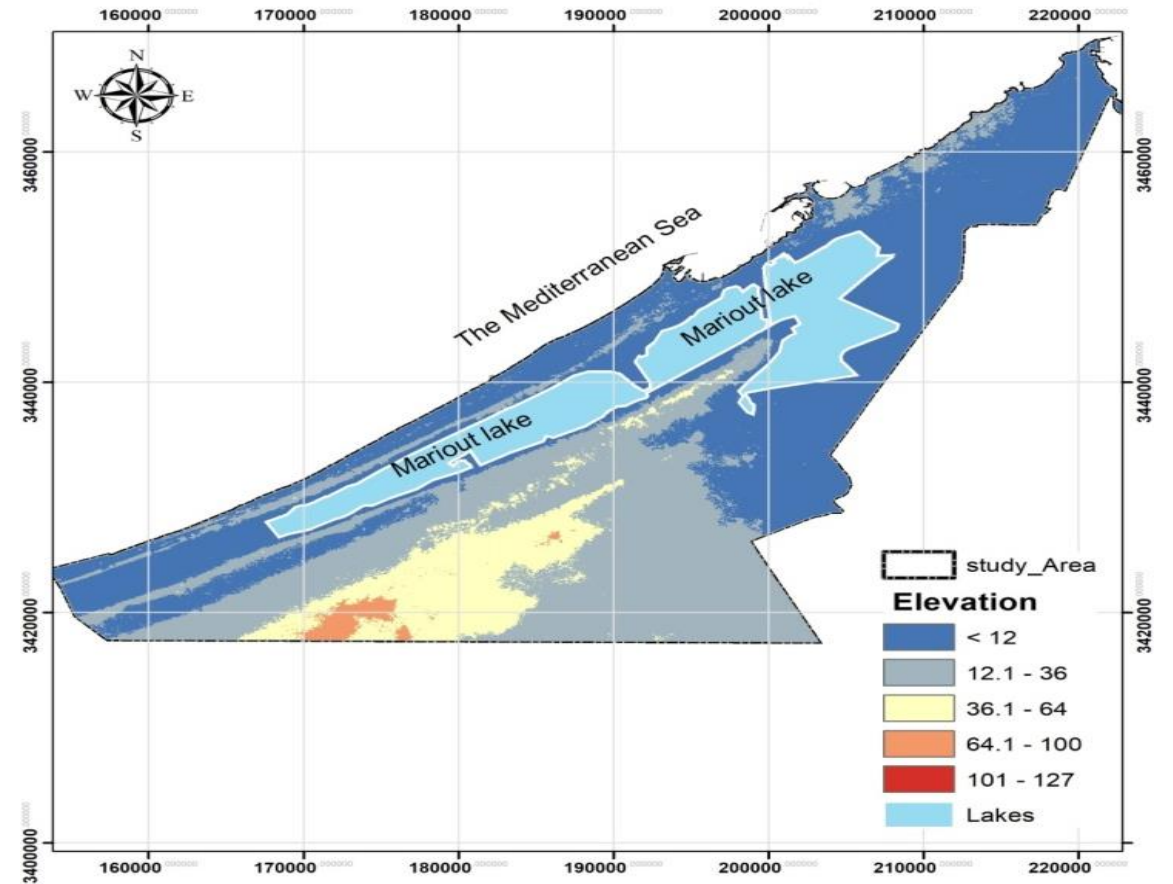
**Distance from the Stream Map**



# GIS/RS Integration

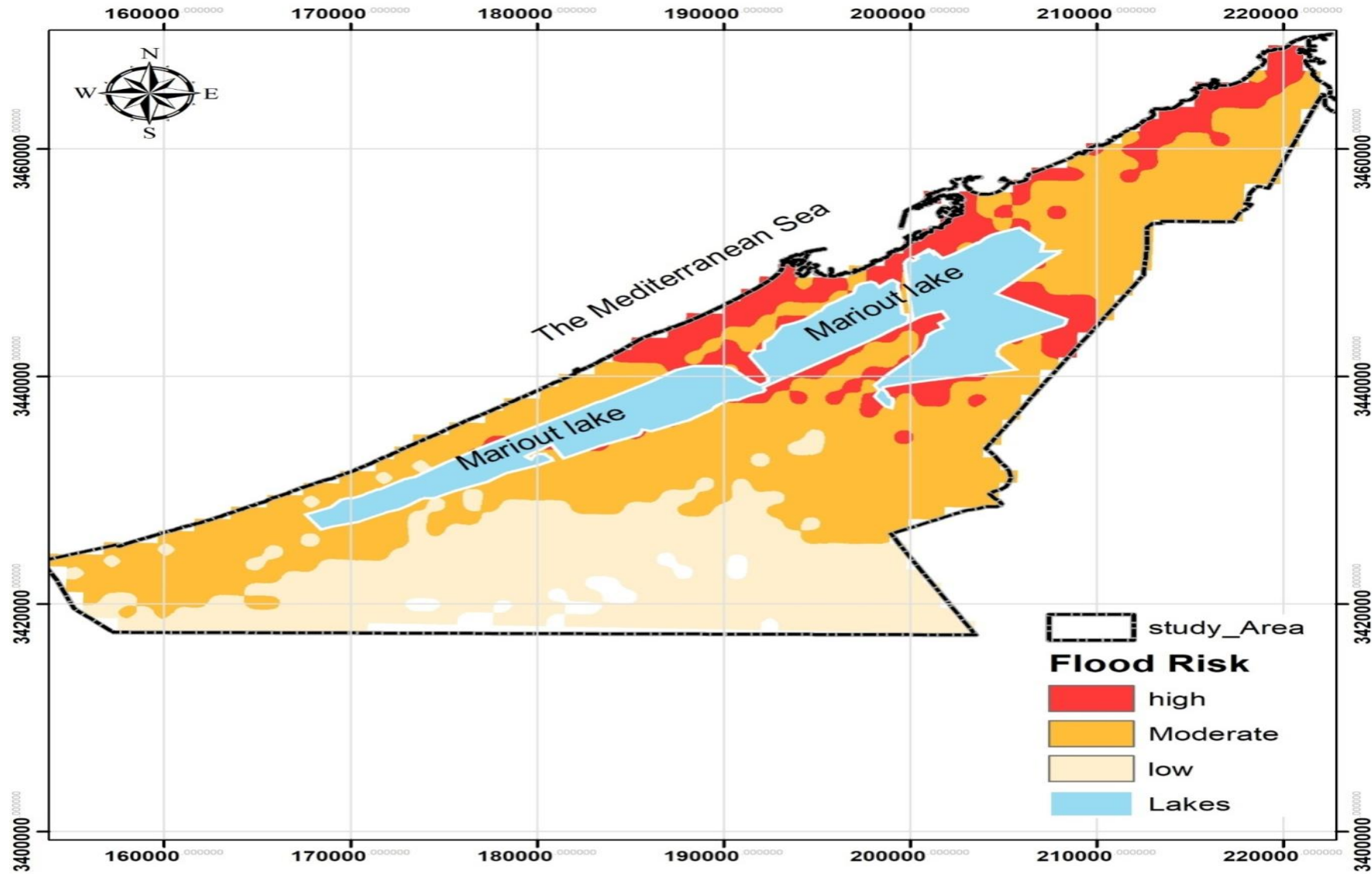


Slope Map



Elevation Map

# GIS/RS for Flood Resilience



**The Urban Flood Susceptibility Map for Alexandria City**



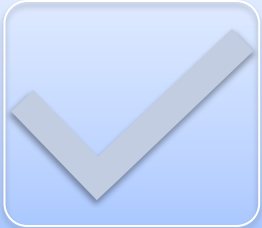
## **Conclusions and Recommendations:**



**A comprehensive understanding of the flood risk in the study area is made possible by the integration of RS with GIS applications.**



**Decision-makers can effectively allocate resources, priorities preventive measures, and identify vulnerable locations by using this model.**



**Plan for the harvesting of rainfall projects, natural based solutions (NBS), and the use of stored rainfall as a source of water for drinking and agriculture rather than discarding it in the sea.**



**Provide a real time forecasting and warning system for better preparation activities in advance of flood event (e.g. Lowering water level in reservoir or a pond, activation of pumps, evacuation of residents, traffic regulation, road closure, etc.)**



***Thank you  
for your  
attention***

