

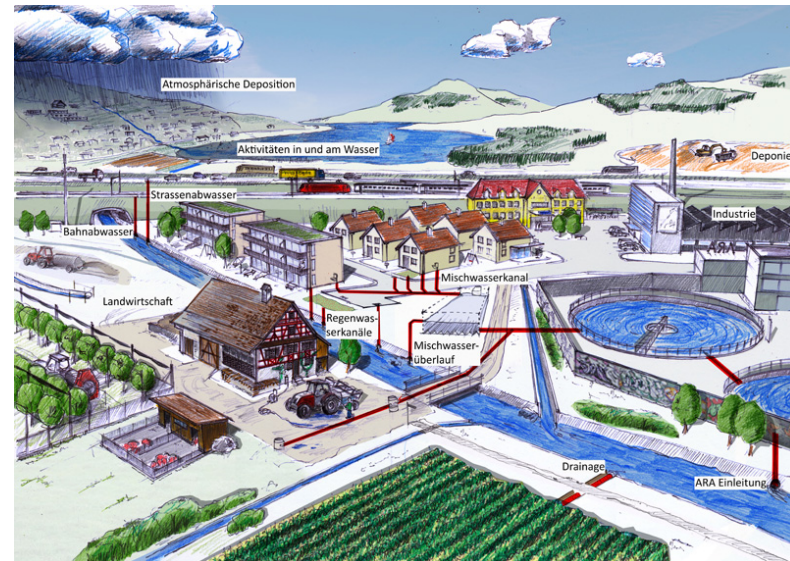
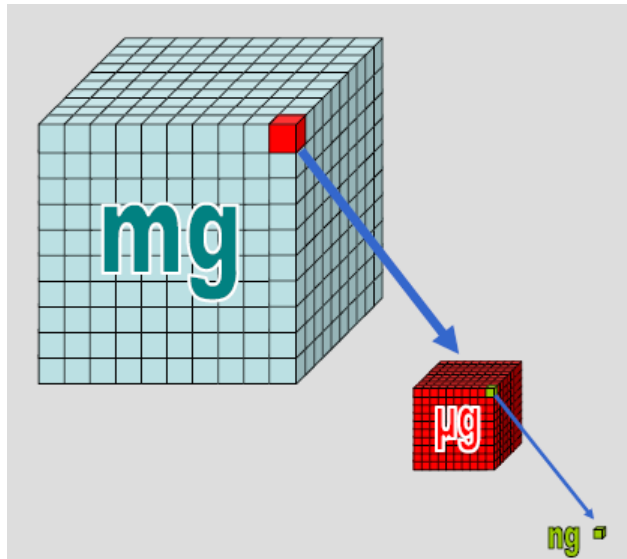
STANDARDS AND ALTERNATIVE POLICY APPROACHES IN LIGHT OF EMERGING WATER QUALITY CHALLENGES

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Water Science Alliance

NEW CHALLENGES IN WATER PROTECTION

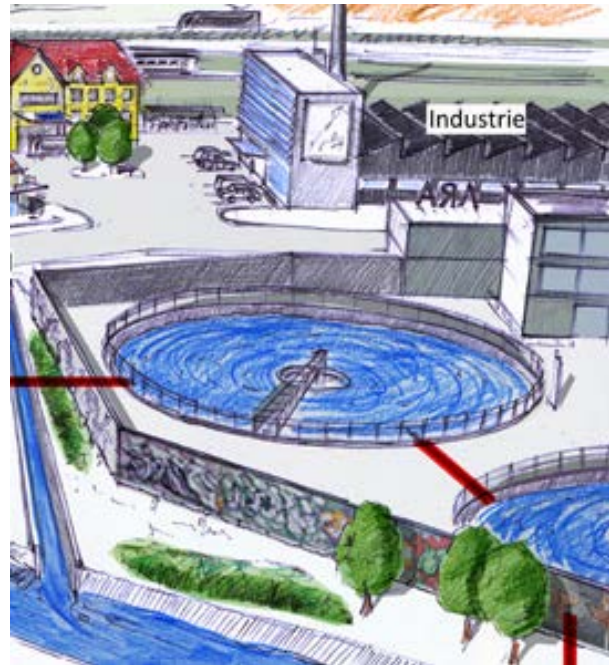
- Micropollutants
 - Huge diversity of:
 - Substances
 - Sources of pollution
 - Inputs into the environment



MICROPOLLUTANTS CHALLENGE

TRADITIONAL POLICY APPROACHES

- Wastewater treatment as traditional response to water quality issues



- Numerous pollutants are not vulnerable to conventional wastewater treatment and steadily transported into the aquatic environment

RESEARCH QUESTION

What kind of policy instruments are suitable to address new challenges in water protection?

