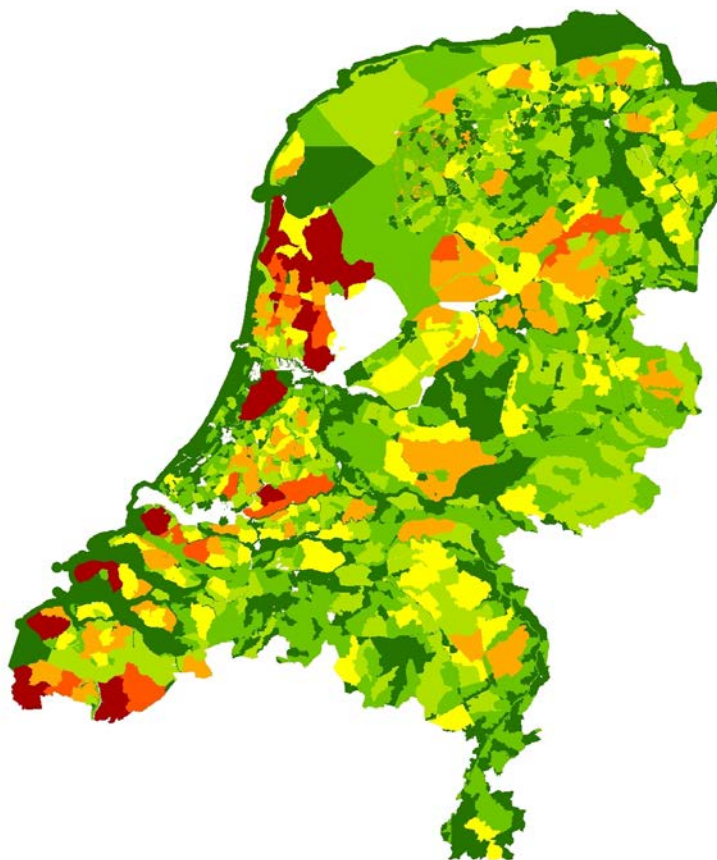


#### 4) Name: allocation to discharge unit (gaf90\_nl), leaching and run-off of nutrients based on STONE model calculations

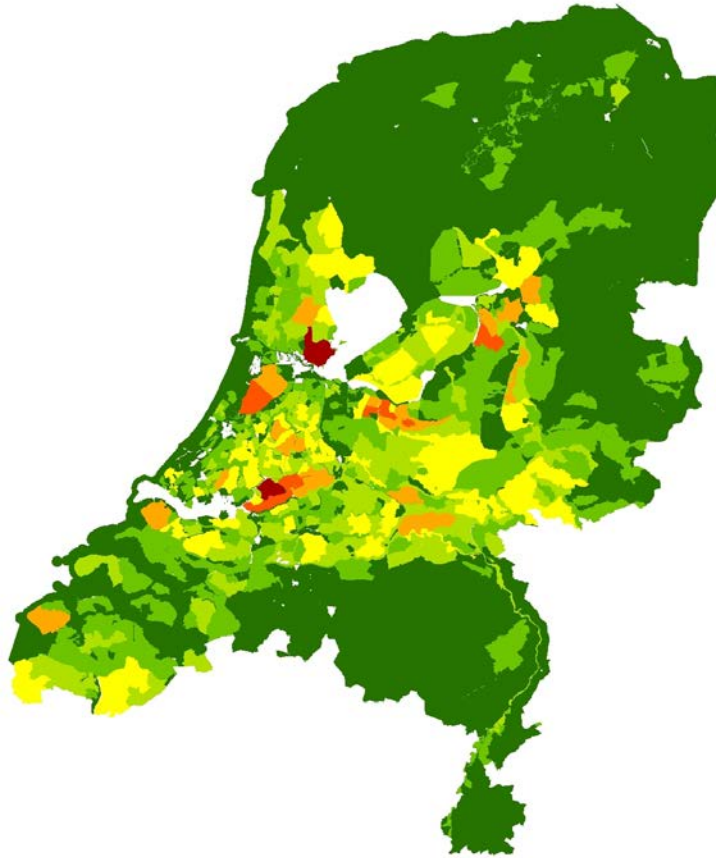
##### *Description*

STONE (Dutch acronym for Jointly Developed Nutrient Emission Model) is a model developed for use in national policy evaluations. It calculates a spatial distribution of N and P discharge to surface water, based on soil type, land use, manure or fertilizer application and precipitation/evaporation data.

The first step is a calculation on the level of about 6500 STONE plots, each of them having a specific combination of soil type, hydrology and land use. In a second step, the model aggregates the results to the level of discharge units. A discharge unit is the smallest hydrological unit in the Netherlands, based either on water-management or on natural circumstances. In most cases, they have an area of 5 to 10 square kilometres. To account for uncertainties in base data and model calculations, results are aggregated to clusters with a minimum area of 25 km<sup>2</sup>. No results are available for clusters that only contain surface water or urban area.



*Example map 4a : leaching of nutrients phosphorous*



*Example map 4b :run-off phosphorous (in both maps, orange and red colors indicate the highest amount)*

***Institutes involved***

Alterra

Deltares

National Institute for Public Health and the Environment (RIVM)

Directorate-general for public works and water management (Rijkswaterstaat)

***Currency of distribution basis data***

Model calculations are for 2013

***Background documents***

Wolf, J., R. Rötter, O. Oenema Nutrient emission models in environmental policy evaluation at different scales—experience from the Netherlands Agriculture, Ecosystems and Environment 105 (2005) 291–306

Information on the STONE model (2003)

<http://www.sciencedirect.com/science/article/pii/S1364815203000367>