EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT A
ECONOMIC AND SCIENTIFIC POLICY

Economic and Monetary Affairs

Employment and Social Affairs

Environment, Public Health and Food Safety

Industry, Research and Energy

Internal Market and Consumer Protection

Europe's water challenges

WORKSHOP

EN

2012

EUROPEAN PARLIAMENT

DIRECTORATE GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

WORKSHOP

Europe's water challenges

Brussels, 8 March 2012

PROCEEDINGS

Abstract

The upcoming Blueprint on Europe's waters triggered the Coordinators of the ENVI Committee to request a study and workshop on the state and challenges of Europe's waters. The following document is a summary of the proceedings of the workshop. The workshop included presentations and discussions with MEPs and experts on water-management and policy.

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This document was requested by the European Parliament's Committee on Environment, Public Health and Food Safety.

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CONTENTS

LIST OF ABBREVIATIONS

CAP	Common Agricultural Policy
CC	Closed Cycle
CCS	Carbon Capture and Storage
CSP	Concentrated Solar Power
EIA	Environmental Impact Assessment
EPBD	Energy Performance of Buildings Directive
EQSD	Environmental Quality Standards Directive
ETC/W	European Topic Center on Water
EuPs	Energy use in Products
GWD	Groundwater Directive
IAS	Invasive Alien Species
IPCC	Intergovernmental Panel on Climate Change
LCPD	Large Combustion Plant Directive
NOx	Nitrogen Oxides
OT	Once Through
PHARE	Poland and Hungary: Assistance for Restructuring their Economies
RBMP	River Basin Management Plans
SEA	Strategic Environmental Assessment
SO2	Sulphur Dioxide
UWWD	Urban Waste Water Directive
UWWT	Urban Waste Water Treatment
UWWTD	Urban Waste Water Treatment Directive
WEI	Water Exploitation Index
WFD	Water Framework Directive
WISE	Water Information System for Europe
WuPs	Water use in Products
WWT	Waste Water Treatment

EXECUTIVE SUMMARY

Background

This study and the associated workshop were requested by the Environment, Public Health and Food Safety Committee (ENVI) of the European Parliament in the context of the Implementation report on "The implementation of the EU water legislation ahead of a necessary overall approach to European water challenges" (ENVI/7/07348).

On the 8th of March 2012, the Policy Department Economic and Scientific Policy of the European Parliament organised a workshop on Europe's water challenges. The event took place at the European Parliament. MEP Dr Richard Seeber was chair of the first part and MEP Ms Edite Estrella of the second part. MEP Seeber was the ENVI rapporteur and MEP Estrella one of the Shadow Rapporteurs on the above - mentioned Implementation report.

Aim

The workshop was meant to:

- provide an overview of the current situation in water availability and water quality in Member States; and
- discuss policy challenges in the European water situation in regard to:
  - water and climate change
  - water and energy
  - water and financing
  - water and nature protection

In the context of EU water legislation the workshop was also to review the:

- implementation, achievements, failures and gaps;
- challenges for water availability (including the links with water demand, urbanisation, extreme weather events, water efficiency, etc….); and
- challenges for water quality (i.e. do national measure and/or measures within other relevant EU legislation achieve the objective of the Water Framework Directive for priority hazardous substances? Etc…).

Furthermore, the workshop presented an opportunity for representatives of industry agriculture, water producers and civil society to present their views as well as questions and comments from the audience.

1. PART 1: STATE OF PLAY AND EU WATER LEGISLATION

1.1. Welcome and introduction

The event was opened by MEP Richard Seeber who emphasized the good progress made in European water policy in terms of improved water quality and the establishment of the Water Framework Directive (WFD). However, although Europe has relatively abundant resources of water, some regions suffer from water scarcity and even droughts. Climate change and increased economic activity, especially from the growing production of bio-fuels, will exacerbate pressures on freshwater sources. The adoption of the Water Framework Directive (WFD) in 2000 was a landmark in European water legislation. The WFD made it compulsory for the Member States to focus on river basins and in the case of international river basins – whether they fall entirely within the European Union or extend beyond the boundaries of the Community – Member States were asked to ensure coordination and co-operation with the aim of producing one single international River Basin Management Plan. The River Basin Management Plans that were submitted last year showed a great variety among the Member States with some having set up strong institutions and encouraging stakeholder involvement, and others with less successful implementation. Due to low levels of implementation in some Member States the 2015 target of 'good ecological status' for all freshwater bodies are not likely to be reached. To tackle the challenges and to work towards the 2015 target, relevant policies should be better integrated. MEP Seeber mentioned recent policy developments around climate, energy and resource efficiency, and he stressed the importance of the discussions on the Common Agricultural Policy (CAP) reform for water. Furthermore, it is crucial to mainstream water issues into all European policies. Energy for example, being the largest user of water in Europe, must be addressed while considering the sector's own peculiarities.

In this context, the European Commission is preparing a Blueprint to Safeguard Europe's Water which includes a review of existing legislation and exploring the need for new legislation.

1.2. Summary of the 2012 EP study on the State and challenges of Europe's waters

Erik Klaassens (Ecorys) presented the main findings from the Implementation report carried out by Ecorys on the state of European waters. Mr Klaassens reiterated the good progress made in European water quality but emphasized that many challenges remain.