OUTLINE

Policy options in theory

1. Overview of policy instruments in water protection policy
2. Evaluation of policy instruments
 - 2.1 Environmental quality norms: pros and cons
 - 2.2 Policy instruments – a problem perspective
 - 2.3 Instrument choice – a policy perspective

Policies in practice

3. The Swiss case

1. OVERVIEW OF POLICY INSTRUMENTS FOR WATER PROTECTION

- Definition: *policy instruments* = single means through which political goals can be reached

Source-directed

End-of-pipe

Regulatory
instruments

Economic
instruments

Voluntary
instruments

1. OVERVIEW OF POLICY INSTRUMENTS FOR WATER PROTECTION

- Definition: *policy instruments* = single means through which political goals can be reached

	Source-directed	End-of-pipe
Regulatory instruments	<ul style="list-style-type: none"> • Substance bans • Authorization restrictions • Environmental quality norms (EQN) • Emission limits 	<ul style="list-style-type: none"> • Mandatory best-available techniques (BAT) / technical standard
Economic instruments	<ul style="list-style-type: none"> • Product charge • Substance charge • Subsidies for behavioral changes 	<ul style="list-style-type: none"> • Effluent/emission charge • Subsidies (e.g. for improved wastewater treatment)
Voluntary instruments	<ul style="list-style-type: none"> • Guidelines on best-environmental practices(BEP) • Disposal requirements • Information campaigns • Research (e.g. on green pharmacy) 	<ul style="list-style-type: none"> • Advice/consulting about BAT • Research • Voluntary negotiated measures /ppp

2. EVALUATION OF POLICY INSTRUMENTS

2.1 Environmental quality norms

Pro:

- Soft tool, avoidance of regulations
- European frame with national/regional-level adaptations
- Monitoring where uncertainties exist

Cons:

- Need for fact sheets on single substances > resource-intensive process
- EQN and substance lists get out of date quickly
- EU MS have difficulties to agree on a common list
- Monitoring of EQN is resource-intensive
- EQN is not a pollution reduction measure

2. EVALUATION OF POLICY INSTRUMENTS

2.2 Problem characteristics

- Causes
 - **Causes** of pollution (single or multiple sources of pollution, natural or anthropogenic)
 - **Prevalence**: Magnitude of factors contributing to pollution (seasonal or all-year-long, local or global)
- Effects
 - **Effects** (on humans / the environment)
 - **Scales** of effects: local, regional, national, international level

2.2 POLICY INSTRUMENTS – PROBLEM PERSPECTIVE

	<i>Characteristics of micropollutants</i>	<i>Appropriate policy instruments</i>
Causes	<ul style="list-style-type: none"> • Multiple entry paths: <ul style="list-style-type: none"> • Diffuse • Point-sources of pollution • Multiple sources of pollution: <ul style="list-style-type: none"> • Agricultural discharges • Household discharges • Industrial discharges 	<ul style="list-style-type: none"> • Source-directed measures • End-of-pipe measures • Product charge <ul style="list-style-type: none"> • BEP • Consulting • Subsidy • Product charge <ul style="list-style-type: none"> • Information campaigns • Disposal requirements • Emission charge <ul style="list-style-type: none"> • Emission limit • Consulting (expert advice) • Disposal requirements • BAT • Subsidy • Voluntary negotiated measures • PPP

Prevalence

- Omnipresence of causes
 - EQN
 - Emission limits
- Seasonality
 - BEP

Effects

- Toxicity risk
 - Substance bans
 - Authorization restrictions
- Uncertainties about effects
 - Research
 - Precautionary principle

