

WET IN EUROPE

Experience with and opportunities for WQT in Europe

Michiel Wind, MSc.

Independent consultant environmental economics

www.eco-consult.nl

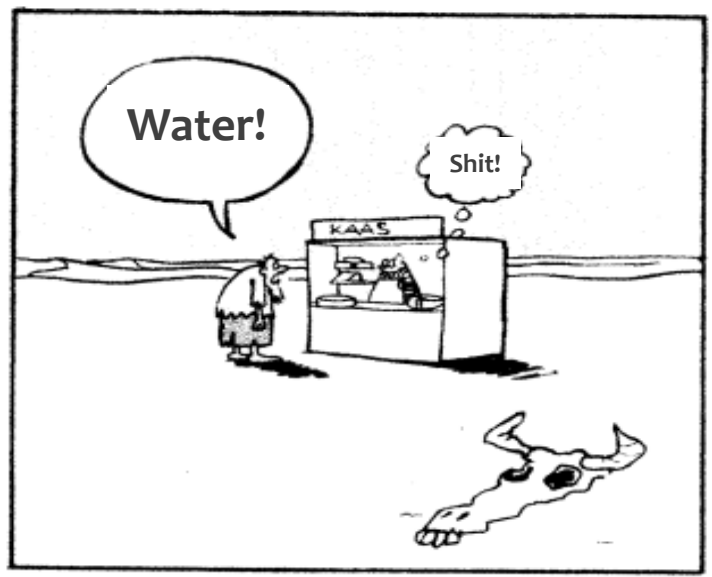
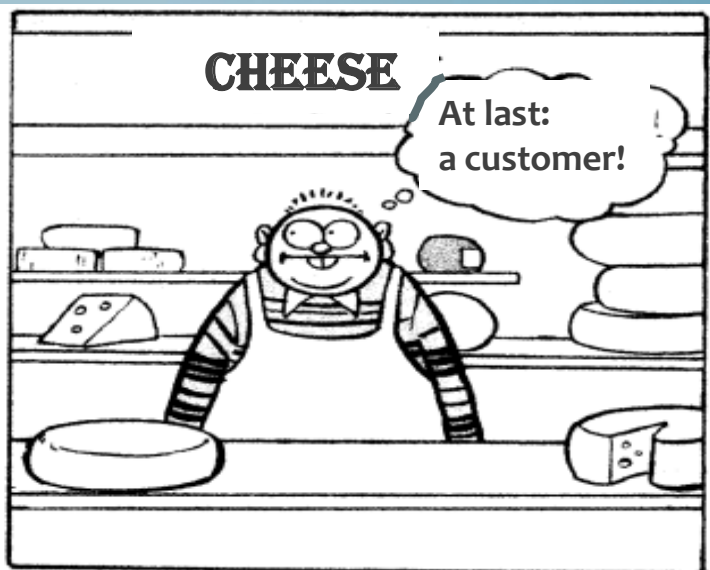
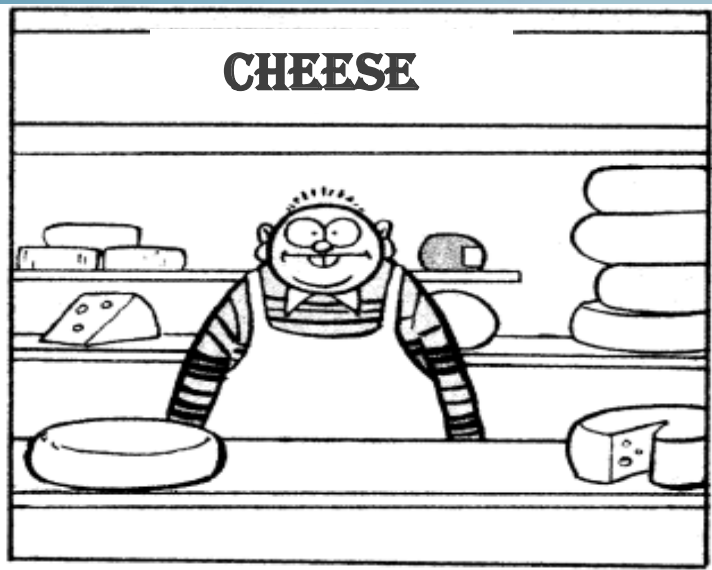
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WET: MAKING QUALITY SUPPLY AND DEMAND MEET



INTRODUCTION

- *WET = WQT in Europe = Water Emissions Trading*

Why this overview of EU literature?

