

**EXAMINATION OF PRELIMINARY FLOOD RISK ASSESSMENT
METHODOLOGIES AND IMPLEMENTATION ON BAKIRÇAY SUB-BASIN**

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EXPERTISE THESIS ABSTRACT

Nowadays, how floods are inundated on the land can be determined by models. However, modelling all rivers is time consuming and not economically efficient. Therefore, preliminary flood risk assessment is performed in order to determine where flood modeling will be applied.

Within the context of this thesis, preliminary flood risk assessments are examined for five different countries, which are Romania, France, Czech Republic, Ireland and Austria. The methods used for the assessment of possible future floods are analyzed. Methods can be classified into two groups, which are GIS based and hydraulic modeling based, in addition to them, packaged softwares that use either or both of GIS and Hydraulic modeling can be expressed as a third group.

A case study is conducted for preliminary flood risk assessment by two GIS methods based on available and easily accessible data on Bakırçay sub-basin that is a located in North Aegean (Kuzey Ege) Basin. As a result of comparison of methods, alluvium method can be expressed as the safest side of obtaining the areas of potentially significant flood risk.

Recommendations are presented for how to make more accurate preliminary flood risk assessment and improvement of the data.

Key Words: Flood, Preliminary Flood Risk Assessment, Floods Directive, Flood Risk Management, Hydraulic Model, The Alluvium Method