



Natural Hazards and Disaster Risk Reduction Policies

Loredana Antronico, Fausto Marincioni (Eds.)

Traditional flood mitigation measures in Mallorca

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Abstract

The drainage system of Mallorca is constituted by ephemeral rivers, known as *torrents*, which are not usually running. The rainfall in the island features high-intensity episodes (of more than 100 millimeters in 24 hours), which occasionally cause *torrents* to overflow and as a consequence causes severe flooding.

The island been historically affected by flood events. Since the 15th century, 223 events have been recorded. Up to the 20th century, floods in the island affected plains with a high agricultural production. In order to reduce the vulnerability of those areas, islanders adopted a wide range of measures based on traditional engineering.

The research is intended to describe the main measures adopted by local population in order to control surface runoff. Among them, the channelization of a large part of the streambeds, the deviation of the streams and the use of *parats*, a complex system of stone walls built within river beds that diverts the flow and to avoid the flooding of the adjacent fields. In limestone areas of Mallorca, another traditional system is the *albellons*, which are artificial runoff channels that run under the soil, build with stones, which help to avoid the flooding of the fertile lands of the area. Finally, in the mountainous areas, other dry-stone structures, called *marges*, are used to create land to farm in the mountain slopes. *Marges* avoid erosion, as they have channels on the sides, where water is deviated and driven to reservoirs where it can be kept to be used later.

The research is focused on that man-made systems, how they work, where are located in the island and their evolution. These systems are currently in ways of abandonment, given the change in the economical framework from the island, which has evolved from the traditional agricultural society to a tourism-based economy. The current situation has not only meant a higher degree of urbanization but also an increase of human presence in flood-prone areas. The lack of maintenance of traditional dry-stone structures has a direct effect on the increase of risk of flooding.

Keywords: Mallorca, ephemeral streams, flooding, mitigation, dry-stone.

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