

DÉNES LÓCZY (*)

MAN-MADE TERRACES IN A GERMAN AGRICULTURAL LANDSCAPE

ABSTRACT: LÓCZY D., *Man-made terraces in a German agricultural landscape*. (IT ISSN 0391-9838, 1998).

Some of the man-made features have integrated into the landscape as its organic part and influence geomorphic and environmental processes. In the paper the function of terraces on arable land (*Ackerterrassen*) and in vineyards is investigated. The test area is a valley on the western margin of the Odenwald Mountains, the Meerbach valley, near the town Bensheim, Hesse, Germany. In the Rhine valley limited availability of land and the increasing concentration of population called for intensive farming on small plots at a very early date. Although some of the early settlements were later abandoned, some ancient patterns of cultivation manifested in a wealth of man-made features in the landscape, have survived to this day. The landscape ecological significance of terraces is manifested through the redistribution of moisture and nutrients available for agricultural crops. A survey of nutrient losses through runoff was made in various cross-sections and it was found that the partial basins with more terraces insignificantly contribute to the nutrient load of the trunk stream. That is interpreted as an evidence to the efficiency of man-made terraces in the conservation of soil fertility and in the prevention of eutrophication of water bodies.

KEY WORDS: Man-made Terraces, Erosion, Water pollution, Landscape ecology, Germany.

RIASSUNTO: LÓCZY D., *Terrazzi antropici in un paesaggio agricolo della Germania*. (IT ISSN 0391-9838, 1998).

Alcuni lineamenti antropici si sono inseriti organicamente nel paesaggio come una sua parte e influenzano i processi geomorfici e ambientali. In questo lavoro si tratta della funzione dei terrazzi nelle terre arative (*Ackerterrassen*) e nei vigneti. L'area di studio è una valle posta al margine occidentale dei rilievi dei Monti Odenwald, la valle Meerbach vicina a Bensheim Hesse (Germania). Nella valle del Reno la limitata disponibilità di terra e il progressivo incremento della popolazione ha provocato da tempo la necessità di una agricoltura intensiva in piccoli appezzamenti. Sebbene alcuni dei più vecchi insediamenti siano stati poi abbandonati, qualche antica traccia delle coltivazioni è rimasta in un paesaggio dai marcati lineamenti antropici. Il significato ecologico dei terrazzi si manifesta

con la redistribuzione dell'umidità e dei nutrienti per le colture. Un rilevamento della perdita di nutrienti con il ruscellamento è stato fatto in varie zone e si è trovato che i piccoli bacini con più terrazzi contribuiscono pochissimo al carico di nutrienti. Ciò è interpretato come una dimostrazione dell'efficienza dei terrazzi antropici nella conservazione della fertilità del suolo e nella prevenzione dell'eutrofizzazione delle acque.

TERMINI CHIAVE: Terrazzi antropici, Erosione, Inquinamento delle acque, Ecologia del paesaggio, Germania.

INTRODUCTION

Terraces break long and steep slopes and reduce their average angles and act as sediment traps. In areas where soil parent materials are mostly unconsolidated deposits, slope stability is generally increased by terraces. Promoting infiltration or diverting runoff parallel with contour lines, they are instrumental in erosion control. To some degree, other, at least partly man-made, features like hollow roads (surfaced or unsurfaced) fulfill similar functions in the landscape.

Since forest clearing in medieval times, the prevailing land use classes of basins remained to be pastures and meadows (with scattered fruit-trees, «*Streuobstwiesen*»), vineyards and arable land arranged according to the relief conditions. Along the middle section of the Bergstrasse, however, built-up areas have recently expanded to reach 21 per cent of land (Bartelheimer, 1992). The survey of the extent of environmental pressure and possible responses also in this region has thus become an intriguing issue in research.

STUDY AREA

The narrow foothill zone along the western front of the Odenwald (fig. 1) inherited the name Bergstrasse («mountain road») from the Roman «*strada montana*», a paved link between the commercial centres of Northern Germany and the passes of the Alps. Along the ancient road loess

(*) Department of Physical Geography, Institute of Geography Janus Pannonius University H-7624 Pécs, Ifjúság u. 6, Hungary.

Author wishes to express thanks to the Alexander von Humboldt Foundation for enabling him to carry out research in Germany, to Prof. Dr. Otmar Seuffert for supervising and to all institutions and individuals in Germany who supplied him data. Gratitude is also due to Dr László Szalai for assistance in preparing the computer maps.