

# Priorities for a new global treaty on nitrogen

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# Contributing processes

- International Nitrogen Initiative (IGBP & SCOPE)
- UNECE Task Force on Reactive Nitrogen (TFRN) & Gothenburg Protocol revision
- European Nitrogen Assessment (ENA) & other regional assessments
- UNEP Global Partnership on Nutrient Management (GPNM)
  - Forthcoming global overview: *Our Nutrient World* for Rio
- Royal Society London, Global Nitrogen Cycle:
  - Forthcoming “*What would a global policy on  $N_r$  look like?*”

# Why worry about nitrogen?

The WAGES of  
too much or  
too little  $N_r$

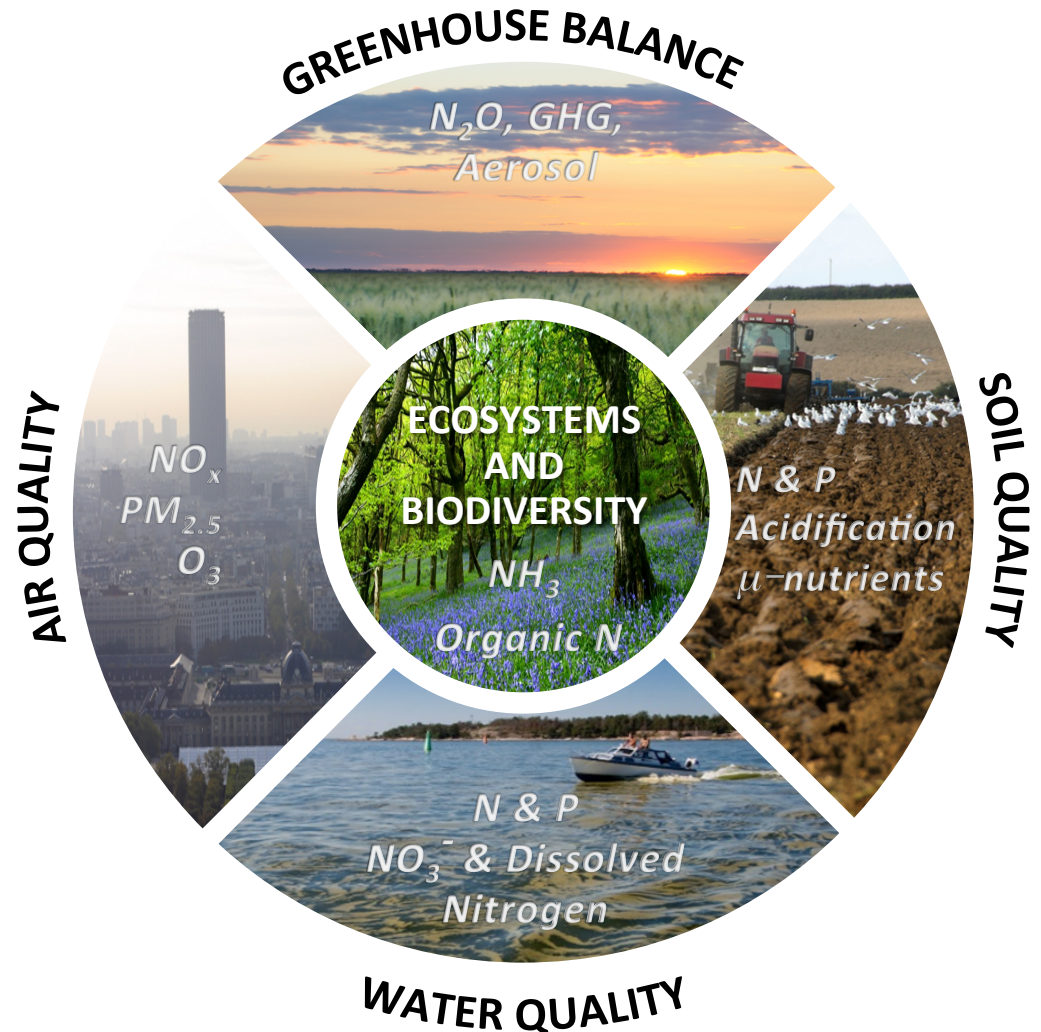
**W**ater quality

**A**ir quality

**G**reenhouse balance

**E**cosystems

**S**oil quality









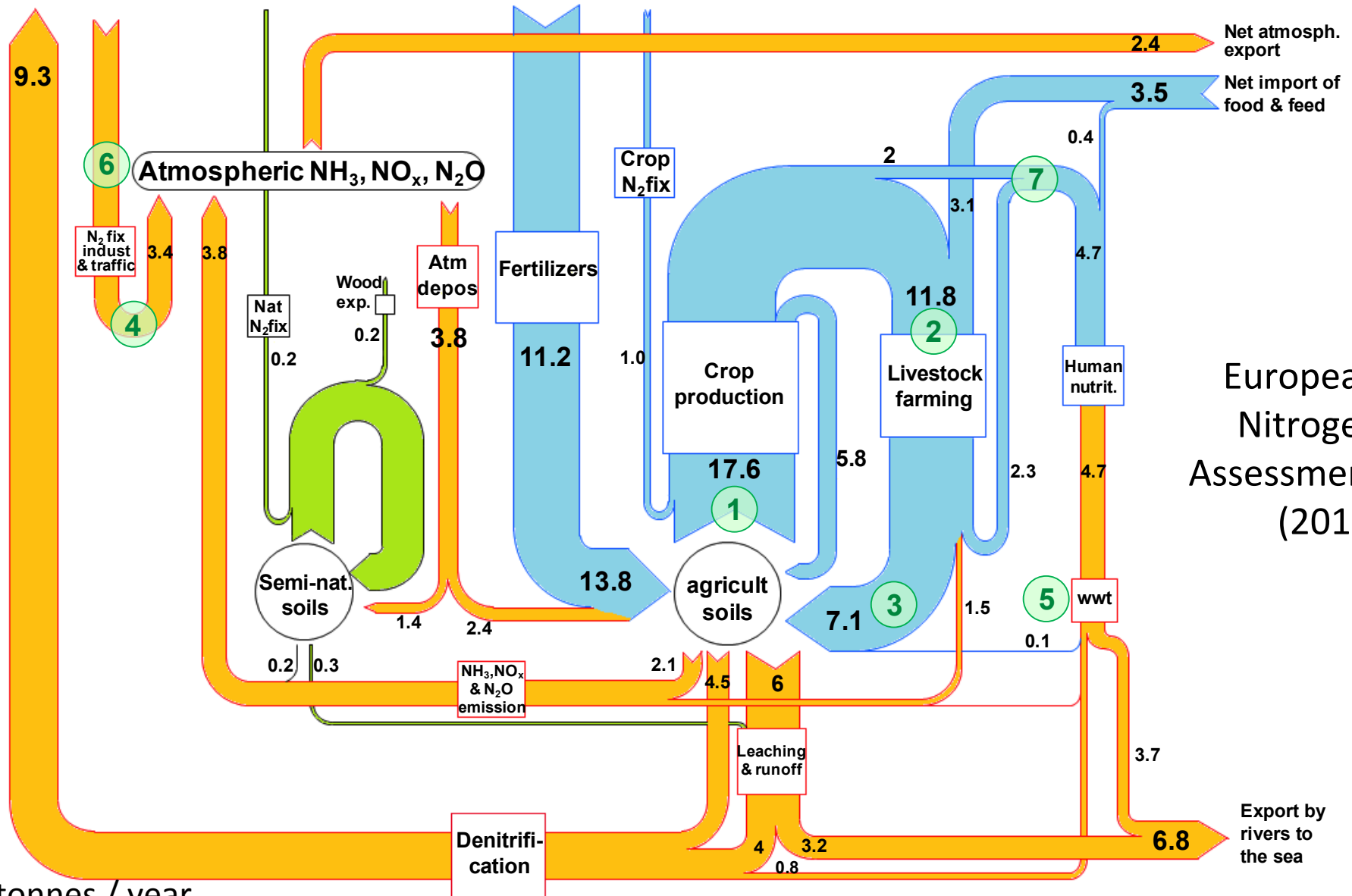


# Key questions for an international nitrogen treaty

- What actions should be in it?
- Who should host it?
- What is stopping us?

# Key Actions to Manage Nutrients

## Atmospheric N<sub>2</sub> pool



European  
Nitrogen  
Assessment  
(2011)

M tonnes / year

# Nine key actions

## Agriculture

1. Improving nitrogen use efficiency in crop production
2. Improving nitrogen use efficiency in animal production
3. Increasing the fertilizer N equivalence value of animal manure

