

8th Meeting of the Expert Panel on Nitrogen Budgets (EPNB-8)

Copenhagen, April 26, 2013, 1 p.m. – 5 p.m.

Agenda¹

1. Status of guidance document annexes (moderated by Wilfried Winiwarter)
2. “Showcase” annex – humans and settlements (Magdalena Pierer)
3. Progress on farm gate budgets (Nick Hutchings)
4. Dynamic N budgets: next steps (Jürg Heldstab)
5. Fine tuning of work plan (Wilfried Winiwarter)
6. Country reports (all)
7. AOB (all)

Introduction of all participants (20)

Alessandra De Marco (IT); Clare Howard (UK); Irina Morozova (RU); Isaura Rabago (ES); John Muldowney (IE); Jon Magnar Haugen (NO); Jürg Heldstab (CH); Kajsa Lindqvist (SE); Klaas van der Hoek (NL); Lidiya Moklyachuk (UA); Magdalena Pierer (AT); Natalia Kozlova (RU); Nick Hutchings (DK); Oene Oenema (NL); Shabtai Bittman (CA); Steen Gyldenkærne (DK); Theodore Karyotis (GR); Thomas Dirnböck (AT);

Chair: Wilfried Winiwarter (AT)

Minutes: Markus Geupel (DE)

GD Annexes (pools)

The adoption of the Guidance document (GD) provides opportunity and duty to describe the respective pools in the annexes already foreseen. The fact that the GD now is official should help in providing resources for this work. In order to direct efforts and allow to resolve very general issues, a “showcase” annex has been started on already. Also for many of the other annexes work has been assigned, to be confirmed at this meeting. Pools and responsibilities are agreed as follows:

- Humans and Settlements (“showcase”, Wilfried/Magdalena)
- Agriculture (Adrian Leip/Wim de Vries/Nick)
- Waste (Clare)
- Atmosphere (Alessandra)
- Forest, semi-natural areas (to be determined: Markus attempts to assign Sönke Zaehle)
- Energy and fuels (Albert)

Not assigned yet:

- Hydrosphere
- Material and products in industry

¹ Note: all existing presentation slides are accessible on the EPNB web site (<http://www.clrtap-tfrn.org/epnb>)

Discussion:

- Klaas will refer us to the co-authors of the ENA chapter on “Benefits of nitrogen for food, fibre and industrial production” for possible support on this issue
- Hydrosphere: Markus indicated that HELCOM or the Water Convention might be possible processes to profit from. Wilfried supports this concept, suggests further interaction with existing activities like those presented as the Danish country report at the TFRN meeting. EPNB needs to explore existing sources, can not set up its own database. Thomas recommends to contact ICP Waters or ICP IM or ICP Forest people and will inform Wilfried with the names of persons to address

Humans and settlements – showcase

Presentation by Magdalena:

- connections to the other pools are describes
- sub-pools are described
- linked to the rest of world (imports/exports)
- internal structure
- Questions:
 - o distinction of the “organic world” and the “material world” (furniture, clothes) is still difficult
 - o stock or stock-change?
 - o threshold of relevance? (in DE: 1 Gg a^{-1})

Discussion:

Nick: which percentages should be in/excluded? Very important question!

Jürg: Humans and settlements pool is of minor importance, as 95-97% of all N flows occur in agriculture; suggest to use a low number of sub-pools. The threshold below which fluxes may be neglected is very important, CH uses a cut-off at 1 Gg a^{-1} .

Markus: supports a cut-off at 1 Gg a^{-1} , also used in DE.

Alessandra: too detailed information will increase the uncertainty, without adding further value to the overall message

Jürg: uncertainty is important for considering boundaries; stock and stock changes, it's difficult to quantify, stock changes should have to be taken into account, less the stock itself. Important for stock change consideration, according to CH experience, are sediments, forest.

Wilfried: supports focus towards stock change only

Lydia: Polymers need consideration – flows between “industry” and “humans” pools

Shabtai: It would be extremely helpful to know whether certain flows can be neglected - useful information also in an annex to clarify

Jürg: part of agricultural food production flows into industry, another part directly to humans. There are substantial losses in food industry, which need to be accounted for – will it be done in the “industry” pool?

Magdalena: FAO database (and national statistics providing for that database) is a very good source of information – need to be consulted, and system boundaries drawn in accordance.

Shabtai: Slaughterhouse-products should be accounted for.

