



# AGATE

## Overview of requirements for Europe & Question Time

*Facilitator - Michiel (KNMI)*



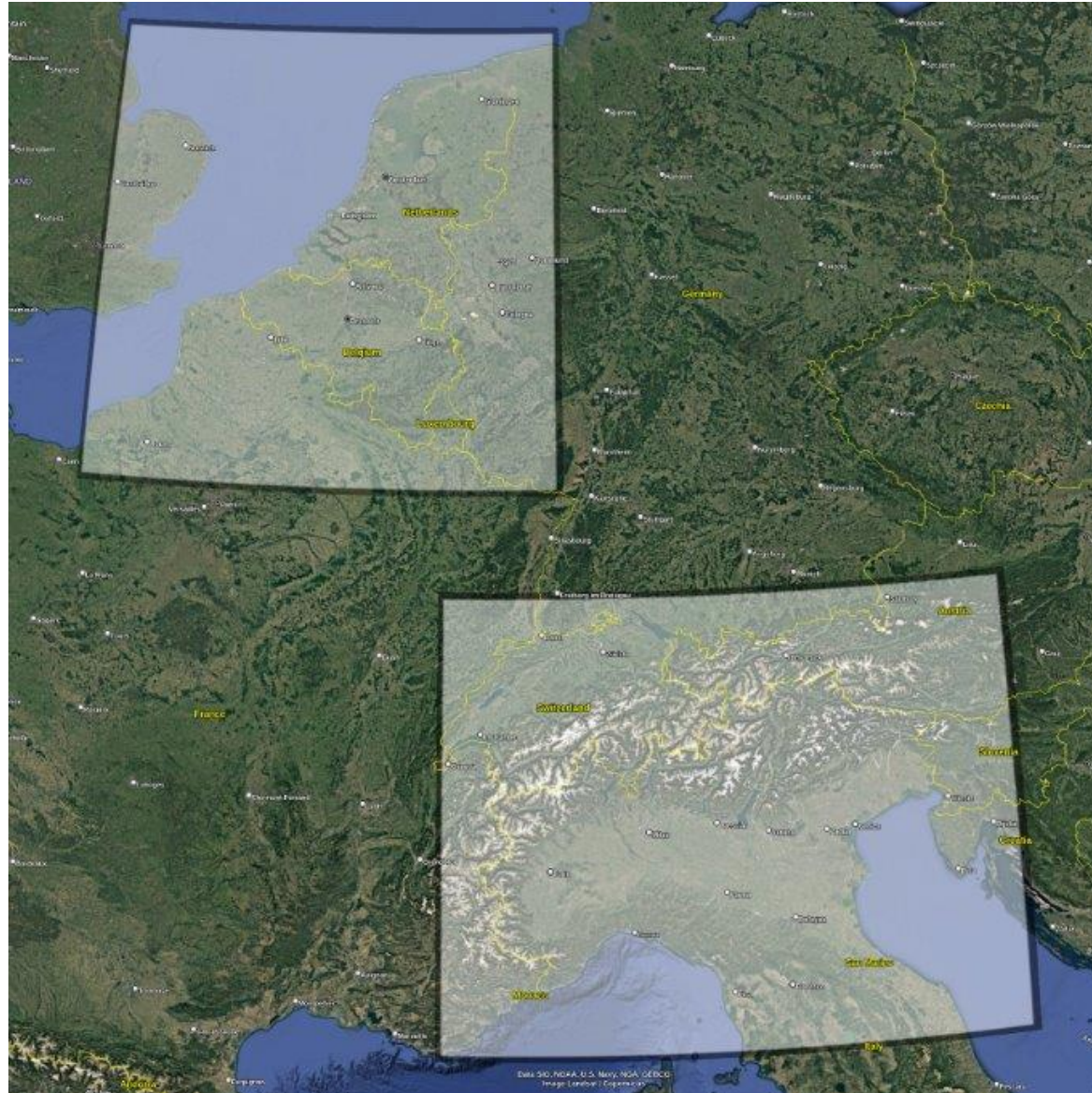
Koninklijk Nederlands  
Meteorologisch Instituut  
*Ministerie van Infrastructuur en Waterstaat*



# Overview - User Community (Europe)

Core Users Italy	Core users Low countries
ARPA – emission inventories, municipal detail	RIVM – emission inventories VMM – emission inventories, deposition modelling VLM – policy, nitrogen
Proxy data; End user ARPA: every 2-3 years updated inventory; LIFE PREPAIR; NH <sub>3</sub> , CH <sub>4</sub> rice maps; leakages; livestock with animal densities, calculated N emissions from fertilizers; other spatial proxy data at municipality level; meteorological parameters (hourly), CH <sub>4</sub> observations; NH <sub>3</sub> seasonal cycles	Proxy data; End users VMM: EMAN emission model; CH <sub>4</sub> manure, enteric ferm., manure bank data (VLM), application factors; OPS model, ground-based observations VLM: rural policies, landscaping, biodiversity RIVM: NEMA emission model; trends; spatially explicit emissions up to 1x1 km <sup>2</sup> grid; ground-based observations
<b>Key Interests:</b> spatial details on the domain, trends per year (NH <sub>3</sub> ); temporal resolution. NH <sub>3</sub> and CH <sub>4</sub> , soil NO <sub>x</sub> .	<b>Key interests:</b> independent data sources for benchmarking, validation, finding missing hot spots, NH <sub>3</sub> (t), formation of NH <sub>4</sub> <sup>+</sup> aerosols (episodes), soil NO <sub>x</sub> (getting more relevant over time); data following guidelines; stables and manure storage, N <sub>2</sub> O emissions (soil and manure treatment); CO <sub>2</sub> , CH <sub>4</sub>
Data in plain text	Webviewer Anthropogenic NO <sub>x</sub> , NH <sub>3</sub> emissions side products, LNG Detection of differences as a function of several parameters
Information on the calculation method(?)	Independence of AGATE (sectoral) emission data Importance of verification (Europe) vs monitoring (Asia) What, when, where, how much?

