

Hydraulic risk perception of Trasimeno lake: historical and actual issues.

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Abstract

The paper outlines the perception of the hydraulic risk over the centuries by means of a description of the hydraulic works and projects designed to control and manage the Trasimeno lake water resource.

The lake Trasimeno is located in Central Italy, with an area of 128km². It is a closed lake without natural outlets or inlets. Because of this features, its water levels are mainly controlled by meteorological conditions and the exploitation of the water resource; therefore they record noticeable and sometimes quick fluctuations in time.

Indeed, during the centuries, the hydraulic nature of the lake led to two alternating scenarios of large floods and severe droughts resulting in the necessity of the implementation of measures in order to mitigate the connected hydraulic risk.

The first attempts to manage the lake water levels date back to the Etruscans and Romans and were mainly focused on the control of floods by means of the construction of artificial outlets in order to discharge water surplus, but in many cases they were not efficient enough to avoid floods in the nearby rural areas. Because of this, during the late Middle Ages, two streams, feeding the lake, were diverted into the Val di Chiana area.

In recent times the extensive exploitation of the water resource has also pointed out the problem of severe droughts that occurred in the past century (especially the one occurred in 1958) also enhanced by the climatic trends over the area. This brought to the development of many projects all of them based on the same choice of increasing the inflow into the lake by extending the catchment area or by connections with other river networks such as the Arno or Tiber river systems.