

# Welcome to the Stakeholder Consultation Meeting on the Drinking Water Directive

## 26/05/2015 Brussels

### Organised by:

DG ENV: Tobias Biermann

ECORYS : Erik Klaassens (TL)

Dr. Iglia Vassileva

Joachim Schellekens

Leon de Graaf

Alterra : Dr. Wim de Vries

Dr. Hans Kros

Dr. Paul Römken

KWR : Dr. Adriana Hulsmann

Dr. Gerard van den Berg



# Agenda: Morning session

10:00 – 10:15	Introduction to the project (Erik Klaassens)
10:15 – 10:30	EC's role and goals (Tobias Biermann – DG ENV)
10:30 – 10:45	Approach to the evaluation (Erik Klaassens)
10:45 – 11:30	Project results to date:
10:45 – 11:00	Public Consultation (Iglika Vassileva)
11:00 – 11:30	Approaches and results related to the relevance, coherence, effectiveness and efficiency of the DWD (Hans Kros)
11:30 – 11:45	<i>Coffee break</i>
11:45 – 12:00	Reflections/comments from the audience
12:00 – 12:30	Statement election (voting, Adrianna Hulsmann)
12:30 – 13:30	<i>Lunch break</i>

# Agenda: Afternoon session

- 13:30 – 15:00      Break out groups (World café). 3 sessions, 3 topics
- Relevance and Coherence of current approach (*moderator: Wennemar Cramer*)
  - Effectiveness of current approach (*moderator: Teresa Lettieri*)
  - Efficiency of current approach (*moderator: Corina Carpentier*)
- 15:00 -15:15      *Tea break*
- 15:15 – 15:30      Feedback from moderators
- 15:30 – 15:45      Reflections/comments participants
- 15:45 – 16:15      Panel discussion (*Birgit Mendel, Christopher Leake, Klaus Ockenfeld, Claudia Castell-Exner, Ana Roche*)
- 16:15 – 16:45      General discussion/feedback/additional issues
- 16:45                Closing remarks

# Evaluation of the Drinking Water Directive supporting the revision of the EU DWD

## An Approach to the Evaluation

Brussels, 26<sup>th</sup> of May 2015

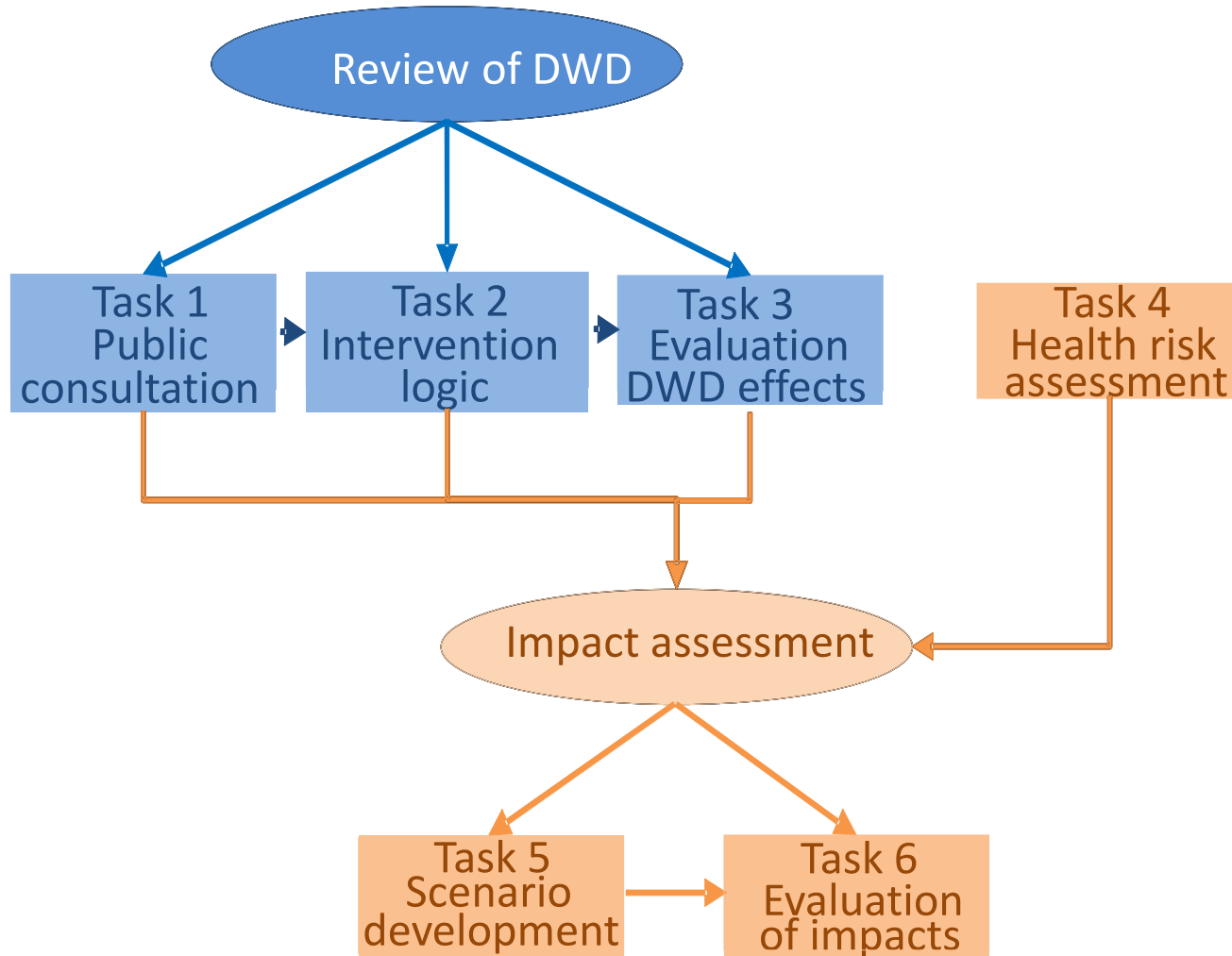
Erik Klaassens, Ecorys (Rotterdam - NL)



# Aim of the Study (1)

- ➔ To support a possible revision of the EU drinking water policy and the current Drinking Water Directive (DWD)
  
- ➔ The study consists of two main study parts:
  1. An **ex post** evaluation of the Drinking Water Directive and drinking water policy to assess whether the legislation is **fit for purpose** and achieving its objectives (Tasks 1, 2 and 3)
  2. An **ex ante** impact assessment of future policy options for renewing the DWD (Tasks 5 and 6).
    - ➔ A dedicated task (Task 4) on scoping and testing Drinking Water Health Risks will inform the ex-ante impact assessment.

# Aim of the Study (2)



# Presentation on main project results

- Task 1: Public consultation  
Iglika Vassileva (*Ecorys*)
  
- Task 2, 3: Approaches and results related to relevance, coherence, effectiveness and efficiency  
Hans Kros (*Alterra*)

# What is Evaluation? (1)

**Evaluation should not be confused with monitoring** – collecting and recording information in a routine and systematic way to check progress against plans – though monitoring is critical for the evaluation process.

**Evaluation is about judging:**

- Did an activity achieve what it set out to do?
- Did a policy change behaviour as expected?
- Did laws and regulations reach their intended effects?

Evaluation looks at the difference in a situation **with and without** (policy, regulation etc.), not before and after.



## What is Evaluation? (2)

Evaluation is important for:

- finding out whether the aim of a programme, or a policy has been achieved;
- assessing what else has been achieved;
- finding out what went well and what could be improved;
- feeding back progress to everyone involved in implementation and policy making;
- demonstrating that resources are well-allocated;
- sharing experiences with others including key decision makers

# Evaluation Criteria

- Relevance and coherence - the extent to which the given legislation is relevant to the identified needs and general EU policy objectives and coherent with other relevant policy tools.
- Effectiveness: the extent to which the legislation is achieving its operational, specific and global objectives.
- Efficiency: the relationship between financial and other inputs related to the implementation and enforcement of the legislation and the concrete outcomes (how economical have the various inputs been converted into outputs and results)
- EU value added: the extent to which an intervention supported at EU level brings about changes that would not have occurred through Member States acting on their own or cooperating bilaterally.

# Thank you

Erik Klaassens, Ecorys

[Erik.klaassens@ecorys.com](mailto:Erik.klaassens@ecorys.com)



## Stakeholder Consultation meeting 26/05/2015 Brussels

### DWD Evaluation EC's role and goals

# Retrospective



# We evaluate 98'er DWD

- Emerging Pollutants
- Full Risk based approach
- Source reduction
- DW Contact Products Legislation
- .....



**Effectiveness**

**Efficiency**

**Coherence**

**Relevance**

**EU added**

**value**

## (EX) VALUE for you



You look back: (1980) 1998 ===== 2015



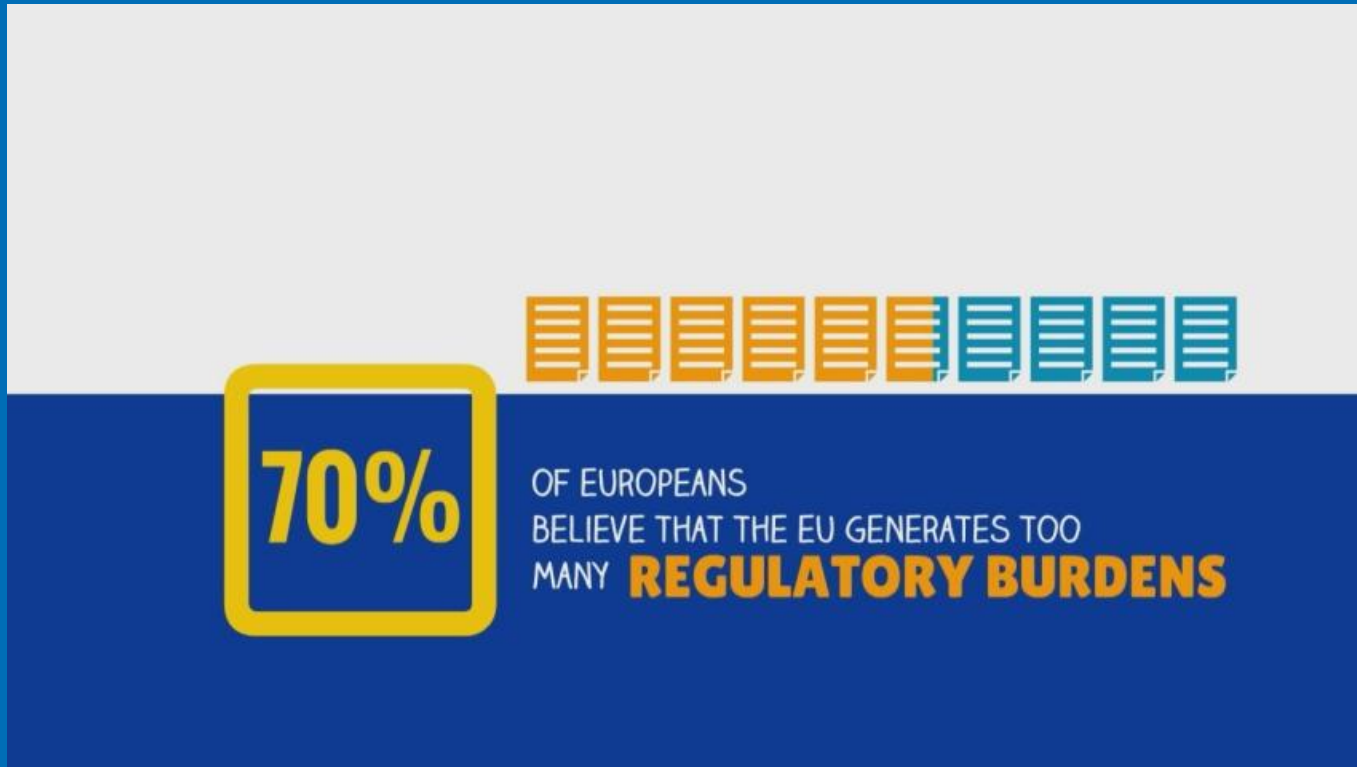




Our Perspective today  
- Legislator in 1998 -



## Evaluation - EU <http://europa.eu/!QY43nC> Better Regulation



<http://europa.eu/!QY43nC>

[http://ec.europa.eu/priorities/democratic-change/better-regulation/index\\_en.htm](http://ec.europa.eu/priorities/democratic-change/better-regulation/index_en.htm)

19 May 2015 - Better Regulation Package

## DWD Objectives:

- to protect human health from the adverse effects of any contamination (extra study task beyond the evaluation)
- to ensure that drinking water at the consumer tap is wholesome and clean.