Water availability is generally a local or a regional issue. While it remains a relatively minor problem on a European level, many regions in the South and those with high population densities and/or concentrations of energy infrastructure or industry, face water scarcity issues. In most regions water used for cooling in energy production is the largest source of abstraction. Large abstraction levels could have a negative effect on the hydromorphology. Irrigation for agriculture is the second biggest user on an EU level and is an even larger user than the energy sector in Southern Europe. Finally, while end-use water efficiency has improved as more efficient technologies have been deployed, demographic changes such as the shrinking size of households and migration to urban areas, in combination with high leakage rates in some Member States, make overall water efficiency improvements harder to achieve.

Water quality in the EU is improving, but much work remains to be done to achieve the 'good ecological status' target set in the WFD. Wastewater treatment (WWT) in Europe is improving, with observable trends towards both higher percentages of the population being connected to treatment systems and moves towards better quality (tertiary) treatment.

Agriculture remains a major source of nutrient discharge, such as nitrates and phosphorous, which causes significant and continuing eutrophication problems in European waters.

Acidification and other water pollution issues show positive trends, especially in the energy and industry sectors, as a result of technological advances and environmental, health and safety regulation.
The challenges of leakage and of proper waste water treatment should be seen in the context of financing investments in infrastructure and the economic instruments to create the right incentives for users to reduce water consumption.

1.3. In view of the Blueprint for water

Peter Gammeltoft (European Commission) explained the process and progress made towards the Blueprint for water which is expected to be launched during the Cypriot presidency in late November 2012. Mr Gammeltoft informed participants of the workshop on several on-going studies which are being carried out to support the process and high-lighted some of the preliminary results from these studies. They show signs that water quality is improving. Good examples are the recurrence of salmon in the Rhine and French Seine, although the goal of the WFD (to reach 'good ecological status' by 2015) will probably not be reached in all parts of Europe. The studies also show how the instruments for tackling water scarcity should be developed and the importance of integration and coherence between the CAP, chemicals legislation, and renewable energy and transport policies. Moreover, as water consumption is expected to increase with 50 % (including the use for bio-energy), full implementation of the WFD is needed. Mr Gammeltoft emphasized however that it is not necessarily new legislation that is needed, but rather better use of existing instruments and better implementation in all parts of Europe. Finally, he noted that the implementation of economic instruments, which are part of the WFD, is less than perfect.

1.4. Knowledge on EU water: the lack of data

Beate Werner (European Environmental Agency-EEA), head of EEA's water group presented the agency's upcoming reports on the efficient use of water resources, on hydromorphology vulnerability, on the status of freshwater ecosystems and on biodiversity which aim to support the Blueprint. Water knowledge, she argued, is good at national level but data and several indicators are urgently missing at regional levels. The purpose of the reports was to establish the drivers of water pollution and scarcities as well as economics, governance and innovation in water. She highlighted the resource efficient technology parts and the lack of information on pricing schemes, taxes, subsidies and tariffs on a European level. The price of environmental protection is largely unknown, which makes it difficult to know what the most cost efficient options are. Finally, Ms. Werner argued that the two most imminent threats to European waters are changes in hydromorphology and diffuse pollution from mainly urban areas.

1.5. Q&A and closure of 1st session

One of the assistants of MEP Czesław Adam SIEKIERSKI wondered if the issue of land use change from rural to urban land was taken into account in the implementation and the review of the various pieces of legislation under discussion. In the absence of Mr Gammeltoft, MEP Seeber reacted by stating that decision makers not always consider all issues when reviewing legislation, but as agriculture and urbanisation are the main drivers of pollution in Europe, these issue should be taken on board.
MEP Seeber concluded the first section by noting the need for implementation and policy integration, mainstreaming of water into other policies, and the challenge for policy makers to take a holistic perspective on water. He highlighted the economisation of the whole sector and pointed to the need for discussion around the issue of charging for ecosystem services. Another important aspect is the regionalisation of water where some regions have abundant sources of water and other suffer from over exploitation, which is an issue that needs to be addressed from a European perspective.

2. PART 2: EUROPEAN WATER CHALLENGES

2.1. Introduction

MEP Edite Estrela, shadow rapporteur on the implementation report on "The implementation of the EU water legislation ahead of a necessary overall approach to European water challenges" - introduced the second session. She argued that the whole policy framework for water in Europe is well structured but high-lighted that future challenges will grow, especially with climate change. The incidence and severity of droughts, floods and water scarcity are increasing both in terms of costs and in terms of human lives affected. She urged Member States to make better use of EU funds to make the appropriate investments in water efficiency, flood protection, and other measures.

2.2. Round-table discussions

2.2.1. Setting the scene

Mr Stefan Scheuer was introduced by MEP Estrela as the moderator for the round table discussions. Mr Scheuer in turn introduced the speakers of the panel and also made a short presentation on the increasing complexity of water challenges. In his introduction Mr Scheuer noted that pollution has become increasingly diffuse and difficult to tackle. Moreover, land-use changes and water abstraction affect all parts of river basins where various elements such as fish, dams and dykes need attention. The central challenge is policy integration and mitigating the potentials for conflict between energy, transport, agriculture, urban planning, and industry. The key to the solution is the smarter use of public policy with better public participation and improved economic incentives figuring out who pays what.

2.2.2. Water and agriculture

Representing the agricultural sector, Luis Bulhão Martins, who is president of the environmental working group of the Committee of Professional Agricultural Organisations and General Confederation of Agricultural Cooperatives in the European Union (COPA COGENA), took the floor. According to Mr Bulhao there is a misunderstanding and a lack of knowledge among consumers on how food is actually produced and the large role of water therein. The demand for ready-to-eat products and thereby water abstraction levels is increasing. Rain fed agriculture is simply not sufficient in today's economy and irrigation is necessary, and although farmers are improving their ecological foot-print their income has been declining. At the same time, the CAP is under ongoing reform and the final budget not known.

