

#### **Modelling scenarios in**

### **ArcNEMO in preparation**

### for European legislation: a

### policy perspective

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### **Presentation outline**

- Why agricultural emission modelling?
- ArcNemo: model concept
- Scenario-study
- Conclusions





2

# Why agricultural emission modelling

• 4th Action Programme Nitrate directive: EU-Com request report on future agricultural measures to reach goals of Water Framework Directive

#### Response Flemish government: launch a study

- → Build new agricultural emission model to link with water quality model
- → Based on available data & current knowledge
- → Reference in Flanders
- → Open source model at VMM-infrastructure







### **ArcNemo: model concept**











## Scenario's for 5th Action Programme and River Basin Management Plans

#### Study

#### Content: long term scenario's on 3 axes

- $\rightarrow$  Variation in fertiliser limits
- $\rightarrow$  Variation in types of fertilisation
- $\rightarrow$  Variation in fertilisation practices

#### Risks:

- $\rightarrow$  Timing 5th Action programma
- $\rightarrow$  Limited budget
- $\rightarrow$  No experience with scenario-modelling
- $\rightarrow$  No intensive calibration of ArcNemo







### **Calibration areas for ArcNemo**









### Scenario study: areas



#### FLANDERS ENVIRONMENT AGENCY









### Scenario development

#### Good interaction !!!

#### Focus on policy maker

- $\rightarrow$  Adapted to ArcNemo?
- $\rightarrow$  'realistic' scenario's
- $\rightarrow$  More scenario's

#### Validation issues







### Results





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### Results





### Conclusions

#### Did we succeed? No.....

#### **•** BUT: a steep learning curve on different levels

- → Need for calibration/validation: on-going study (Water balance, soil-N-balance, soil-P-balance)
- → Insight in scenario-development
- → Message for policy makers: model development takes time....
- → In-time preparation for 6th Action Programme & 3th RBMP's





13