Pesticides in surface water:
Procedure for the use of monitoring results in Product Stewardship and authorisation

May 14th 2013, Rik de Werd

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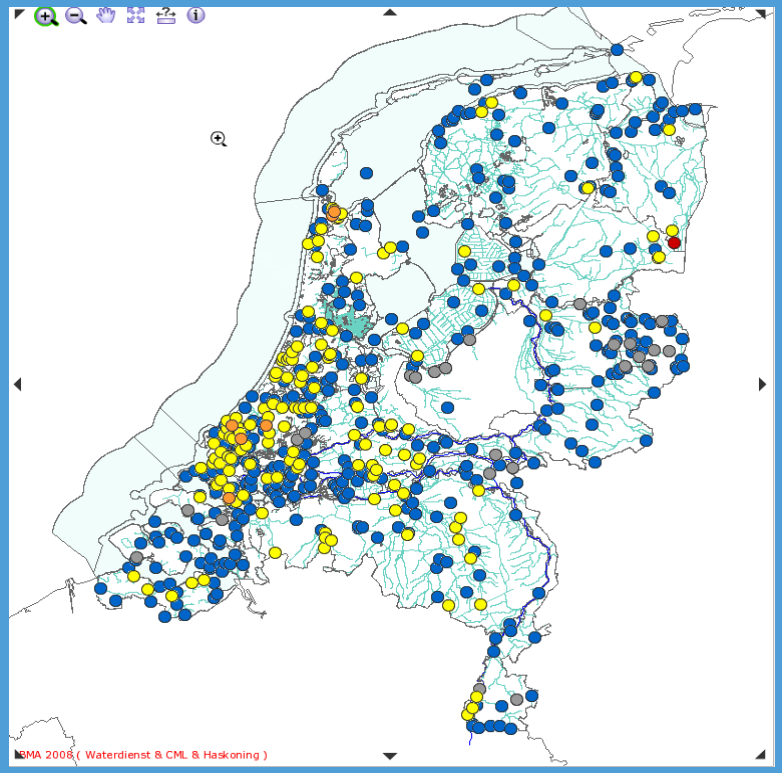
Outline

- Motivation
- Explanation of the procedure
- Testing phase & implementation
- Summarising conclusions

Note:

- This presentation describes a proposed method
- Changes might occur before formal implementation

Motivation: frequent EQS exceedances



% exceeding measurement per location data 2011, MAC-EQS (Pesticides' Atlas)

- Pressure to meet WFD goals
  - European Water Framework Directive
  - EU Sustainable Use Directive

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Boundary conditions for the new procedure

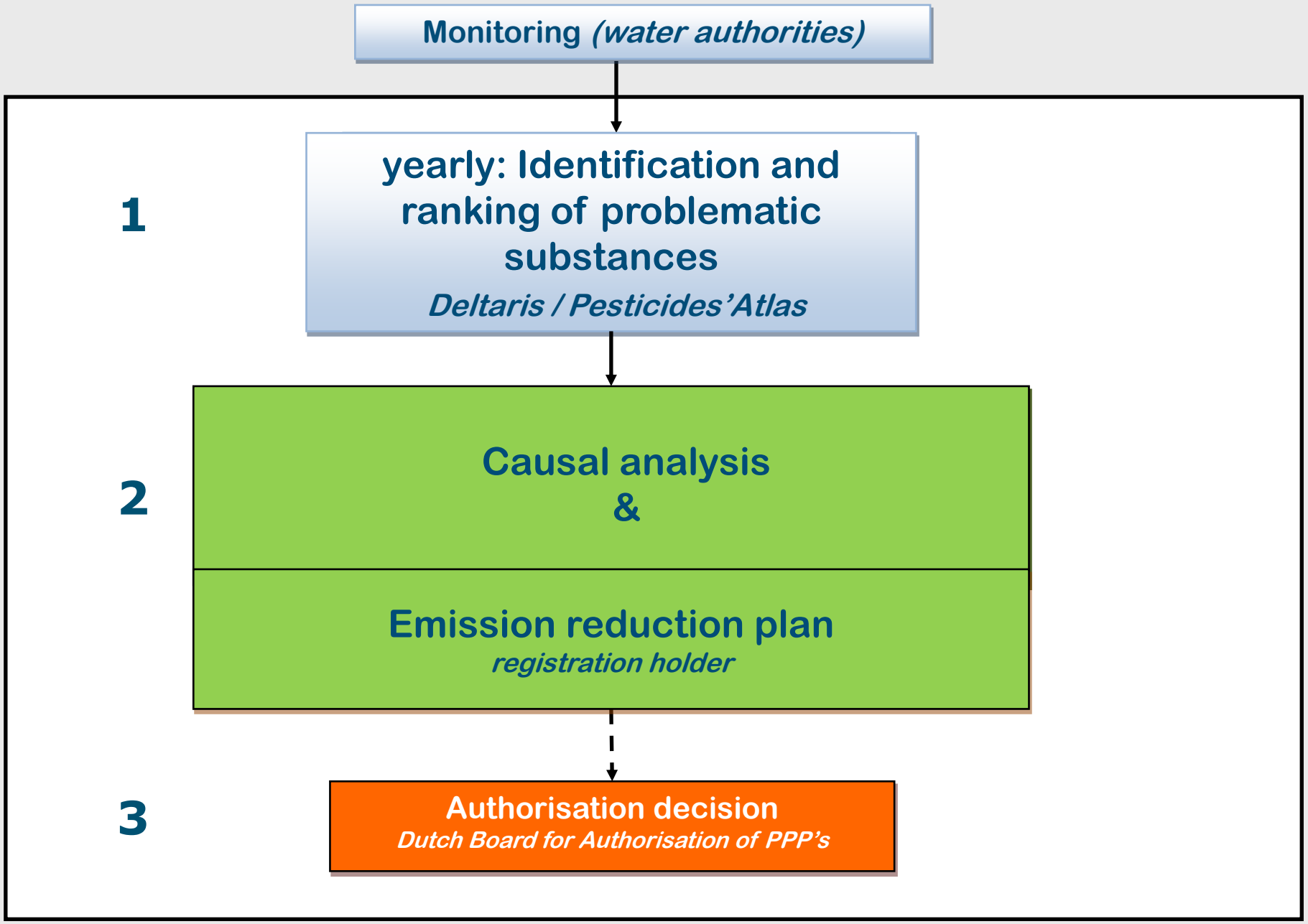
- Exceedances in WFD Water bodies ⟶
  obliged authorisation adjustments possible