2.2.3. Water and stakeholder representation

Mrs Lesha Witmer who represents the Women for Water Partnership was the next speaker. She noted that the global women's day coincided with the workshop. Ms. Witmer argued that the top priority of resources among women is water, even before issues such as food, energy and education which emphasises the importance of water for society. Then she cited article 14 in the WFD that spells out the importance of public participation in policy making. While the article is good in itself, the implementation is inadequate as it is often reduced to "just posting a paper online" which cannot be considered as public consultation.

In the way WFD is currently implemented, civil society is only allowed access to the process once the policy is a fait accompli. People need to be able to make an informed choice about water and understand why their water bills are increasing. Current economic instruments are often misguided where economical behaviour is not rewarded with lower bills, which sends the wrong signals. Transparency is therefore a key factor to many policy actions and not the least to economic instruments.

2.2.4. Water and energy

Next, Dr Graham Whale from Conservation Clean Air and Water in Europe (CONCAWE) and Shell represented industry. Dr Whale's organization functions as an environmental think-thank for the refinery industry and while he acknowledges that this industry uses massive amounts of water, it has improved performance considerably over the last four decades. Today most European refineries have tertiary water treatments, for example. CONCAWE's constituency is continuously improving its environmental performance and water is high on the industry's agenda given an estimated 1.4 billion annual bill for water (1 €/m3). Dr Whale highlighted the plethora of legislative acts that refineries need to comply with. He mentioned REACH, E-PRTR and IED as the most important. Therefore, Dr Whale argued that policy makers should allow the WFD sufficient time to be properly implemented before reaching any hasty conclusions. Legislation is complex and comprehensive, and no new legislation is needed. What is needed however is a simplification and integration of existing policies.

2.2.5. Water and finance

Finally, Mr Carl-Emil Larsen, president of the European Federation of National Associations of Water and Wastewater Services (EUREAU), raised the central role of the polluter pays principle in the WFD. Mr Larsen argued that it is a crucial principle when addressing the financing problem of water policy. In the current situation, water treatment facilities rely heavily on public funding and donors to make the necessary investments. This is an untenable situation considering that major investments are needed both in efficiency technologies and in upgrading infrastructure to prevent leakages. Full cost-recovery must include a return on investments to be feasible and a focus on the three T's; taxes, transfers (read: subsidies), and tariffs (read: bills) is needed.

2.3. Q&A and closure

Stefan Scheuer asked the panel to reflect on the principle of cost recovery as the correct incentive for consumers and on other issues pertinent to water.

Graham Whale: It is indeed a problem that when consumers reduce their consumption, it just raises the flexible part of their bill. However, this reflects the cost structure of water production, where more than 80 % of the costs are fixed. Nevertheless, he welcomed a discussion on this point.

Lesha Witmer: The issue of full cost-recovery should not be looked at as if we are dealing with a balance-book of a company. What should be realised is that there are three types of clients – producers, consumers and government - who each have their own balance book. The question is, when and how do we balance these different books?

Luis Bulhão Martins: The agricultural sector has made an important contribution to the status of water in Europe through the adoption of integrated farming technologies and deploying 'precision farming' which seeks to minimise the use of pesticides, fertilizers and water, thereby reducing the risk of leakage of pollutants into groundwater. Another issue is the pricing of water.
He noted that the principle of full cost recovery does fit well with the requirement of the WFD that asks for water pricing to be adapted to the local economic and social situation, resulting in fair prices.

Graham Whale: The polluter pays principle is a concept not well suited to address pollution issues that date back 30 or 40 years and the principle is also too simple when addressing the complicated issue of responsibility. In the present world, products and services used cannot be easily traced back to specific industries.

Luis Bulhão Martins: For agriculture, management of water by demand may work for regions where water availability is not an issue, but in regions with water scarcity, supply side management may be needed.

Lesha Witmer: The Water Framework Directive is a visionary piece of legislation but regarding its implementation there is a need to: i) focus on what should still be implemented in the future and how this can best be done, instead of focussing on what is not done; and ii) keep up to date on policy integration.

Carl-Emil Larsen: The pressure on water will be huge in the future, especially with the increased demand from bio-fuels.

Stephan Scheuer then asked the audience for questions or comments.

MEP Bogusław Sonik asked about the information on water needs for shale gas extraction. In a reaction, Dr Whale admitted that more information was needed to work on the real issues and Mrs Witmer mentioned that knowledge gained on this issue in other countries (such as Canada) should be taken into account when making a business case on shale gas in Europe.

Mr Geert de Cock (Food & Water Europe) emphasised the need for policy integration, especially regarding water, transport and energy and gave an example of transport policies which should not only look at issues as CO_2 but also at water.

3. WORKSHOP CONCLUSIONS

Based on the discussion, Mr Scheuer summarised as follows:

The speakers covered industrial, service provider and governance perspectives. They delivered clear statements and engaged in a quite lively debate. Nevertheless the discussion eventually missed the perspectives of environmental and consumer NGOs and water managers which would be relevant to get a grasp of the broad workshop topic.

Amongst the represented views there seems to be broad agreement that despite improvements in the past, water pollution remains to be a challenge and that water scarcity is a new and additional challenge for which the EU should develop responses. The use of economic instruments is highly relevant.

While the agriculture and oil industry representatives are sceptical about the use of the polluter or user pays principles, it is a priority for the water service providers and civil society representatives.