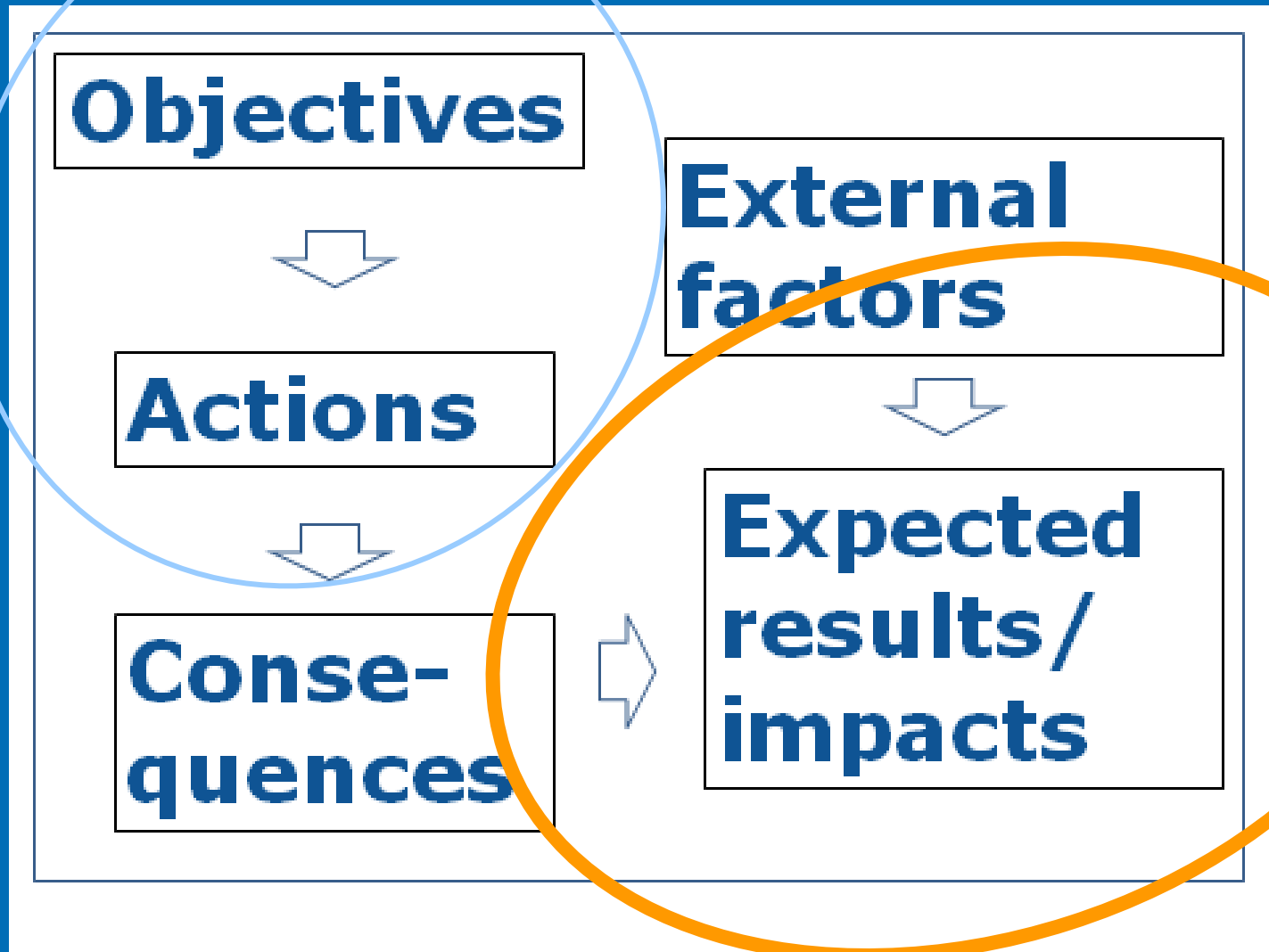


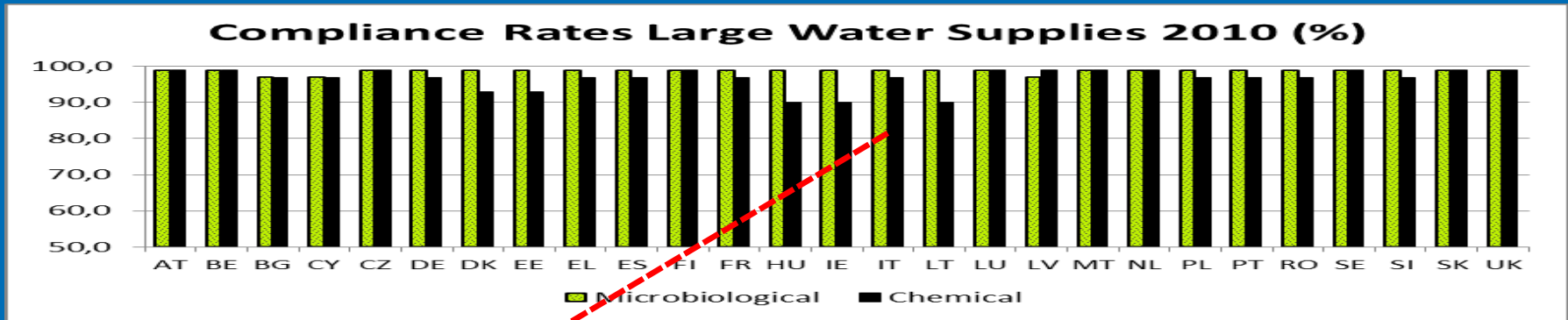
## DWD Actions (for Member States):

- Compliance with Parameters (Article 5 Annex I)
  - Microbial parameters
  - Chemical parameters
    - » geogenic,
    - » anthropogenic
    - » leaching from contact materials
    - » related to fertilization
    - » related to plant protection
- Monitoring programmes (Article 7 Annex II)
- Remedial actions (Article 8)
- Derogations (9)
- Quality assurance measures for contact materials (10)
- Up-to-date information to consumers (13)

*individual parameters  
not to be discussed!*

## Intervention Logic





Implementation ~~≠~~ Evaluation



Performance?  
Why?



# Evaluate actions, consequences, results/impacts

Was/Is DWD

- - effective                      objectives achieved, influences?
- - efficient                      costs/benefits, other more efficient ways?
- - coherent                      internally, externally, gaps, overlaps?
- - relevant                      appropriate or obsolete parameters and approaches?
- - added value                      profits, continue to require action at EU level?

## Based on Evaluation Results

2016 Impact Assessment => Look ahead





- Comments to:
- [ENV-DRINKING-WATER@ec.europa.eu](mailto:ENV-DRINKING-WATER@ec.europa.eu)
- [safe2drink@ecorys.com](mailto:safe2drink@ecorys.com)
  
- Tobias Biermann
- European Commission
- DG Environment
- Unit C.2 - Marine Environment  
and Water Industry
- 1049 Brussels/Belgium
  
- Phone: +32 2 29 62573
- [tobias.biermann@ec.europa.eu](mailto:tobias.biermann@ec.europa.eu)
- <http://ec.europa.eu/environment/water>



DWD Evaluation

DWD Evaluation

# Public Consultation

EU Survey on the quality of drinking water

## Results

Brussels, 26<sup>th</sup> of May 2015

Iglika Vassileva, Ecorys



# Public consultation - EU Survey

Period: 23/06/2014 to 23/09/2014  
-available in all languages

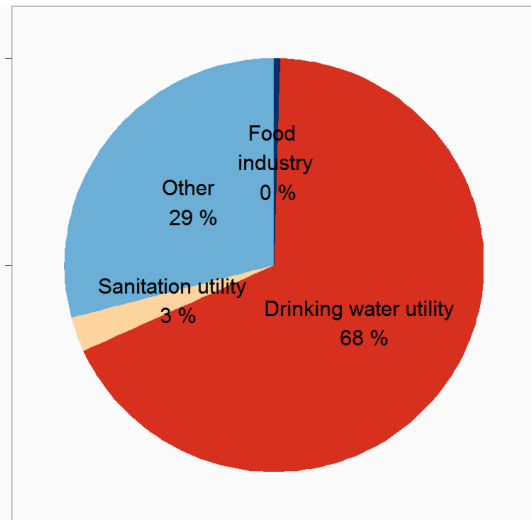
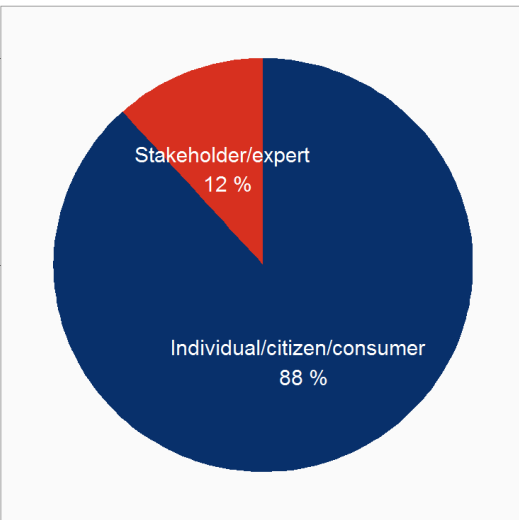
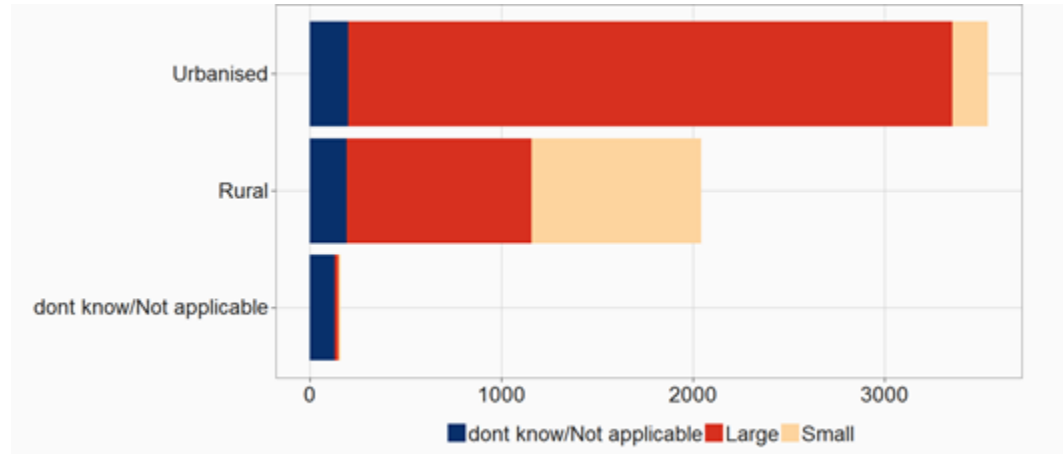
5908 replies + 136 e-mail position papers

Part 1: General Questions to Consumers  
Part 2: Questions Drinking Water Directive