Scales

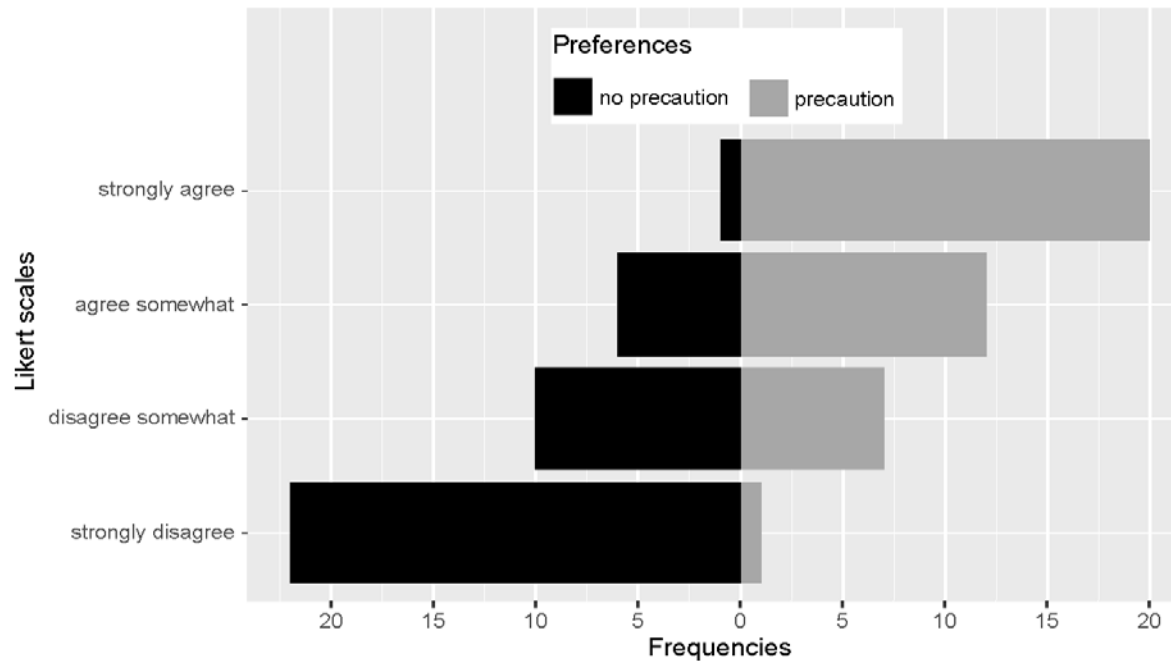
- Persistence, bioaccumulation
 - Internationally coordinated substance bans
 - Authorization restrictions
 - On smaller scale: voluntary negotiated measures, PPP
-

2.3 INSTRUMENT CHOICE – A POLICY PERSPECTIVE

- Policy-making is not only a matter of rational decision-making
- Policy decisions are influenced by a number of factors:
 - Asymmetric information
 - Beliefs, perceptions
 - Political systems induce rules of the game: conflict vs. compromise
 - Interest-based politics can challenge compromise-seeking
 - Party and power politics
- ➔ Need to design solutions on which political actors can agree on