- *WET fits WFD and Marine Strategy Framework Directive:*
 - *Polluter Pays Principle*
 - *fixed environmental targets*
 - *cost recovery*
 - *cost-effectiveness*
- *Ambitious WFD targets, and*
- *associated high costs*
- *Trading for greenhouse gasses: a success in EU*
- *Several WET studies in EU member states*
- *WET overlooked by European Commission?*

ABSOLUTE CAP ↔ RELATIVE BASELINE

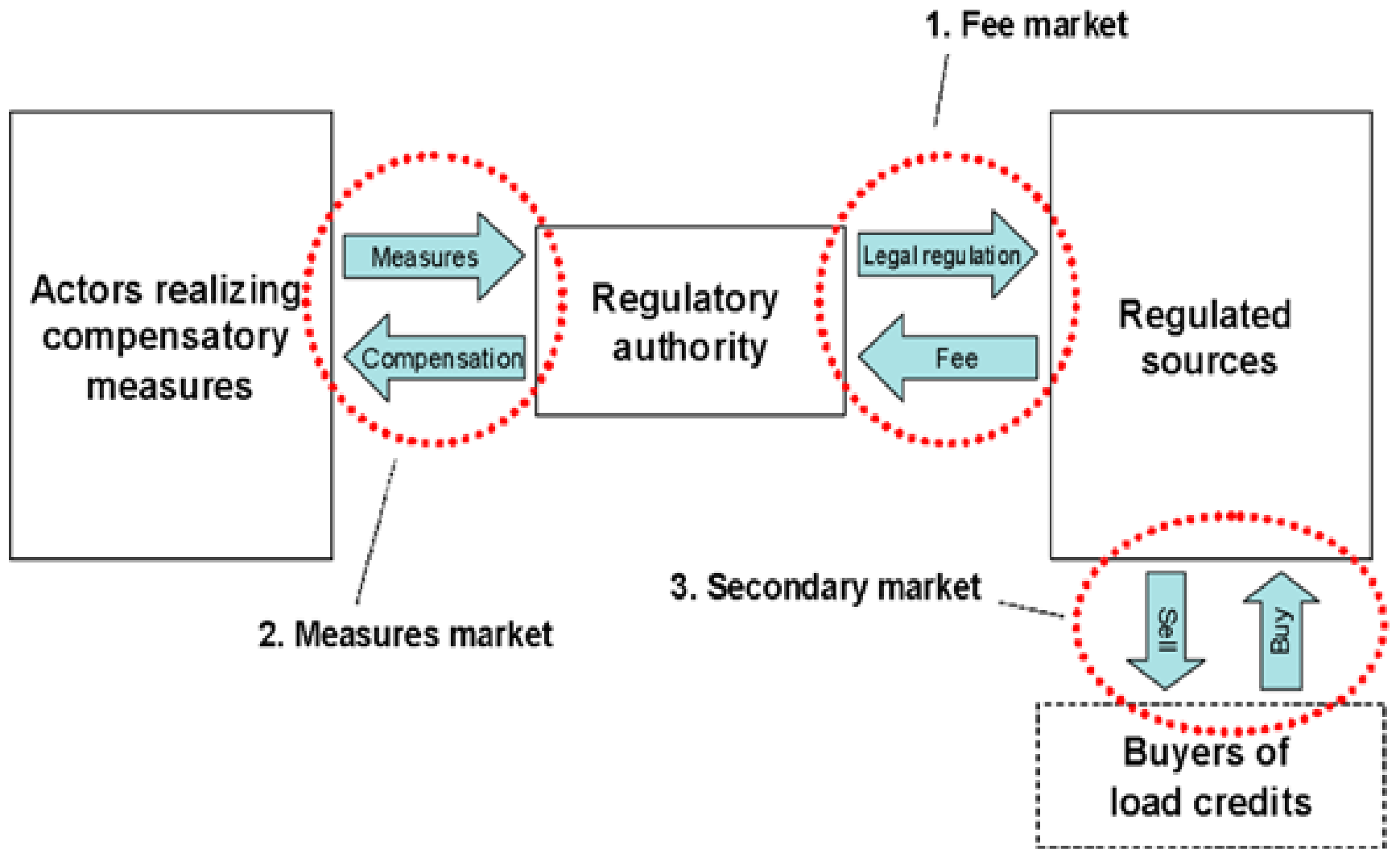
Cap-and-trade:	Baseline-and-credit trading:
Absolute cap over <u>all</u> emissions	'Cap' proportional to polluters activity ('performance standard rates')
Best for point-sources: <u>total</u> emissions well measurable	Mostly for non-point sources: <u>changes in emissions</u> easiest measured
Efficient and strait forward: (opportunity) costs associated with <u>all</u> permits	Less efficient: polluting activities stimulated by free emission permits up to baseline

