



NEU Concept and Plan for the meeting

NEU 1st Annual Science Conference
& General Assembly
Garmisch Partenkirchen, 13-17 March 2006

What to do with 16.6 Meuro?

*Guigu jar from the
Yuan dynasty
(1279-1368)*

£15.6 million,
Christie's, July 2005



NitroEurope IP



- *What is the effect of reactive nitrogen supply on the direction and magnitude of net greenhouse gas budgets for Europe?*

- **Effect of N on GHG balance:**

More GHG

N_2O (+2' from NH_3 , NO_3^-)

CH_4 wetlands

$\text{NO}_x \rightarrow \text{O}_3 \rightarrow$ less C uptake

Unclear

Cattle CH_4

SOM decomposition

Less GHG

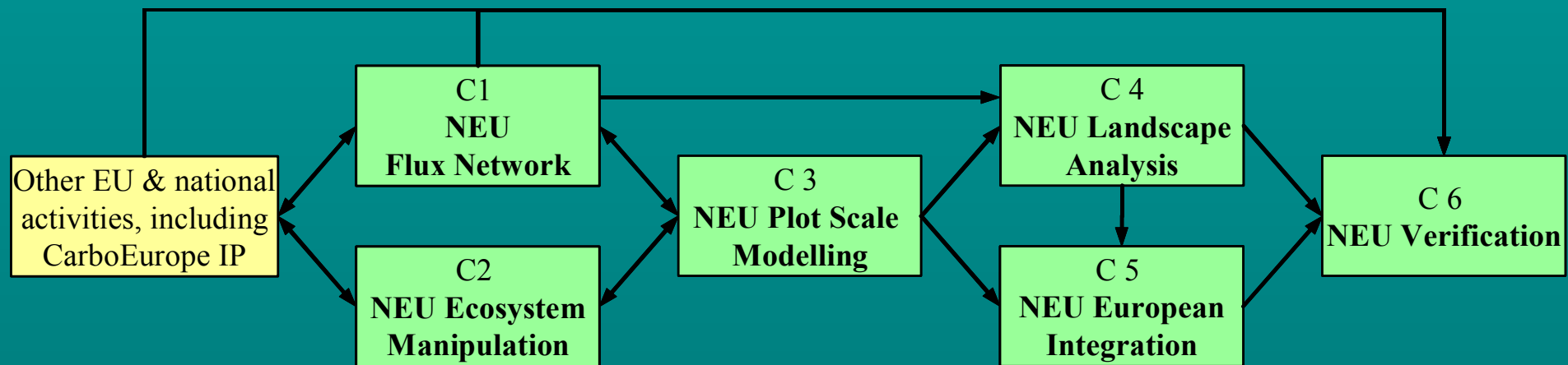
C uptake in plants

Nitrogen Aerosol

- *To what extent would a more-integrated management of the N-cycle and its interactions with the C-cycle have potential to reduce greenhouse gas and N_r emissions simultaneously?*

NitroEurope

Overall Science Structure



Plus four supporting components:

