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- **12887 | Morphometric Parameters Analysis of Tâmega's River Catchment as Forcing Conditions to the Occurrence of Floods in Amarante**

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Floods occur every year in Portugal and cause losses and damages, affecting people, goods and services in several critical places along the country (DISASTER PROJECT). Thereby, this paper deals with the occurrence of floods along the riverside of Amarante city, in the Tâmega's river catchment, one of the critical places that is frequently affected and conditioned by this process, reinforcing the importance of research about the factors that promote its occurrence.

Initially, a literature review was carried out in order to understand what already has been done about the floods research for Amarante. The literature analysis revealed the existence of 10 studies, between 1998 and 2014, which are, essentially, about explaining and describing the flood events, as well as mentioning some causes and consequences.

For the basin delimitation and definition of the drainage network it was used a DTM based on the SRTM data with 30 meters of spatial resolution. After the catchment delimitation it was necessary to delimit a sub-catchment, in order to confine the analysis to the sector more proximal to Amarante, which receives the high precipitation values of all catchment (mean of 1731mm/year) and, for this reason, more directly influence has on the occurrence of floods in Amarante.

Then, it was calculated the morphometric parameters for Tâmega's catchment and a sub-catchment (Table 1). They can be grouped in geometric characteristics, drainage system, relief, geology, land use and vegetation, helping to understand the watershed response.

The results analysis allows to verify, the biggest propensity of the sub-catchment for floods because it presents a form closer to the circular in comparison with the Tâmega catchment that is more elongated. In the remaining parameters the values are similar for both catchments, which evidences that floods can be influenced by other factors such as topography, land use or anthropic action.