SWEDISH MODEL 1/3

Swedish EPA and Collentine:

- *Point sources: cap; for emissions over cap: a fee.*
- *Fees used for compensating measures in non-point sources (agriculture)*
- *Compensating measures are chosen in reverse auction.*
- *Secondary permit market: point sources trade permits amongst themselves.*

SWEDISH MODEL 2/3



SWEDISH MODEL: ADVANTAGES 3/3

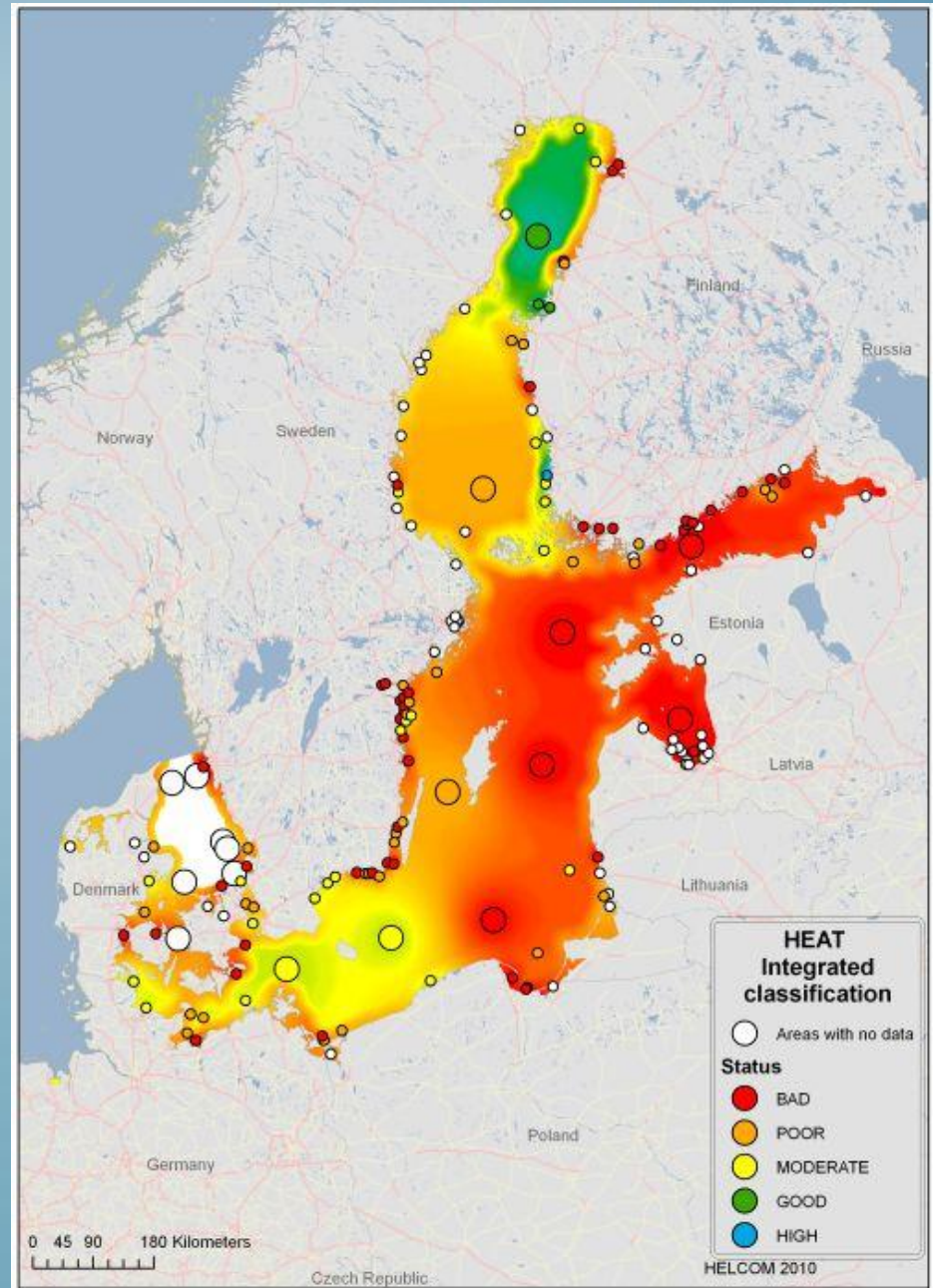
- *Combination of ‘cap and trade’ and ‘baseline and credit’:*
 - *Cap and trade where possible, baseline and credit where necessary*
 - *Regulated point sources: cap and trade*
 - *Non-point sources: baseline and credit*
 - *Advantages from both systems combined*
- *Regulating authority facilitates all sources to take part:*
 - *Regulated sources can simply pay the fee or buy permits*
 - *Non-regulated sources paid for measures by authorities.*
- *All sources stimulated to innovate and reduce emissions.*

