

The Scheldt, France-Belgium-Netherlands – SSA 9

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Policy issue: nitrogen source apportionment for the catchment, estuary and adjacent coastal waters of the Scheldt

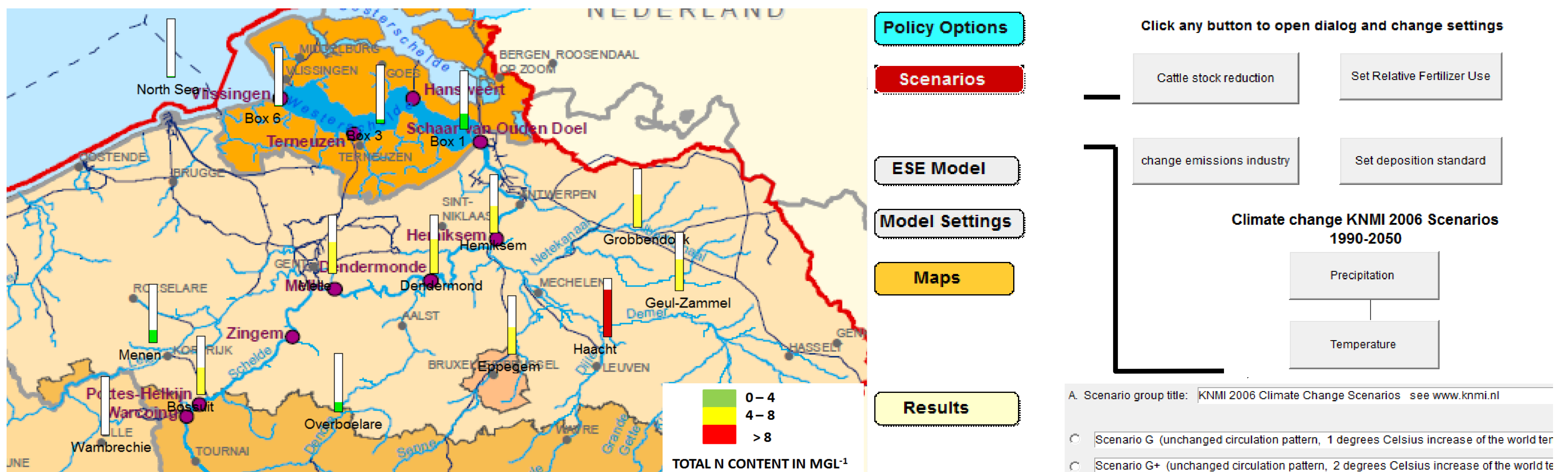


Fig 1. Graphical user interface with animated icons and quick access to scenarios, management strategies and animated map indicators.

