



Small meeting WG3 Amsterdam

**Mitigation options:
framework of different databases**

Wim Chardon



Examples of databases

UK - report with 44 options

DK - report with 22 options

NL - database with 80 options

SERA17 (US) - factsheets of 32 options

Kronvang et al. - review with 24 options

Sharpley et al. - list/description 32 options

AgriBMPWater - database with 16 options

COST Inventory - list with 88+ options



Examples of databases, references

UK - report with 44 options:

Cuttle, S.P. , C.J.A. Macleod, D.R. Chadwick, D. Scholefield, P.M. Haygarth, P. Newell-Price, D. Harris, M.A. Shepherd, B.J. Chambers & R. Humphrey. 2007. An inventory of methods to control diffuse water pollution from agriculture (DWPA). User Manual. Prepared as part of Defra Project ES0203, IGER and ADAS, UK.

DK - report with 22 options:

Schou J.S., Kronvang, B., Birr-Pedersen, K., Jensen, P.L., Rubæk, G.H. Jørgensen, U. & Jacobsen, B. 2007. Virkemidler til realisering af målene i EUs Vandrammedirektiv. Udredning for udvalg nedsat af Finansministeriet og Miljøministeriet: Langsigtet indsats for bedre vandmiljø. Faglig rapport fra DMU, no. 625, 132 pp. (in Danish with English summary)

NL - database with 80 options. Alterra, contact person Erik van Os



Examples of databases, references

SERA17 (US) - factsheets of 32 options:

http://www.sera17.ext.vt.edu/SERA_17_Publications.htm

Kronvang et al. - review with 24 options: J. Environ. Qual. (2005) 34:2129-2144 Table 1

Sharpley et al. - 32 options: Sharpley, A.N., J.P. Schmidt, and G.W. Hergert. 2007. Nutrient management practices. p. 149-193. *In* M. Schnepf and C. Cox (ed.), Environmental benefits of conservation on cropland: The status of our knowledge. Published by Society of Soil and Water Conservation, Ankeny, IA.

AgriBMPWater - database with 16 options for nutrients

<http://www.bordeaux.cemagref.fr/public/agribmpwater/index.html>

COST Inventory - list with 88+ options, Contact person Wim Chardon



Examples of databases

Large numbers of options:

16 - 88+ in lists or in databases

Categories needed for comparison / overview

Examples of categories will be given



Categories of options: UK report

- Land use
- Soil management
- Livestock management
- Fertilizer management
- Manure management
- Farm infrastructure



Categories of options: Denmark

Kronvang et al.

- On-farm regulations
- Changes in land use
- Environmental management

Report Denmark

- Changed farming methods
- Change in land use
- Technical measures



Categories of options: Sharpley et al.

- Farm gate
- Soil/plant assessment and management
- Irrigation management
- Manure application decisions



Categories of options within inventory

number

11 - Reduce agric. P,N input, or increase output

21 - Reduce (conversion to) soluble forms of P,N

23 - Reduce mobilisation of particulate forms of P,N

14 - Reduce P,N transport on field scale

13 - Reduce P,N transport in surface water

6 - Abating consequences of eutrophication in
surface water

88 - total



Categories of options

Conclusion:

Large differences in number and description of categories: makes comparison difficult



Proposed categories

- Nutrient + manure management
- Crop management
- Livestock management
- Soil management (tillage etc.)
- Water management: irrigation + drainage

- Land use
- Land infrastructure (buffer zones, terracing)
- Measures in surface water



Description / Factsheet options

Ideally, in database each mitigation option will be described and evaluated

Examples are given from reports etc.



Descriptions etc. Danish report

- Certainty with respect to effectiveness
- Description and function
- Application
- Effect on N or P emission
- Potential land area effected
- Time frame
- Environmental side-effects
- Relevance, potential for targeting, administrative handling
- Cost effectiveness
- References



Descriptions etc. UK report

- Description
- Rationale
- Mechanism of action
- Potential for applying the method
- Practicability
- Costs
- Effectiveness
- Other benefits / risk of pollution swapping



Descriptions etc. Dutch database

- Description
- Mechanism of action
- Practicability
- Can it be controlled?
- Costs
- Effectiveness
- Other benefits / risk of pollution swapping



Descriptions and evaluation of options

Conclusion:

Small differences in description and way of evaluation of options: makes comparison easier



What can we develop?

- List of options, with factsheet of each option
- Examples: reports of UK and Denmark
- Factsheets (32) of SERA17 (show example)



What do we have?

- List of 88+ options, with title + references for selected options on website → make complete
- Make factsheets, we can use (?):
 - Reports of UK and Dk: cite/translate?
 - Factsheets of SERA17: cite
 - Review papers: cite



Questions, remarks ?