

EPNF2-2 - La Forestina - November 22-24, 2016

Minutes (version 27/02/2017)

The Expert Panel on Nitrogen and Food 2 hold its second meeting at 'La Forestina' (Milan), November 22-24, 2016. The meeting consisted of four sessions (see agenda here: http://www.clrtap-tfrn.org/sites/clrtap-tfrn.org/files/documents/EPNF2/201611agenda_epnf.pdf):

- 1) Introduction
- 2) Food & Agriculture Storylines (FAS)
- 3) Presentation of chapter outlines and discussion of chapter contents
- 4) Beyond EPNF
- 5) Next steps

All presentations are available to meeting participants at the following address:

https://drive.google.com/drive/folders/0B3f6_HsV7yGmdTJZR2hwMjhCckU?usp=sharing

Objective of the Expert Panel on Nitrogen and Food

The Expert Panel on Nitrogen and Food (<http://www.clrtap-tfrn.org/epnf>) aims at Core aims "to create a better understanding of the relationship between human diets and the impact of the N-cycle on the environment" (WGSR 47th, September 2010¹). The objective is to produce a report to Parties of the Convention on the key questions formulated in the Proposed aims, structure and scope for the second phase of the Expert Panel on Nitrogen and Food (EPNF) ([WGSR 53rd](#), December 2015²).

Objective of the meeting

The objective of the meeting at 'La Forestina' was to discuss content and objectives of the report, in particular defining the content and objectives for each of the sections, discussing cross-links between the different sections, and discussing how to best align the sections with the "Food and Agriculture Storylines" including "Representative Diet Pathways" which are currently being developed.

The results of the meeting should define

- a- Are the objectives above feasible? what will be the concrete objectives?
- b- What [additional] analysis is required to reach the objectives?
- e- Will it be sufficient for a stand-alone scientific paper? or maybe too broad and better be split? or maybe not broad enough?
- g- Rough outline of content/topics included?

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http://www.unece.org/fileadmin/DAM/env/documents/2010/eb/wg5/wg47/Informal%20documents/Info.%20doc%2018_TFRN%20N%20and%20food%20informal%20WGSR-47.pdf

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http://www.unece.org/fileadmin/DAM/env/documents/2015/AIR/WGSR/WGSR53_Informal_docs_TFRN_proposed_aims_structure_and_scope.pdf

- g- Cross-linkages with other chapters
- h- Ideas with respect to the FAS

Outline and objective of the report

The outline of the report was discussed during the kick-off meeting³ on May 11, 2016. Since this meeting, a lead author was identified for each of the chapters and general content discussed. Slight changes to the outline had been made, i.e. merging part 2 (relevance for the consumer) and part 3 (getting consumer involved) and dropping two chapters (econometric evaluation and nitrogen neutrality; work on these topics is ongoing but won't be necessarily be part of the EPNF report). The current plan is:

PART 1: Food Chain Nitrogen Use Efficiency

- 1.1 The limits of Farm-scale NUE
- 1.2 Food losses and circular nitrogen flows in the post-farm gate food chain
- 1.3 Full chain NUE in Europe and case studies

PART 2: The relevance of Nitrogen for a healthy society

- 2.1 Dietary recommendations & nutrition scores of diet
- 2.2 Nitrogen-smart diet choices: Alternative protein sources
- 2.3 Health effect of Nr losses in the food chain
- 2.4 Policies and societal changes

PART 3: Making the case: nitrogen and food

- 3.1 Representative diet-pathways: the cost of unhealthy diets
- 3.2 Healthy and nitrogen-smart: trade-off or win-win?
- 3.3 Reduction of N pollution: improved supply versus changed demand

The objective of each chapter in parts 1 and 2 is (1) to provide a review of the state-of-the-art science, and (2) to provide a quantitative (range) of values of relevant parameters for each FAS that can be used in part 3 . The objective of the chapters in Part 3 is (1) to integrate information provided by chapters in part 1 and 2 in models, and (2) run the models to answer EPNF overarching questions⁴.

Conclusions of the meeting

The main conclusions and action points were:

- European Diet/Nitrogen Pathways
 - Link to SSPs is needed from a modeling perspective necessary but a 'softer' link is required for interpretation.
 - Objective is to develop 'European diet pathways' and 'European nitrogen pathways' (not 'Food and Agriculture Storylines!)
 - Start defining 'Global Nitrogen Pathways';
 - three ambition levels (high, medium, low)
 - whole agrofood-system NUE vs. diet changes, farm scale, technology, ...

³ http://www.clrtap-tfrn.org/sites/clrtap-tfrn.org/files/documents/EPNF2/EPNF2-1_minutes.pdf

⁴ See [WGSR53 Informal docs TFRN proposed aims structure and scope.pdf](#)

- mapping to SSP, some split (SSP4, SSP5).
 - Flattening of RCPs (not 'challenges' but rather 'quantification').
 - Check differentiation high/low income for Europe.
- **Policies and societal** changes are key for most chapter. A policy/society section should be integrated in each topic. One extra paper setting theoretical framework.
- **Communication strategy** will be important
 - Susanna will send out a questionnaire to collect view that help to strengthen internal consistency on the main challenge to address in the EPNF report as well as to spin out key messages for different audience.
 - The feedback to the questionnaire will be the basis to develop a communication strategy
- Work concentrates/starts in **three topics**:
 - Nutrition and diets – global/European diet pathways
 - Reaching N targets – supply versus demand
 - Agrofood, nutrition and pollution effects
- **EPNF2-product.**
 - Final report: max 100 pages.
 - Key messages must be well elaborated
 - Chapters vs papers: not yet decided. A higher impact might be obtained by focusing on few high-level papers. Until next meeting the topics will be developed – decision taken then.