## Transport and Industry

4. Low-emission combustion and energy-efficient systems
5. **NO<sub>x</sub> capture and utilization technology**

## Waste & Recycling

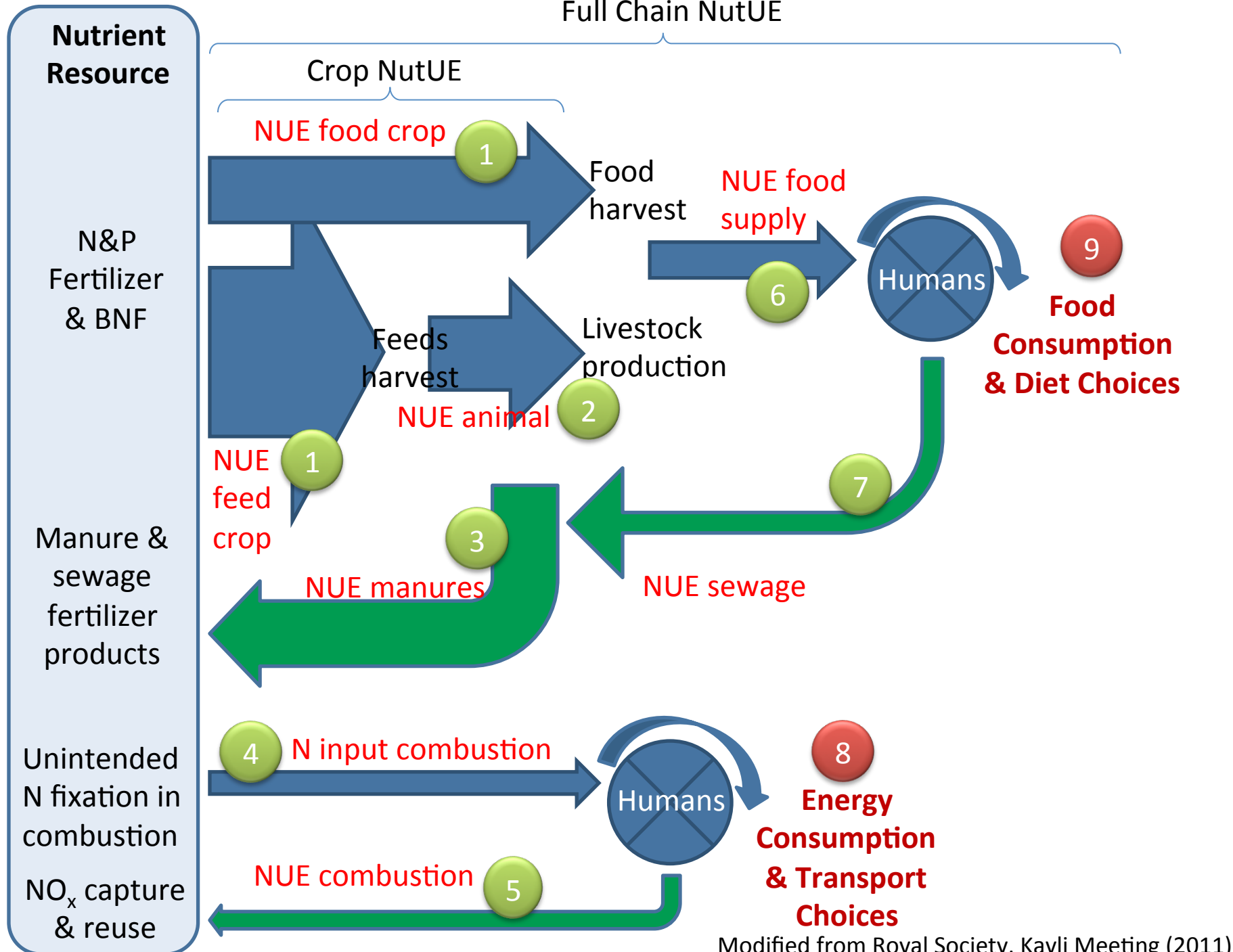
6. **Improving food supply efficiency & reducing food waste**
7. Recycling nitrogen (and phosphorus) from waste water systems

## Societal consumption patterns

8. Energy and transport saving
9. Lowering the human consumption of animal protein



# Full Chain NutUE



# What is stopping us?

- **Policy makers are not yet N empowered**
  - Strong resistance lobby, weak public call, Gothenburg Protocol  
 $\text{NH}_3$
- **Nitrogen has not yet gained public recognition**
  - Hooks for the message. N in food: Your environment: Your health!
- **Many small-players are harder coordinate**
  - How to work with arable and livestock farmers
  - Work with the markets: improving NUE saves money; opportunities for new fertilizer products; value in manure.
- **Current financial interventions don't address N threats**
  - Subsidies for food security, but fear of N taxes;
  - Subsidized agriculture finds it hard to transfer any mitigation costs.

# What is stopping us?

## Our Desire for More

- The Nitrogen challenge is NOT mainly about food security.

It is about *Food Luxury*:

“The security of our food luxury.”