Oene: suggests to contact Helmut Rechberger (Vienna University of Technology), additionally there is a PhD student of Oene works on material flow analysis – focused on agriculture

General debate on pets: Which pets are to be included? How to account for horses? Some countries seem to keep good account in their agricultural statistics even for pleasure horses, so it seems to be useful to allow countries to determine their approach.

General discussion on fish: where from does N flow derive? Possibly this needs to be settled with the Hydrosphere pool (check with ICP Waters!)

Clare: “artificial” protein as a meat substitute – is this food industry?

Lydia: recommends providing numerical value for thresholds.

Natalia: GD annexes need to be written for the user. Consider to develop a step-by-step guidance, a manual, or an example.

FARM Nitrogen budgets for Test farms

Presentation by Nick

- regulation
- documentation
- advice to farmers
- advice to policy makers

There is a connection to annex IX for calculating Nitrogen Use Efficiency (NUE) on test farms, in order to determine improvements over time. Information thus is needed within the country (comparing results of different years) and less important for comparison between countries.

Approach should be closely connected to what is available in the Eurostat/OECD Nutrient Handbook.

DNMARK-Project,

Disaggregated agricultural budgets (DK)

- disaggregation of EU statistics (Alterra)
 - o NUTS 0/1/2 data
 - o INTEGRATOR model

Compare DK and NL-approach

Comparison of a bottom-up approach based upon farm level data with a national approach (top-down)

Discussion:

Natalia: that it is very useful for Russia

Theodore: it is problematic, that the soils are very variable, that it is difficult to quantify.

General discussion: There is a tool in development which can calculate the farmgate balance for large region for Europe based on the information available at the farm

Important question: Do measures in annex IX and its subsequent documents really reduce the emissions? To be answered by calculating farm gate balances.

Wilfried: Can we come up with a suggestion, using material is available anywhere

Nick will come forward with a suggestion by fall 2013, (end of October), and a final draft till spring 2014 (consistent with the proposed timeline)

Dynamic N-Budget

Presentation by Jürg

- A new Swiss national N budget allowing projections for 2020 was published recently², following the former N budget for 2005. Both N budgets use the same pools and flows.
 - Emissions, losses and inputs of reactive N are aggregated on national level such as suggested in the ENA
 - NUE (following the OSPAR method) for the national agriculture was calculated
- Dynamic N tool project with Adrian Leip:
 - The tool name is “DynIB” (Dynamic Integrated Budget tool)
 - The tool is fed with a complete N budget for one status and some flows for another status (a scenario). It then calculates all missing flows for the second status.
 - Elasticities are introduced to manage non-proportionalities between different N flows. They have been calibrated provisionally by making use of the two Swiss national N budgets 2005/2020
 - Switch from Excel to GAMS was carried out due to limited solution techniques of Excel – a later migration (to avoid GAMS licence fees) seems unproblematic
 - A calibration routine will be developed in summer 2013
 - A bilateral meeting between INFRAS and JRC is necessary to assess the performance of the calibration step on the CH example; it is planned for October 2013 at JRC in Ispra/IT
 - Test and calibration with DE N budgets in winter 2013/spring 2014 is planned, in order to differentiate universal from country specific elasticities.
 - The next version of the tool could be tested in a workshop training day with experts from several countries at the next task force meeting (attract experts, identify bugs, improve user-friendliness).

Discussion:

Markus will produce German update till fall 2013

Q: how much time does it take to produce a national budget?

Markus: the tricky item is to close links with the respective experts. An update, as is done now, can be performed in approx. 2-3 month

Work plan

The workplan, as developed during EPNB-7, is confirmed, with all items scheduled for April 2013 settled already

² <http://www.bafu.admin.ch/publikationen/publikation/01713/index.html?lang=en>

Fall 2013

- EPNB-9 as a virtual meeting
- Exchange of draft final “showcase” document
- Status discussion of further annexes
- Initialize work on any annexes (pools) still remaining
- Roadmap for farm nitrogen budgets
- Progress on dynamic tool on N budgets, bilateral meeting JRC/INFRAS in Ispra.

Spring 2014

- Finalize first annexes, aiming to complete all annexes by the end of 2014
- First draft paper on farm nitrogen budgets
- Test version of the dynamic tool on N budgets available for more general application and evaluation

The next meeting is scheduled as virtual meeting (WebEx) in the end of October / early November. Wilfried will suggest dates (doodle)

In spring 2014, EPNB will again meet along TFRN

There was agreement to skip Country reports and no need for other business.