Work plan by topic

The work plan for about the next 6 months (until next meeting) was discussed in working groups (by topic) with the objective to identify priority areas where the work needs to start/focus and identify responsible persons for each of the tasks:

Topic 1: Nutrition and diets – global/European diet pathways

Situation of current diets in Europe

- Description of current diets and their relative disease burden in Europe. . The description will include whenever possible details about food and nutrient intakes in different SES groups.
- Inventory of policies and initiatives for the promotion of healthy and sustainable diets in Europe
- Alternative foods: technologies and nutritional values [Corinna, Hanna] (first draft early March)
- Description of possible scenarios
- Priorities: current policies + alternative foods
- Scenarios: draft version

Topic 2: Reaching N targets – supply versus demand

Farm level

- List of relevant policies (direct agriculture policies (cap, taxes, labelling...) + indirect (big data infrastructure, innovation, GMO, environmental...) – link with OECD work
- List of relevant technologies (standard measures, joker measures from e.g. alternative protein sources, N-innovation-paper...). Mitigation potential, implementation criteria (e.g. farm size, farm type, link to GDP, population density....)
- Population of table - Mapping policies + technologies + pathways

Food chain

- Status quo: better quantification of current status; waste by stage (transport, processing , retail, catering, household); potential for circularity; N flows
- Case studies
 - Value: illustration → communication; cradle-to-cradle
 - Case studies should cover the range of technologies
- Possible pathways:
- List of relevant policies – avoidance and management
 - Direct agriculture policies (CAP, taxes, labelling)
 - Indirect policies (big data infrastructure, innovation, GMO, environmental legislation etc.)
 - Link with OECD work
- List of relevant technologies
 - Standard measures, joker measures from e.g. alternative protein sources, N-innovation-paper.
 - Mitigation potential
 - Implementation criteria (e.g. farm size, farm type, link to GDP, population density)
- Population of table - Mapping policies + technologies + pathways
 - List of relevant technologies – avoidance and management; SDG – 50% reduction reachable, but in different ways [Ina] (touch bio-economy technologies?)
 - Population of table – mapping policies + technologies

Topic 3: Agrofood and pollution effects

- Focus on 3 compartments: air, water, soil and how N losses from agriculture impact on them
- Use what is available in literature
- Starting point: emission trends and share of agriculture (past to present day emission trends, scenarios for future trends e.g. SSPs, LIMITS ...); particularly Europe: high share of agriculture (but not detailed enough to assess impacts of specific measures like healthy diet).
- Review policies
- Summarize available impacts studies (since/missing in last report):
 - AQ and health (e.g. Lelieveld, LIMITS paper, ...)
 - Soil – loads – exceedances of critical loads ((EMEP, other?)
 - Water (no real new material since previous report, but can be summarized again) – loads, consequences for purification needs...
- Flag some issues that are relevant particularly for the N and agro-food chain – to be addressed in paper/integration chapter
 - Studies on toxicity of ammonium nitrate / in combination with carbonaceous or not

- Non-linearity of the sulfate-nitrate-ammonium system
- Feedback of warming on emission strength
- Need for better N scenarios describing policy interventions/behavioural change/technical measures...

Actions - General

- Focus of the work between 12/2016 and 04/2017 will be mainly literature review until the next meeting, to be done according to conclusions for the three topics defined
- Collaborative working will be facilitated with google documents on a shared drive ⁵
- Integration / definition of model simulations will be discussed in next meeting
- Next meeting: to be organized back-to-back with the INMS meeting on global/regional modelling, probably in June 2017⁶
- TFRN-12 (Aarhus, June 2017) – no ‘full’ EPNF meeting will be planned.

Nitrogen Neutrality

A preliminary calculation of the C and N footprints of the meeting (including travel) gave a total of 7 t CO₂eq and 6 kg N. A UNFCCC-certified (gold standard) compensation project was selected that compensated 4.5 g N/kg CO₂, thus offsetting the 7 t CO₂eq also all Nr losses are compensated.

- 22 out of 23 participants to the meeting contributed to N-neutrality (96%)
- Total money collected was 168.5 Euro (average 7.66 Euro/person or 7.33 Euro/participant)
- A total of 173 Euro was donated to the project “Biogas Plants for 9000 families” at <https://www.myclimate.org/>

Information on the selected project “Biogas Plants for 9000 Families” is found here:

<http://www.myclimate.org/carbon-offset-projects/projekt/india-biogas-7149/>

Some details on the calculation are given here: http://www.clrtap-tfrn.org/sites/clrtap-tfrn.org/files/documents/EPNF2/20161122_nneutrality_epnf.pdf

⁵ https://drive.google.com/drive/folders/0B3f6_HsV7yGmMDNUOEFgCWNIaVE?usp=sharing

⁶ At the meeting in November a date end of March/April was mentioned, but a more likely date will be in June