<http://ec.europa.eu/eusurvey/>

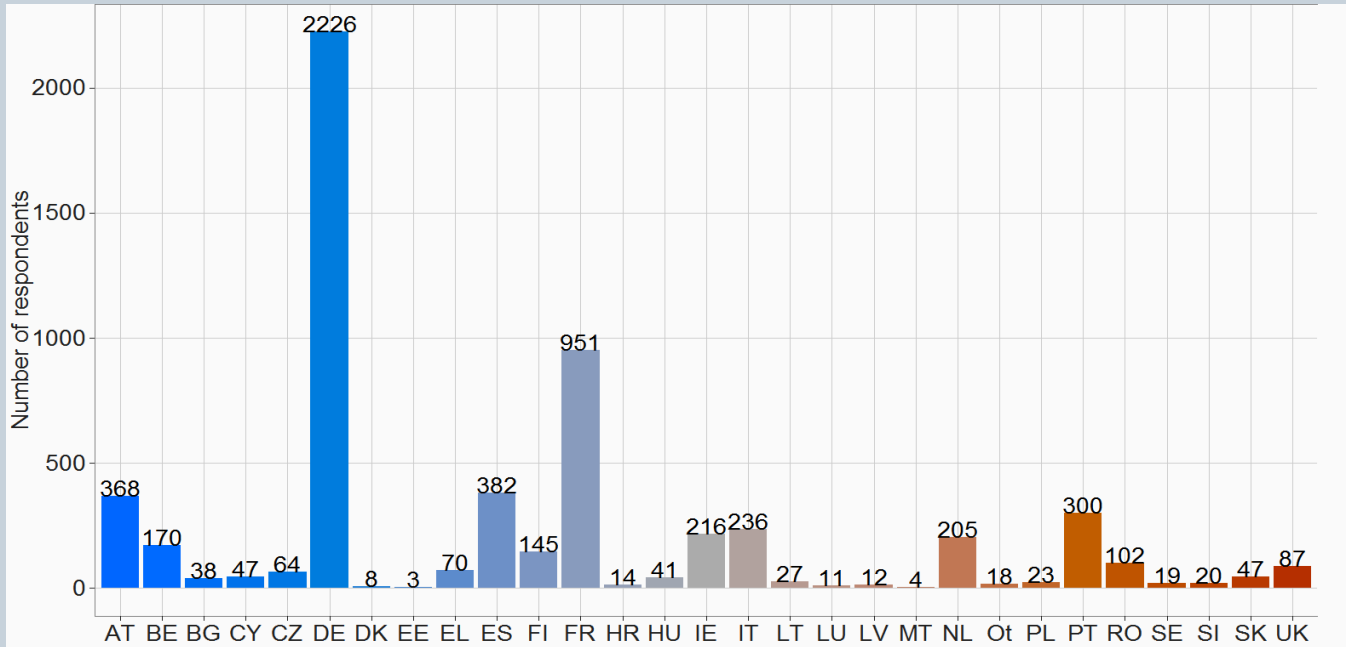
# Public consultation - EU Survey

62% - urbanised  
72 % -large  
watersheds

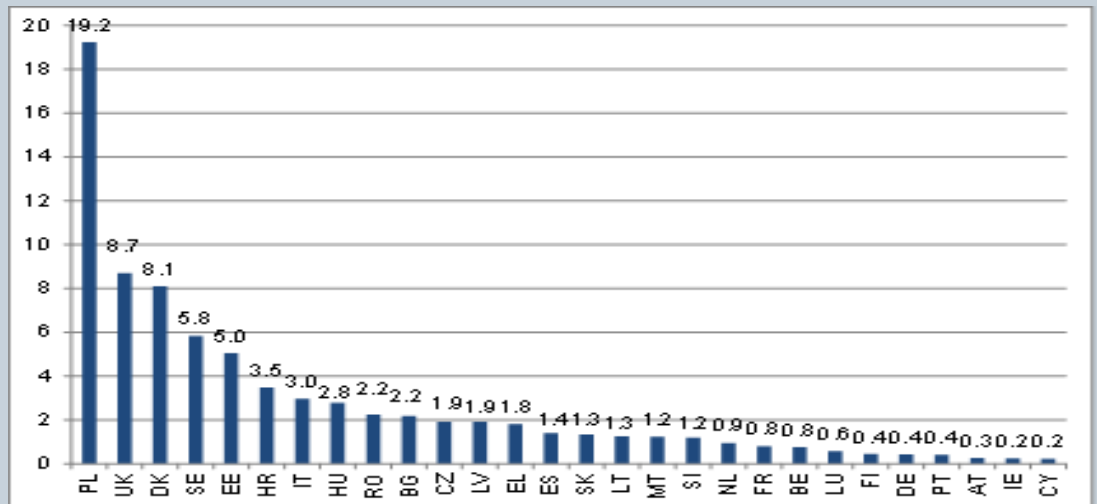


88% - citizens  
12% -  
stakeholders

# Answers per country



## Applied weights



# Public consultation – Approach and methods

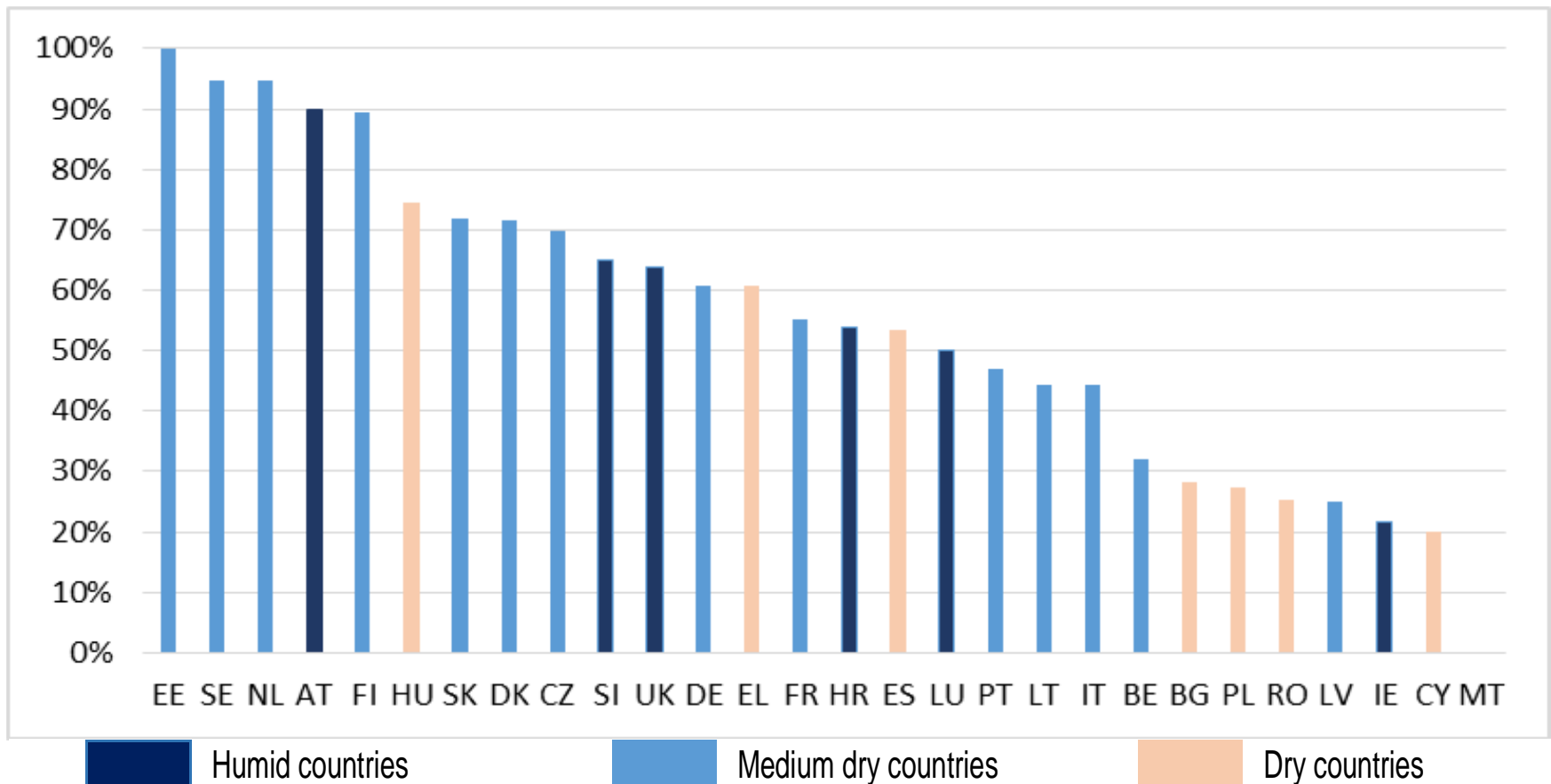
- Data review - errors, irrelevant data, double answers, filled in questionnaires submitted through the e-mail: biased answers (3,9%)
- Open answers and position papers - translation
- Data processing tools - Visual basic and R software
- Weights applied per country
- Sensitivity analysis

## Use of drinking water, EU-28

56% drink directly from the tap

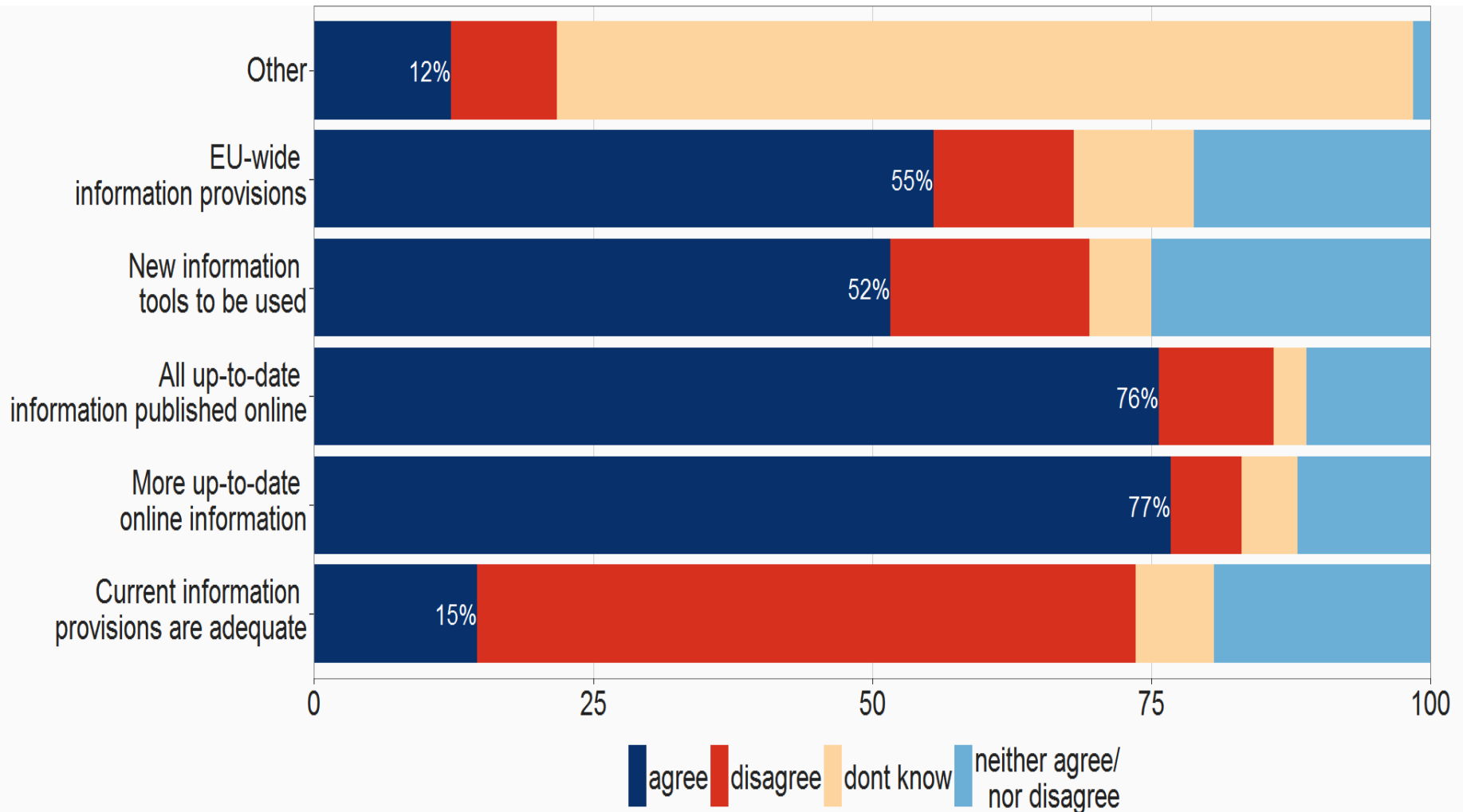
84% cook with water from the tap

90% use drinking water for personal hygiene.



# Information, EU-28

The satisfaction of the respondents ranges from 0% (EL, MT, SE) to as high as 36% (AT)





# Information (2)

## Needs:

- Clear and simple information related to the quality of drinking water
- Access to detailed information for anyone who would like to receive such information
- Information on – water quality, water losses, cost of the supply, profit margins, investments made and monitoring

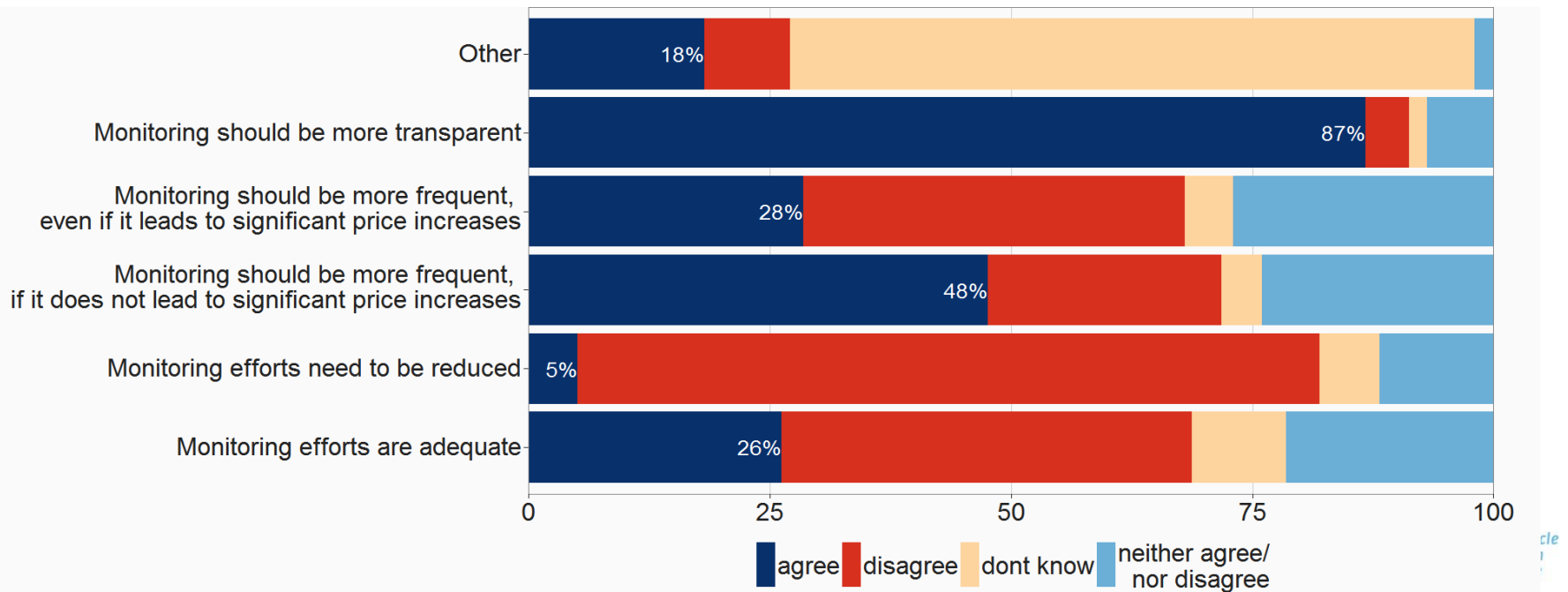
## Ways to provide information:

- consumer's bills - development of online accessible GIS database.
- more detailed and consumer oriented information at local level and more general at EU level

