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EPNB vs. European Nitrogen Assessment:

What is available?

What can we use?

outline



- 1. European Nitrogen Assessment – overview**
- 2. Direct contributions from EPNB members to ENA**
- 3. Other relevant chapters**
- 4. Specific focus on farm budgets**
- 5. Conclusions**

ENA overview



- Overview on the current state of the art in science on nitrogen in the environment in Europe
- For publication in April 2011
- 26 individual chapters, currently in review
- Cambridge University Press
- Editors: Billen, G., Bleeker, A., Erisman, J. W., Grennfelt, P., Grizzetti, B., Howard, C., Sutton, M., van Grinsven, H.

ENA sections



Section A - Nitrogen in Europe: the present position

Section B - Nitrogen processes in the biosphere

Section C - Nitrogen flows and fate at multiple spatial scales

Section D - Managing nitrogen in relation to key societal threats

Section E - European nitrogen policies and future challenges

Geographic variation in agricultural and other terrestrial nitrogen budgets over Europe



ENA chapter 15, Wim de Vries et al.

- N budgets as performance indicator and awareness raiser in nutrient management and environmental policy.
- N budgets of agro-ecosystems and non-agricultural terrestrial ecosystems are assessed by using various models with different complexity and data requirements, differentiating between farm system, land system and soil system budgets

Integrating nitrogen fluxes at the European scale



ENA chapter 16, Adrian Leip et al.

- Environmental problems related to nitrogen concern all economic sectors and impact all media: atmosphere, pedosphere, hydrosphere, and anthroposphere.
- A set of high resolution maps shows key element of the N-flux budget across Europe.
- Comparative nitrogen budgets are also presented for a range of European nations, highlighting the most efficient strategies for mitigating N problems at national scale. A new European Nitrogen Budget is presented on the basis of state-of-the-art Europe-wide models and databases focusing on different part of Europe's society.

Future scenarios of nitrogen in Europe



ENA chapter 24, Wilfried Winiwarter et al.

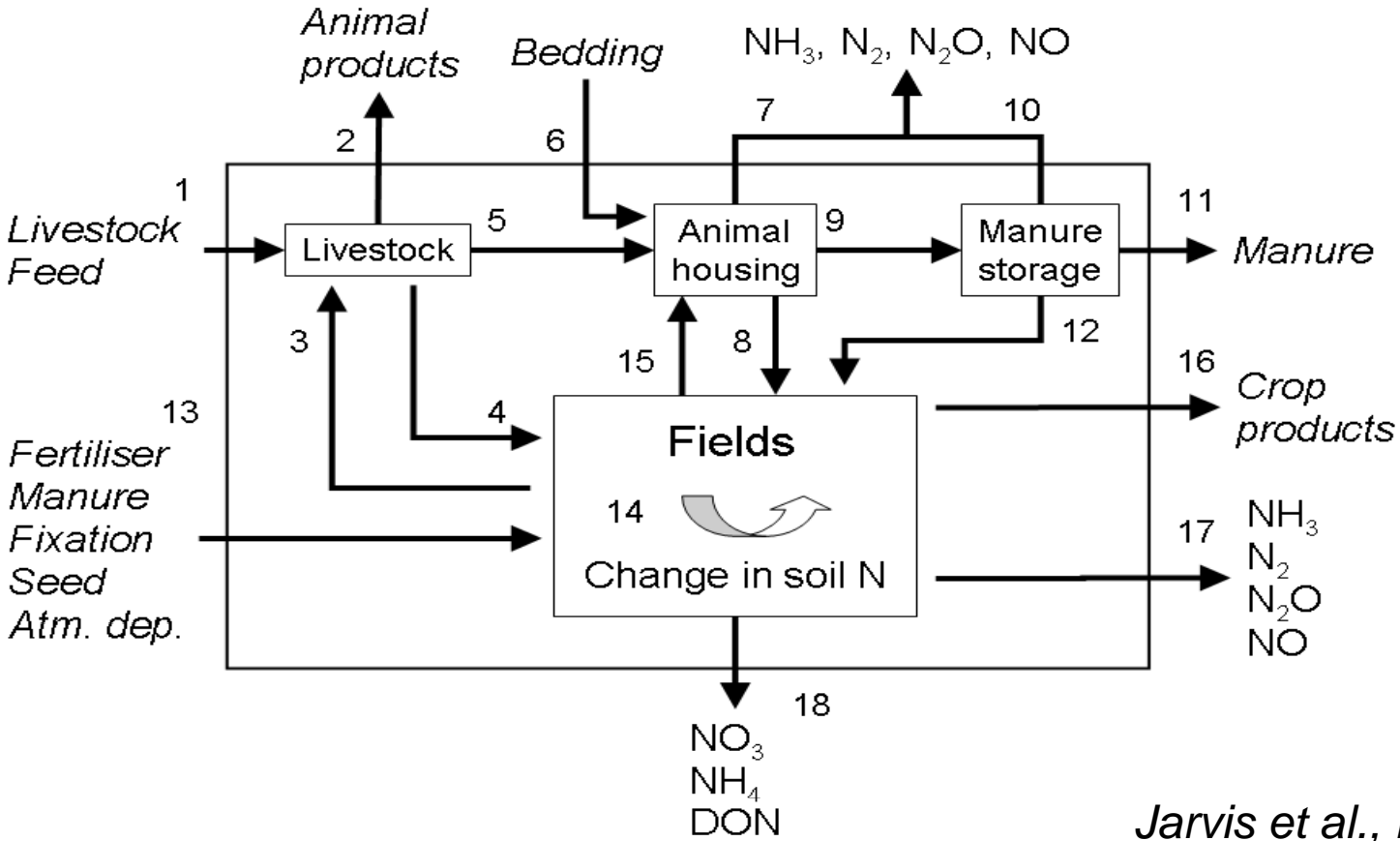
- Scenarios of nitrogen use follow, in principle, existing approaches used for air pollution, climate or ecosystem projections. Short-term projections (up to 2030) are developed using a "baseline" path of development. For medium term projections (up to 2050) and long-term projections, ENA applies a "storyline" approach. Especially beyond 2050, such storylines also consider technological and behavioural shifts.
- ENA distinguishes between demand-oriented and effect-oriented factors determining nitrogen use.

Further key chapters to EPNB



- **Chapter 3: Benefits of nitrogen for food, fibre, fuel and industrial production**
Lars Stoumann Jensen, Jan K. Schjoerring et al.
- **Chapter 4: Nitrogen in current European policies**
Oene Oenema et al.
- **Chapter 10: Nitrogen flows in farming systems across Europe**
Steve Jarvis et al.
- **Chapter 22: Costs and benefits of nitrogen in the environment**
Corjan Brink, Hans Van Grinsven et al.
- **Chapter 23: Integrated approaches to better nitrogen management**
Oene Oenema et al.

ENA use in Annex IX context



Jarvis et al., ENA

Outlook



- Country budgets: see the following presentations
- Farm balances:
 - Follow OECD?
 - Extend OECD?
 - Prioritize national preferences:
 - Effect of groundwater depth (NL vs. DK)
 - Effect of diluting manure (IT vs. NL)
 - What happens to excess N / N deficiency?
 - See definitions of specific N balances