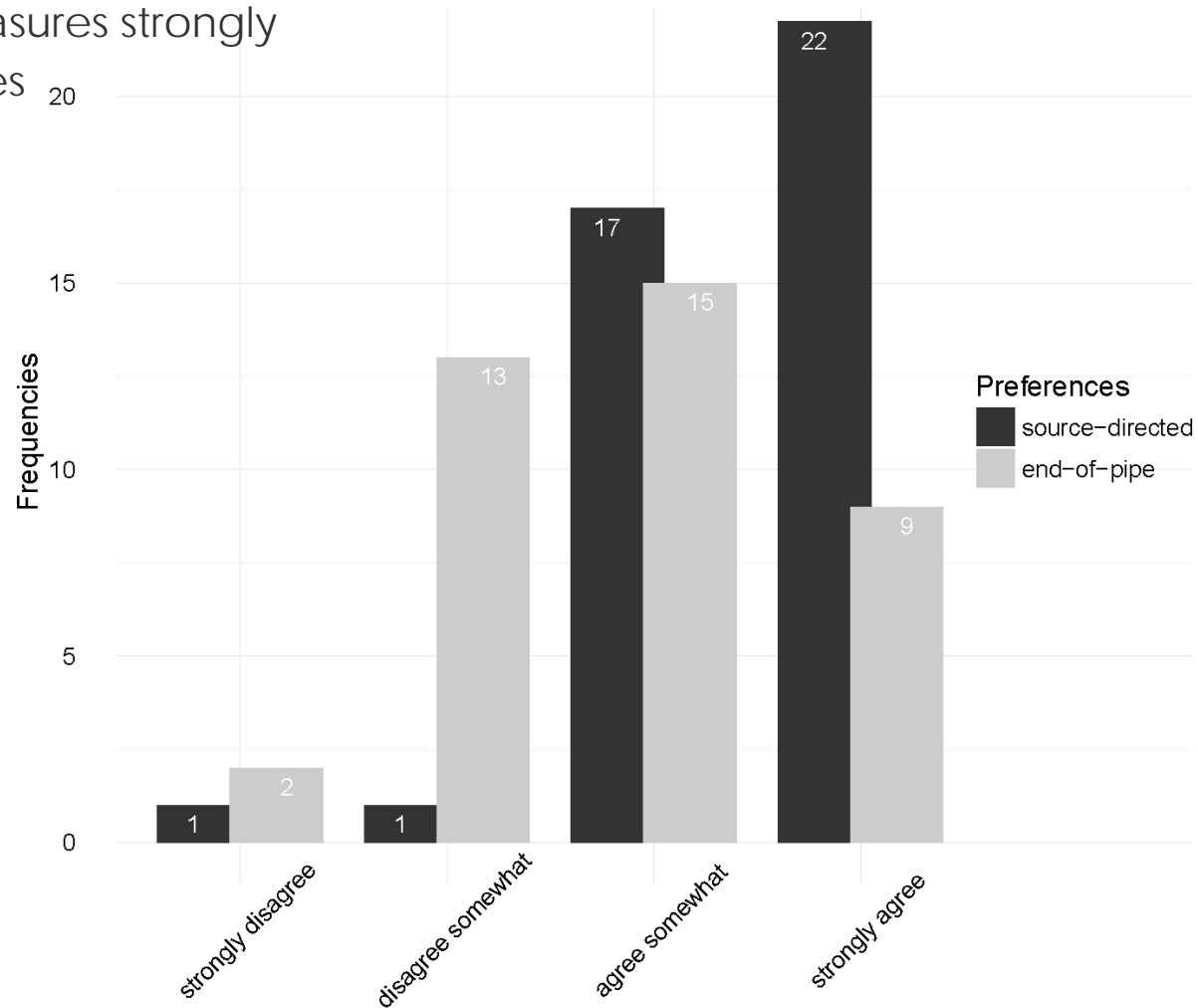
A STUDY ON ACTORS' POLICY PREFERENCES

- Survey of 200 Swiss, German, French, Dutch policy actors
- 2012-2014
- Here: results for the Swiss data on micropollution policies
 - Swiss actors agree about precautionary action on micropollutants