C7. Standards and Data Management

C8. NEU Management

C9: NEU Training

C10: NEU Dissemination

Linking Tasks and Delivery in NEU



C1 Flux Networks

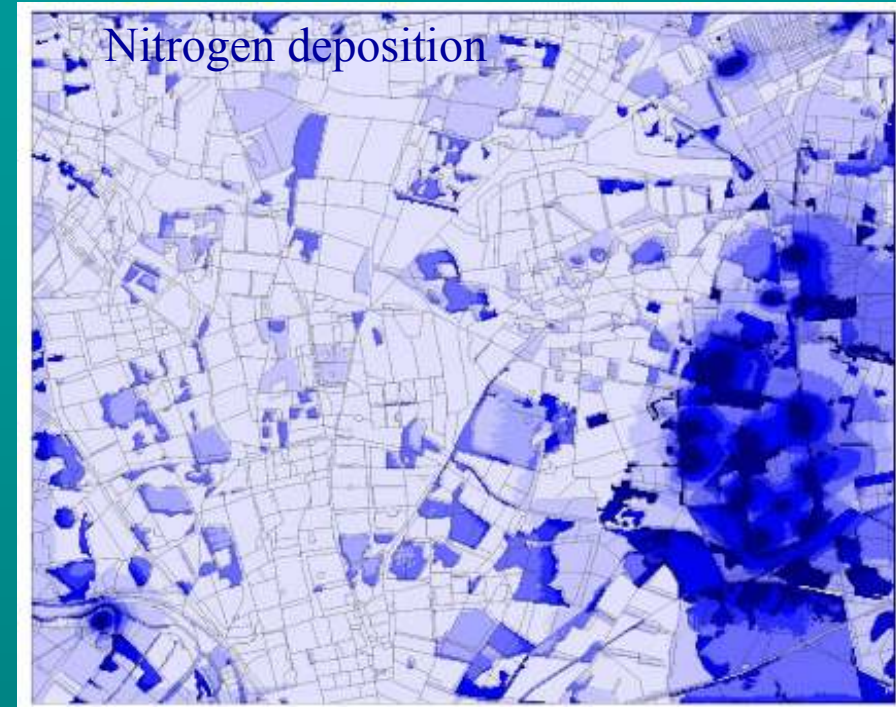
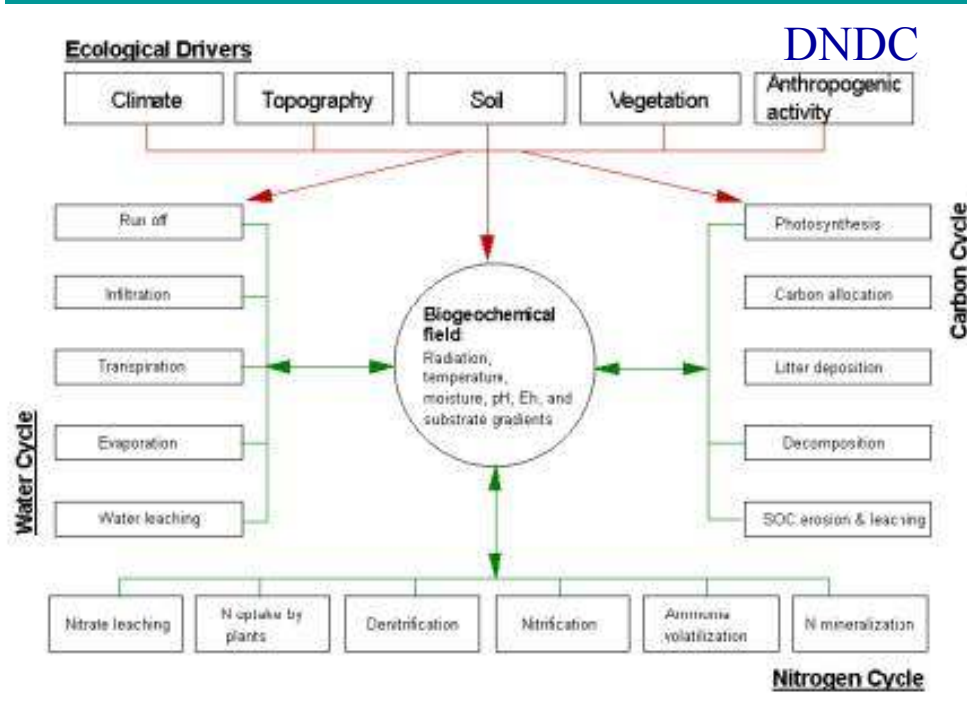
- Methods development
- Integrated air, plant and soil data
- Process understanding



C2 Manipulation

- Process testing
- System responses to perturbation
- Interactions between drivers