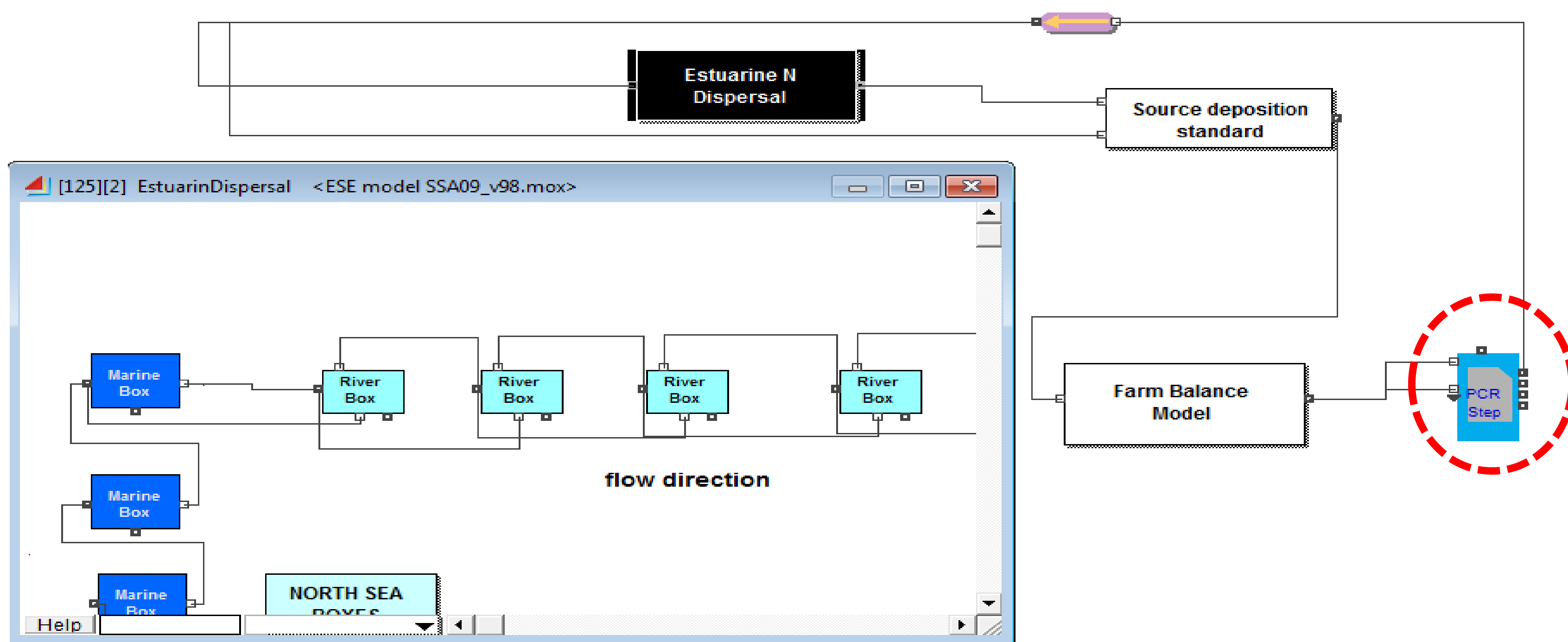


Fig 2. Hierarchical ESE system structure with feedback based on reusable model building components.

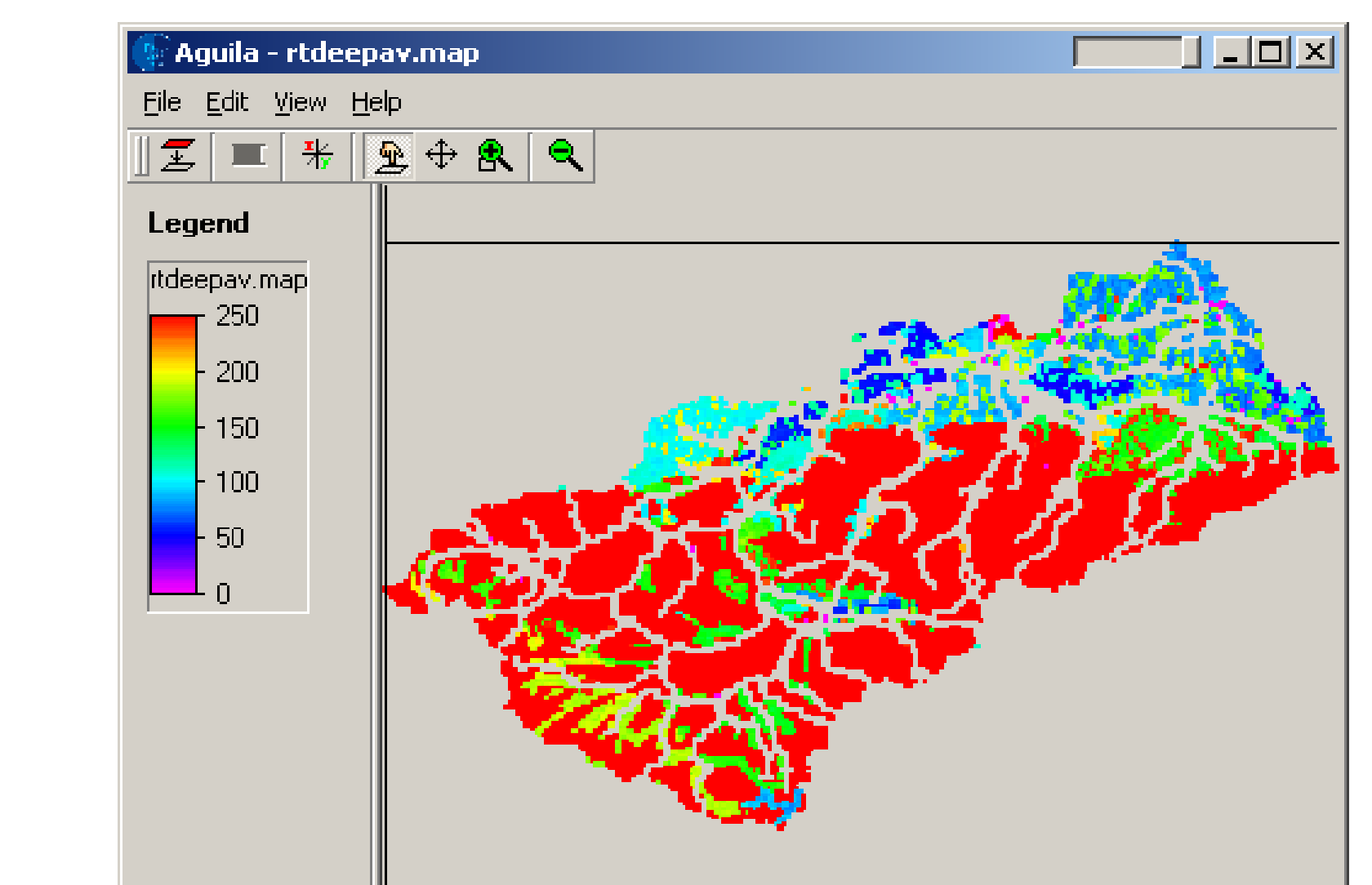


Fig 3. Two-way interface with spatial-dynamic simulation software PCRaster (example residence time).