- Plausible relation needed between a registered use and standard exceedances

- Responsible role authorisation holders (Syngenta, BASF, etc.)

Procedure overview:

3 main steps


Monitoring (water authorities)
1
yearly: Identification and ranking of problematic substances
Deltaris / Pesticides'Atlas
2
Causal analysis
&
Emission reduction plan
registration holder
3
Authorisation decision
Dutch Board for Authorisation of PPP's

1: Identification 'problematic substances'

- Pesticides' Atlas = source monitoring data
  - National database monitoring results
  - Mostly monitoring by regional water authorities
- AA-EQS & MAC-EQS exceedances relevant
- Exceedance in WFD water body is selection criterion
- Three most recent years
- Substance list yearly updated

Ranking

- Weighing includes exceedances outside WFD Water bodies (in smaller water bodies)
- WFD Priority substance: always prioritised (only few relevant in NL; e.g. isoproturon)
- Exceedances weighed by:
  - Water body type (Official measuring location for WFD, WFD water body, ditch, etc.)
  - Height of exceedances
  - % locations with exceedance

Example substance list (2008-2010)

pnts awarded	substance no.	name	authorization	type	parent compund / metabolite	prior subst.
191	113	isoproturon	yes	PPP	parent	1
23	79	diuron	no	PPP + OA	parent	1
17	50	chloorpyrifos	yes	PPP	parent	1
4	104	hexachloorbutadieen	no	PPP	parent	1
9449	231	imidacloprid	yes	PPP + B	parent	2
7610	900	terbuthylazin, desethyl-	yes	PPP	metabolite	2
4255	149	pirimifos-methyl	yes	PPP	parent	2
4215	43	carbendazim	yes	B + PPP	parent + met	2

2: Causal analysis & emission reduction plan

For which substances on the list?

Voluntarily by authorisation holders:

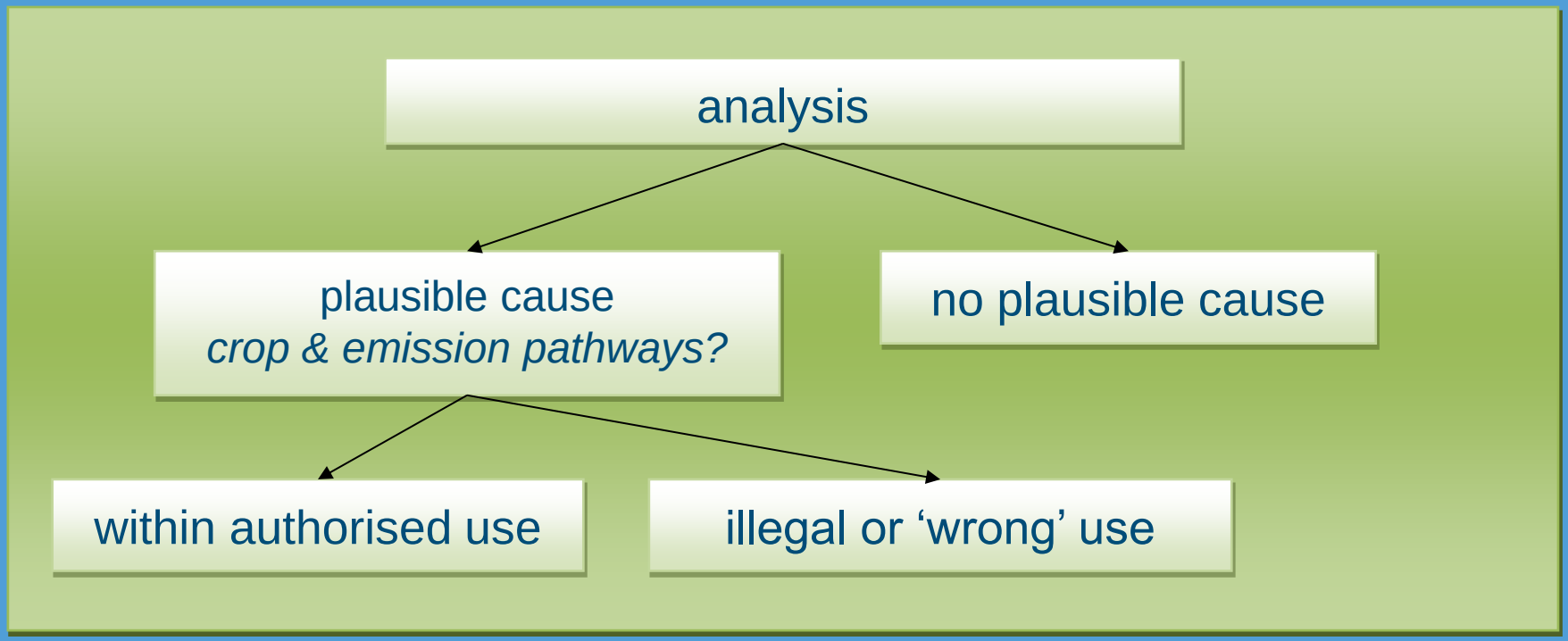
Or mandatory

- Yearly meeting government – authorisation holders to decide which substances to take action upon
- Highly ranked substances: interim re-authorisation possible
- In regular re-authorisation (regularly every 10 years)
- For new authorisations for substance already on the market (if standard exceeding).

➢ Results included in 'draft registration report'

2: Causal analysis:

- Responsible use (crops) and emission pathways?
- Relation authorised use --- exceedances?



Causal Analysis: set up

3 or 5 phases:

National scale

1 Compilation ‘standardised’ factsheet

2 Expert consultation & analysis

Optional: further analyses

3 Addition factsheet

4 Expert consultation & analysis

5 Final conclusions

Subjects:

1 Substance properties

2 Dutch Registration

3 Agricultural use data

4 Emissions to surface water

5 Surface water monitoring results

Standard sources for Phase 1 Fact sheet:

- Substance properties: Registration report / registration holder
- Authorised use NL: Authorisation board / registration holder
- Agricultural use data: Statistics Netherlands & LEI - WUR
- Calculated emissions to surface water:
  - Dutch National Environmental Indicator (NMI)
  - Registration report (optional)
- Measurements (Pesticides' Atlas)

Expert consultation

- Who? Companies (registration holder, advisory company), research, water authorities, etc.

- Why?
  - → Additional or better information
  - → Create support for outcome

- How?

  Digital Crop Protection Platform for expert consultation and expert interaction (transparency)

Phase 5: Final conclusions of the causal analyses

- Level of detail in conclusion varies strongly with available information
- Contribution of wrong use to exceedances is described if data available
- Summarised in a table

Example conclusions table (fictional):

	% Use	Spray drift	Surface run off	Lateral leaching	Point source pollution	Etc.
Cut flowers covered	**30%**	**Not applicable**	**Not applicable**	**Plausible cause**	**Plausible cause: discharge of nutrient solution**	
Seed potatoes	**20%**	**Not a plausible cause**	**Not a plausible cause**	**Not a plausible cause**	**Not a plausible cause**	
Lilies	**Etc.**	**Possibly a cause**	**No data available**	**Possibly a cause**	**Plausible cause**	
Sugarbeet (seed coating)		**Not a plausible cause**	**Not a plausible cause**	**Not a plausible cause**	**Not a plausible cause**	
Etc.						

Emission reduction plan

- Must connect to the outcome of causal analysis
- May consist of use restrictions, awareness campaigns, technical solutions, etc.
- Time frame depends on necessary measures

- Effectiveness:
  - monitoring and yearly update of responsible authorities.
  - Authorities decide whether enough progress is made. If not, the ERP may need to be adjusted

Experiences causal analysis

Realistic test cases with *Syngenta, Bayer, BASF & Certis*

- Procedure is transparent and proves to be applicable.
- Model or national information is amended with valuable information from 'the field'.
- Factsheet & expert consultation prevents narrow focus, but is time consuming and added values sometimes limited
- Limitation on emission pathway data becomes clear (e.g. point source pollution)
- Results analyses useful for evaluation emission reduction plans

Implementation

- Emission reduction plans included in Dutch National Action plan for Sustainable Use Directive
- Causal analysis and Emission reduction plans included in Dutch national policy note on Sustainable Crop Protection
- Formal implementation expected in 2013
- Board for Authorisation already makes use of monitoring data in authorisation procedures (new authorisations for substances already on the market)

Summarising conclusions

- Procedure for formal feedback of PPP monitoring results from surface water is ready to use
- Transparent causal analysis with expert consultation in combination with fact-finding
- Use of monitoring data, PPP use data, emission calculations and more
- Important role for authorisation holders
- The methodology will be applied in authorisation procedures, but can also be used on voluntary basis
- Formal implementation expected this year

Thank you!

Monitoring working group

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