

## **Minutes EPNB meeting – Prague, 11 May 2010 (EPNB-3)**

### ***List of participants***

Wilfried Winiwarter, IIASA, Austria (chair)  
Albert Bleeker, ECN, Netherlands (minutes, co-chair)  
Rostislav Neveceral, CHMI, Czech Republic  
Juerg Heldstab, INFRAS, Switzerland  
Stefan Reis, CEH, United Kingdom  
Gabriele Wechsung, UBA, Germany  
Tom Clair, Environment Canada, Canada  
Wim de Vries, Alterra, Netherlands  
Anne Christine Le Gall, INERIS, France  
Theodore Karyotis, NAGREF, Greece  
Penny Johnes, University of Reading, United Kingdom  
David Fernall, Defra, United Kingdom  
Donal Murphy-Bokern, Consultant, Germany  
Michela Rogora, CNR ISE, Italy  
Till Spranger, MBU, Germany  
Klaas van der Hoek, RIVM, Netherlands

### ***Introduction***

Wilfried welcomes attendants to this meeting and proceeds with the agenda

### ***Agenda***

There are no additions to the draft agenda and thus the following topics will be addressed during the meeting (not necessarily in this order):

- *Reports from related activities*
- *Country budgeting reports*
- *Status of N-budgeting guidelines*
- *Status of farm level budgets and their relationship to options as presented in Annex IX*
- *Work plan 2009/10: open items*
- *Work plan 2010/11*
- *Joint sessions with EPMAN/EPNF*

### ***General***

Wilfried gives a short presentation about the relation between the EPNB and the Gothenburg Protocol revision. There is a request of the Working Group on Strategies and Review to the TFRN regarding support for the Gothenburg Protocol revision: Annex IX and Guidance Document. Further details to be found in the powerpoint slides of Wilfried (see TFRN-EPNB website, like for all presentations in general).

### ***EPNB related activities***

#### **OECD workshop feedback** (Albert)

In March 2010 a workshop on Agro-Environmental indicators was organised by the OECD (Leysin, Switzerland). This workshop dealt with the current status of the OECD indicators and the way to proceed into the future (how can these indicators be improved). From the OECD side there is a clear wish to cooperate with experts of the TFRN (not necessarily only EPNB) to improve the methodology / input with respect to the Nitrogen Balance indicator. Kevin Parrish of the OECD (who couldn't be at the EPNB meeting) suggested to organize a joint workshop (OECD / Eurostat / TFRN) to further discuss these improvements. Proposal from the EPNB is to follow this up and see what can be done with respect to this collaboration.

### EPNB vs. European Nitrogen Assessment (Wilfried)

Wilfried provides a short overview of the status of the ENA progress and the way EPNB is contributing to that process. Then going in some more detail with respect to the chapters of Wim de Vries / Adrian Leip & Wilfried Winiwarter. However, there are also some other chapters of ENA of interest for the EPNB: 3 (benefits) / 4 (policies) / 10 (flows) / 22 (costs/benefits) / 23 (integrated approaches)

ENA can also be (partly) used in Annex IX context, especially when considering the following issues:

- farm scale Nitrogen Use Efficiency (NUE)
- farm scale N input-output balances (NIOB)
- level of high efficiency (with respect to these indicators)

Outlook with respect to EPNB activities/contributions:

- country budgets: see the following presentations
- farm balances:
  - Do we follow OECD methodology or even extend it?
  - 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

### EPNB, ENA and *European N budgets for farm, land and soil* (Wim de Vries)

Provides overview of the different budgets (farm, soil, land / surplus, NUE). It's important to understand what we are talking about when mentioning nitrogen budgets results, since it does make a large difference when looking at the different items.

Wilfried: what would be good indicators for farms: farm budget / soil budget?

Reaction Wim: Scale / type of the budget depends on the (policy) questions to be answered.

### ***Country scale nitrogen budgets - presentations:***

#### Canada (Tom Claire)

Issues with Adrian's model: complicated, difficult to show inter-relationships.

Summary:

The mass balance model is a good start and has been informative to identify how Canadian N flows occur. Canada is a large exporter of wood/fertilizer/mineral oil and oil products

Next steps:

Developing a model using Stella in order to be able to look at dynamics in the mass balance model

#### Switzerland (Juerg Heldstab)

The first version of the N Flow Analysis was set up as part of the Integrated Nitrogen Strategy for Switzerland. Extensive guidelines available (in German language), as well as description of the individual processes (input / output)

Factors for successful realization:

- willingness of administration to establish N flow analysis
- Data: UNFCCC / CLRTAP / agricultural research results / custom statistics

Challenges:

- many projects touch the issue – elaborate coordination necessary
- missing data/missing knowledge of uncertainties /different values for same flows/verification is complex, laborious and expensive. Different definitions of subsystems/processes complicate budgeting. Incompatibilities caused by changing methods inconsistent time series

#### Greece (Theodore Karyotis)

Presentation from Theodore Karyotis on nitrogen leaching, mineralization and uptake of nitrogen in agriculture in Greece. Extensive presentation about these issues in a specific agricultural area of Thessaly (province) in Greece.

#### United Kingdom (Penny Johnes)

Presenting the first version of a nitrogen budget for the United Kingdom.

