CS 03 Representation of soil moisture and root water uptake in climate models

Project manager	dr. Jos van Dam		
Institute	Wageningen UR, Environmental Sciences Department		
Email	jos.vandam@wur.nl		
Consortium	Wageningen UR, Environmental Sciences Department Royal Netherlands Meteorological Institute (KNMI) Wageningen UR		
Project website			
Starting date	24 October 2004	**Completion date**	31 December 2008

Context / Social problem

The previous generation of climate models predicts too high temperatures for dry summers for certain regions in Europe. The main reason is the desiccation of the soil during summer when transport of moist air from the Atlantic is blocked.

What do we know/not know?

The above mentioned problem has prompted a number of research questions:

1. Which of the soil-water-atmosphere processes will have to be incorporated into an improved soil/ vegetation module for a new generation of climate models?
2. What influence will this have on the prediction quality of the climate models?
3. How can we obtain the data required for the calculations on a European scale more quickly?

What is being studied?

This study uses a more detailed soil/vegetation module as benchmark. Systematic sensitivity analyses are used to select the aspects to be incorporated. On the basis of the sensitivity analyses groundwater depths, shallow soil profiles and deep and shallow root profiles are incorporated in the soil-vegetation module. Satellite images are used to obtain input and test data. At this moment a soil-vegetation-module is being tested using data derived from satellite images.

What are the results, and who are they for?

The project will deliver several versions of a soil/vegetation module to KNMI. The outcome of the research will be a model for KNMI that produces at the European scale the best predictions. More extensive use of satellite images is an additional expected outcome.