There is growing awareness of conflicts and business risks associated with water use (biomass energy or industrial water use). This awareness might well be the result of successful water policies and holistic management on the one hand and the reality that water indeed becomes scarcer for human appropriation in Europe, as ecosystem water needs are given increasing priority.

In the first part of the meeting the frustration about the lack of progress in implementing existing legislation was noted, but no specific demands for new legislation where made. This could also explain that nearly no demands were expressed to Parliament which one would normally expect at such an event: but implementation is largely driven by national governments and the European Commission, and as long as no legislative gaps are to be closed, the European Parliament will have difficulties to find a pro-active role in shaping Europe's responses to the water challenges.

In conclusion it should be noted that the participation of further stakeholders and a focused discussion on the quantitative water management issues could eventually deliver more action oriented results.

MEP Seeber thanked all the participants for their contributions and closed the meeting.

ANNEX 1: WORKSHOP AGENDA

Policy Department A: Economy & Science
Committee on the Environment, Public Health and Food Safety (ENVI)

Workshop on Europe's water challenges

Thursday, 8 March 2012 from 9h30 to 12h00
European Parliament, Brussels
Room: Altiero Spinelli 5G3
The event is open to the public. Interpretation will be available in EN-DE-FR

9:30 *Welcome MEP Richard Seeber, ENVI Rapporteur*

Part 1 State of play and EU water legislation

9:35 **Presentation of the study: Focus on current situation,** *Erik Klaassens (ECORYS)*

9:50 **In view of the Blueprint for water,** *Peter Gammeltoft, DG ENV, European Commission*

10:00 **Knowledge on EU water: the lack of data**, *Beate Werner, Head of group on Water, EEA*

10:10 ***Q&A, open discussion***

10:30 *Conclusions from the Chairman*

Part 2 European water Challenges

10:35 *Welcome by MEP Edite Estrela, ENVI Shadow Rapporteur*

10:40 **Round table introduced and moderated by expert on policy integration,** *Stefan Scheuer, independent consultant*

10:45 **Presentations from each speaker (6 minutes) on:**

- Water and agriculture, *Luis Bulhão Martins - President of the working party on Environment in COPA COGECA*

- Climate change, nature protection, and water efficiency, *Lesha Witmer - Women for Water Partnership*

- Water and energy, *Graham Whale, CONCAWE/Shell*

- Water and finance, *Carl Emil Larsen, EUREAU*

11:20 **Panel discussion**

11:40 *Q&A, open discussion*

11:55 *Conclusions from the Chairman*

ANNEX 2: SHORT BIOGRAPHIES OF EXPERTS

Erik Klaassens, Ecorys

Mr Erik Klaassens is a senior consultant at Ecorys with over 20 years of experience. Trained as an economist, Erik has been involved in the formulation, implementation and the evaluation of rural development and natural resource programmes in Asia, Pacific and Africa. During the last 10 years, Erik has contributed to various environmental studies in the European context. Examples of recent work for the Commission include contributing to a handbook for a pan-European approach to economic assessment of water related impacts of policies), a study on the economic aspects of climate change, greening of Europe, and the cost of not implementing environmental acquis. He has also worked with Romanian and Bulgarian authorities on the economic aspects of the Water Framework Directive.

Peter Gammeltoft, DG Environment, European Commission

Head of Unit, Unit D.1: "Water". His current responsibilities include: Water Framework Directive, Groundwater, Chemicals in Water, Floods Directive, Water Scarcity and Droughts, Water and environmental resources vulnerability. His previously worked for the following organisations:European Commission, DG Environment, Water Unit 2006, European Commission, DG Environment, Clean Air and Transport Unit, 1998-2005, European Commission, DG Environment, Water Unit 1991-1997,Danish EPA, 1979-91, Copenhagen Gas Works, Denmark, 1977-79, Roskilde University, Denmark, 1975-77

Beate Werner, Head of Group 'Water', European Environment Agency, Copenhagen

Mrs. Beate Werner has led the Water Group at the European Environment Agency (EEA) since 2006. As a biologist with over 20 years international experience in ecosystem research and monitoring, her work focuses on assessing ecosystem services provided by water. In the 1980s she researched nutrient balances in forest ecosystems on behalf of the UNECE Critical Loads Mapping Programme before leading the German federal government's Soil Monitoring Initiative. Since joining EEA in 2003, her work has encompassed developing the Water Information System for Europe (WISE), establishing links between science and policy, and assessing ecological and economic aspects of water quality and quantity.

Stefan Scheuer, Independent Consultant

Stefan Scheuer has 11 years of experience in EU environmental and energy policy making. He is founding director of a consultancy providing management advice, advocacy and research. Clients include governmental, business and environmental organisation at EU and national level. He holds mandates for high level representation and provides research work on water and energy topics. In 2007 Stefan lectured EU environmental policies at the University of California and Edinburgh and carried out research on integrated water management. From 2000 to 2007 he worked at the European Environmental Bureau, lately as its Policy Director, and was chairman of the ECOS, the EU citizens' organisation working on greening technical standardisation. Stefan holds an MSc in Hydrology, Albert-Ludwigs University in Freiburg, Germany.