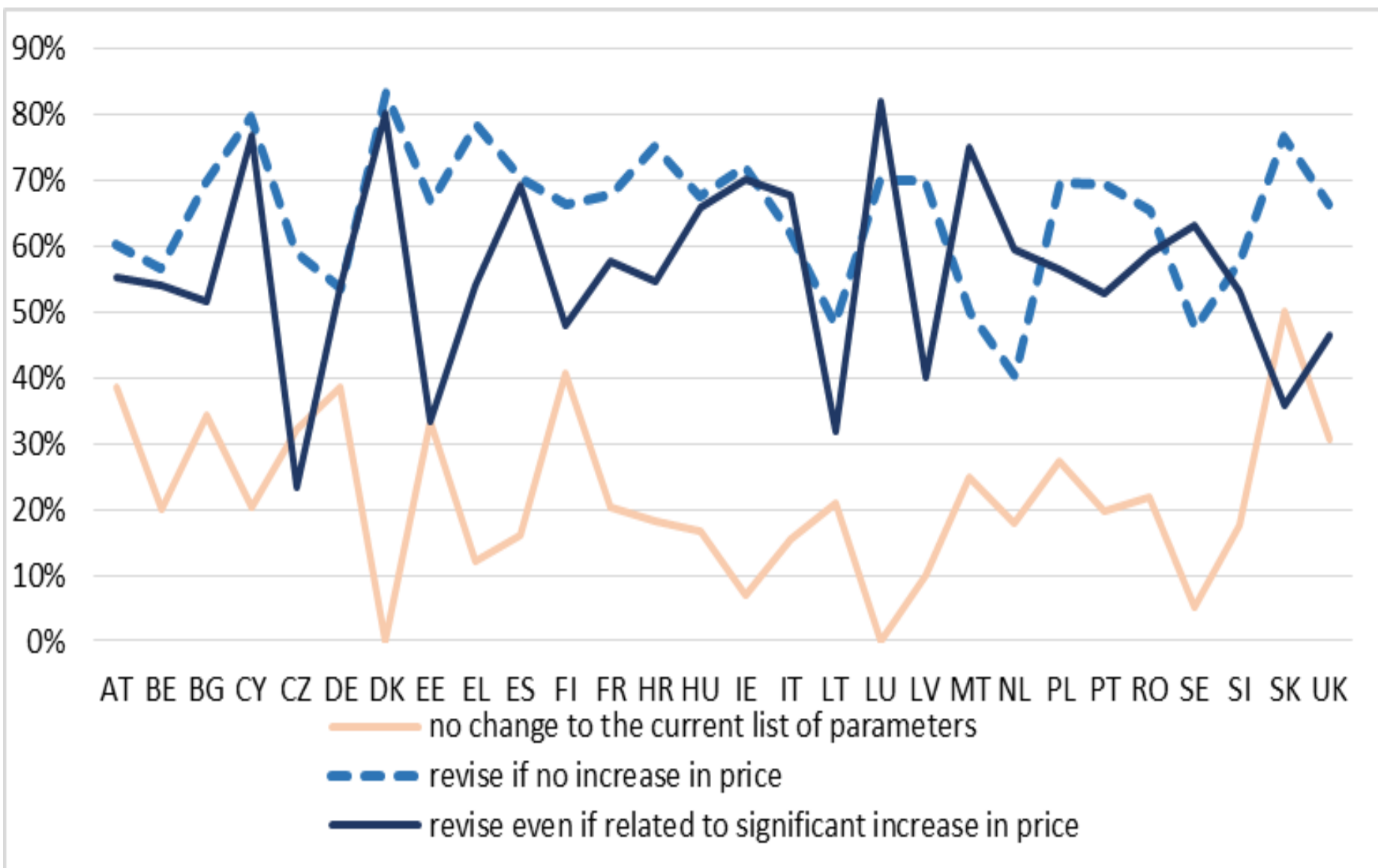
# Monitoring

Not important whether the monitoring is done more frequently or not, BUT

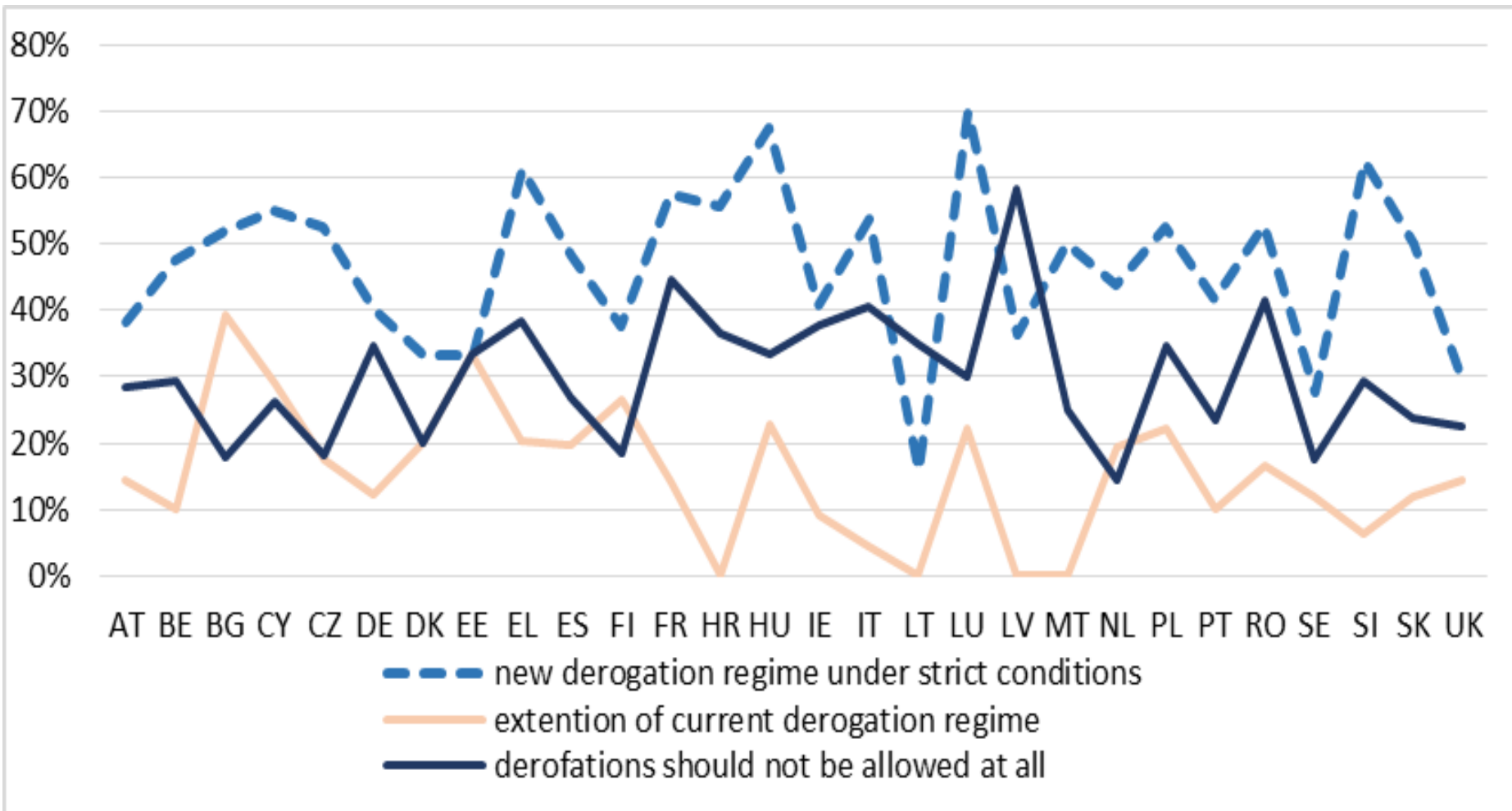
- Designed according to the needs
- More transparent
- Based on risk-based approach
- Used as a preventive measure



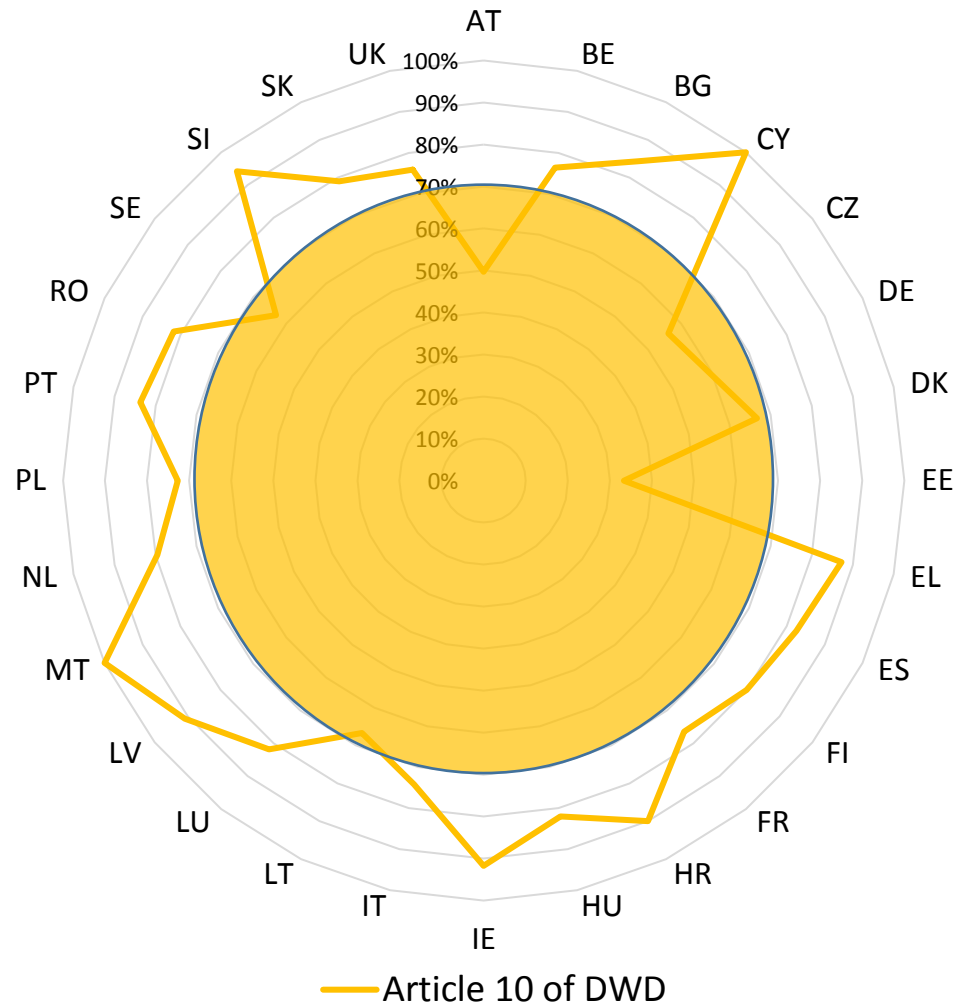
## Revision of the list of parameters



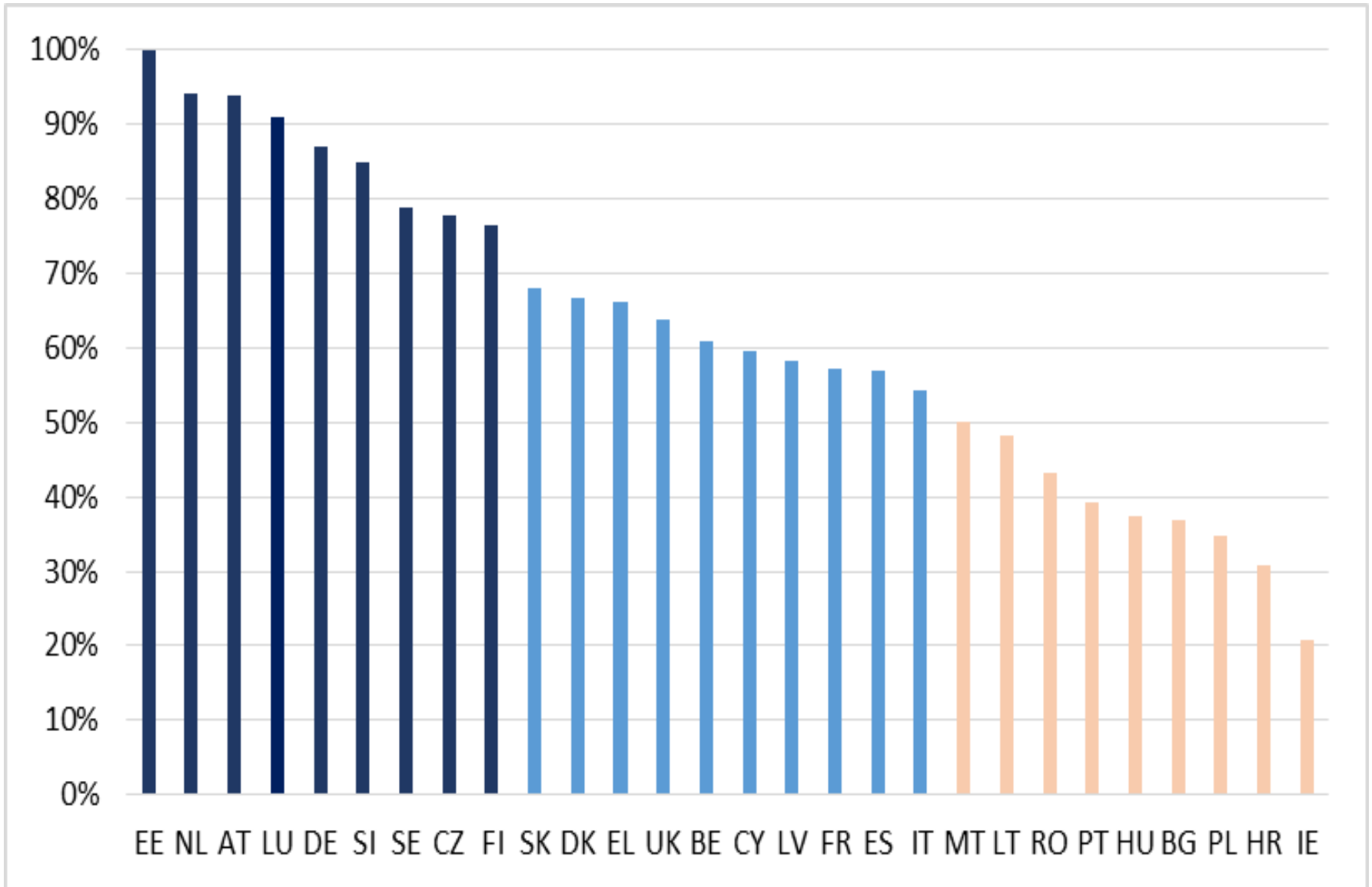
# Derogations:



# Article 10 - contact with materials



# Affordability



# Conclusions

- Revision of the list of parameters in the DWD (Annex I) on the basis of new scientific evidence;
- Revision of the derogation regime - introduction of a new derogation regime to a limited extent and under strict conditions;
- Revision of article 10 of the DWD, or development of a new legislation, for establishment of a harmonized approach across member states in respect of substances and materials that can be used in contact with drinking water;
- Introduction of a risk based approach in drinking water monitoring/management;
- Strengthening the requirements with regard to ensuring transparency of the water service and provision of information at local level and at EU level.

# Conclusions – other issues

- Pricing of the drinking water serves:
  - Transparency in pricing;
  - Application of the cost recovery principle;
  - Application of polluter pays principle.
- Establishment of standards for the water losses in the networks;
- Guaranteeing the right to access/supply of clean drinking water to every EU citizen including addressing problems related to artificial additives as fluoridation



# Thank you

Iglika Vassileva, Ecorys

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# Project results to date

**An Assessment of  
Relevance – Coherence – Effectiveness – Efficiency**

**Approaches and some results**

**Brussels, 26<sup>th</sup> of May 2015**

**Hans Kros, Alterra, Wageningen-UR**



# Outline

- Aim of the study
- Overview of aspects
  - Relevance
  - Coherence
  - Effectiveness
  - Efficiency
- Clarifying questions



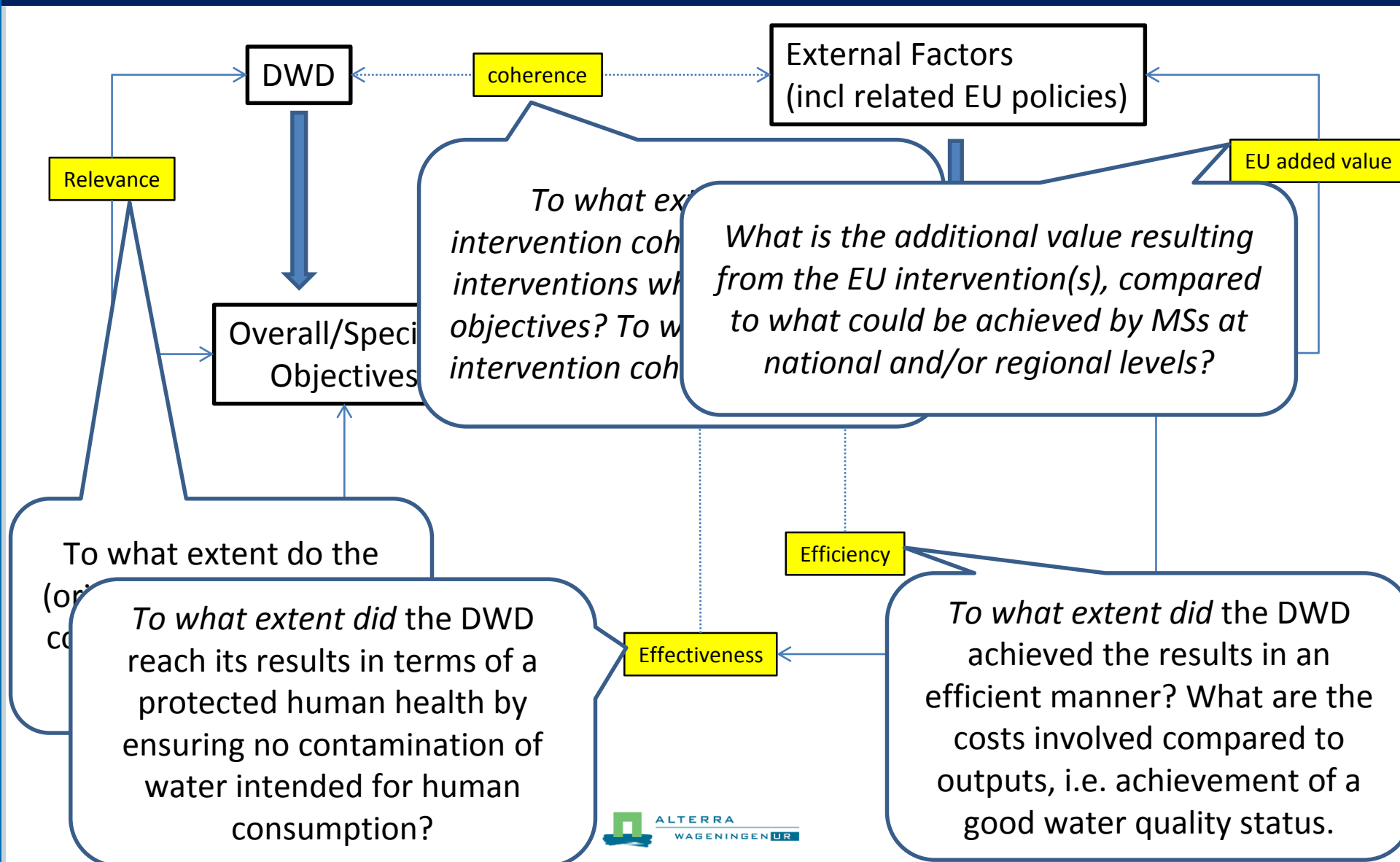
# Aim of the Study

- Task 2: to develop an Intervention logic including all the activities and expected effects of an intervention
- Task 3: to develop a methodology to answer the evaluation questions related to Relevance, Coherence, Effectiveness, Efficiency and EU added value

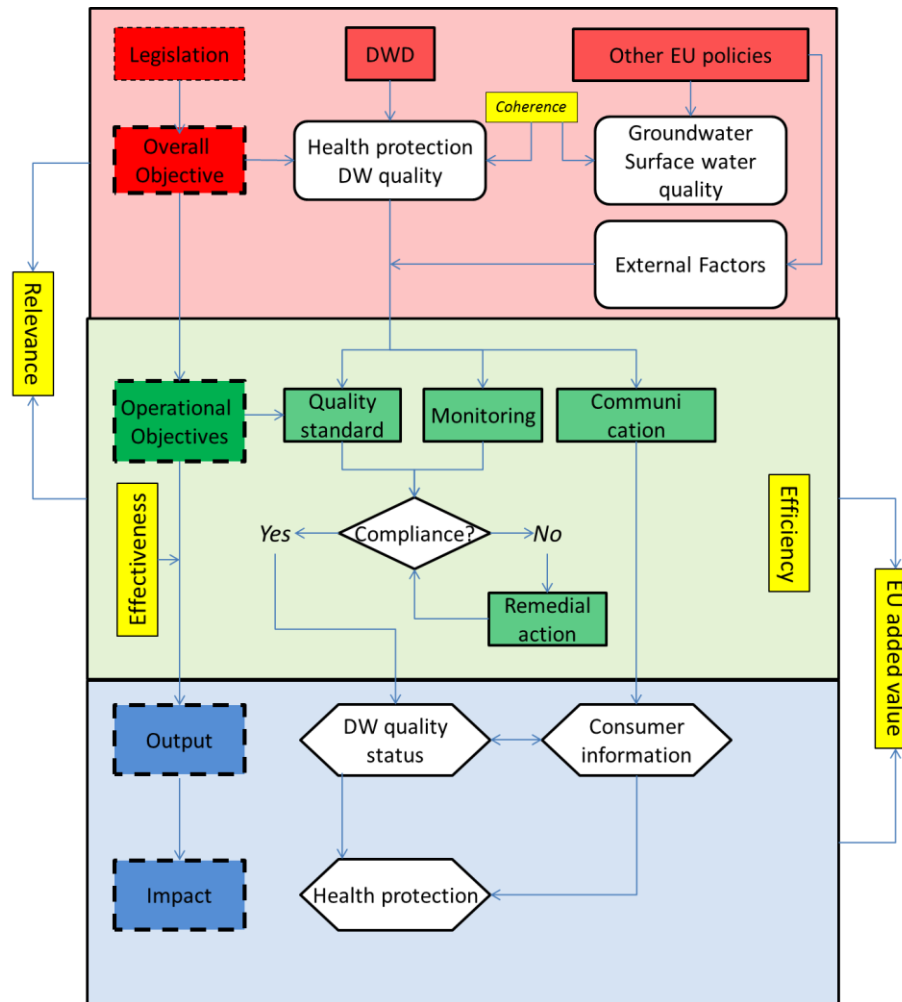
## TASK 2: Intervention logic



# Intervention Logic of the DWD (1)



# Intervention Logic of the DWD (2)



# Approach to the Evaluation of the DWD

Current approach to evaluation:

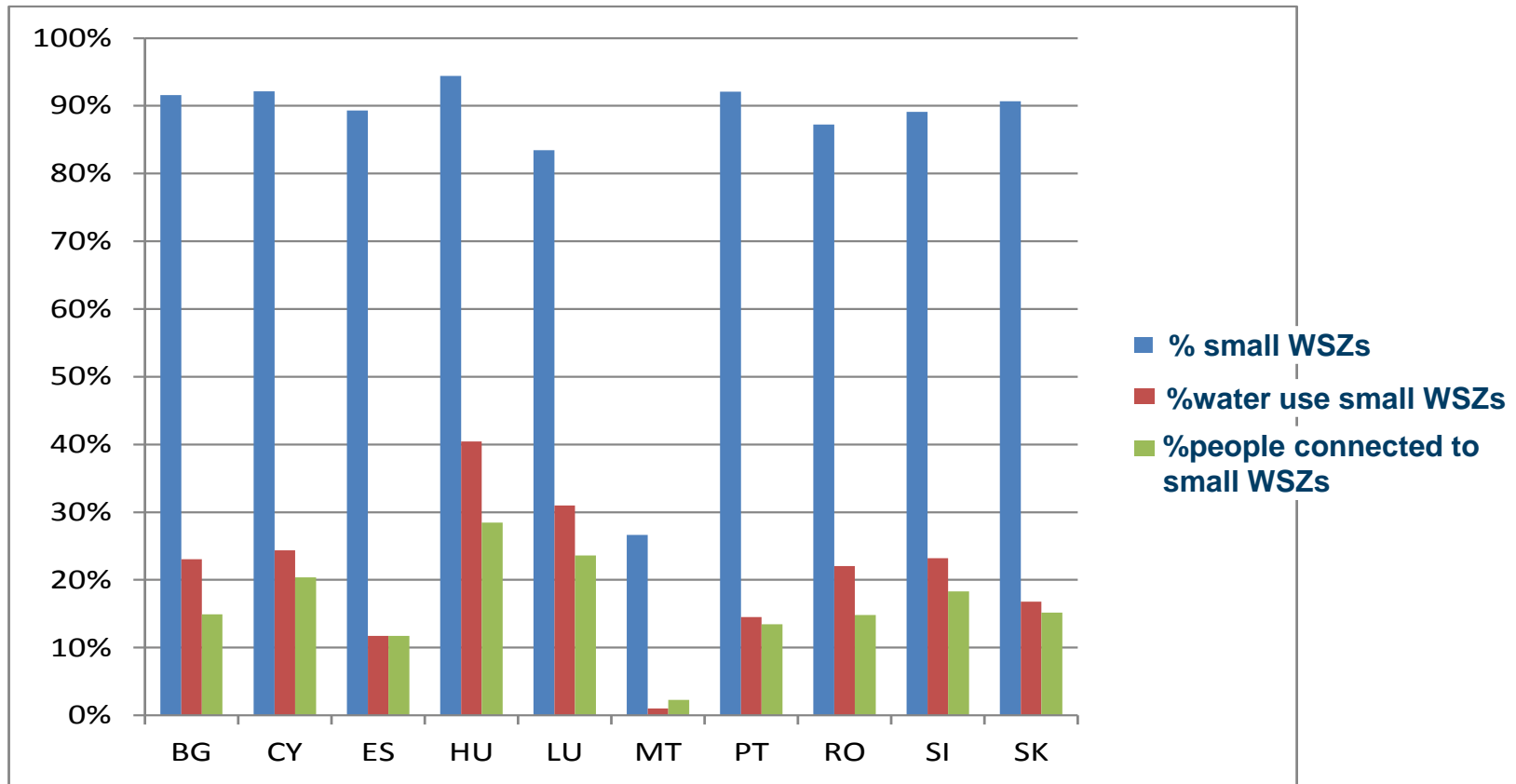
- Relevance: percentage of people protected, relevance of included parameters and quality of monitoring
- Coherence: Coherence between DWD and other directives (internal coherence comes later!)
- Effectiveness: Changes in non-compliance of relevant parameters
- Efficiency: Focus on comparison current versus risk based approach (Water safety plans)



