



Balancing monitoring and modelling of nutrient flows in a Dutch polder system

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The impact of fertilizer strategies on the water quality of Dutch surface waters is hard to quantify. Water is the driving force that leaches fertilizer remains (such as nitrate and phosphate) from the soil surface towards groundwater and surface water. This leachate is influenced by different processes. For a proper reasoning of measures it is essential to relate losses to relevant processes. A phased systematic approach is applied to be able to separate different processes of subsystems for land/soil and water. The approach is currently applied in 4 catchments in The Netherlands. These catchments differ strongly in soil type and regional water flow. This paper describes one catchment, a typical Dutch polder “De Krimpenerwaard”, having peat soils and fully controlled water management. Results of the first two phases will be presented which cover land and water subsystem and compares measured and modelled data. Modelling approaches from one phase to another increase in spatial and temporal detail using dynamic models for water and nutrient flow in soil and surface water systems. A discussion will be described on how to proceed for the coming years in developing a monitoring approach which tries to optimize the delicate balance between measurements and modelling.