Luis Bulhão Martins, COPA-COGECA

Mr Luís Bulhão Martins is the Vice-Chairman of Copa-Cogeca's Working Party on Environment. Trained as an agronomist engineer and a Portuguese farmer, he has become a water and CAP expert and is involved in several stakeholder discussions both on a national and international level. He has held various functions in agricultural organisations and associations for decades. He is for example Administrator of CERSUL S.A, Southern Cereals Producers Group, since 1990, Director of ANPROMIS – National Association of Sorghum and Corn Producers, Chairman of the Beneficiaries Association of the Lucefecit Irrigation Perimeter.
Chairman of the Vila Viçosa Mutual Agricultural Credit, Director of Olidal, Alentejo Olive Producers, Director of ANCPA, National Association of Alentejo Pig Breeders, Director of ACCS, National Association of Serpa Goat Breeders, Director of CAP Board since 2001 and vice-President since 2005, responsible for the Water and Environment sectors, Chairman of the CAP Advisory Council for Water and Environment, Member of the National Water Council as a CAP representative, CAP expert in the Advisory Group for Agriculture and Environment of the European Commission, and CAP expert in the Environment Working Group of COPA/COGECA.

Lesha Witmer, Women for Water Partnership

Mr Witmer is independent senior advisor on sustainable development (focus water management) and human resources (participatory approaches and gender issues included) and vocational training since 1991. She is inter alia Steering Committee member of Women for Water Partnership (WfWP), steering committee member of the European water stewardship program, member of the International Standard development Committee of the Alliance for Water Stewardship, co-initiator of the intergroup on water of the European Parliament, advisor to the World Wide Fund for Nature (WWF) on fresh water policy and legislation, and member of the EU Water Initiative Coordinating Group. She was member of her government's delegations to the UN Commission on Sustainable development (CSD) several times and chaired the standing committee on environment, sustainable development & water of Business & professional women International and the Netherlands Women's Council. Ms Witmer holds a degree in Human Resource Management and general (business) management (Nijenrode) and studied law (university of Amsterdam).

Graham Whale, CONCAWE/Shell

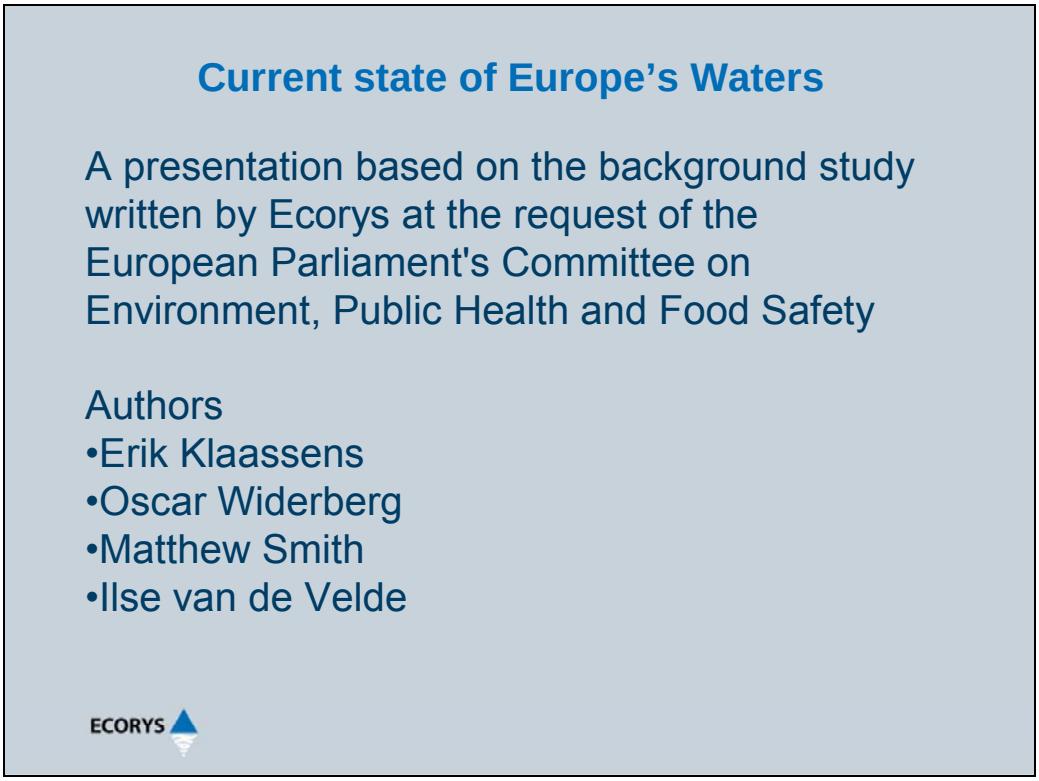
Graham Whale is an environmental specialist with over 27 years experience in aquatic ecotoxicology and environmental risk assessment. Initially he worked for the Aquatic Environmental Protection division of the U.K. Ministry of Agriculture Fisheries and Food (MAFF) where he was responsible for the environmental impact assessment of oil dispersant products and trade wastes disposed at sea. In Shell he has been responsible for marine, freshwater and terrestrial ecotoxicology teams whose activities have mainly centred on environmental issues of direct concern to the oil and gas industry. This has typically involved the assessment of the predicted and actual environmental impact of refineries, petrochemical complexes and offshore oil and gas production platforms. At both a national and international level Graham is involved in the development of regulatory methods and strategies for the environmental hazard/risk assessment of chemicals, effluents and contaminated sites. Graham is currently employed as a Senior Ecotoxicologist/Environmental Risk Assessor for Shell Health and is the chairman of both the CONCAWE Water, Soil and Waste Quality Management Group (WQMG) and the CONCAWE STF32 Biological Effects Measures Task Force.

