

# Analysing the cost-effectiveness of heritage conservation interventions: a methodological proposal within project STORM

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Cost-Effectiveness Analysis (CEA) may constitute a valuable decision-support tool to allocate cultural heritage preservation resources, allowing policy comparisons without the need to monetise the expected outcomes which, in heritage contexts, are largely made of non-use values and inherently difficult to price. Nevertheless, its application in the heritage sector is still limited, arguably due to difficulties in ‘effectiveness’ appraisals. STORM (Safeguarding Cultural Heritage through Technical and Organisational Resources Management) is an H2020-funded project for the development of Disaster Risk Management solutions for heritage sites facing natural hazards and climate change. Within its scope, a methodology for the CEA of conservation interventions was developed and applied to the Roman Ruins of Tróia (Portugal), the remains of the largest known fish-salting production centre of the Roman Empire, one of STORM’s pilot sites. This paper describes the CEA methodology, including cost and effectiveness indicators and discount rate: some directives are suggested for listing the costs associated with conservation interventions; and guidelines are offered for the assessment of effectiveness, based on the compatibility of the foreseen actions with heritage materials and cultural values, and on the training of the professionals involved. Effectiveness appraisals should be undertaken by a sufficient number of relevant experts, so as to allow the obtaining of a measure of uncertainty, corresponding to the standard deviation of the expert assessments. To ensure that cultural values are safeguarded, it is additionally recommended that an effectiveness tolerability threshold is put forth, below which no actions should be chosen. The paper furthermore reports on the methodology application for the assessment of five strategies to control the risks of a sand dune weighing upon the walls of a well in the largest workshop of the Roman Ruins, Workshop 1. The strategies varied in terms of approach (preventive and remedial) and in terms of fabric interference (different degrees of maintenance). The CEA showed that ordinary maintenance options are costlier, but more effective, than extraordinary maintenance ones; it additionally confirmed that remedial strategies are not only costlier, but also highly ineffective when it comes to the conservation of the cultural significance of archaeological assets, largely reliant on the preservation of original materials. The most cost-effective option was the less intrusive strategy, matching current perspectives on archaeological conservation, and seemingly indicating that the procedure is robust. Applications to other conservation actions, e.g. emergency interventions, in the remainder STORM pilot sites, will allow further validation of the methodology.

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Keywords: archaeological heritage conservation; cost-effectiveness analysis; disaster risk management; project STORM.

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