



## **Farming in Prehistoric Europe: modelling the impact of the first agriculturists on the landscape**

Rens van Beek (1) and Rik Feiken (2)

(1) Department Physical Geography, Utrecht University, The Netherlands, (2) Groningen Institute of Archaeology, University of Groningen, The Netherlands

The meso-scale landscape dynamics model, CALEROS, has been developed to simulate the interactions between climate, soil production and erosion, vegetation and land use on geomorphological to human time scales in Mediterranean environments. In this study we re-evaluate the scenarios of Gregg (1988) to explore the options open to the first, Neolithic farmers in such an environment. Starting from a static model, we evaluate optimal farming strategies across a Mediterranean landscape gradient in and compare this to the outcome of Gregg's study for temperate Europe in order to reveal inter-regional and local differences and the sensitivity to the underlying assumptions. Subsequently, the impact of agriculture on the landscape is implemented and dynamically evaluated in terms of primary production and sediment yield. Thus, the stability of the first agricultural ecosystems is explored and the ultimate carrying capacity of the Neolithic landscape determined.

Gregg, S.A. (1988): Foragers and Farmers: Population Interaction and Agricultural Expansion in Prehistoric Europe. In: Butzer & Freeman (Eds.), Prehistoric Archeology and Ecology Series. The University of Chicago Press, Chicago, pp. 275.