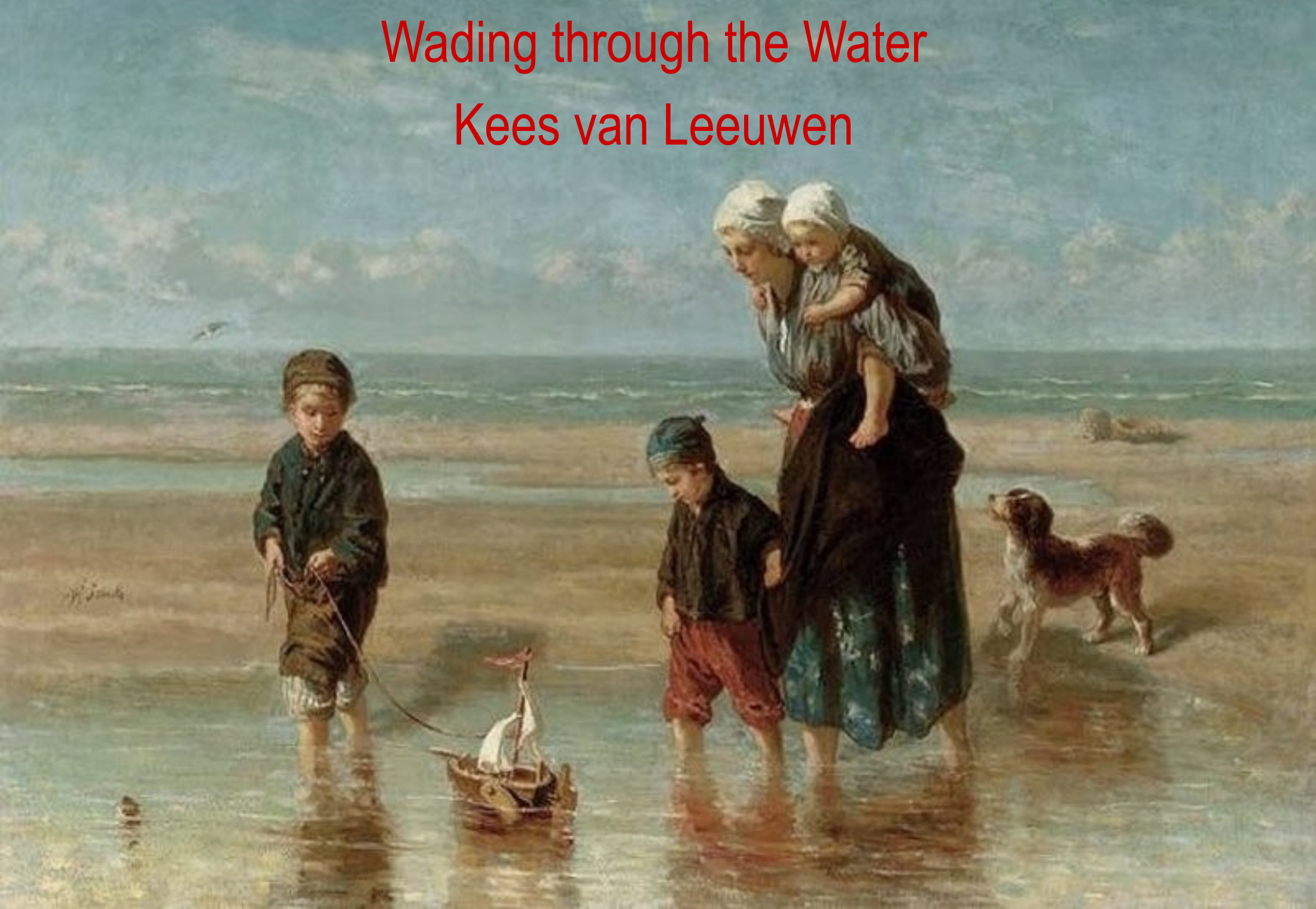


# Wading through the Water

## Kees van Leeuwen







Soest, De Eem nabij de groote Melm

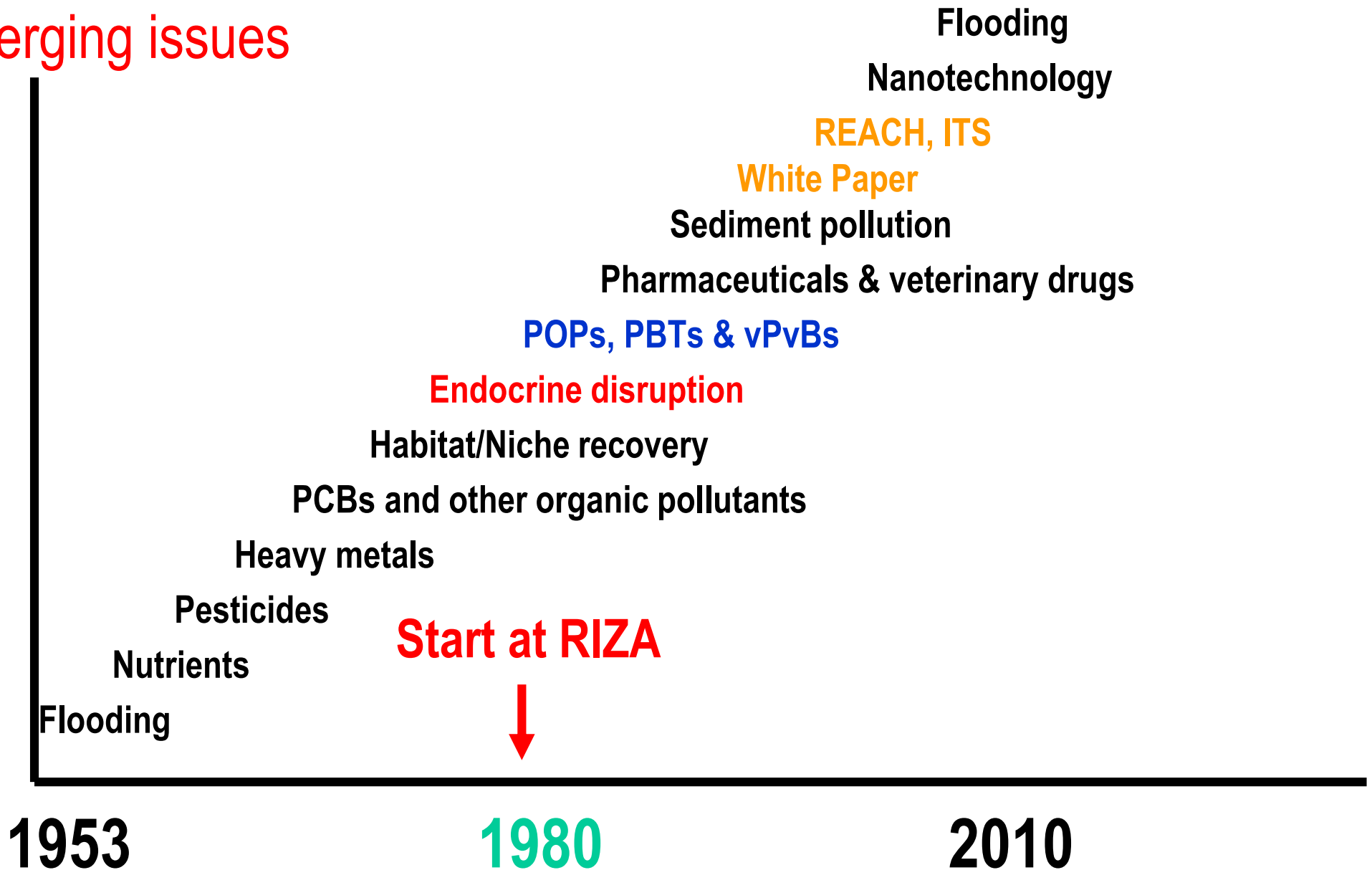


# Water Pollution



# Developments in water management

Emerging issues

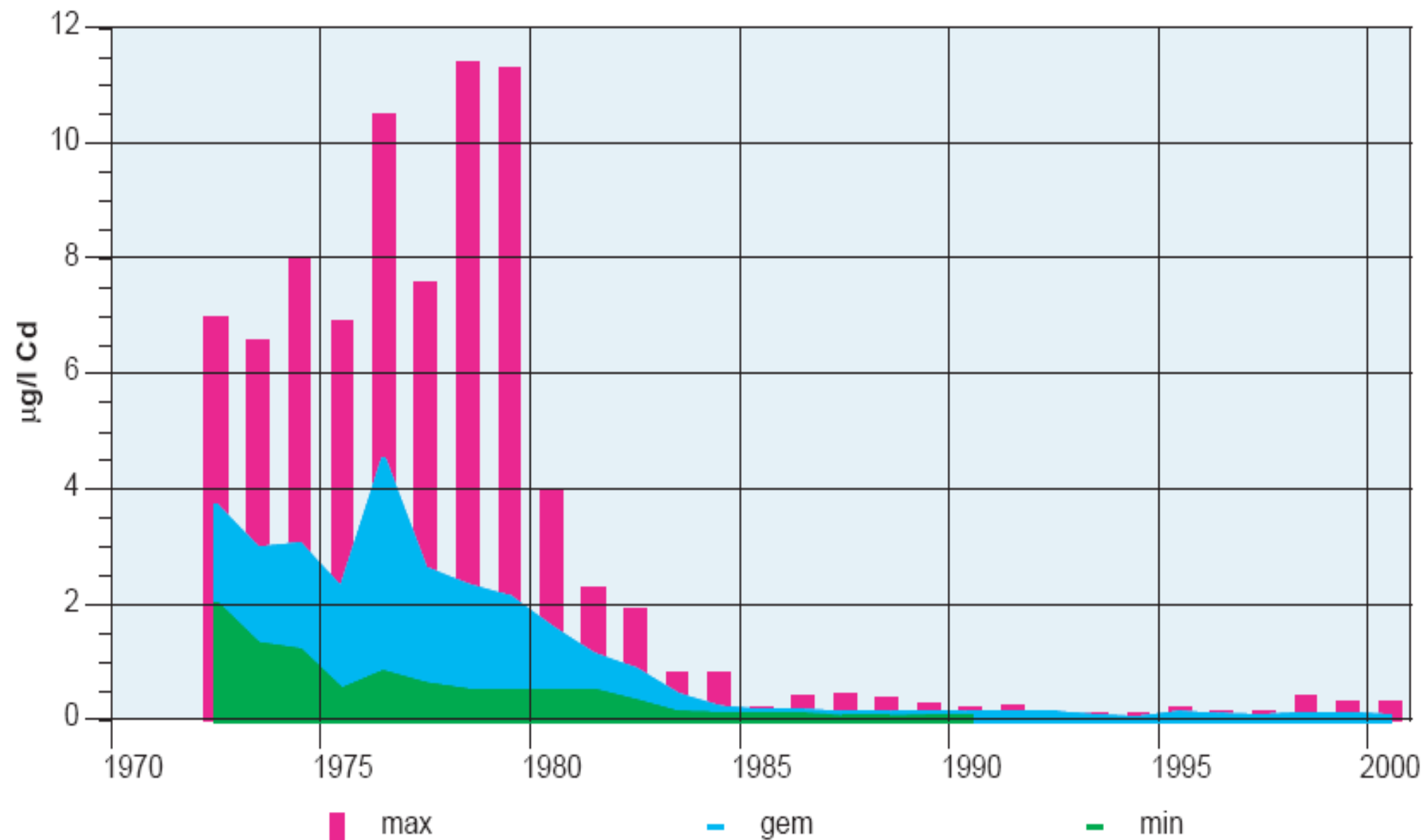








Cadmiumconcentratie van het Rijnwater te Lobith (1970-2001)







# 1) Sandoz calamity at Basel

- 1986 (RIZA, Leleystad)
- Scope: IRC (Rhine calamity team)
- Organophosphate pesticides (max 5  $\mu\text{g/L}$  in NL)
- Fish kills at Basel and sublethal effects on *Daphnia* at Lobith
- Populations with short generation times were all restored after 1 year (Van Urk)



# Conclusions

- Teamwork
- Empowerment
- Multidisciplinary science and clear scope (IRC)
- Good communication with all media!
- Symbol: Salmon back into the river Rhine
- Minister Kroes turned an accident into a great success, i.e., ecology and river basin management became part of the political agenda of IRC

# Wasverzachters; zacht, ook voor het milieu?

## Inleiding

In een recent uitgebrachte literatuur-analyse van de Overleggroep Deskundigen Wasmiddelen-Milieu worden milieu-aspecten van kationische oppervlakte-actieve stoffen (kat-OAS) beschreven.