# Domains for Europe



# AGATE baseline products Europe

## Data Availability 'Boundaries/Limitations'

<b>Step 1</b>				
<b>Satellite-derived emissions (10 km scale)</b>		NH3 Low countries & Po Valley	Soil-NOx Low countries & Po Valley	CH4 Po Valley
<b>Step 2</b>				
<b>High resolution emissions (user-defined)</b>	Crops	Crops-NH3	Soil-NOx	Rice-CH4
	Livestock	Livestock-NH3		Livestock-CH4
<b>Step 3</b>				
<b>High resolution deposition (user-defined)</b>	Deposition	Nitrogen-deposition		

# High resolution emissions (user-defined) Data Availability 'Boundaries/Limitations'

## Downscaling

- Sectors (crops, livestock, rice, soil)
- Spatial resolution (max. 1 x 1 km) ?
- User-provided proxy data = questions? - format? timing?

## Temporal resolution vs accuracy

- Monthly data (baseline)
- Seasonal data with higher accuracy
- Annual with highest accuracy

## User Validation Data

- Belgium / Netherlands / Italy

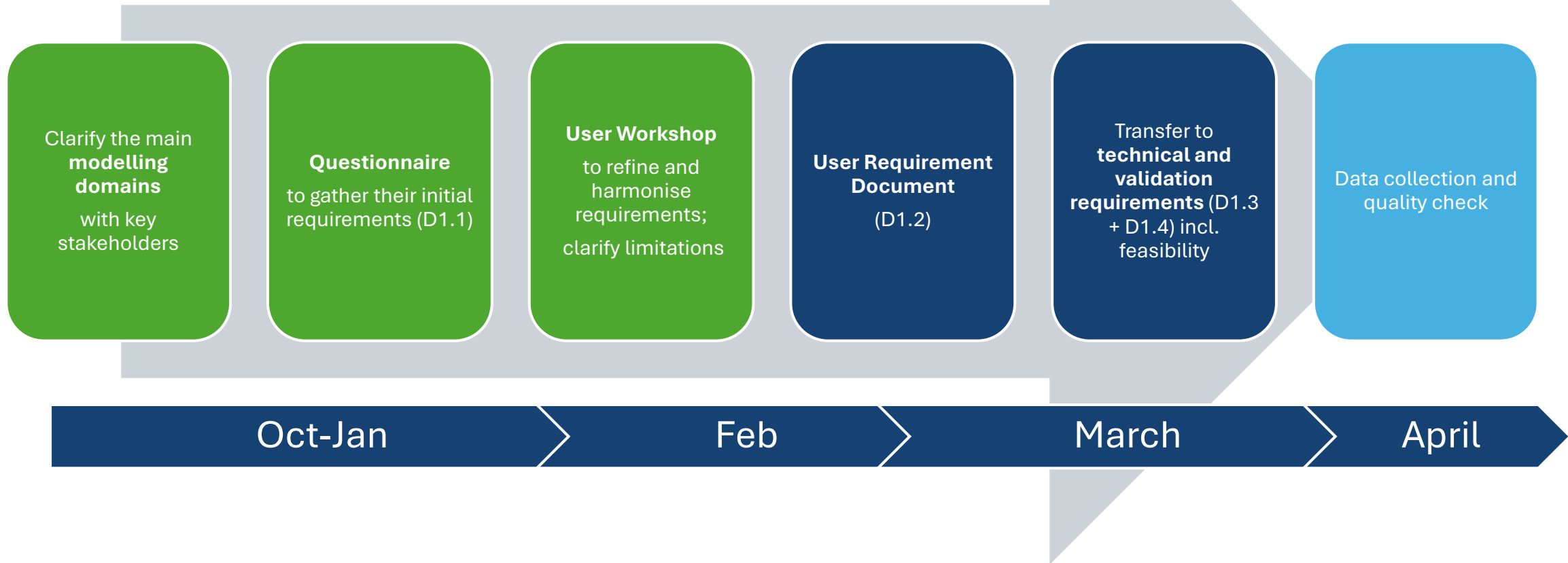
## Data Format

- NetCDF
- GeoTiff
- ....

# Further questions

- Which products are you most interested in?
  - Proxy data for downscaling and validation; choices/availability
  - Soil NO<sub>x</sub>
  - Nitrogen deposition
- 
- Additional requirements ?
  - How to deal with large uncertainties?

# Next Steps



**Other questions?**