Linking Tasks and Delivery in NEU



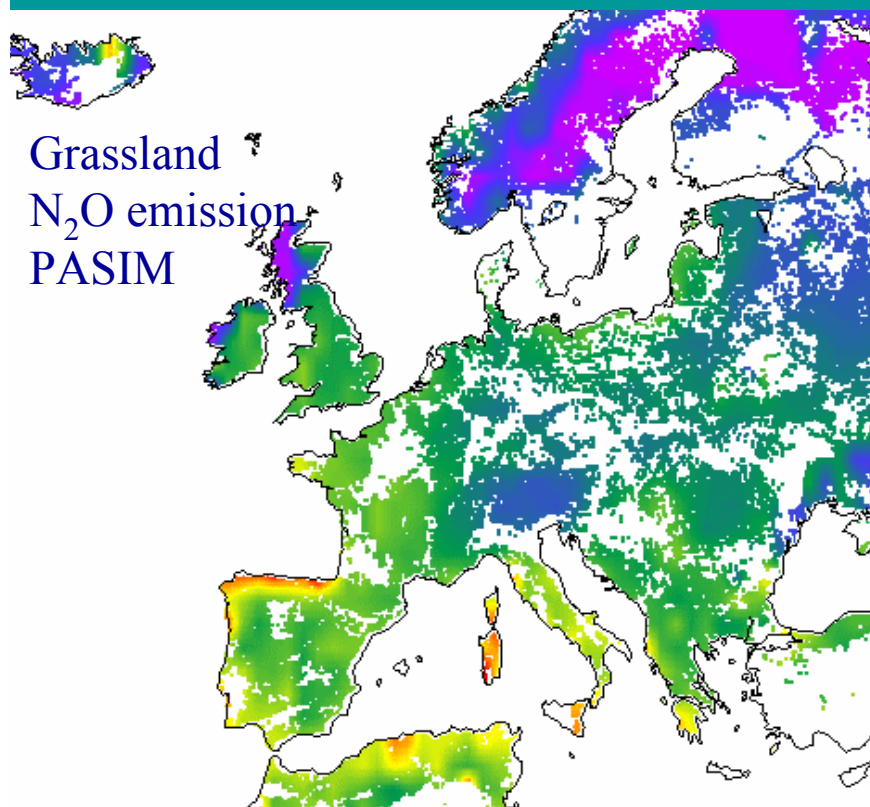
C3 Plot-scale modelling

- Reconstruction of observations
- Explanation of interactions
- Prediction of future responses

C4 Landscape analysis

- Spatial interactions
- Complexity
- Management interactions
- Abatement strategies

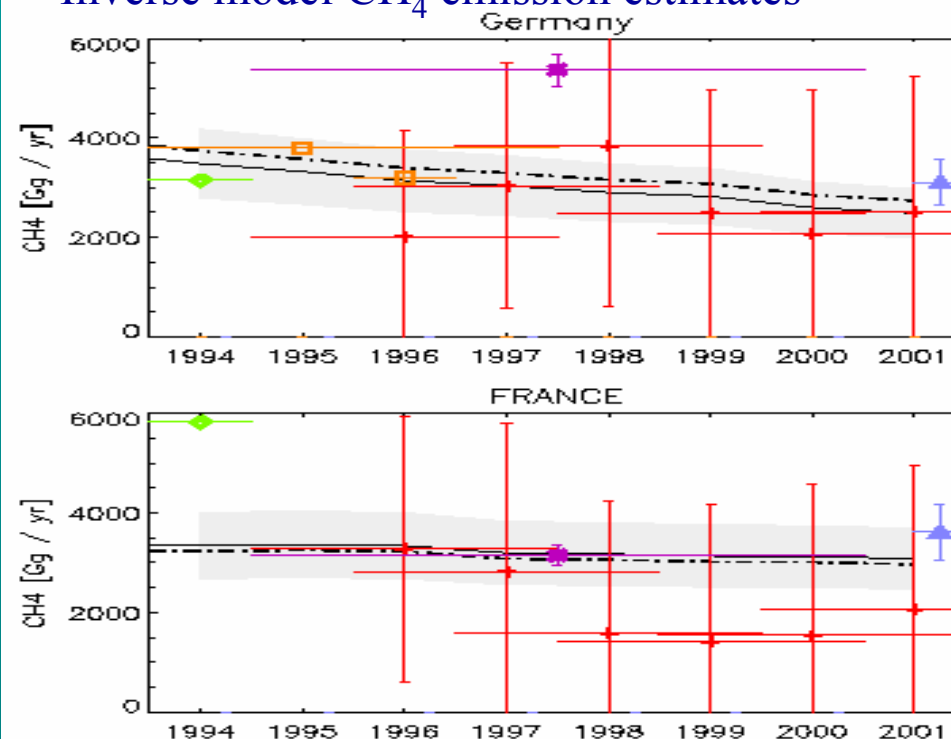
Linking Tasks and Delivery in NEU



C5 European Integration

- Upscaling
- Improving input datasets
- Ecosystem vs multi-sector models
- Past changes and future scenarios

Inverse model CH₄ emission estimates



C6: Verification

- Independent data check
- Uncertainty assessment
- Protocol compliance
- Revision of IPPC/UNECE values

Meeting Structure

- **Plenary Talks**
 - What are the recent advances?
 - What will NEU do to take this forward?
- **Parallel Sessions**
 - Review detailed tasks
 - Refine time-tables and agree actions
- **Objectives**
 - Everyone should know exactly what they are doing and the steps to achieve it.
 - Get everyone working well together, building the NitroEurope community.