Het initiatief tot het vormen van deze overleggroep is voortgekomen uit informeel overleg tussen het ministerie van VROM, de wasmiddelen-industrie en betrokkenen bij het wetenschappelijk



KEES VAN LEEUWEN  
Directie Stoffen en  
Risicobeheersing  
DGM  
Ministerie VROM

onderzoek. De leden van dit overleg

## Samenvatting

De wasverzachters die in dit artikel worden oppervlakte-actieve stoffen. Het verbruik van geschat op tweeduizend ton actieve stof per jaar. Deze stoffen worden geloosd op het oppervlaktewater, breken daarin langzaam af en blijken bovendien zeer giftig voor waterorganismen. De geen-nadelige-effect concentratie voor ecosystemen wordt, conform het advies van de Gezondheidsrisico-beoordeling van stoffen, geschat op 16 mg/ in oppervlaktewater berekend, respectievelijk gedan ook, dat alleen al deze stoffen het Nederland belasten. In verband met de grote verbruiksomv beleidsintentie ecologisch inpasbaar te handelen wordt geconcludeerd dat het beter is te kiezen v

oplossing in water onttrokken. In een rwzi blijft circa 90% van de stoffen achter in het (actieve) slib. In proeven in het laboratorium breken de stoffen redelijk goed af; het blijkt echter dat de snelheid van de afbraak sterk afhankelijk is van de

Ook c conce... Nederlandse oppervlaktewateren. Uit modelberekeningen volgt echter dat de concentratie in oppervlaktewater na tienvoudige verdunning van gemiddeld



## 2) Fabric softeners in NL

- DTDMAC, 1989 (VROM/RIVM/RIZA)
- “Expert Panel on Detergents and Environment”
- Toxic and persistent (similar to bactericides)
- Highly adsorptive (sediment / suspended matter)
- Research articles in H<sub>2</sub>O (1989) and Chemosphere (1992)
- Questions in parliament / TV interviews
- Ban or voluntary agreement ? (economic impact was substantial!)



# Conclusions

- Take initiative (article in H<sub>2</sub>O)
- Timely involvement of DG and Minister
- Empowerment, collaboration and clear scope
- Good communication (H<sub>2</sub>O, Chemosphere, Parliament and VARA-television)
- Backed-up by political staff/scientific community
- Voluntary agreement: less persistent alternatives
- International follow-up (AIS) leading to risk assessment guidance and voluntary assessments of detergents ingredients

# Changes in the perception of health and environmental risks and their solutions

1970	1995
Sectoral (air or surface water)	Multiple media (including soil, sediment and groundwater)
Localized	Diffuse pollution
Human health and well-being	Ecosystem health, production and goods
Local/regional	National/international/global
Limited economic damage	Great economic damage
End of pipe solutions	Integral approaches

# Principles for risk assessment

Detailed procedures for risk assessment are given in the Technical Guidance Documents (TGD):

- man
- environment
- QSARs
- emission scenario documents



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**2<sup>nd</sup> edition of the  
Technical Guidance Document  
(TGD)  
on Risk Assessment  
of Chemical Substances  
following European  
Regulations and Directives**

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**Freely available from ECB web page**

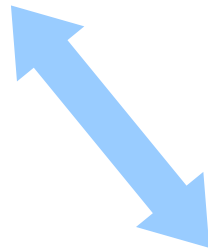
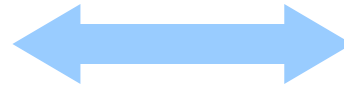
**<http://ecb.jrc.it/tgdoc>**

# 3) REACH

Hazard information

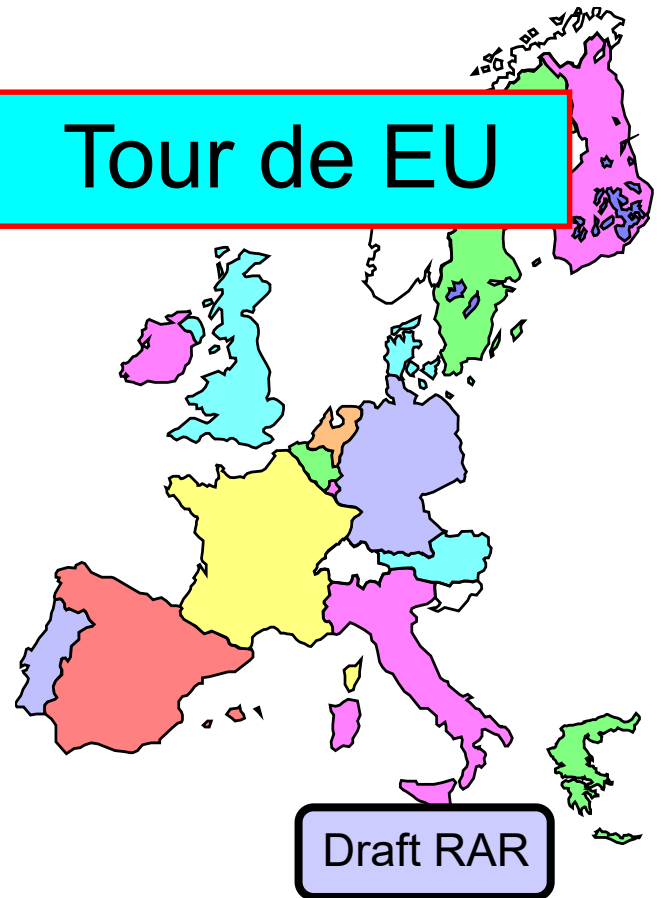


Exposure information



Safe use?

