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EXPLANATORY NOTES OF THE GEOMORPHOLOGICAL MAP OF THE ALTA BADIA VALLEY (DOLOMITES, ITALY)

ABSTRACT: PANIZZA M., CORSINI A., GHINOI A., MARCHETTI M., PASUTO A. & SOLDATI M., *Explanatory notes of the Geomorphological map of the Alta Badia valley (Dolomites, Italy)*. (IT ISSN 0391-9838, 2011).

This paper shows the geomorphological aspects of the Alta Badia valley (Autonomous Province of Bolzano, northern Italy), located in one of the best known areas of the Italian Dolomites, between the passes of Gardena, Campolongo and Valparola-Falzarego. The paper is also aiming at illustrating the annexed Geomorphological map of the Alta Badia valley (Dolomites, Italy), at 1:20,000 scale.

The present morphological features of the Alta Badia valley is the result of a complex interaction between geological structure and modelling processes that have mainly been active since the Last Glacial Maximum (LGM). Stratigraphy and structure controlled the formation of subhorizontal dolomitic plateaus, flanked by sub-vertical slopes that are linked to less inclined ones - where softer materials mainly outcrop - by broad scree slopes and talus cones.

Landforms in the area are largely related to mass movements that have progressively remodelled the main valleys during the Holocene, partly masking the older traces of glacial origin. Landslides - that took place after the progressive glacier retreat - showed an intense period of activity at the end of the Lateglacial, followed by alternated clustering during the Holocene, as witnessed by several radiometric datings. Slope processes have gradually become the main geomorphological feature in the valley. The slopes are, at present, characterized by the presence of extensive scree slopes and talus cones, debris flow accumulations and different types of landslides. Sometimes, landslide bodies dammed the valley bottoms forming lakes. This is the case of the plain of Corvara in Badia that is made up

of alluvial and lacustrine deposits accumulated as a consequence of the repeated damming of the valley since the early Holocene.

The traces of the LGM consist of scattered and small moraine deposits on plateaus as well as of broader outcrops along the slopes, where they have largely been mobilized by subsequent mass movements. On the other hand, glacial landforms shaped during the Lateglacial are mainly located in the lowest part of slopes and, occasionally, along the valley floors, especially in the centre-eastern part of the study area.

Recently, the intense urbanization and the development of the ski tourism, on which the economy of the valley is based, have been modifying the landscape with ever growing intensity.

KEY WORDS: Geomorphological map, Alta Badia valley, Dolomites, Italy.

INTRODUCTION

The Alta Badia valley is part of the Italian Dolomites, which are universally known for their scenic beauty and scientific interest. The long and complex geological and geomorphological history of this region has shaped typical and spectacular landforms characterised by huge dolomite vertical cliffs rising from gentle slopes made up of darker terrains, where woods, pastures and scattered hamlets are located, as well as important tourist infrastructures.

The Research Group of Geomorphology of the University of Modena and Reggio Emilia has coordinated and participated in several national and international projects concerning the study of the geomorphological aspects of the Dolomites, also in collaboration with the National Research Council of Padua. The research carried out for more than 20 years have mainly regarded methods and techniques of geomorphological mapping, slope movement analysis and landslide hazard assessment. These investigations have been funded by different Framework Programmes of the European Commission (e.g., «Environment» and «Environment and Climate» programmes) and by national programmes (e.g., Miur-Cofin / Prin and Carg projects). The Geomorphological map of the Alta Badia synthesises the results from the above mentioned investigations.

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