How best to organize our science?

As a series of independent small STREPS?

– Advantages

- Flexible open competition
- Open for young initiators
- Small friendly science communities

– Disadvantages

- Lack of coordination in designing projects
- Difficulty to communicate on common terms between projects

– Learning from the TERI Challenge

How best to organize our science?

As major Integrated Projects?

– Advantages

- Design a coordinated effort with real synergy
- Can address the “big questions”
- Increased visibility of outputs of and message

– Disadvantages

- Pre-existing clique, harder for young initiators
- Less flexible open competition
- Can be large and impersonal
- Harder to coordinate!

Addressing the Challenges



Making it Personal

- Develop science communities in the Components and Activities

Opportunities for Young Initiators

- Young Scientists Forum, Summer Schools

Measurement Innovation

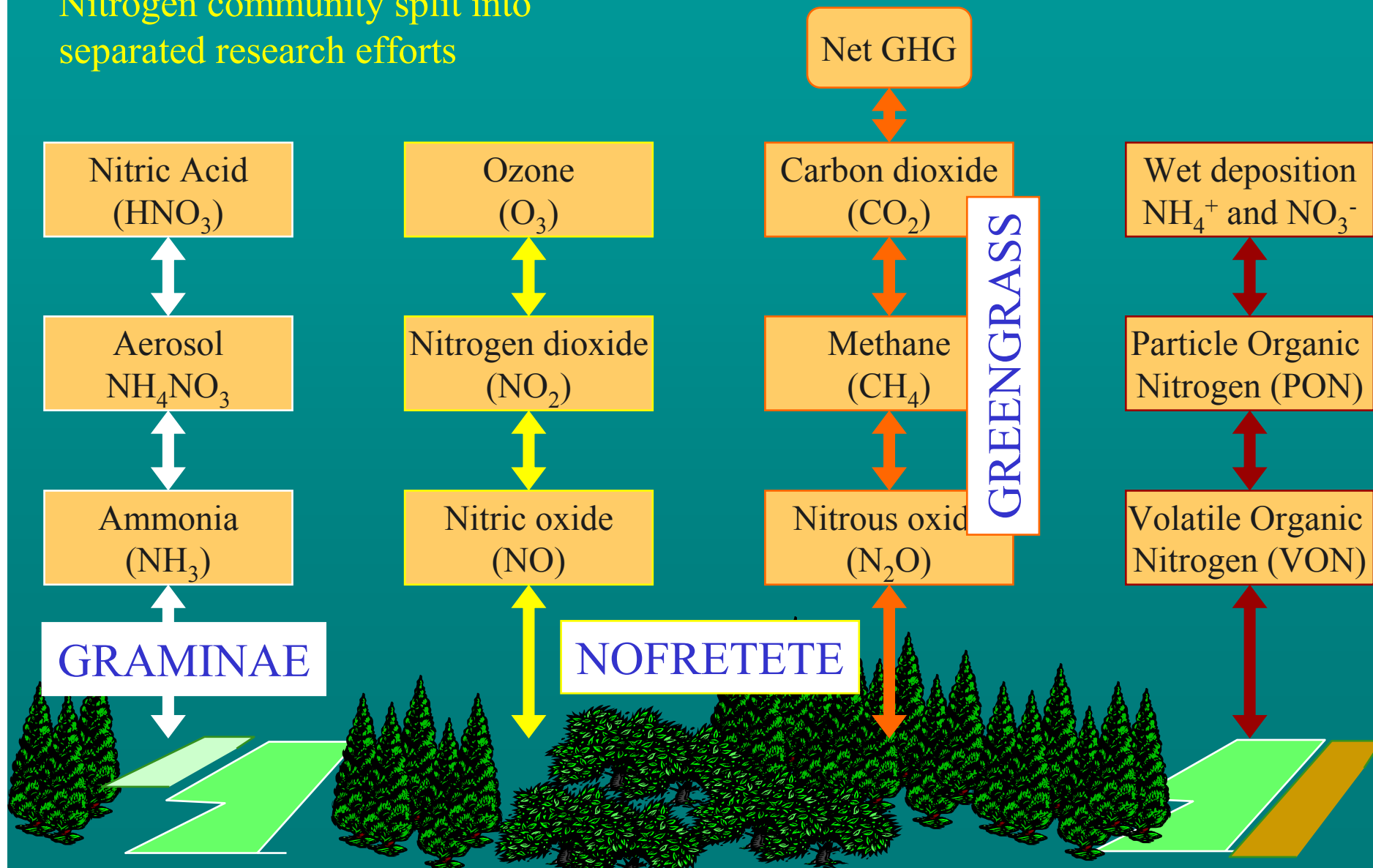
- Open competition to build flux systems