# TASK 3: Methodology to answer the evaluation questions : relevance



# Relevance: Percentage of small WSZs and people connected small WSZs



Share of water production and population connected to small ( $< 1000 \text{ m}^3 \text{ day}^{-1}$ ) water supply zones (WSZs) (10 MS only)

Source: DWD reporting obligation EIONet <http://rod.eionet.europa.eu/obligations/171>

# Relevance of parameters included in assessment

- Which parameters are relevant to protect drinking water quality?
  - Expert knowledge about health effects at exceedance
  - Relevant for a (substantial) part of the EU
  - Relevant in view of non-compliance
  
- Which additional parameters should be monitored that are important for human health?
  - Expert judgement based on knowledge about health effects of unmeasured parameters
  - Regulation of parameters in other countries outside EU

# Approach to Relevance

Parameter	Parametric value	Unit	Relevance	Explanation		
				Threshold	Health effect	Relevant for a (substantial) part of the EU
<b>Microbial parameters</b>						
<i>E. coli</i>	0	n/100ml	+++	Yes	Yes	Yes
<i>Enterococci</i>	0	n/100ml	+++	Yes	Yes	Yes
<b>Chemical parameters</b>						
Acrylamide	0.1	µg/l				
Antimony	5	µg/l				
Arsenic	10	µg/l				
Lead	10	µg/l				
Mercury	1	µg/l				
<b>Indicator parameters</b>						
Aluminium	200	µg/l				
Ammonium	0,50	mg/l				
Chloride	250	mg/l				
<i>Clostridium perfringens</i>	0	n/100ml				



# Selection of 'relevant' candidate parameters

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## Group parameters

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## Candidates for study

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Microbial parameters

*E. Coli*

Chemical parameters

- Geogenic
- Related to fertilization
- Related to plant protection
  
- Related to materials in contact with drinking water

Arsenic

Nitrate

Atrazine

Desethylatrazine

Terbutylatrazine

Bentazon

Lead

Copper

Indicator Parameters

*Cl. perfringens*

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# Data Quality: Difficulty of Interpretation of data (1)

Some parameters are combined in one record  
e.g. “E. coli e ferro”

CountryCode	WSZ_ID	Parameter	NCI_Year	NCI_TotalAnalysis	NCI_Total Noncompliances	NCI_Maximum
IT	Acqu. Sorical serve Cessaniti capoluogo	Coliformi - E.coli	2011	5	3	122 - 20
IT	Acqu. Comunale	Colif. - E.coli	2011	10	5	73 e 2
IT	Acqu.capoluogo di Gerocarne	Coliformi e Ferro	2011	8	5 e 1	> 200 e 364

## Data Quality: Difficulty of Interpretation of data (2)

Sometimes WSZ are recorded more than once for the same parameter and for the same year:

Member States	Number of WSZ with > 1 result per year
Austria	10
Belgium	15
Bulgaria	5
Cyprus	21
Czech Republic	4
Germany	432
Spain	2
France	85
Greece	1
Hungary	2
Ireland	91
Italy	490

# Data Quality: Difficulty of Interpretation of data (3)

Percentage Compliance reported both as fraction (1.0 = 100%) as well as percentage (100 = 100%)

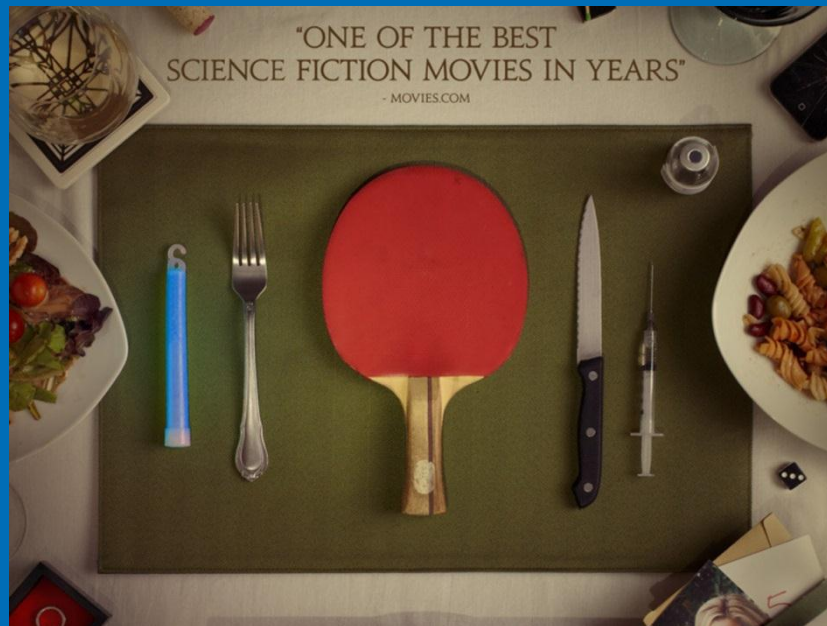
CountryCode	Parameter	DWD_Year	NS_WSZMonitor	NS_WSZNonCompl	NS_Analys	NS_AnalysisNonCompl	NS_PercComply
MT	AI	2012	11	0	45	0	0.99
BE	AI	2011	238	16	14490	34	100

Parameter names are missing

CountryC	Parameter	NS_Year	NS_WSZMonitored	NS_WSZNonCompli	NS_Analysis	NS_AnalysisNonCompl	NS_PercComply
IT	isoproturon	2013	18	0	1552	0	0
IT		2013	2	0	2	0	0
IT		2013	18	0	67	0	0
IT		2013	10	0	43	0	0
IT		2013	8	0	53	0	0
IT		2013	2	0	2	0	0
IT		2013	8	0	41	0	0



# TASK 3: Methodology to answer the evaluation questions : coherence



# Coherence between DWD and other Directives

- Identify to what extent DWD and related EU Policies regulate water quality
  - Direct regulation water quality (e.g. Groundwater Directive)
  - Regulation of emissions to the water system (e.g. Nitrate Directive)
  - Regulation of emission to adjacent terrestrial systems (e.g. Pesticides Use Regulation)
  - Indirect regulation of emission to soil or water via e.g. control of food quality (e.g. Food Directive)
  - Regulation of Use of dangerous substances (e.g. Directive on dangerous substances)

# Coherence: Approach (1)

- Coherence with other EU legislation is defined here as identification of:
  - Gaps where further or different EU legislation is required
  - Overlaps, discrepancies and contradictions



## Coherence: Approach (2)

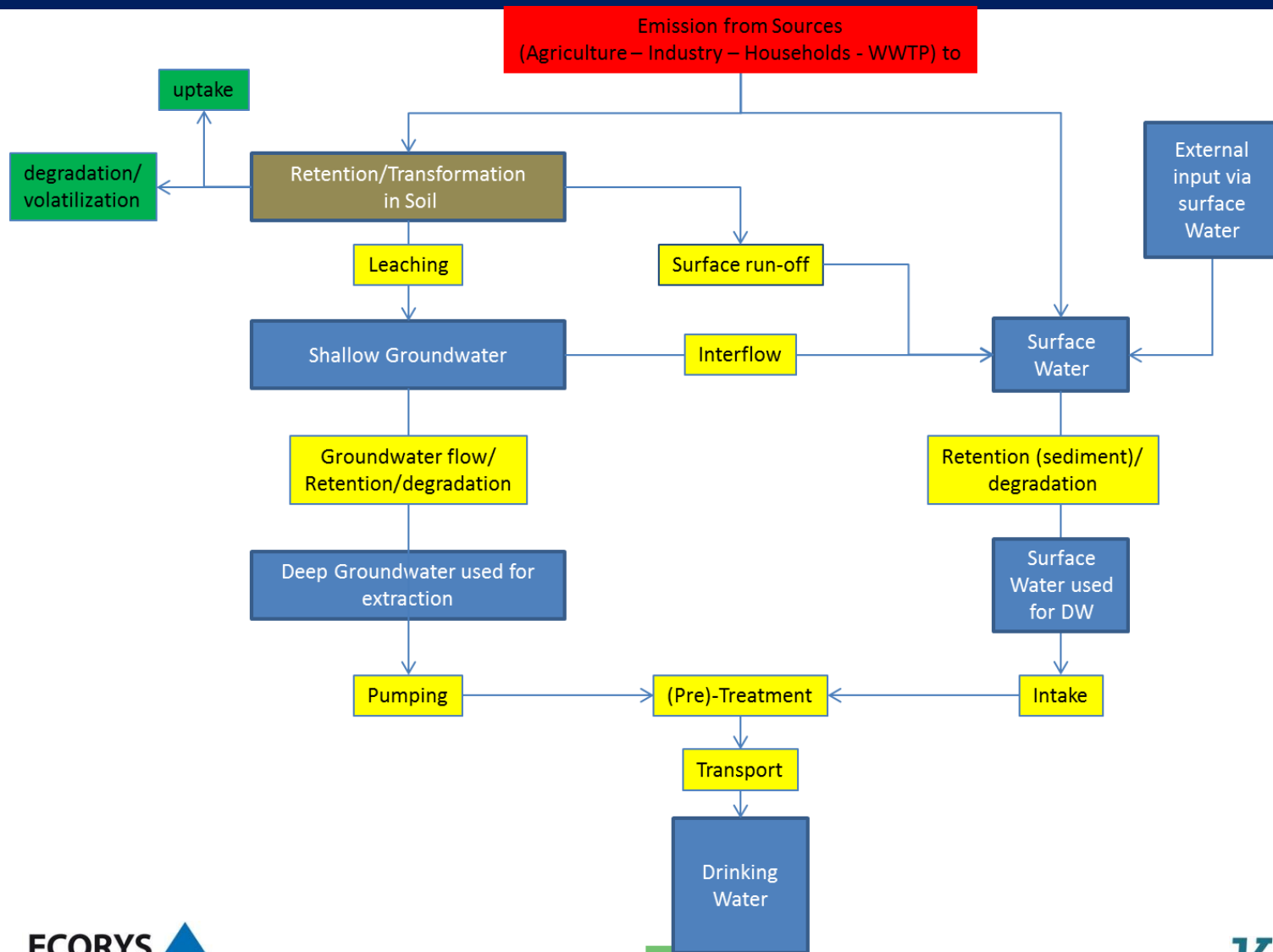
Coherence: Mode of action of adjacent policy

- Option 1: *direct comparison* of allowed maximum levels in surface/ground water with those in DWD
- Option 2: *conversion of allowed emission* to corresponding maximum levels in surface waters
- Option 3: *prediction* of expected maximum levels in ground/surface waters depending on maximum allowed load to soil

