

THE EFFECT OF LAND USE AND COVER CHANGE ON WATER RESOURCES IN SPAIN.

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Wide headwater areas in Spain suffered since the first half of the XX century the abandonment of farming and stockbreeding activities. This process allowed the increase of forested area, both spontaneous and promoted by Spanish and EU Policies. It has been demonstrated that the cover change from grass to forest supposes a reduction in runoff production due to interception losses, and therefore some decrease of water resources should be expected in most of the river basins. Indeed, decreasing trends of annual discharges have been observed in some of the large river basins, although these trends have not been yet sufficiently investigated. A revision of the information available for the Ebro river shows that, after considering the variability of climate and the increase of water consumption for irrigation, there is a remaining annual decrease of about 0.2% of the mean discharge that is to be attributed to changes in the water balance of the headwaters. In some other river basins with headwaters below the tree line, temporal decreases of discharge are more marked and, independently of their origin, threaten the efficacy of strategic water management structures. In the light of the current knowledge of the hydrological role of vegetation, these changes in water balances should be primarily attributed to the known increase of forested areas in the catchments.