Strong Coordination

- NEU Secretariat and Component Leaders

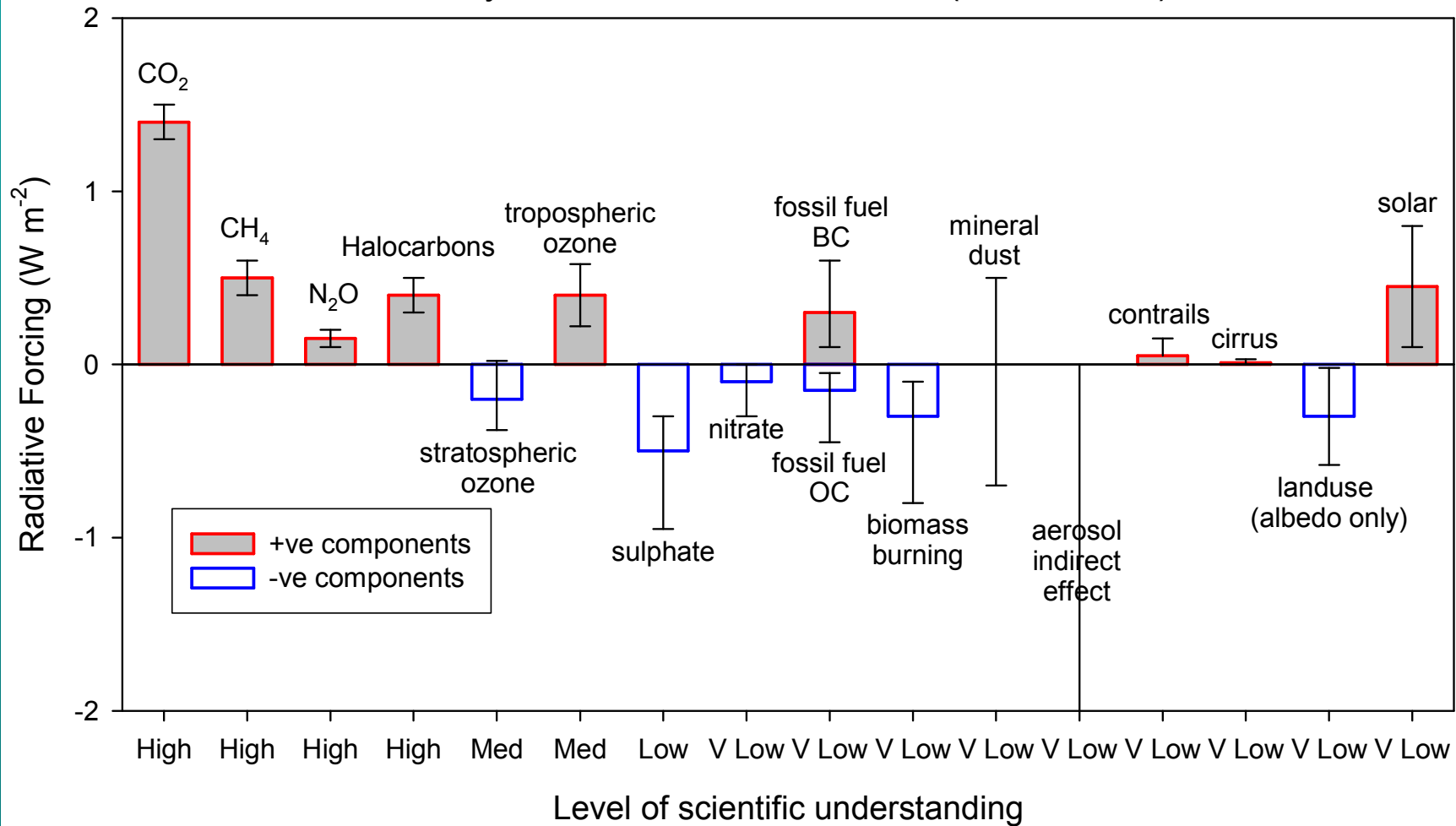
Re-cutting Nitrogen Science