Carl Emil Larsen, EUREAU

Mr Carl-Emil Larsen is the President of EUREAU, European Federation of National Associations of Water and Waste Water Services. He has extensive national and international experience on water issues as for example Board Member of the Danish Water Forum and Governing Member of the International Water Association (IWA). He has spent the last 30 years working on water and environmental issues mainly in Scandinavia and Denmark as geophysicist, consultant and director for large international consultancy bureaus. Carl-Emil is active on the national arena as chairman of The Foundation for Development of Technology in the Danish Water Sector, board member The Geological Survey of Denmark and Greenland and chairman of the IWA National Committee. Since 2005, he works as Managing director for DANVA, Danish Water and Waste Water Association.

ANNEX 3: WORKSHOP PRESENTATIONS

Presentation by Erik Klaassens, Ecorys



Current state of Europe's Waters

What did the study set out to do?

- ➔ Give an overview of the current situation in Member States regarding water availability and water quality.
- ➔ Present the challenges facing the EU water situation in regard to climate change, energy, financing, and nature protection.

In the context of EU water legislation, we looked at:

- ➔ Implementation, achievements, failures and gaps
- ➔ Challenges for water availability
- ➔ Challenges for water quality

ECORYS

Current state of Europe's Waters

Water availability *is a regional issue*

… Europe has an abundance of water (only 13% of available resources are abstracted)

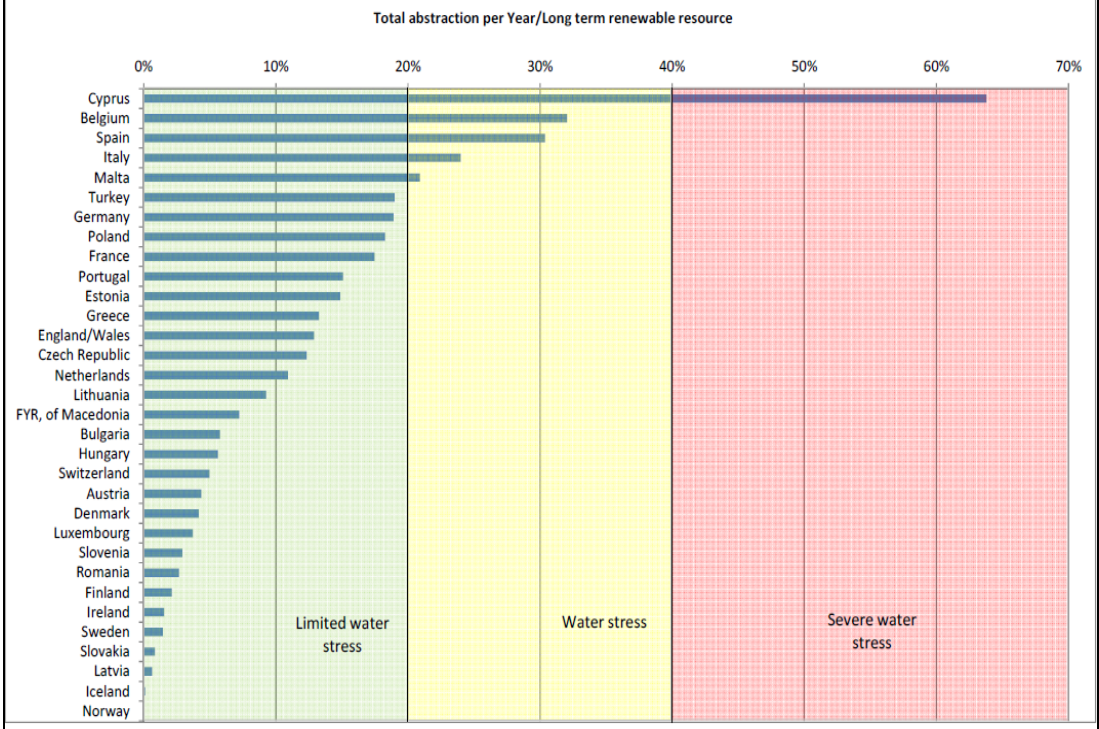
…. but many regions, particularly in the South or areas with high population densities are faced with issues of water scarcity

The EEA uses the **Water Exploitation Index** (WEI) to understand water availability.

WEI = Total annual water abstraction / Long term renewable water resources

WEI > 20% ➔ water stress
WEI > 40% ➔ unsustainable water stress

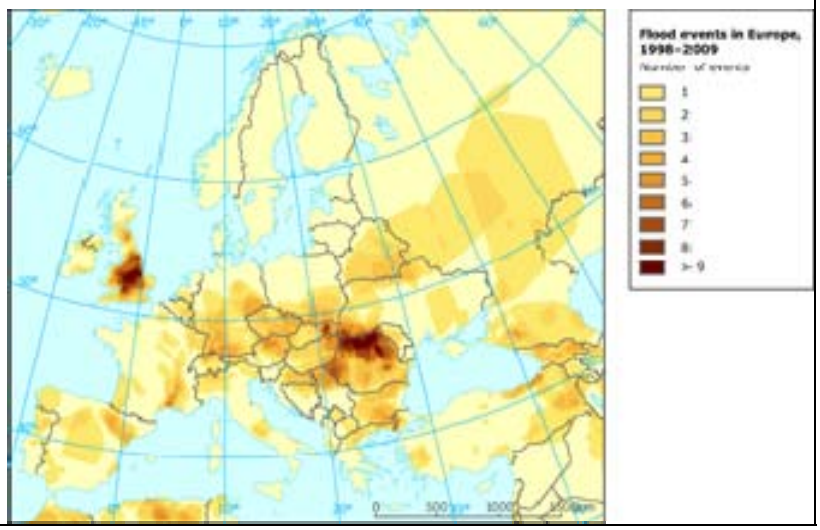
ECORYS



Source: EEA (2010)

Current state of Europe's Waters

- **Floods and droughts** cause significant fluctuations in **short term water availability**.
- Damage in human life, property, the economy and eco-systems from these events runs into billions of Euros each year.
- One estimate puts the damage at 6-9 billion EUR / year (5th World Water Forum).