Structure of Adrian seems to be too difficult here again (like Canada) – therefore they used the structure for Germany first (later on converting it back to Adrian's structure again)

#### Germany (Gabriele Wechsung)

Updating the national nitrogen budget of Germany

- presenting the process of updating the available budget of Germany
- again, Adrian's tool seems to be too complicated in terms of input to the tool
- import / export industrial nitrogen

Question asked: how about the nitrogen in Coal/Coke (seems to be a big number) – have to make sure that this doesn't start double counting.

#### NL/application of budgeting tool (Albert Bleeker)

Template/budgeting tool by Adrian was used to provide a structure to the national budget.

#### **General discussion**

Standardisation with respect to the national activities needed, since there seems to be a big difference in the different items.

An offer exists by JRC to improve the 'Adrian tool' to a server based system. This offer has been strongly welcomed as it may allow responding to the two main issues observed:

- The "macro problem" could be taken care of (some countries had problems to run the macros in the Excel spreadsheet – possibly, macros were deleted during E-mail transfer)
- Description of the individual items required for input was not sufficiently transparent. Such a description would need to be improved in the course of a system update.

Challenges:

- How to proceed with country budgets
- How to proceed with our contribution to Annex IX

#### Country budgets:

We need guidelines (possibly based on the Swiss case) for getting everything into the same shape. The guidelines can be supported by the (then well-documented) tool from Adrian

Discussion about a way of transferring the information from Adrian's tool into something policy relevant. This possibly runs via:

- intervention points
- indicators (which ones - can we hook up to the OECD work here)
  - Comparison nitrogen emission ceilings
  - Comparison nitrogen deposition with critical loads needs spatial variation (not possible here)
    - Recommendation for going into more spatial resolution, since several indicators have a spatial dimension to it.
  - How about efficiency indicators: that would be possible / needed (possibly per individual process)
  - No one indicator can tell us the full story, more indicators needed at the same time
  - Normalized fluxes are needed (per ha, per capita)

### Annex IX: EPNB contributions

Some of the points mentioned during the discussion about the Annex IX issue and the EPNB contribution to it:

- for going into the Annex IX improvement options, we should have a reference 'budget'
- we might also look into other policy arenas, since they also might have relevant information/tools available
- OSPAR also has something available with respect to nitrogen balances (with 'absolute' targets)
- we have to think about what 'a level of high efficiency' means.
- not only focus on NUE, but also N-surplus
- WFD / Natura2000: to what extent are other 'regulations' stricter than what is proposed here.
- How to proceed:
  - we need to contribute text to the guidance document
  - check with Luisa Samarelli about which tools are available in other arenas (and how effective are they)
  - make sure that options that are proposed here are not weakening the overall process

**Meeting conclusions** (see also slides "reporting back to the Task Force"):

EPNB offers to further develop national budgets for policy use, following the purpose of:

- Use as quantification tools (compare fluxes)
- Scenarios
- Communication tool
- Identify intervention points
- Extract indicators
  - Total NH<sub>3</sub> vs. NEC
  - Deposition vs. Critical loads
  - Limits to fertilizer application (would require spatial resolution)

Contributions to Annex IX would consist of:

- Farmgate balances for demonstration farms based on OECD methodology
  - methodology extension is possible if needed
- No possibility to define "level of high efficiency" – also as strongly dependent on specific country and sector /farm situation (animal vs. plant production) – instead results of reports (and improvements) would create benchmark
- National budgets: clearly indicators can be extracted – available results from countries would constitute a benchmark.

Workplan 2010/11

- Improve on calculation template (web-based)
- Provide guidelines (description / methodology)
- Liaise with OECD – OECD/EUROSTAT/EPNB-TFRN meeting in fall (details to be determined)
- Reference to OECD farmgate-balance in guidance document
- Long – term perspective (2011 and later):
  - Pool changes ↔ N<sub>2</sub> emissions
  - Time lag (dynamic system)
  - Local / regional budgets (Spatial differentiation)
  - Validation; QA/QC on inputs

### ***Post event discussions***

Note: the following results from discussions after the proper EPNB meeting, either as a consequence of the joint EP meetings or of the full TFRN meeting.

- 1) EPMAN (Oene Oenema) intends to compile text for the guidance document, related to the Annex IX reference. EPNB will support this action, with Albert helping in writing text, and Wilfried and Donal willing to review
- 2) Oene also will use a model to extract “level of high efficiency” for NUE and NIOB by farm type – he has data available
- 3) The following text was submitted to establish country N budgets into official documents. The text is supposed to go into the Gothenborg protocol directly, or into an EB decision (as it extends further than agriculture, it cannot be in Annex IX)  
“Each party shall/should set up a system to establish and report national N budgets. These national N budgets should cover all major flows of reactive nitrogen in order to support future improvement programs as well as inter-country comparisons. The parties shall strive to harmonize their efforts as well as their reporting methodology.”

### ***Follow-up actions:***

Template improvements: Adrian

EPNB-4 (together with OECD/EUROSTAT): Albert

Reference farmgate balance: David to provide information / guidance on farmgate balances (OECD?)

Continued development of country budgets: all country experts

Documentation of nitrogen budgeting: all; Jürg to provide Swiss example (even if available in German language only)