Nitrogen community split into
separated research efforts



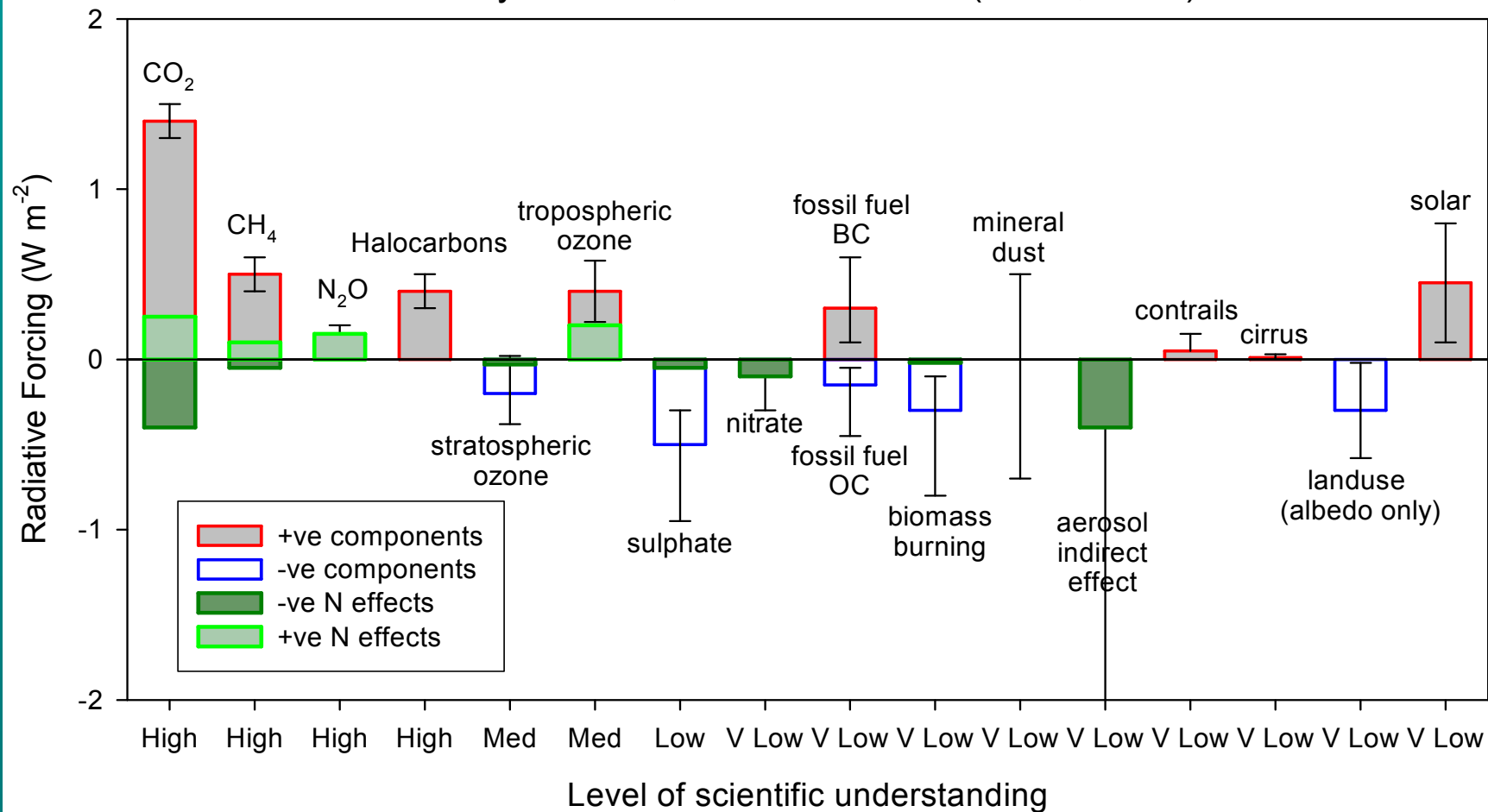
The effect of N on the European GHG balance...

