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Ending the Cinderella Status of Terraces and Lynchets in Europe

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Terraces and lynchets are not only ubiquitous worldwide and within Europe but can provide increasingly important Ecosystem Services (ESs), which may be able to mitigate aspects of climate change. They are also probably a major cause of non-linearity between climate and erosion rates in agricultural systems as noted from alluvial and colluvial studies. In this paper we review the theoretical background of terraces and lynchets, present a modified classification, and show how new techniques are transforming the study of these widespread and often ancient anthropogenic landforms. Indeed the problems of dating terraces and also the time-consuming nature and costly surveys has held back the archaeological study of terraces until now. The applicable suite of techniques available now includes the creation of Digital Terrain Models (DTMs) from Structure from Motion (SfM) photogrammetry, Airborne and Terrestrial Laser Scanning (ALS-TLS); the use of OSL and pOSL, pXRF, FTIR, phytoliths, calcium oxalates from plants and potentially sedaDNA. Examples will be drawn from a recently started ERC project (TerrACE; ERC-2017-ADG: 787790, 2018-2023; https://www.terrace.no/) which is working at over 10 sites in Europe ranging from Norway to Greece.

This paper explains the development of a new holistic approach to terrace archaeology driven by a modern conceptualisation of human-landscape relationships, and facilitated by new scientific developments. We explain the rationale for our choice of case study areas, for example, the range of bio-climatic zones. In addition, this multi-regional approach allows us to address contingent regional and local historical/socioeconomic processes; from demographic fluctuations to the development of specific forms of agricultural techniques. Examples of DTM creation, field analyses and selected results will be given from Martleburg in Belgium and sites in Italy. We will then move on to explain how this combination of a comprehensive suite of modern field and laboratory methods and an interpretive strategy informed by the environmental humanities will yield exciting

and groundbreaking results.