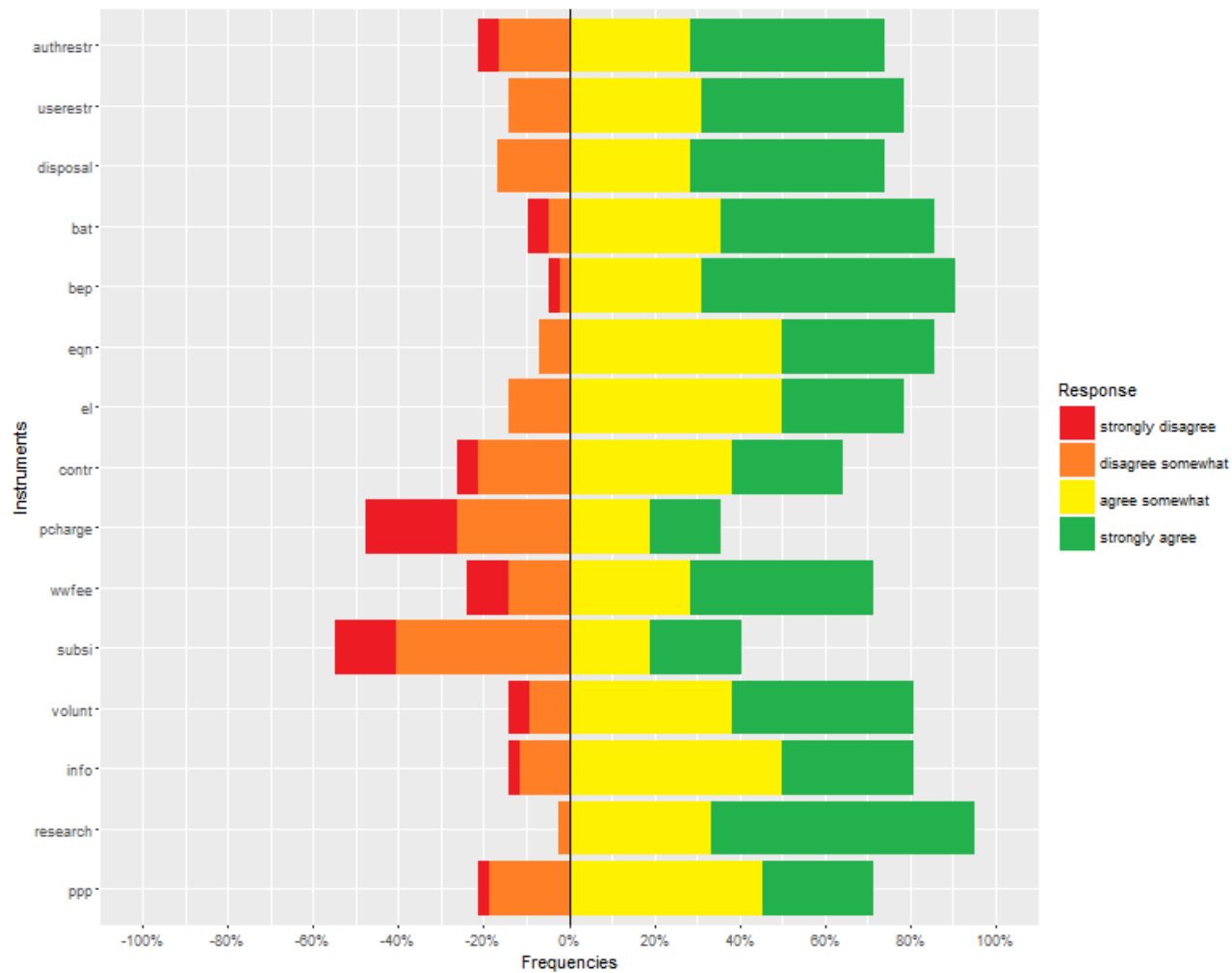


SWISS ACTORS POLICY PREFERENCES

- Swiss actors agree with
 - source-directed measures strongly
 - end-of-pipe measures



SWISS ACTORS INSTRUMENT PREFERENCES



3. POLICIES IN PRACTICE

- 3.1 The Swiss case
 - Amendment of the Swiss Waters Protection Act / Ordinance (2007-2015)
 - Technical standard: 80% treatment capacity measured in form of indicator substances (to be defined)
 - Technical standard for selected wastewater treatment plants
 - Large wwtp (100.000 PE)
 - Medium-size wwtp (10.000 – 100.000 PE) that drain into small rivers
 - Medium-size wwtp (10.000 – 100.000 PE) that drain into waters used for drinking-water purposes
 - Wastewater charge
 - To be paid by wwtp operators
 - Depends on the size of the wwtp / connected households
 - Capped to 9CHF/year/inhabitant
 - Charge is used to establish a fund
 - Wwtp operators are reimbursed for 75% of their costs related to the technical upgrade of the plant

CONCLUSIONS

- Micropollutants = a complex problem > no „one-size-fits-it-all“ solution
- Plenty of alternatives to EQN
 - These alternatives transcend the field of water policy
 - ➔ Need for integration of involved policy fields (agricultural, industrial, chemical policy)
- ➔ Need a better understanding of how to design policies that
 - Effectively reduce pollution (not just monitor it)
 - Appropriate: Take into consideration problem-characteristics
 - Different interest groups and countries can agree on

Literature

- Metz, F. & Ingold, K. (2014): Sustainable Wastewater Management. Is it Possible to Regulate Micropollution in the Future by Learning from the Past. A Policy Analysis. *Sustainability*, 6, p. 1992-2012. doi:10.3390/su6041992 .
- Open access article available at: <http://www.mdpi.com/2071-1050/6/4/1992>

QUESTIONS