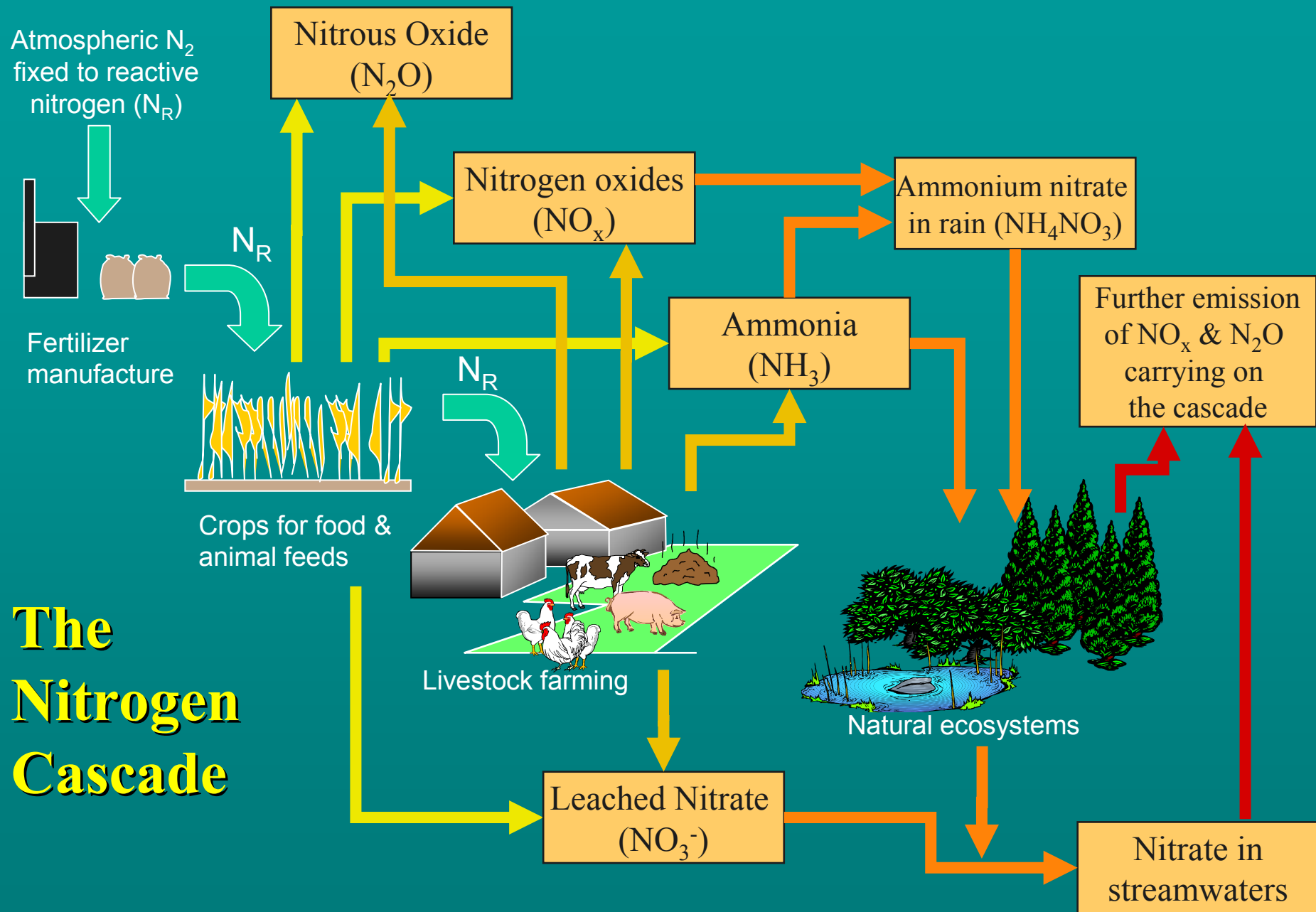
The mean global radiative forcing of the climate system for the year 2000, relative to 1750 (IPCC, 2001)



The effect of N on the European GHG balance...

