Abstract

Hydroelectric heritage comprises the ensemble of structures and technical components built for the scope of hydroelectric energy generation. This definition includes architecturally prominent elements, such as power stations and large dams, as well as less visible structures, such as penstocks, surge shafts, and transformer stations. Despite their cultural, social, and historical significance – and even though many European hydroelectric systems date back to the early twentieth century – active hydroelectric infrastructures remain largely marginal in the context of heritage valorisation practices. Their ongoing operational status relegates them primarily to the role of energy generation infrastructures, limiting the recognition of their intrinsic cultural values and preventing the applicability of conventional heritage approaches.

The present dissertation addresses this gap by investigating how active hydroelectric infrastructures can be recognised and valorised as cultural heritage within contemporary European contexts. It argues that the fact that they are still in operation should not be treated as an obstacle to recognition as heritage, but rather as one of their many defining conditions, that calls for specific strategies. The study critically examines the limits of existing approaches to hydroelectric infrastructures recognition as heritage, highlighting their limits in accounting for this kind of heritage.

Methodologically, the research adopts a multi-scalar and interdisciplinary approach combining architecture restoration theoretical frameworks, historical analysis, and applied economic valuation methods. A comparative investigation of selected European experiences – spanning both active and decommissioned hydroelectric plants across the countries of Norway, Spain, and Italy – identifies key valorisation practices as well as recurring issues. These insights inform the development of an analytical framework, mapping the topic of hydroelectric heritage valorisation across both theoretical and practical dimensions.

The application of a new strategic approach to hydroelectric heritage valorisation is subsequently tested through an in-depth case study of the hydroelectric heritage of Southern Italy, an often overlooked heritage characterised by significant historical and landscape values but limited recognition. The research documents this heritage through the construction of a georeferenced database of hydroelectric infrastructures built between the early twentieth century and the 1960s. The hydroelectric system of the Sila Plateau in Calabria is then selected as a pilot case for the application of an economic valuation methodology rooted in value theories.

In fact, a central contribution of the dissertation lies in the assessment of perceived cultural values associated with active hydroelectric infrastructure, focusing in particular on neglected heritage in marginalised areas. Drawing on the existing theory and applications of economic valuation of cultural heritage, the study applies Complex Social Value Theory to an active hydroelectric system. Through a Conjoint Analysis approach carried out through the Choice Experiment method, the research evaluates residents' and visitors' preferences and for alternative heritage valorisation scenarios integrating the historical hydroelectric system into the developing slow tourism offer of the Sila Plateau. The innovation of the present approach lies in the application of valuation methodologies, usually applied to decommissioned industrial heritage or environmental resources, to an active industrial asset.

The findings suggest that heritage valorisation of active hydroelectric infrastructures requires coordinated engagement of public authorities, infrastructure owners, professionals, and local communities, and that the presented assessment method can function as a mediating tool within these negotiations. The dissertation concludes by presenting the results of the application as an instrument for the integration of active infrastructural heritage into valorisation initiative at a territorial scale, contributing to the ongoing theoretical debates in heritage studies on value attribution while also offering a practical instrument for a value-focused strategy of valorisation.