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Geo-environmental analysis of terraced slopes and dry-stone walls in Can Grau area (Garraf Park, Catalunya, Spain): preliminary results from the Stonewalls4life project.

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Stonewalls4life is an E.U. Life project started in the second half of 2019 involving many subjects, both public bodies and privates, in a multidisciplinary working group. The main objective of the project is to demonstrate how an ancient technology for land use, drystone walling, can be effectively considered to improve the resilience of the territory to climate change by adopting a socially and technically innovative approach.

The project actions are being performed at Manarola, within the Cinque Terre National Park (eastern Liguria, north-western Italy). The pilot site is a narrow strip of land close to the seaside and characterized by small valleys with steep terraced slopes. This anthropogenic landscape represents a high-value peculiarity attracting more than three million tourists every year.

Three replication sites were identified in order to demonstrate the transferability and replicability of the project actions: two are located within the Cinque Terre Natural Park territory and one is in the Can Grau area (Garraf Park, Catalunya, Spain).

The Spanish site is currently under evaluation. An extensive geological, geomorphological, and land-use-land-cover (LULC) analysis is now being carried out in the Can Grau area to define its environmental features, especially concerning geological aspects and land use, and focusing on terraced areas and their state of conservation. This study aims to identify a specific suitable site for the replication of the project actions that will be carried out in Manarola, namely for dry-stone walls recovery, and is based on a multitemporal analysis of aerial images performed in a GIS environment and a wide collection and review of bibliographic data.

This contribution illustrates the preliminary results of the Can Grau area analysis, focusing in particular on the distribution of terraced areas and the variation of LULC from the 1950s to the present day. From this study emerges a progressive abandonment of terraced areas used for cultivation, although, according to historical sources, this process mostly occurred after the

phylloxera appeared in the late 19th century, seriously affecting the most important agricultural activity in the Garraf, namely the viticulture.

The outcomes from this study will be useful in terms of both Stonewalls4life project implementation and overall land management, particularly aiming to restore a man-made geomorphological heritage and mitigate geo-hydrological risk.