# Tour de EU

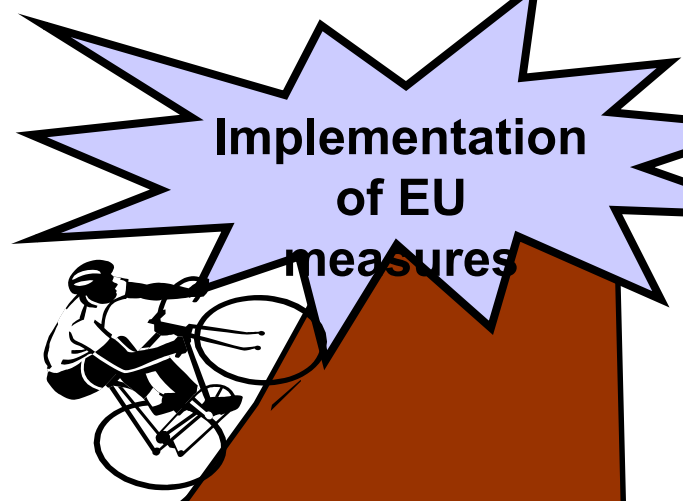


Priority list

Draft RAR

Agreed RAR

Agreed risk reduction strategy



Implementation of EU measures

← 1-? y →

# HISTORY AND CONTEXT

- 1996 Van Leeuwen et al., *Environ Toxicol Pharmacol* 2:243-299 (1996)
- 1997 Minutes of CA meetings (The Hague, the Netherlands)
- 1998 Council of Environment Ministers (Minister de Boer)
- 2001 White Paper published
- Summer 03 Internet consultation
- 29/10/2003 Proposal adopted by Commission
- 17/11/2005 Parliament Opinion in First Reading
- 26/06/2006 Council Common Position adopted
- 13/12/2006 Parliament Opinion in Second Reading
- 18/12/2006 Regulation adopted

# REACH – Discussion points

- 1) **Economic aspects:** High costs of REACH impacting Europe (Letter of Blair, Schröder and Chirac)
- 2) **Animal welfare:** REACH will lead to a significant increase in animal testing
- 3) **Workability** and effects on Small and Medium Enterprises (SMEs)

# Ad 1) the costs of REACH

(Pedersen et al 2003 and Van der Jagt et al., 2004)

1. JRC reports: Testing costs were € 1.5 (1.2-2.4) billion for testing in 11 years
2. European Commission used our estimates in 2004:  
€ 2.3 billion in a period of 11 years (incl. fees).  
This is  $2.3/5500 \times 100 = 0.04$  % of sales in a period of 11 y
3. Conclusion: Economic impact of REACH is negligible



## **Ad 2) animal use under REACH**

(Van der Jagt et al., 2004; EUR report 21405)

⇒ **Number of animals: 2.6 million in a period of 11 years.**

⇒ **This is 2.5 % of the total use of animal tests**

(<http://ecb.jrc.it/> )

# Bottom line

- Timely delivery of high quality products
- Communicate clearly
- Think in terms of interests
- Loyalty and credibility
- Be open to change but not at the expense of your own values
- Legislation is only as strong as its implementation and enforcement



# 《化学品风险评估概论》发布会 暨化学品风险管理研讨会

The release of Chinese version of book  
Risk Assessment of Chemicals in Introductio  
S...

