

Expert Panel on Nitrogen and Food

- progress report -

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*Serving society
Stimulating innovation
Supporting legislation*



A history of the Panel



- **Core aim:** “to create a better understanding of the relationship between human diets and the impact of the N-cycle on the environment” (WGSR 47th, September 2010).
- **First phase:** Co-chairs Henk Westhoek (PBL) and Christian Palliere (FertilizersEurope)
- **Product:**
 - 2 scientific papers (Westhoek et al. 2014; Leip et al. 2014)
 - European Nitrogen Assessment Special Report on Nitrogen and Food, 'Nitrogen on the Table' (launched in full on 12th January 2016)



PBL Netherlands Environmental
Assessment Agency



Nitrogen on the Table

The influence of food choices on
nitrogen emissions and the
European environment

*Special Report of the European Nitrogen
Assessment*

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- **Second phase:** Co-chairs Adrian Leip (JRC) and Susanna Kugelberg (WHO)
- **Core aim:** remains as before. Emphasis is placed on integrating impacts from a whole food chain perspective.



- Questions

- i. How far could a combination of **improved farm level technical measures** and **shifts in consumption** go to improving the Nitrogen Use Efficiency of the overall food system of Europe? And what need the incentives be in order to realize this NUE improvement?
- ii. What is the **relative potential of dietary changes and food waste reduction** to reduce nitrogen air pollution and other environmental threats?
- iii. What are the **health effects** of a range of dietary patterns that generate less nitrogen pollution (ie. positive and negative)? Is it possible to identify particular dietary patterns that achieve health-environmental synergies?
- iv. To what extent can a stronger link between the scientific evidence on environment and health strengthen the case for controlling nitrogen pollution and optimizing diets to meet human health goals?

EPNF2-1: Paris May 2016

Outline of Chapters/Papers



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

EPNF2-2: 'La Forestina' – Milano November 2016

- Start with review papers



- Farm-scale NUE (N Hutchings, A. Leip)
 - Food-waste (D Vanham, G. Carmona, I. Koerner)
 - Full-chain case studies (A Uwizeye, D. Hagan)
 - Alternative protein sources (H van Zanten)
 - Initiatives to make food choices more sustainable (L Temme)
 - Environmental impact of extra-processed food (R Alessandrini)
 - Health effects of air pollution (R van Dingenen)
 - Health effects of water pollution (B. Grizzetti)
 - Diet storylines (B. Bodirsky)
 - Policies, societal changes (F. Bartolini, S. Kugelberg)
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- Preparation 2nd meeting: raising interest – email list with about 50 EU scientists
 - Identification of lead authors for each of the chapters in the outline
 - 'Core group' – about 25 people participating at the 2nd EPNF meeting in Milan, November 2016



- Preparation 3rd meeting: working on topics
- Meeting 21st/22nd June: 17 participants

Objectives

- Decide on scenarios
- Check progress and gaps



Wednesday 2017-06-21 - Room Atlas 1

12:30	13:30	Arrival - Lunch
13:00	14:00	Session 1: Introduction, recap
14:00	15:30	Session 2: Status of work so far <ul style="list-style-type: none">• Series of short presentation on progress of work on review papers, with focus on objective of paper, problems, timeline see template• About 5 min each + 5 min discussion <i>Coffee break 15:30-15:45</i>
15:45	16:30	Session 3: Background presentations <ul style="list-style-type: none">• Sh. Rao: scenarios• B. Bodirsky: diet model• S. Kugelberg/ F. Bartolini: policies
16:30	18:00	Session 4: Working groups on scenarios and policies <ul style="list-style-type: none">• Scenarios• Policies for supply chain mitigation• Policies for diets and nutrition



Thursday 2017-06-22 - Room Atlas 2

09:00	10:30	Session 5 - Linkages between models/chapters: <i>In this session we will define the linkage and necessary data sharing between chapter in parts 1 and 2 with the assessment chapters in part 3</i>
10:30	11:00	Session 6 - Discussion on missing information for the EPNF report (reviews that could give a separate paper or background document) Coffee break 11:00-11:15
11:15	12:30	Session 7 <ul style="list-style-type: none">• Presentation and discussion of decisions made by the working groups.• Actions for next period & overall timeline• Next meeting: skype call mid November whole group.• AOB<ul style="list-style-type: none">• Nitrogen-Neutrality: 125 Euro (125% compensation)• Google document with timeline, links to chapter• Target: submission mid of 2018• Journal (to be embargoed and published together with report):<ul style="list-style-type: none">• Philosophical Transactions of the Royal Society? (Contacting Marco Jan/Feb?)• Global Food Security?• Food Policy?



Storylines (qualitative)

- Stick to 5 SSPs
- Being consistent with SSPs, INMS, SUSTAg, MACSUR, AgMIP
- Start with storylines: trends based on literature distinguish into “drivers of consumption”, “consumption”, and “consequences of consumption” → create storyline table as living document

Scenarios (quantitative)

- focus on quantitative trends for ingredients
- start with statistical regressions
- diverge from statistical regressions based on storylines and historical anomalies, their qualitative reasons, and the magnitude of extreme changes
apply some convergence method
- rejustify the new diets with policy instruments



PART 1: Food Chain Nitrogen Use Efficiency

- The limits of Farm-scale NUE
- Food losses and circular nitrogen flows in the post farm gate food chain
- Sustainable value chain policies

PART 2: The relevance of Nitrogen for a healthy society

- Current food consumption in Europe
- Policies and societal changes framework
- Mapping Policies for sustainable diets
- Nitrogen-smart diet choices: Alternative protein sources (GHG + Nr)
- Health effect of Nr losses in the food chain

PART 3: Making the case: nitrogen and food

- Representative diet-pathways: the cost of unhealthy diets
- Healthy and nitrogen-smart: trade-off or win-win?
- Reduction of N pollution: improved supply versus changed demand
- Assessment of health effect of air pollution
- Assessment of health effect of water pollution

Thank you!





Policies and societal changes framework

- will be descriptive and propose a conceptual framework of policies that can be implemented and how to categorise between types of policies
- highlight the common health and sustainability challenges related to food consumption.
- The objective is to show, from a governmental perspective, what types of policies that are potentially available and discuss the key differences between these policies and how they provide costs and benefits to individuals and business.

Mapping Policies for sustainable diets

- Inventory of present policies / interventions
- objective to map “effective” policies to address the challenges addressed
- will also build on the framework and discuss the strength of evidence of different interventions as categorised