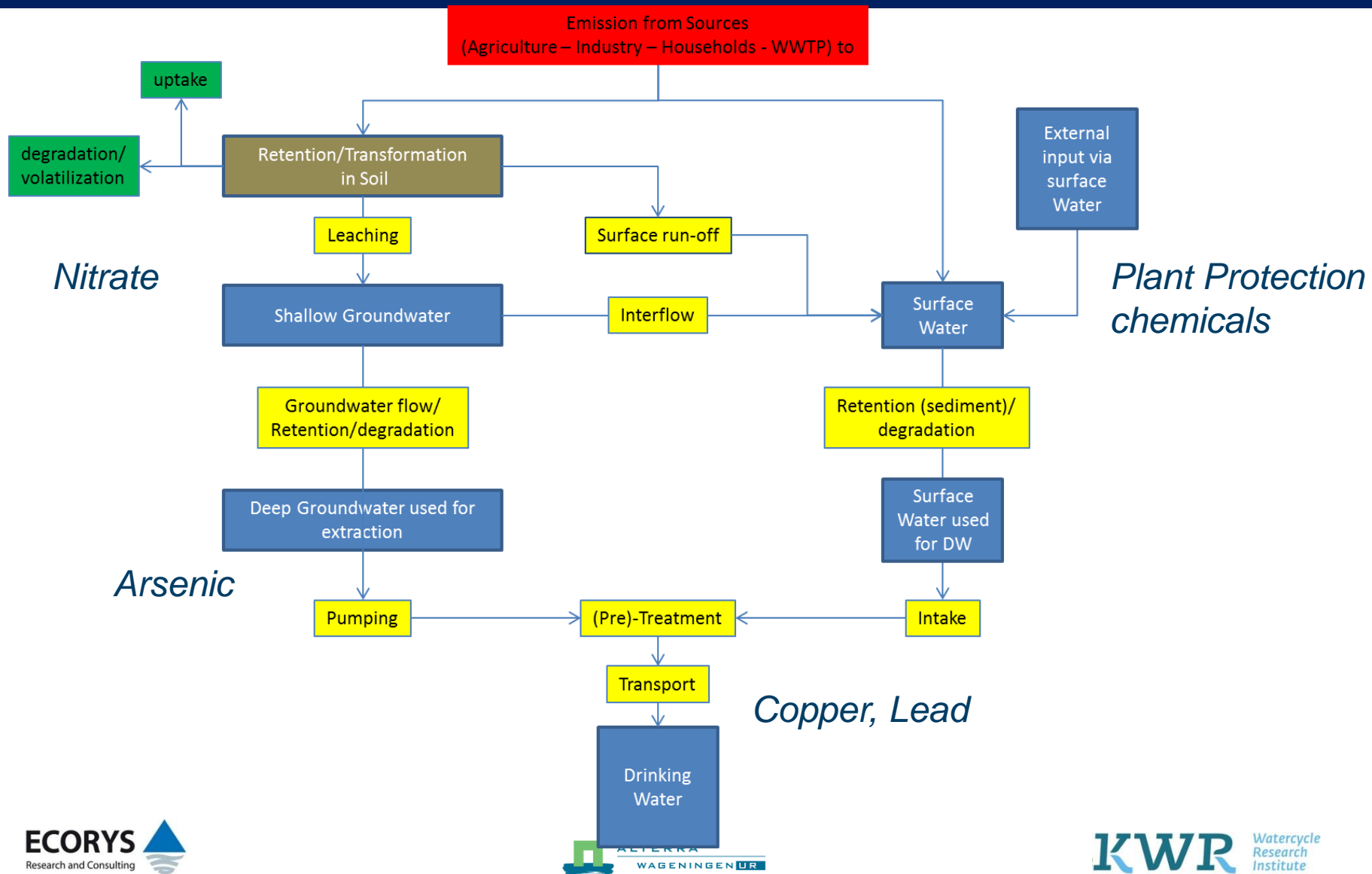
# Coherence: Overview of selected adjacent policies

Directive/Regulation	Code	Option
Nitrate Directive	1991/676/EEC	1
Water Framework Directive	2000/60/EC 2008/105/EC	1
Waste Directive	2008/98/EC	
Sewage Sludge Directive	86/278/EEC	
Plant Protection Products Directive		
Industrial Emissions Directive	2010/75/EU	
Landfill of Waste Directive	1999/31/EC	
Sewage Sludge Directive	86/278/EEC	3
Urban Waste Water Directive	91/271/EEC	2
Undesirable products in animal nutrition	2001/102/EC	
Technical requirements inland waterway vessels	82/714/EEC	
National emission ceilings for atmospheric pollutants	2001/81/EC	
Classification, packaging and labelling dangerous substances	67/548/EEC	
Integrated pollution prevention and control	96/91/EC 2008/1/EC	
Hazardous Waste	91/698/EEC	
Radioactive substances in water intended for human consumption	CD 2013/51/Euratom	1
Exploitation and marketing of natural mineral waters	2009/54/EC	1
Constituents of natural waters and the conditions for ozone-enriched air for treatment of natural mineral waters and spring waters	2003/40/EC	1
Groundwater Directive	2006/118/EC	1

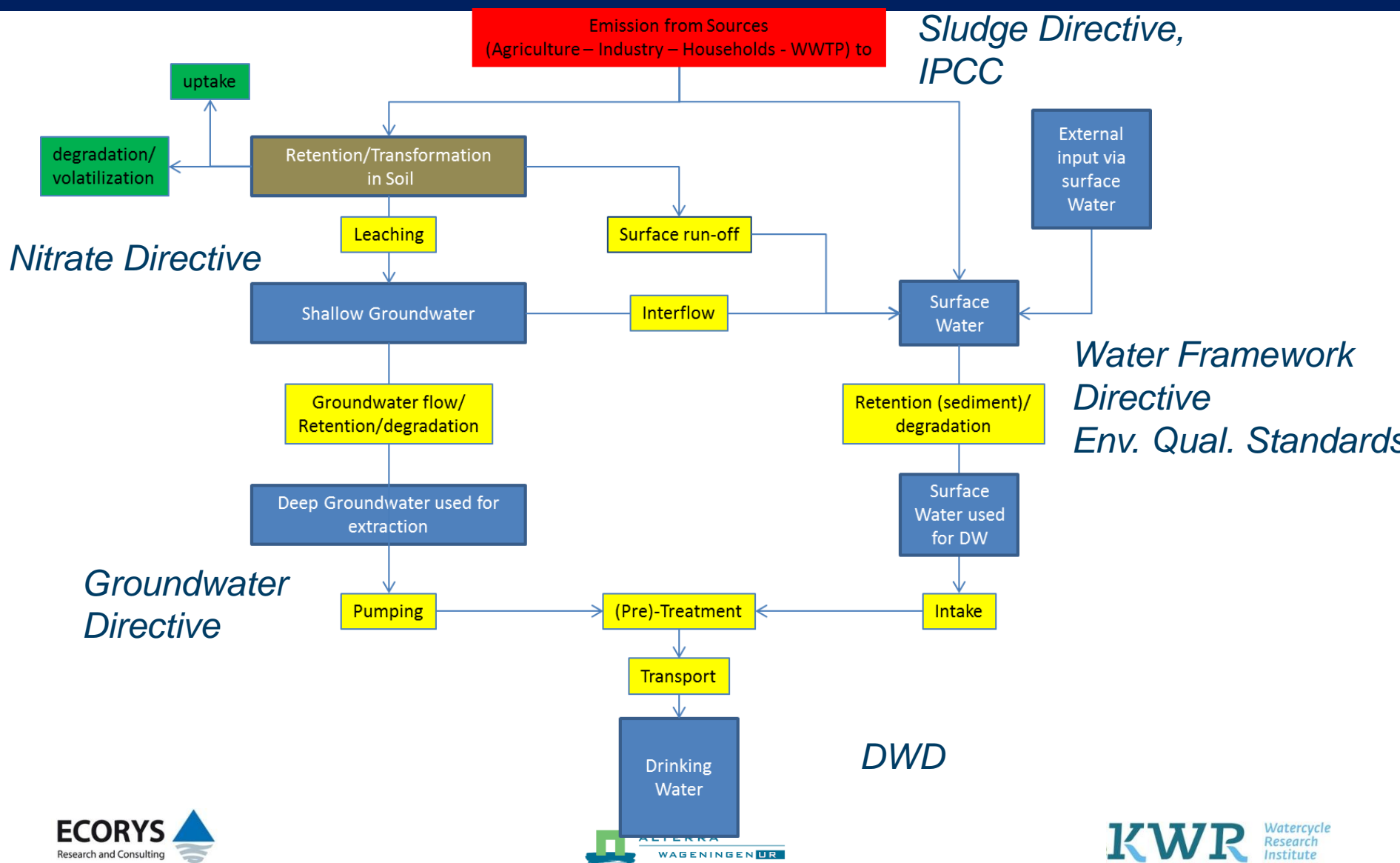
# Coherence: Source – Pathway – Receptor analysis



# Coherence: Source – Pathway – Receptor analysis



# Coherence: Source – Pathway – Receptor analysis





# TASK 3: Methodology to answer the evaluation questions : effectiveness

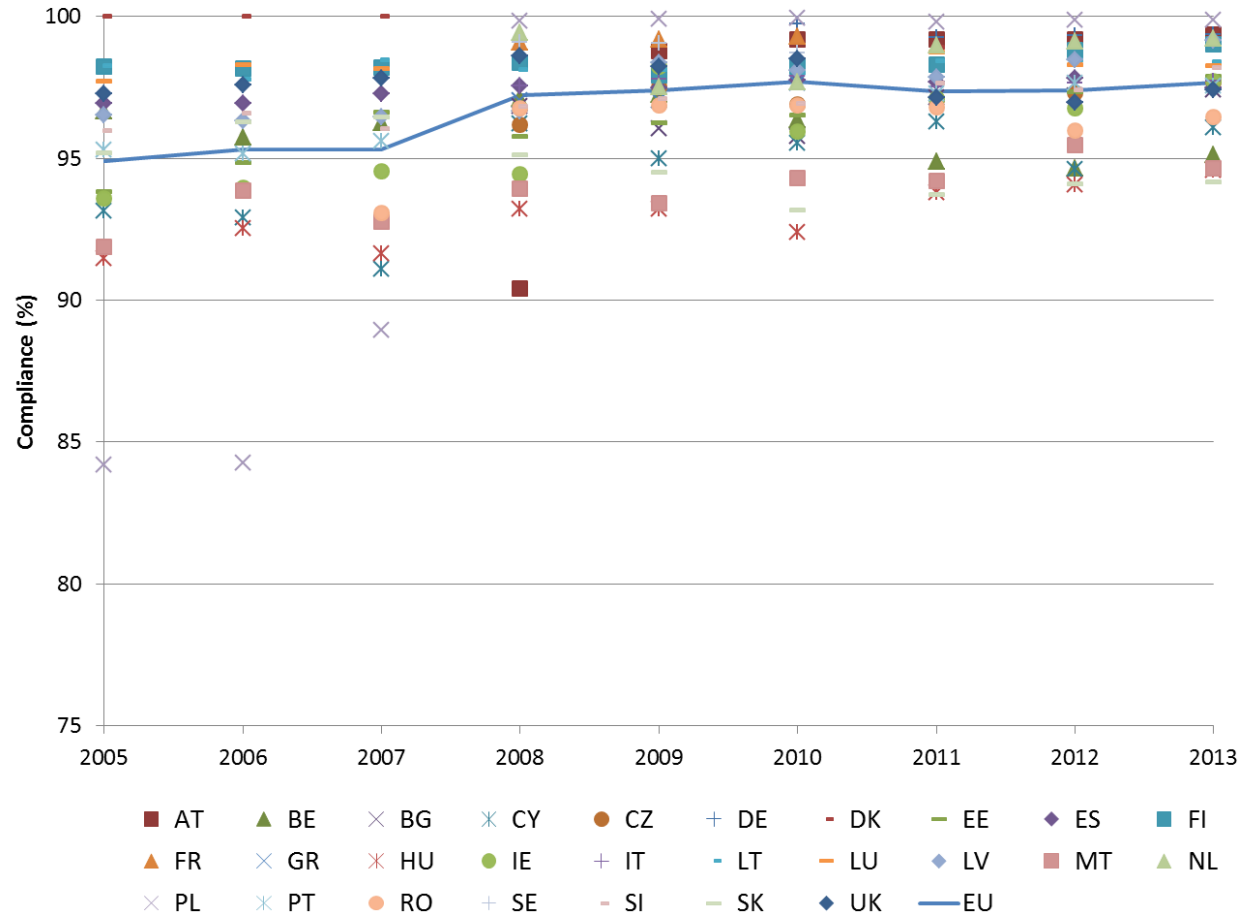


# Effectiveness

## *Temporal trends & spatial variation in water quality*

- Trends in compliance in water quality between 1993 - 2013
- Trends in water quality between 2005 - 2013
- Variation in current water quality (mean 2010 - 2013)
  - Mean compliance of all parameters
  - Mean compliance of ten candidate parameters
  - Mean compliance for each candidate parameters separately

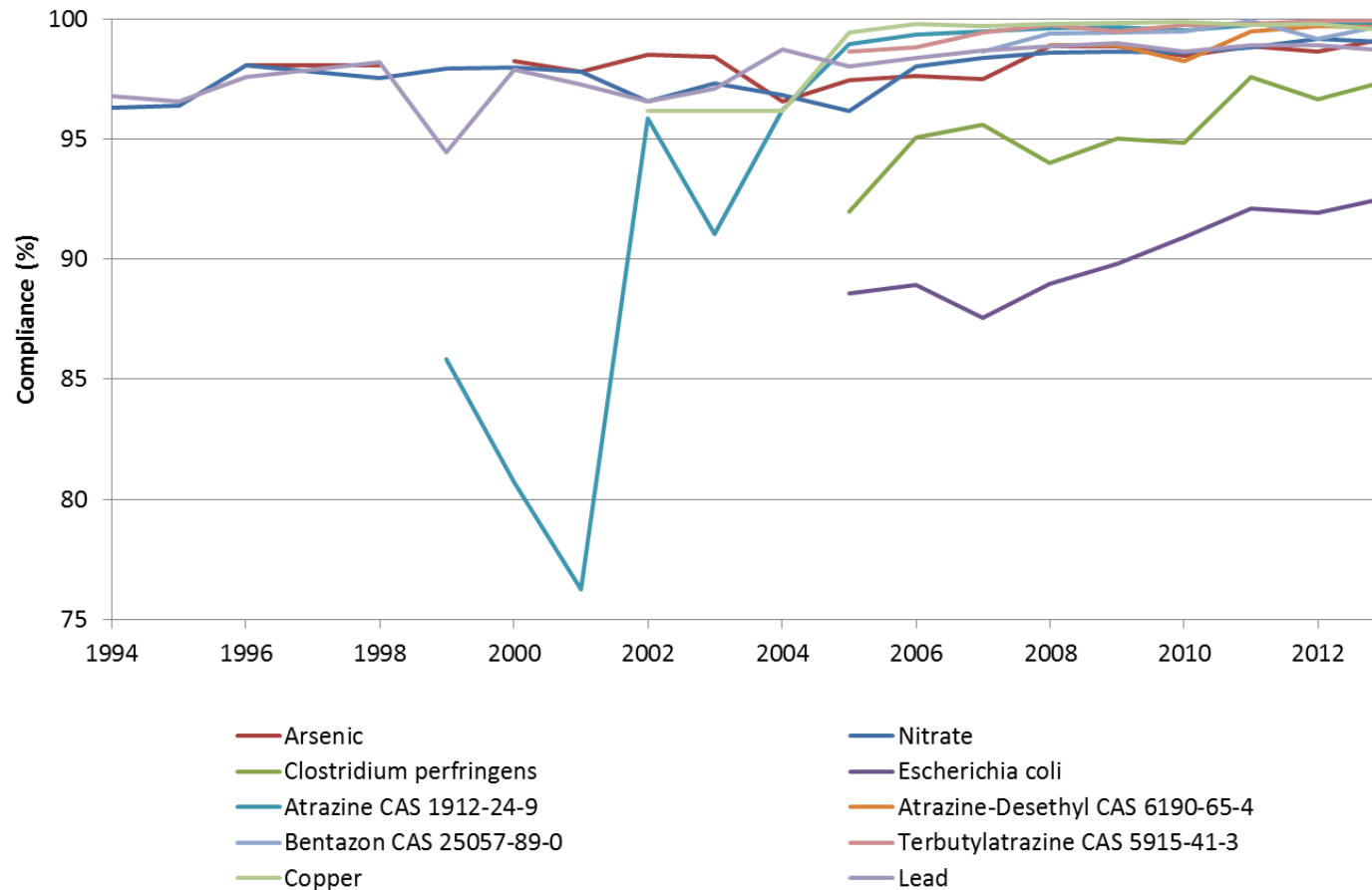
# Trends in water quality between 2005-2013



