

**THE EFFECT OF LAND USE AND COVER CHANGE ON WATER
RESOURCES IN SPAIN. (1) LAND COVER CHANGES AND
HYDROLOGICAL PROCESSES**

P. Llorens and F. Gallart

Inst. Earth Sciences Jaume Almera (CSIC), Barcelona. pllorens@ija.csic.es

Within the framework of the RICAMARE project the effects of land use and cover change on water resources are investigated with a twofold objective: (a) to improve the knowledge on the role of land use changes on water resources in the Mediterranean region, and (b) to define a regional network of research initiatives in this way. The first task of this project is related to changes in natural areas as sources of water for the agricultural and urban ones. The main land use change observed in Spanish rural headwater areas is the afforestation of former agricultural lands. This process started in the first half of the XX century because of agricultural abandonment driven by socio-economic changes and Spanish policies. Recently, following the UE directives almost half of the 500000 ha reforested in Europe in the last years were in Spain. It has been demonstrated that the cover change from grass to forest supposes a reduction in runoff production due to interception losses. However, there is a lack of suitable models able to analyse this land use change and its consequences on water resources at the spatial and temporal scales useful for management purposes. This contribution deals with the analysis of the hydrological role of vegetation on runoff production considering the changes produced by different land use scenarios.