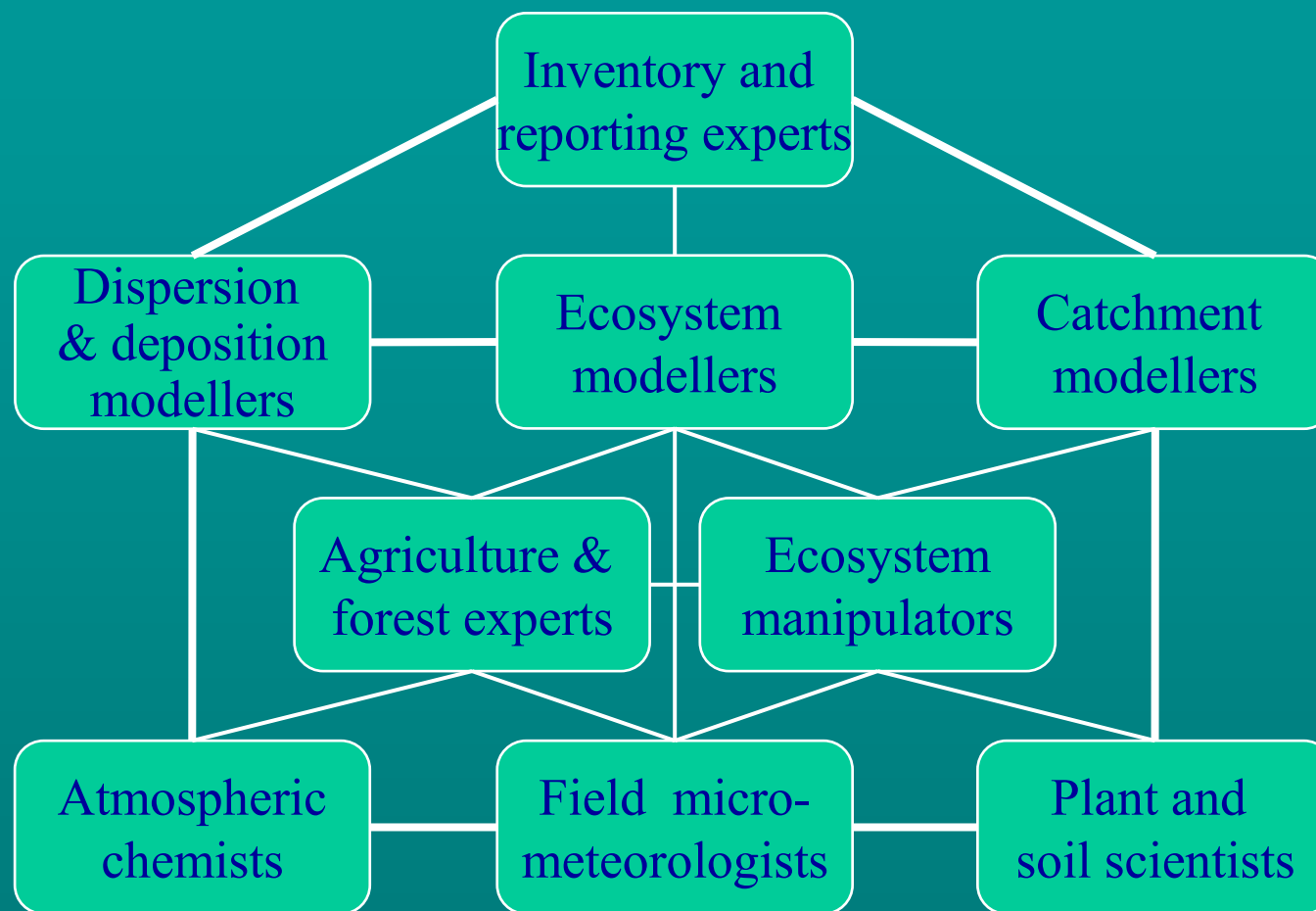
The mean global radiative forcing of the climate system for the year 2000, relative to 1750 (IPCC, 2001)





Abatement may swap one pollutant for another in the nitrogen cascade

Building the NitroEurope Science Community



Parallel Groups Thursday morning to address *Special Topics*

Ensuring Delivery



NitroEurope Task Forces

Promote links between NEU Components

- TF Common Measurement Protocols (C1, C2, C4)
- TF Common Modelling Protocols (C3, C4, C5, C6)
- TF Data Management (all components)
- Additional Task Forces as needs arise

External Advisory Group

- Key users of NitroEurope results
- Monitors plus independent advice

NEU or NOT?

From a map of 1418... After the travels of Zheng He

Let's make use of what is already available
Let's learn to communicate our results better
and a bit sooner....