PS: Disadvantage: relatively complicated...

BALTIC SEA 1/4

HELCOM-plan for BSAP:

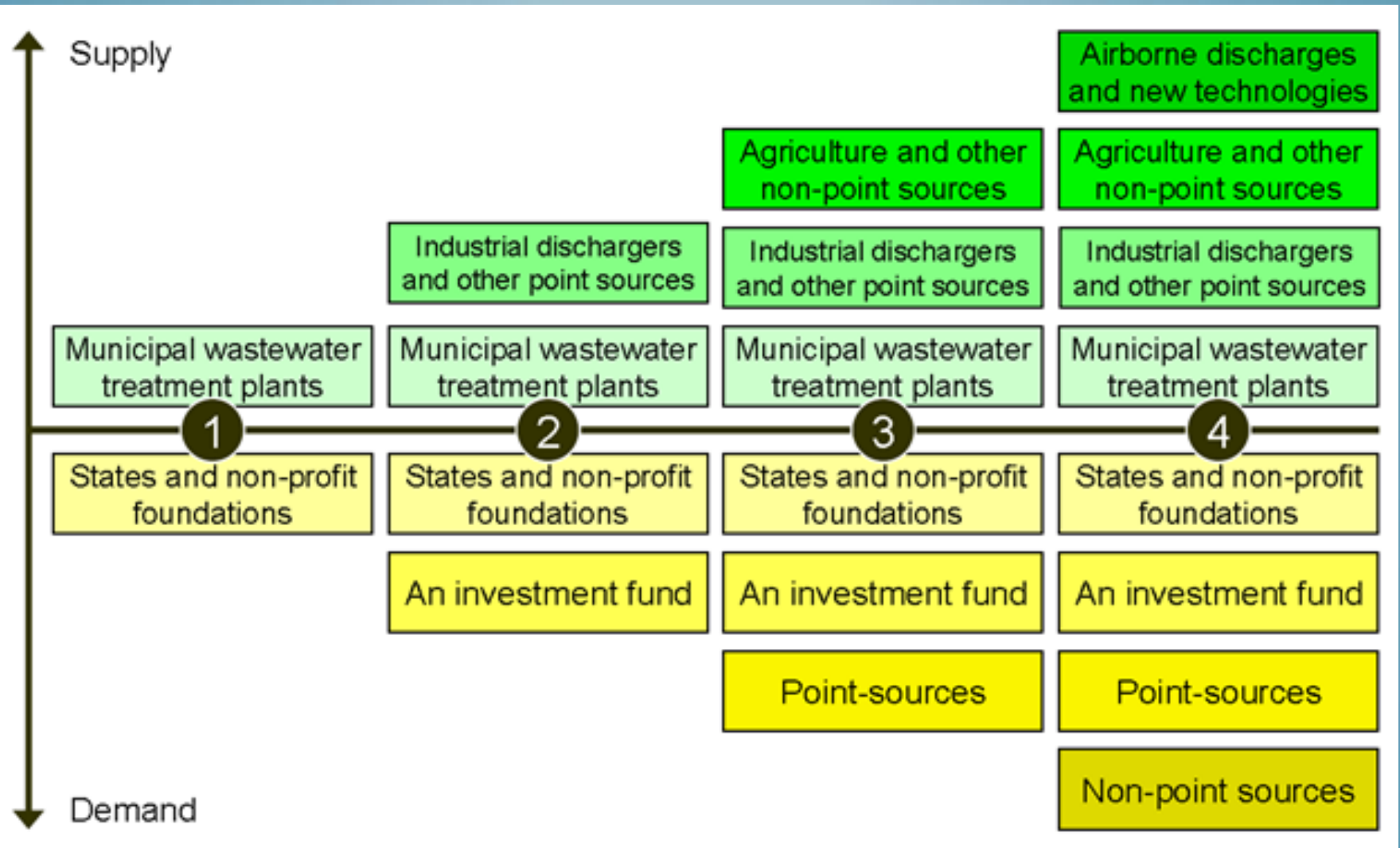
- Gradually introduce international nutrient trading
- First baseline-and-credit, later also cap-and-trade
- Baseline = current Emission Limit Values and BAT's
- First voluntary trading: option to trade for exceeding baseline
- Later compulsory participation: permits required for all emissions



BALTIC SEA 2/4

- *Investments in monitoring are no-regret*
- *Early phases alone will already improve cost-effectiveness*
- *No increase above pre-trade loads allowed, but free purchase of permits for required increase in abatement*

BALTIC SEA 3/4



BALTIC SEA 4/3

Advantages:

- *Cost reductions*
- *Reveals abatement costs*
- *Harmonizes and improves monitoring*
- *Stimulates innovations*
- *Improves cooperation and capacity building*

Disadvantages:

- *Risk of hot spots*
- *Possibly high costs of implementing the scheme*
- *Legal barriers in phase 3 and 4*

BELGIUM: LEGAL ASPECTS 1/2



- *Legal aspects often taken superfluously, but important!*
- *Study by Peter de Smedt thorough, but in Flemish/Dutch*

BELGIUM: LEGAL ASPECTS 2/2

Main conclusions of the study are:

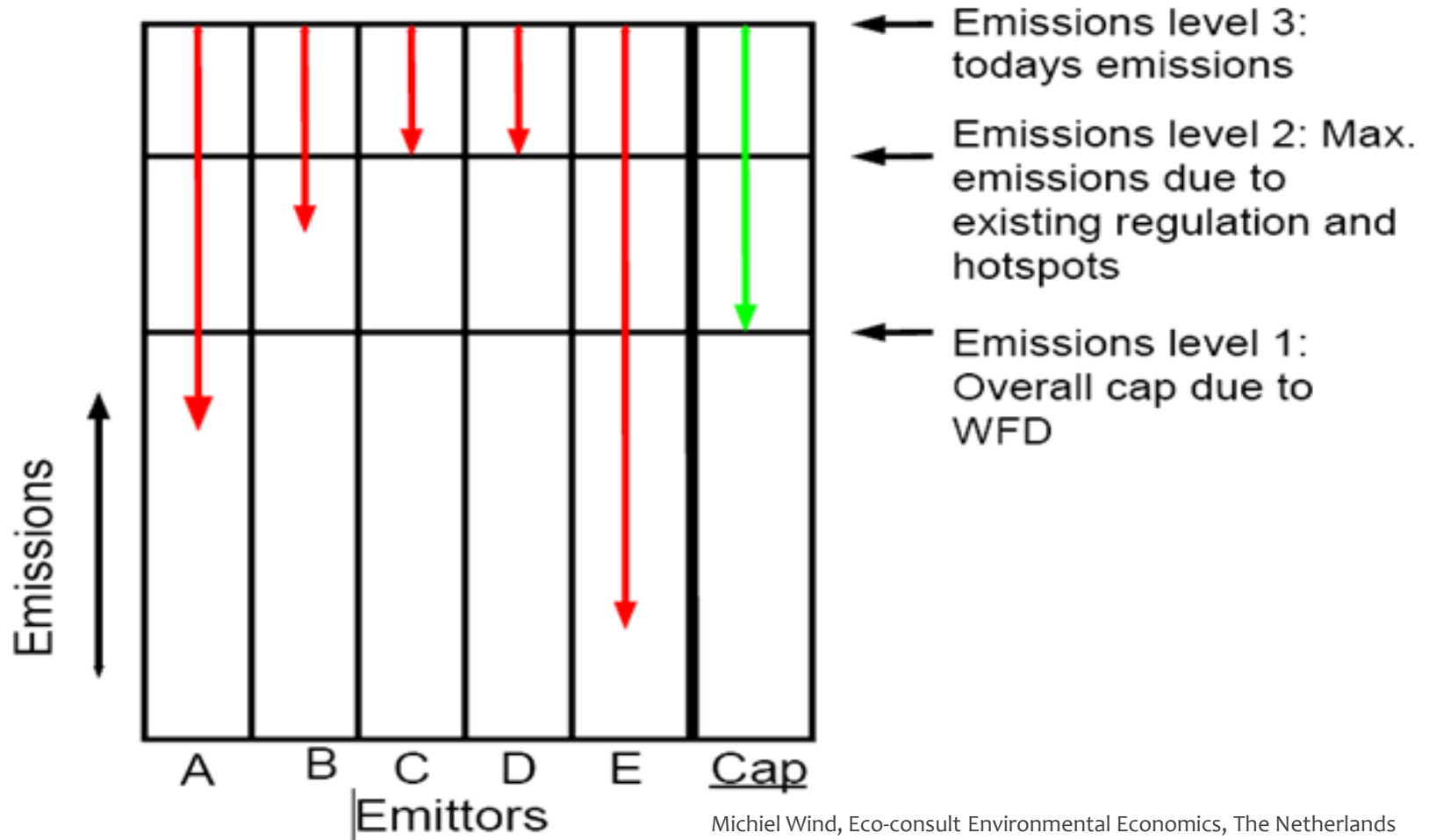
- *IPPC directive needs adaptation to WET (as to EU-ETS)*
- *Installation-based approach is a problem to WET, which targets overall emissions, but:*
- *Physico-chemical substances, specific pollutants, and WWTP's (Urban Wastewater Directive) have legal potential for WET today*
- *WFD's river basin based structure well suited for WET*
- *Pilot project recommended, under clear legal, environmental, economical, and enforcement conditions - equally important to any policy instrument*

NETHERLANDS: GOVERNMENT EXPLORATION 1/6

- *Promising policy instrument, deserves more EC attention*
- *Sectors can be supported socially cost-effective by extra initial allocation of permits*
- *Research should focus on:*
 - *transfer of American knowledge,*
 - *different types (cap and trade, credit trading, and hybrid),*
 - *ways to include non-point sources,*
 - *legal and policy context,*
 - *Ex ante estimation of differences in cost-effectiveness and potential cost savings,*
 - *public support and cultural issues.*
- *Legal opportunity for WET (next figure)*