ECORYS

Current state of Europe's Waters

Water demand is declining, particularly from industry…

Region		Energy	Industry	Irrigation	Public Water Supply	Total
Eastern Europe (BG, CZ, EE, HU, LT, LV, PL, RO, SK, SI)	Early 1990s	21 294	12 538	8 610	11 058	53 500
	1998-2007	20 562	2 276	1 060	6 555	30 453
	Change	-732	-10 261	-7 550	-4 503	-23 047
	Change as %	-3.4%	-81.8%	-87.7%	-40.7%	-43.1%
Western Europe (AT, BE, DK, FI, DE, IC, IE, LU, NL, NO, SE, CH, UK)	Early 1990s	44 820	17 307	2 002	21 343	85 471
	1998-2007	37 029	15 585	901	19 582	73 096
	Change	-7 791	-1 721	-1 101	-1 761	-12 375
	Change as %	-17.4%	-9.9%	-55.0%	-8.3%	-14.5%
Southern Europe (FR, EL, IT, PT, ES, MK)	Early 1990s	26 902	6 344	40 292	12 127	85 665
	1998-2007	25 698	3 821	39 417	13 592	82 528
	Change	-1 205	-2 523	-875	1 465	-3 137
	Change as %	-4.5%	-39.8%	-2.2%	12.1%	-3.7%
Europe Total	1990s	93 017	36 188	50 903	44 528	224 636
	1998-2007	83 289	21 683	41 377	39 728	186 077
	Change	-9 728	-14 506	-9 526	-4 799	-38 559
	Change as %	-10.5%	-40.1%	-18.7%	-10.8%	-17.2%

Current state of Europe's Waters

Higher efficiency in water-use leads to reduced abstractions…

•Efficient water use is a major factor in water availability and improvements in the water efficiency of technologies such as washing machines and dishwashers in households and more efficient use of water in industry have contributed to the decline in public supply water use across Europe

… but is undermined by small households & high leakage rates

•Smaller households bring increased per capita use

•The benefits from end-use water efficiency improvements can be undermined by leakage from water supply systems. The problem of leakage varies considerably across Europe. A handful of member states have very low (<5%) leakages (DE, BE, NL) others with leakage figures higher than 20% (IT, FR, UK, ES, IE, CZ, SK, RO, HU, SI) and the highest estimated at 50% in Bulgaria (old data!)

ECORYS

Current state of Europe's Waters

Low leakage levels in Germany because of…..

- the German tariff system allows full cost recovery for structural maintenance
- this has led to:
  - high financial budgets available for utilities
  - sustained levels of high investment in infrastructure and distribution networks, as a result, the infrastructure is in relatively good condition
- preventative maintenance and leak detection are performed on a regular basis, repair mains can be accessed and exchanged easily and water is treated in order to reduce the damage it causes to infrastructure

ECORYS

Current state of Europe's Waters

Water quality in the EU is improving, but much work remains to be done to achieve the 'good' status

- The quality of inland bathing waters – rivers and lakes – in the EU has improved significantly since 1990.
- In 2009, 89 % of inland bathing areas complied with mandatory values, while 71 % complied with the more stringent guide values.

but large challenges remain!

- Many sources of water pollution: urban waste, mining, forestry, agriculture, aquaculture and inadequate waste water treatment.
- The two major sources are **agriculture** and the **urban environment**.

ECORYS

Current state of Europe's Waters

Water quality in the EU is improving, but much work remains to be done to achieve the 'good' status

- From agriculture the problems are mainly caused by nutrients such as nitrogen and phosphorus from fertilisers, pesticides, sediment, pathogenic micro-organisms produced by livestock and organic pollution from manure.
- In the urban environment the discharge is even more diffuse. Everything from personal hygiene products to friction from car tyres and industrial by-products can pollute water bodies.
- The pollution of waters from agriculture, the urban environment and other sources has several negative impacts on the environment such as eutrophication, ecosystem damages, and human health problems.

ECORYS

Current state of Europe's Waters

- **Wastewater treatment (WWT) is improving** in every region with observable trends towards both higher percentages of the population being connected to treatment systems and moves towards better quality (tertiary) treatment.
- Connection rates (percent of population connected to some form of WWT):
  - Central region: over 97%
  - North: 83%,
  - South: 77%,
  - East± 65%
  - South East: 40% (low, but rapidly improving).
- It is estimated that over the next 5 years, 50 billion Euro will be invested in WWT systems.