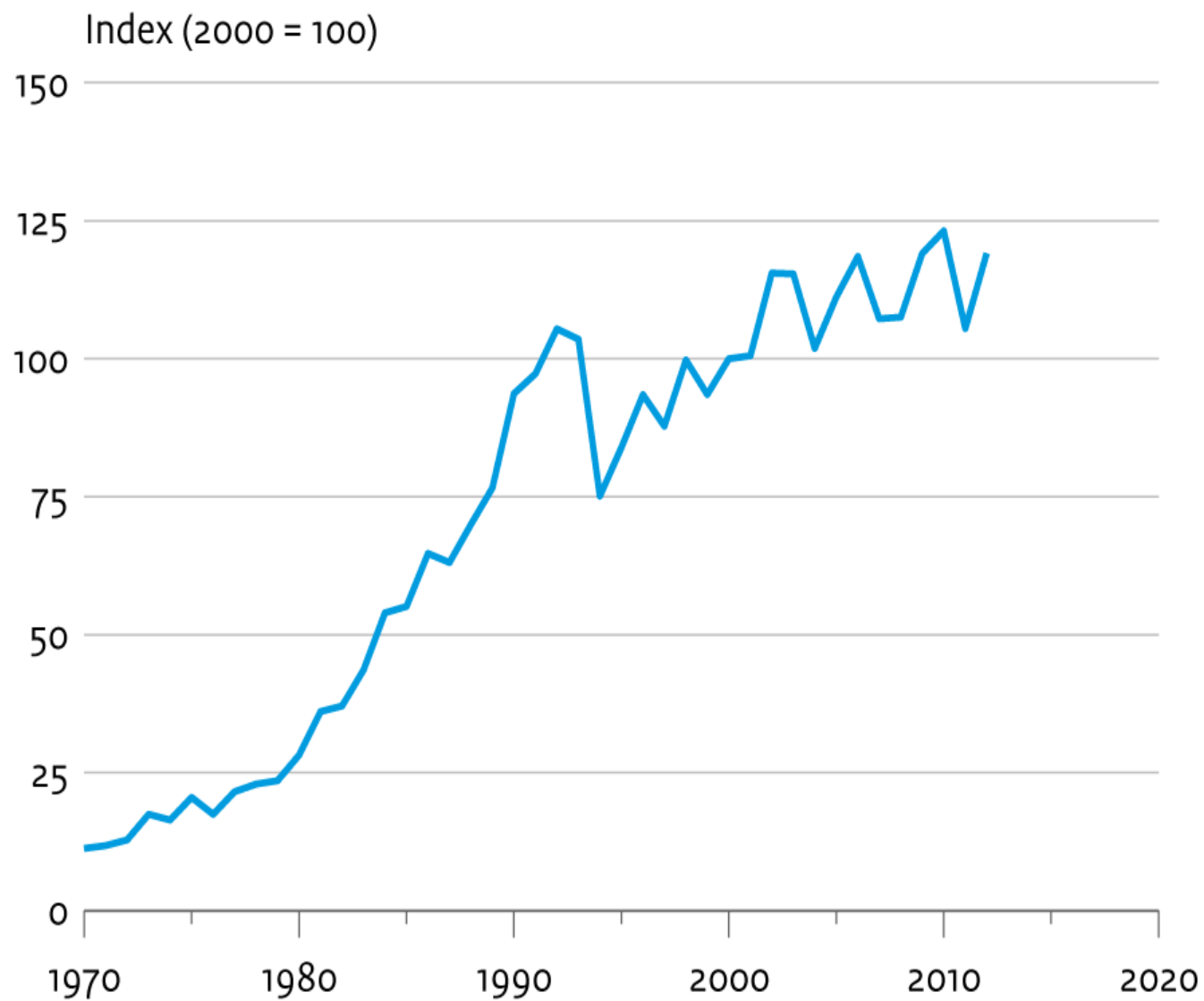








# Aalscholver









# Creating Impact: the implementation challenge

5 Principles	8 Strategies
Take the initiative	Devise a clear organizational mission
Emphasize outcomes	Identify conflicting attitudes and interests
Seek consensus	Establish effective two-way communication
Be reasonable	Develop options for mutual gain (win-win's)
Maintain credibility	Devise the criteria for the evaluation of success together
	Use neutral parties for facilitation (neutral facilitator)
	Shape public perception though use of the media
	Plan for monitoring and renegotiation

# KWR Water Research Institute

A wide-angle photograph of the KWR Water Research Institute building. The building is a long, low-profile structure with a dark, flat roof and a facade of large glass windows. It is situated behind a dense row of tall, green reeds. In the foreground, a calm body of water reflects the building, the reeds, and the blue sky with scattered white clouds. To the right, a wooden walkway or bridge extends into the water, and a line of trees is visible in the background.

•  
Sustainable Development Goal 6: Water

Kees van Leeuwen



# Water and Climate: on our way to 2100

<https://www.ipr.northwestern.edu/our-work/research-tools-apps/water-insecurity/>

