ON THE LINK BETWEEN SOCIO-ECONOMIC DEVELOPMENT AND LANDSCAPE CHANGES IN TWO PYRENEAN VALLEYS: THE TRUE CHALLENGE OF MULTIFUNCTIONALITY

Maria Barrachina1*, Josep Maria Serra-Diaz1, Antoni Francesc Tulla2, Jordi Cristóbal3

1Department of Animal Biology, Plant Biology and Ecology, Universitat Autònoma de Barcelona, Botany Unit, Edifici C (C1/211) Campus de la UAB. 08193 Bellaterra (Cerdanyola del Vallès)
2Department of Geography, Edifici B (B9/1100), Universitat Autònoma de Barcelona, Campus de la UAB. 08193 Bellaterra
3Geophysical Institute, University of Alaska, GI Remote Sensing & Alaska Satellite Facility (ASF) UAF Main Campus. 903 Koyukuk Dr. PO Box 757320, Fairbanks, AK 99775-7320

Abstract

Pyrenean regions have undergone deep changes in the past 50 years. These changes have affected their socioeconomic structures, leading to a shift in land management, which is eventually reflected on the landscape. Two opposite processes are found throughout the mountain range: abandonment and intensification. Land abandonment results from a shift in the socioeconomic model that sustained this mountain area for thousands of years. On the other hand, intensification results from tourism-based development. Furthermore, designation of nature protection areas has contributed to this overall change in land uses.

In this study we address impacts concerning land use changes and a shift in management strategies, taking into account landscape's multifunctional dimension. We compare two valleys within the Catalan Pyrenees which differ in their socioeconomic context: on one side Vall de Cardós, where tourism has great significance together with nature conservation and, on the other side, Vall Fosca, where primary activities are more relevant and tourism has developed on a smaller scale. Landscape structural changes in the past 50 years (1956-2005) have been quantified through GIS techniques and the use of landscape metrics. Our results show that management strategies influence landscape configuration and land uses at present, which becomes especially relevant from a global change perspective.

Key words: landscape dynamics, land management, land use changes, mountain areas, Pyrenees

Received: December, 2011; Revised final: May, 2012; Accepted: June, 2012

* Author to whom all correspondence should be addressed: e-mail maria.barrachina@uab.cat; Phone: +34 93 581 29 85; Fax: +34 93 581 1321