NETHERLANDS: GOVERNMENT EXPLORATION 2/6

Emissions trading and existing regulation, hotspots



NETHERLANDS: MASTER-THESIS 3/6

- *Feasibility study*
- *concludes WET is feasible in theory, but present BAT requirements in IPPC and WFD are problem*
- *two case studies:*
 - *Nutrient trading in polder area not feasible:*
 - *other policy already being implemented, and*
 - *difficult monitoring.*
 - *Cooling water discharges on the Rhine*
 - *Feasible for the German part*
 - *M. Wind: dynamic cap, depending on weather and water flow, using ICT?*

NETHERLANDS: LEGAL MASTER- THESIS 4/6

- *Main conclusion: WET is legally possible, but limited by current European laws. See previous figure.*
- *WET could be introduced alongside existing legislation, similar to ETS and the USA:*
 - *Change as little as possible to existing legislation and permits*
 - *Main legal change: make emission limits flexible*

NETHERLANDS: HOW TO ALLOCATE PERMITS? 5/6

- *Government commissioned study*
- *Skeptical about large scale trading, optimistic about fund as in Swedish model*
- *BAT-obligation limits trading room, therefore:*
- *recommendation to deal with it at European level*
- *Local pilot with cooling water discharge offsetting is proposed.*

NETHERLANDS: FREE UNIVERSITY REPORT BY OOSTERHUIS 6/6

- *'Opportunities for the use of tradable permits in Dutch water quality policy'*
- *WET stimulates innovative and even more cost-effective reduction measures*
- *Sources often discover cheap reductions within own facilities after WET is in place*

- *Main conclusion:*

WET can fill gap between source related requirements by WFD, and ambient water quality also required by WFD (see previous figure)

OTHER STUDIES

German Ph. D. thesis: 'WQT systems: An Integrated Economic Analysis of Theoretical and Practical Approaches', by M. Keudel (206 pages!)

UK Forestry Commission:

- '... innovative approach...'*
- '... largely overlooked in Europe so far.'*
- '... should be explored further as a means to meeting requirements under the Water Framework Directive'*

Poland:

- 2007 report: WET as a means to finance WFD-implementation.*
- Presently: ecological basis for WET studied*

Italy: two exploring studies (in Italian?)

OPPORTUNITIES IN EUROPE ^{1/2}

WET for WFD:

- 1. WET respects Polluter Pays Principle, cost recovery*
- 2. WFD departs from good ecological status, and requires the market to sort out the rest. Discharge levies depart from levy, environmental outcome unsure.*
- 3. WFD takes care of monitoring and enforcement necessary for trading*
- 4. WFD based upon natural areas for water management: watersheds, river basins and water bodies: logical trading zones*

OPPORTUNITIES IN EUROPE 2/2

- *North Sea: eutrophication, international WET system, similar to Baltic Sea (Marine Strategy Directive!)*
- *Cooling water discharges:*
 - *some experience in the US*
 - *temperature increasing problem due to climate change*
 - *point sources: easy monitoring*
- *Others:*
 - *heavy metals*
 - *organic matter*
 - *suspended sediments*
 - *medical drugs*
 - *pesticides*
 - *suggestions? ...*



CONCLUSIONS, RECOMMENDATIONS

- *WET useful in reducing emissions beyond BAT, down to WFD-levels, in cost-effective, speedy, flexible way.*
- *WET is possible today, but*
- *EU Commission support needed to facilitate and overcome national hesitation and (perceived!) legal problems.*
- *Swedish model found a smart way to include non-point sources*
- *Baltic Sea proposal is ambitious but feasible: gradual, no-regret implementation of WET*

FURTHER INFORMATION

- Download report 'Water Emissions Trading in Europe – a literature overview and discussion of opportunities' from www.wateremissionstrading.eu or www.eco-consult.nl
- Register for my e-mail list
- m.wind@eco-consult.nl

QUESTIONS, REMARKS?

"We must take action."

Do we have to?
Why is this so
urgent?

OK. So what
should we do?

But it seems
so hard. Can
we really do
it?

