Optimizing food choices: Key questions

TFRN-Expert Panel on Nitrogen and Food (phase 2)

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Adrian Leip
European Commission, Joint Research Centre (JRC)

E-mail: adrian.leip@jrc.ec.europa.eu
Nitrogen on the Table

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

Special Report of the European Nitrogen Assessment

12 January 2016 | Nitrogen on the Table - Henk Westhoek
The N on the Table report addressed two questions:

1. What are the emissions of reactive nitrogen **per unit of produce** for the most important food commodities?

2. What would happen if people in the EU would **reduce their meat and dairy consumption** by 25% or 50% regarding emission of nitrogen, greenhouse gas emissions and land use?
Key messages from the N on the Table report

• Only 22% of the nitrogen input into the EU agricultural system is transformed into food; the rest is lost in various forms;
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• Only 22% of the nitrogen input into the EU agricultural system is transformed into food; the rest is lost in various forms;

• Livestock sector is responsible of 80% of agricultural nitrogen losses to the environment (mainly nitrate and ammonia);
Nitrogen Investment Factors for food products \([\text{kg N input} \ (\text{kg N in product})^{-1}]\)

**Livestock products**
- 3 kg N input \((\text{kg N in product})^{-1}\)

**Vegetable products**

**Ruminant meat**
- 10 kg N input \((\text{kg N in product})^{-1}\)

**Other livestock prod.**

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Leip et al., AgrSci, in press
Key messages from the N on the Table report

- Only 22% of the nitrogen input into the EU agricultural system is transformed into food; the rest is lost in various forms;

- Livestock sector is responsible of 80% of agricultural nitrogen losses to the environment (mainly nitrate and ammonia);

A 50% lower meat and dairy consumption and production would lead to:
- EU diets more in line with health recommendations
- Around 40% lower nitrogen emissions
- 25-43% lower greenhouse gas emissions
- EU would import less soy, and export more cereals
Health benefits: lower intake of saturated fats as well as of red meat

Key assumptions/simplifications

- Demand changes translate directly to changes in production
- Reduction of feed requirements: large reductions of soy imports
- Released land used (i) either for cereal exports or (ii) extensification/bioenergy
- No indirect effects (leakage, rebound, energy substitution)
- No technological (mitigation) measures
- Assessment at the farm gate
- Health effect evaluated via intake of proteins, red meat and saturated fatty acids
- Diets defined with equal energy (substitution be cereals)
Phase II (2016 onwards): Objective

- The core aim of the EPNF remains as before “to create a better understanding of the relationship between human diets and the impact of the N-cycle on the environment”
- Emphasis is placed on integrating the impacts of transboundary nitrogen air pollution [...] from a whole food chain perspective (cradle-to-grave, including also the fate of N after consumption).
SUSFANS Conceptual Framework for Assessing EU Sustainable FNS

http://www.susfans.org/

DIRECT Drivers of Food System Actors
- Consumers, e.g.
  - Consumer characteristics (choice motives, health concerns)
  - Social environment (cultural & social norms)
  - Consumer environment (economic incentives, information, availability)
- Food Chain, e.g.
  - Regulatory environment & standards
  - Input and output prices
  - Customer preferences
  - Market structure
- Producers, e.g.
  - Regulatory environment & standards
  - Input and farm gate prices
  - Contract opportunities
  - Natural resource availability
  - Available technology

EU & national policy makers

NGOs and other Food System influencers

EU food system

EU policy goals

Balanced and sufficient diets for EU citizens

Reduced environmental impact

Viably and socially balanced EU agri-food business

Contributions to global FNS

Food system outcomes

- Diets and consumption patterns
- Productivity, profit and competitiveness
- Environmental conditions
- Fair and just social conditions for food system actors

SUSFANS Conceptual Framework for Assessing EU Sustainable FNS

http://www.susfans.org/
Leon eating Joghurt

https://commons.wikimedia.org/wiki/File%3AEating_yoghurt.jpg

Key questions:

I will be strong and smart!!

I won’t eat Joghurt any more!

.... Or maybe just a little....

I will eat everything!

And I’ll buy only “bio”

Who will be able to afford it?

Well, I am just a baby!
• What aspiration level is realistic?
• Which policies/instruments are needed?
• What kind of communication is required?

• What is a healthy quantity of consumption? How to score diets’ healthiness?
• What is a sustainable level of consumption?
• What alternatives exist to substitute the beneficial characteristics?

• How can food waste along the food chain be reduced?
• Which level of food waste reduction is attainable?
• How much are un-avoidable food losses?

• What farming systems and products have the lowest impact per ‘unit of benefit’?
• What is the maximum Nitrogen Use Efficiency attainable at farm level?
• What technological measure exist / are effective to reduce nitrogen pollution?
• What is the ‘price’ of optimised food – for the farmer, consumer, society?

• What are the short-term economic feedback effects (leakage, rebound)?
• What are the long-term effects (changing society)?
• Which are the stakeholders to engage? How?
Expert Panel on Nitrogen and Food II
- Kick-off session on Wednesday –

- 08:30 – 10:30 Plenary session  [Room: CC 13]
- 10:30 – 12:30 Parallel session  [Room: MB 4122]
- 13:30 – 15:30 Working Groups [Room: MB 4122]

Fill in sheet if you are interested !!

and/or contact: adrian.leip@jrc.ec.europa.eu