Mean compliance of all (available) parameters over period 2005 – 2013

Source: DWD reporting obligation EIONet <http://rod.eionet.europa.eu/obligations/171>

# Trends in compliance in water quality between 1993-2013

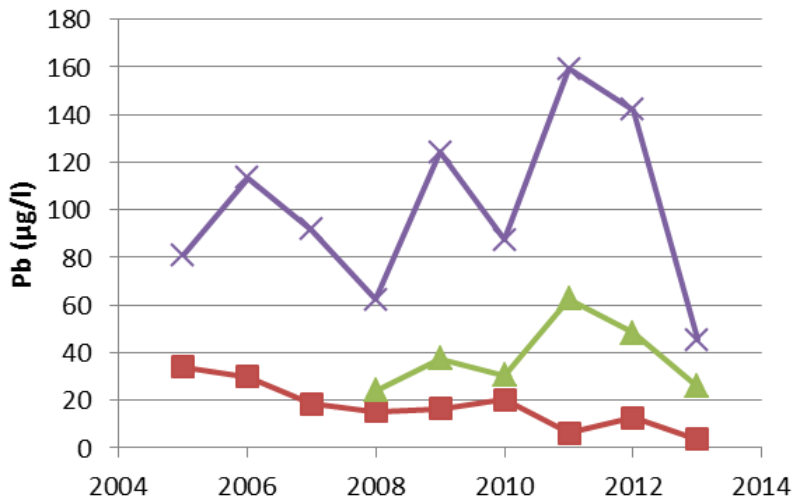


*Mean compliance of ten parameters over the period 1993 - 2013*

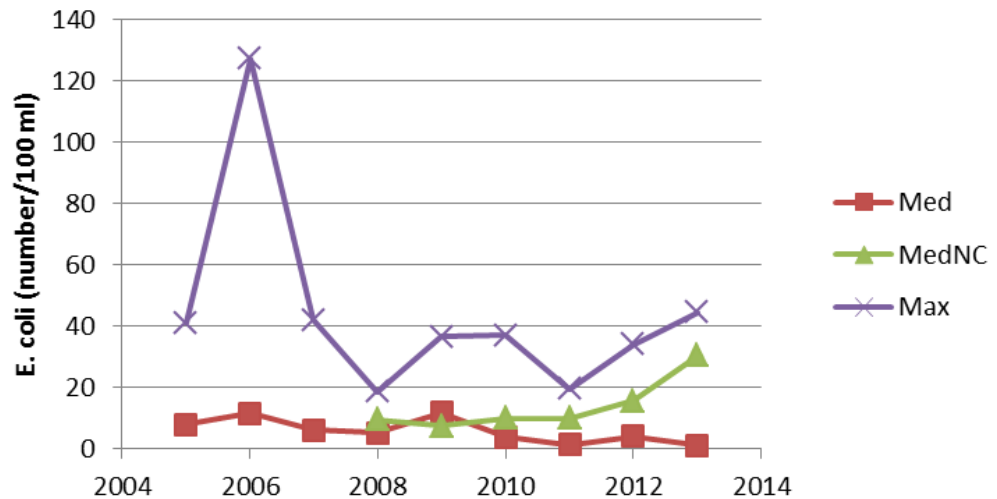
Source: DWD reporting obligation EIONet <http://rod.eionet.europa.eu/obligations/171>

# Trends in water quality between 2005-2013

## Lead



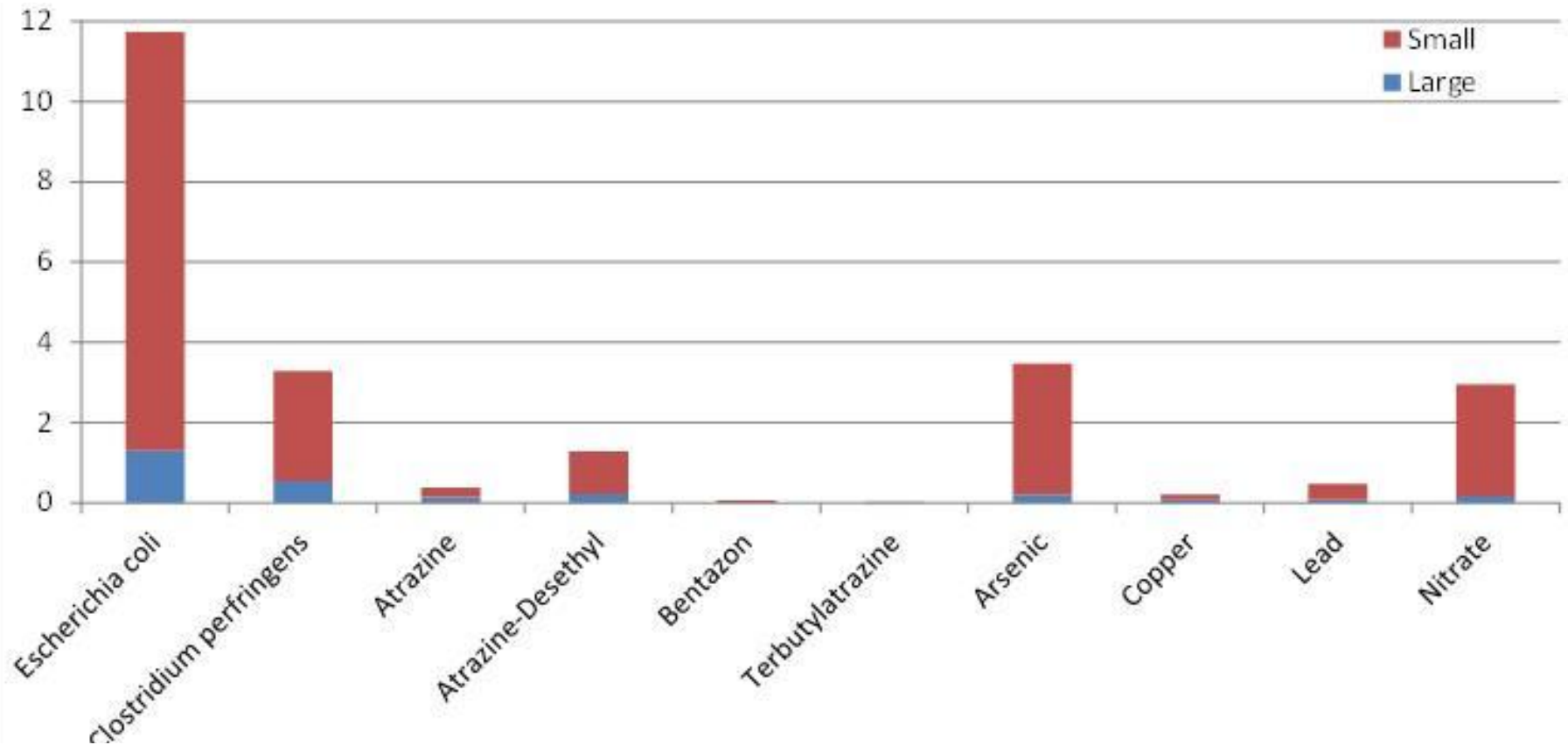
## Escherichia coli



Mean concentration of non compliant WSZ at EU level for 2005 – 2013 (for all MS)

Source: DWD reporting obligation EIONet <http://rod.eionet.europa.eu/obligations/171>

# Variation in current water quality in large and small WSZs



Percentage non-compliance of the ten candidate parameters for large and small (< 1000 m<sup>3</sup> day<sup>-1</sup>) WSZs for 10 MS (Period 2010 – 2013)

Source: DWD reporting obligation EIONet <http://rod.eionet.europa.eu/obligations/171>

# TASK 3: Methodology to answer the evaluation questions : efficiency



# Efficiency: compare to risk based approach (Water Safety Plans)

## Key components of a Water Safety Plan approach

- *Setting health based targets* (based on an evaluation of health concerns)
- *System assessment* to determine whether the water supply chain -from source through treatment to the point of consumption- as a whole can *deliver water of a quality that meets the health-based targets*
- *Operational monitoring* of the control measures in the supply chain, which are of particular importance in *securing drinking-water safety*
- *Management plans* (documenting the system assessment and monitoring; describing actions to be taken in normal operation and incident conditions – including upgrade and improvement), documentation and communication
- *A system of independent surveillance* that verifies that the above are operating properly



# Efficiency: Pros and Cons WSPs vs monitoring approach

Aspect	Monitoring	WSPs
Environmental impact/ Control water quality		
<ul style="list-style-type: none"> <li>• Large WSZs</li> <li>• Small WSZs</li> </ul>		
Coverage (WSZs included)		
Internal cooperation water suppliers/agencies		
Costs		
<ul style="list-style-type: none"> <li>• Investment</li> <li>• Operational</li> </ul>		
Auditing		
Consumer confidence		

# Thank you

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# Statement Elections

## Voting on Statements

Brussels, 26<sup>th</sup> of May 2015

Adriana Hulsmann, KWR, Nieuwegein



# Procedure

## Voting on Statements

- Statement shown on screen, one by one
- No discussion/questions
- Show card (green = agree/red = disagree)
- Results/scores will be used in break-out groups

## Statements: Relevance

The current approach of the DWD (combination of standard setting, monitoring and remedial actions) is sufficient for safeguarding water quality and protecting human health.

# Statements: Relevance

The current DWD does not include all pollutants in the list of parameters.

# Statements: Relevance

The quality of data gathered to assess trends in non-compliance data is insufficient.

## Statements: Coherence

Although inputs of pollutants are already regulated by other directives, the DWD has added value since it focuses on treatment and transport of drinking water.



## Statements: Coherence

There is insufficient harmonization between standards, forcing water supply companies to more treatment than needed.

## Statements: Effectiveness

Monitoring imposed by the DWD has improved water quality, since it has given insight in non-compliances and thereby initiated remedial actions.

## Statements: Effectiveness

The contribution of the DWD to improved water quality, relative to other policies, cannot be quantified.

## Statements: Effectiveness

The current DWD does not guarantee that specific local problems with water quality will be resolved.

## Statements: Efficiency

The current approach to monitor drinking water quality is inefficient, since it includes the monitoring of parameters that are not posing serious risks to human health.

## Statements: Efficiency

At present, health inspectors are not equipped to assess and evaluate a risk based approach (use of Water Safety Plans).

## Statements: Efficiency

The current derogation practice is too flexible and conditions not strict enough.

## Statements: Efficiency

Insufficient information to consumers will turn them to other water resources than DWD protected drinking water.



# Thank you

*To be continued during break-out session after lunch (12:30 – 13:30)*



# Break-out session

25/30 min each

**Group 1, effectiveness: foyer (t lettieri, h kros)**

**Group 2, efficiency: end of room (c carpentier, a hulsmann)**

**Group 3 relevance and coherence: entrance  
(w cramer, g vd berg)**

## Rotate 1 to 2, 2 to 3 etc

# Break-out sessions

## Main outcomes

Brussels, 26<sup>th</sup> of May 2015

Wennemar Cramer, on Relevance and coherence  
Teresa Lettieri, on Effectiveness  
Corina Carpentier, on Efficiency



# Panel discussion

## Feedback on results and a peak forward

Brussels, 26<sup>th</sup> of May 2015

Dr Birgit Mendell, EU MS regulators

Christopher Leake, Agri-industry

Klaus Ockenfeld, Drinking water appliance industry

Michela Vuerich, NGO/civil organisation

Dominique Gatel, EurEau

# Room discussion:

reflection / left-open issues / feedback / ?

Brussels, 26<sup>th</sup> of May 2015

