

USAGE OF GEOLOGICAL DATA/INFORMATION ON PRELIMINARY FLOOD RISK ASSESSMENT

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ANKARA-2016

EXPERTISE THESIS ABSTRACT

This study aims to analyze effects of geological and geomorphological process and characteristics of a basin on the river systems and floods, and also investigate preliminary flood risk assessment studies, the first step of the Flood directive, which includes methodologies applied based on geological data and information and sample projects of this methodologies. It is the first study that is conducted in this respect.

Within the scope of this study, paleoflood methodology to estimate historical floods which have not been determined with gauging stations and/or observation has been analyzed and examples of this methodology has been detailed. Furthermore, within this study, alluvium method, which is one of the methodologies of preliminary flood risk assessment and examples of this method in Turkey, has been evaluated. In addition to this, preliminary flood risk assessment methodologies of four selected EU members' countries have been investigated.

As a result, it is determined that geological characteristics of a basin define factors such as type of basin, surface run off, sediment transportation which have effects on flood occurrence and magnitude. In this respect, taking into consideration of geological data in projects enables to provide more accurate and reliable results. Moreover, in alluvium method, reliability of geological maps effects to get more reliable results and this method is an important guidance when used with other methodologies.

It is expected that, this study will contribute to determine geological data which has to be taken into consideration in preliminary flood risk assessments.

Key words: preliminary flood risk assessment, historical flood, geology, geomorphology, paleoflood, alluvial method