- **How to turn around intercontinental aspiration for more meat consumption?**
- Nitrogen choices and the *Demitarian Diet*



# Consequences: Tasks for a global treaty on nitrogen

- Establish a process of *Global Nitrogen Assessment*:  
Drivers, flows, impacts & effectiveness of management options.
- Seek consensus on the key indicators:  
Full Chain Nitrogen Use Efficiency (NUE)
- Share experience of the regional successes and best practices
- Grasp the key barriers to change
  - Address the global financial distortions linking N subsidies and N taxes
  - Develop the financial win-wins for low NUE with corporate industry
  - Find consensus on the need to adopt measures where  
cost to the industry < the societal benefits
  - Develop public N education as the foundation of motivating action.
- *Show how better N management arising from the treaty will deliver quantified benefits for air, soil, water, climate & biodiversity.*

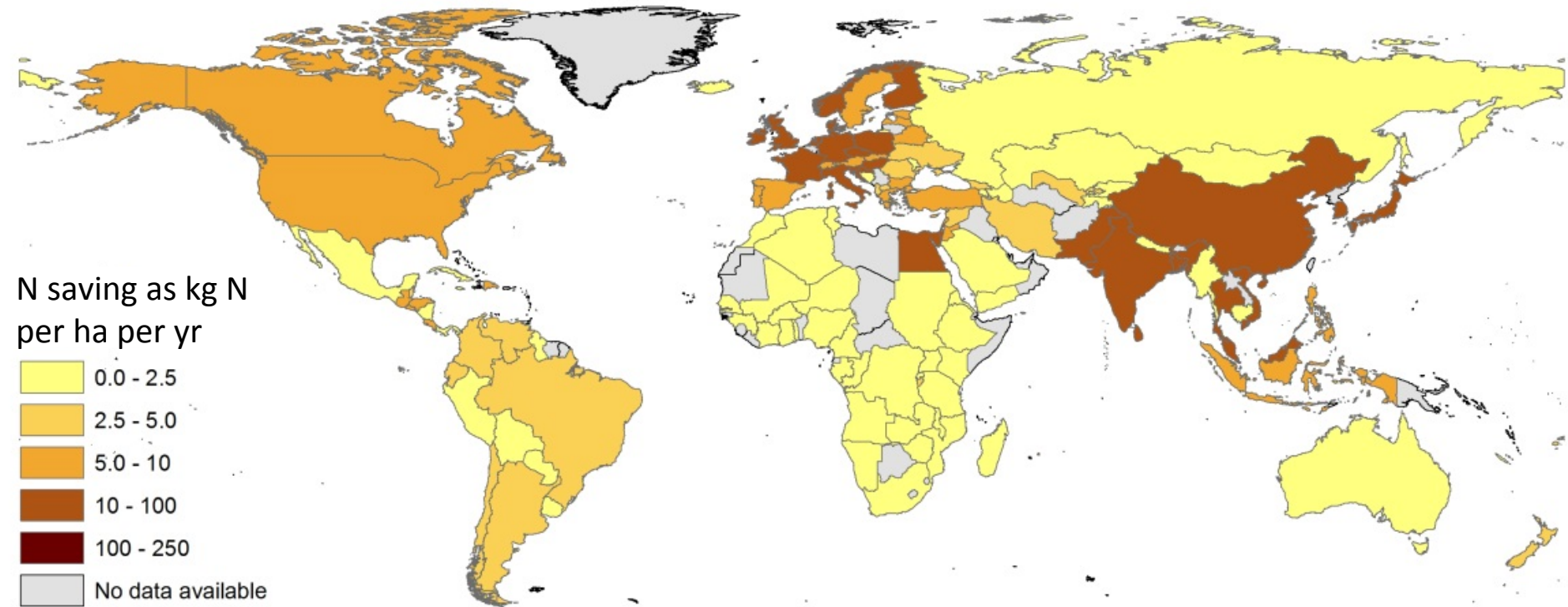
# Who should host it?

- Little government ambition for a new nitrogen process – can we use an existing convention?
- **Framework Convention on Climate Change** – strong focused law, but already faces many challenges.
- **Convention on Biological Diversity** – highly diverse: N might get lost in the forest.
- **Global Programme of Action for the protection of the marine environment from land-based sources (GPA)**
  - soft law, builds on regional agreements.
  - It has Nutrient Management as a leading issue.
  - It has much to gain by showing how it can deliver for the seas, and other threats at the same time.





# Mapping the benefits of a 20% NUE target



Benefits expressed here as equivalent N saving / ha per year  
from the Full-chain NUE target

## Bottom line for the Green Nitrogen Economy

(\$billion/year) Net Benefit 110 = Fert Saving 20 + Env+Health 100 – Implementation 10