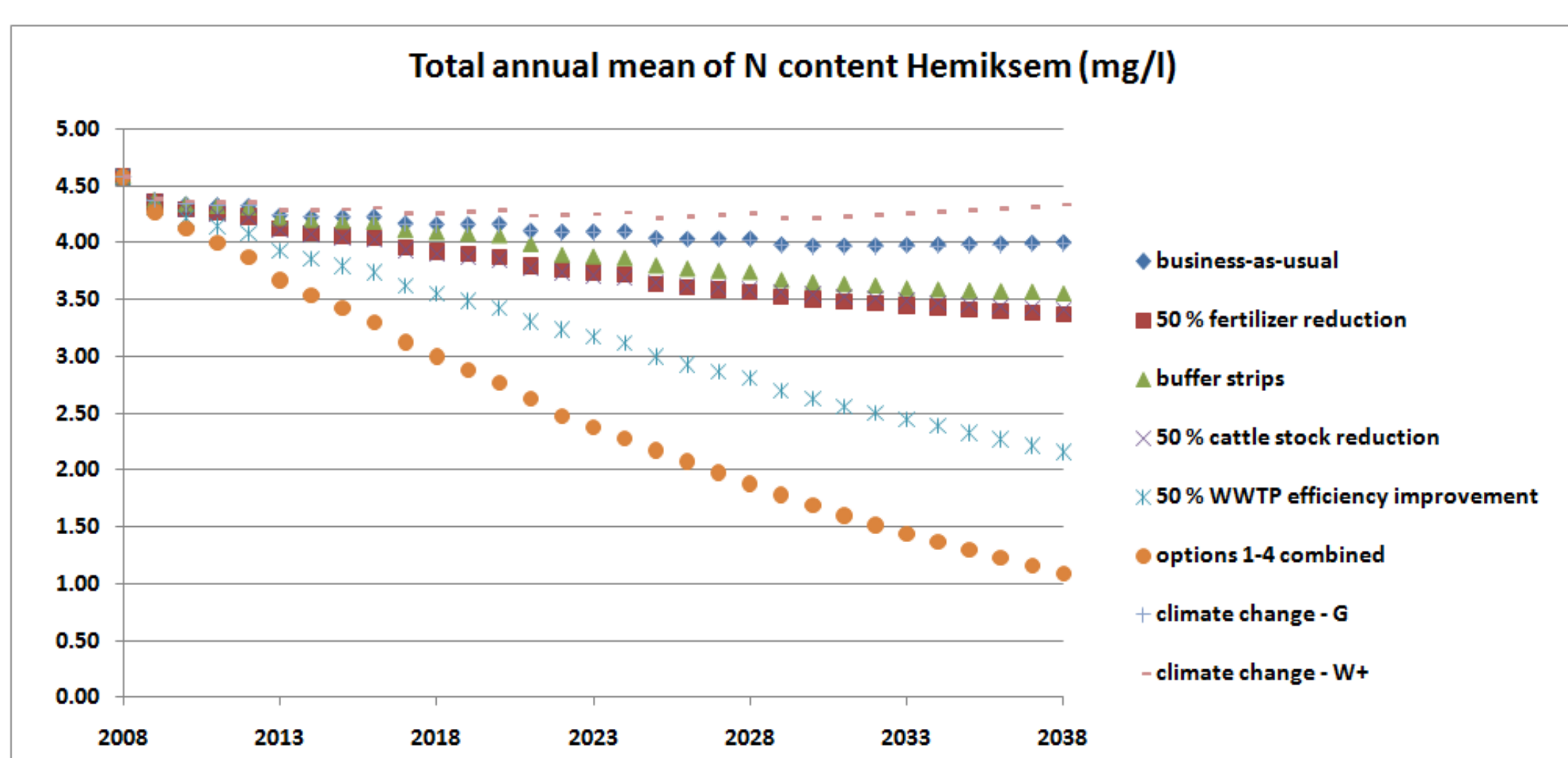


Fig 4. Example of the impact of different strategies and scenarios on the total N content at the outflow point Hemiksem near the city of Antwerp.

Innovative and user-friendly aspects of the Scheldt ESE model

- real-life farmers' decisions drive the economic model
- two-way spatial-dynamic model coupling
- ESE (Economic-Social-Ecologic) system model fully implemented with reusable model building components which are stored in generic model libraries
- choice from KNMI climate change scenarios which are based on the IPCC SRES scenarios for the anthropogenic driving mechanisms
- complete, 30-year simulation takes only 2-3 minutes on standard desktop PC
- expandable set of buttons to access and parameterize management options such as fertilizer use, buffer strips, WWTP emissions, and cattle stock size reduction

Stakeholder response

- authorities responsible for WFD take real interest in the model and the flexibility to incorporate new policy options and scenarios
- rapidity of the simulations and model transparency highly appreciated