ECORYS

Current state of Europe's Waters

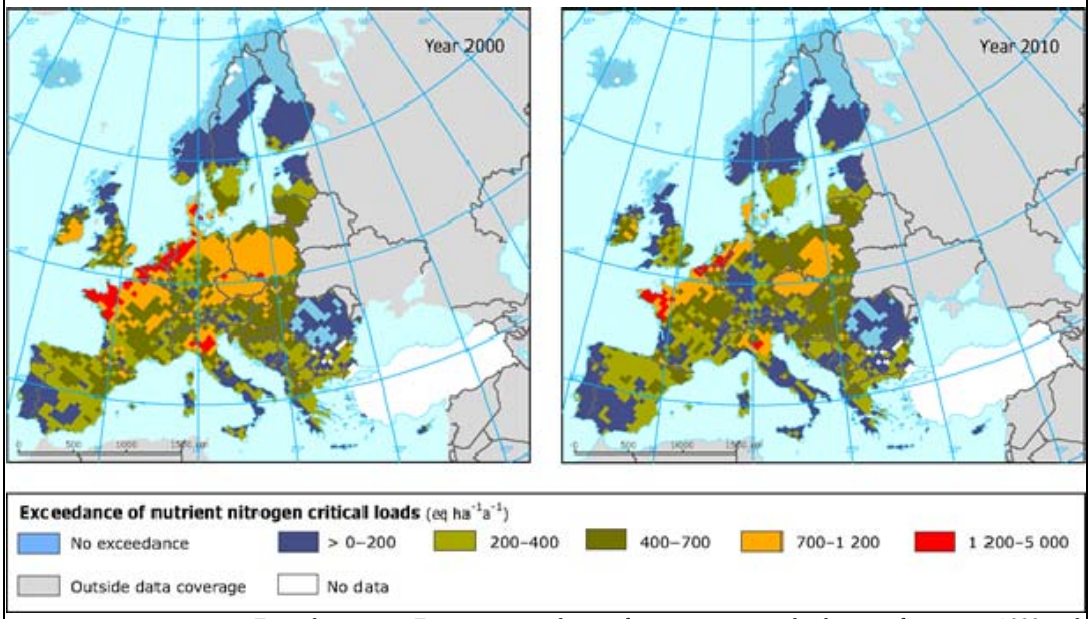
Measures of water quality in relation to ecosystems typically focus on eutrophication or acidification.

Eutrophication is closely related to the use of fertilizer nutrients, such as nitrates and phosphates, in agriculture. Municipal wastewater is another source of nutrients.

In much of Europe, significant exceedance of eutrophication loads occurs. Eutrophication loads are concentrated around major population and agricultural production centres, particularly in North West Europe, Poland, the Czech Republic and Northern Italy.

ECORYS

Current state of Europe's Waters



Eutrophication in Europe – exceedance of nutrient nitrogen loads in surface water 2000 and 2010

ECORYS

Current state of Europe's Waters

- **Acidification** has decreased substantially in recent decades, driven by regulation and limits placed on the emissions of Sulphur Dioxide (SO2) since the 1970s.
- However, the EEA reports that 10% of natural ecosystems remain over their critical acid deposition load.

ECORYS

Current state of Europe's Waters

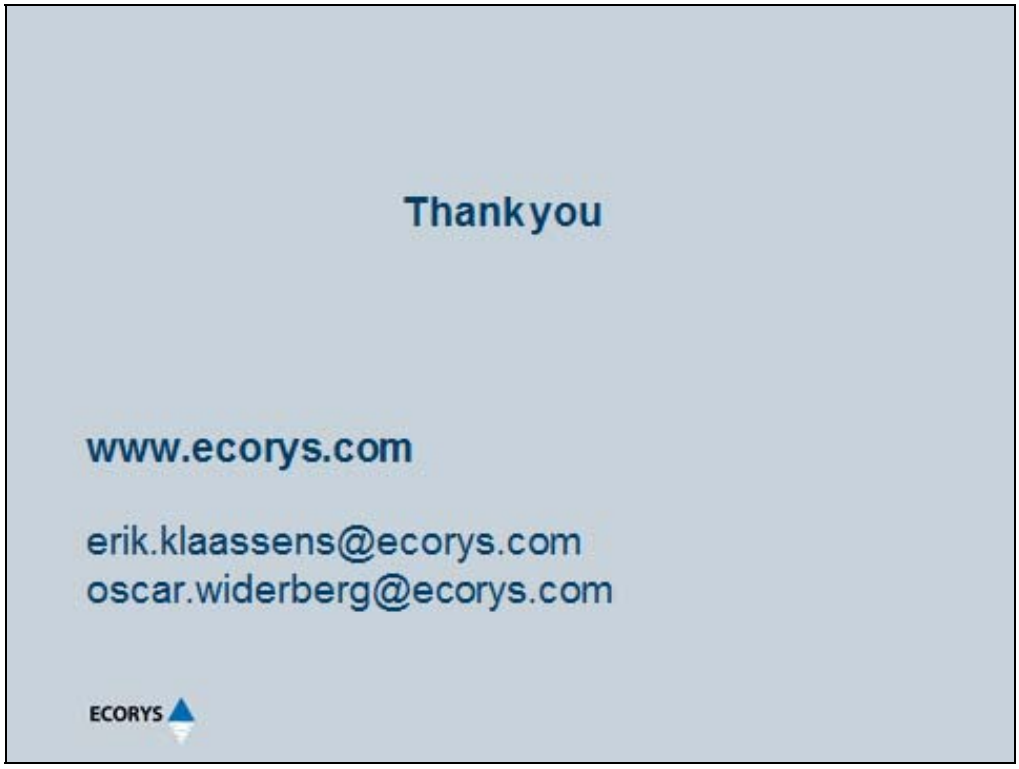
Quality and availability of water data is variable

European level data and monitoring on water has significantly improved over the last 20 years from a base where data on water tended to be rather fragmented or simply missing. Yet progress is varied.

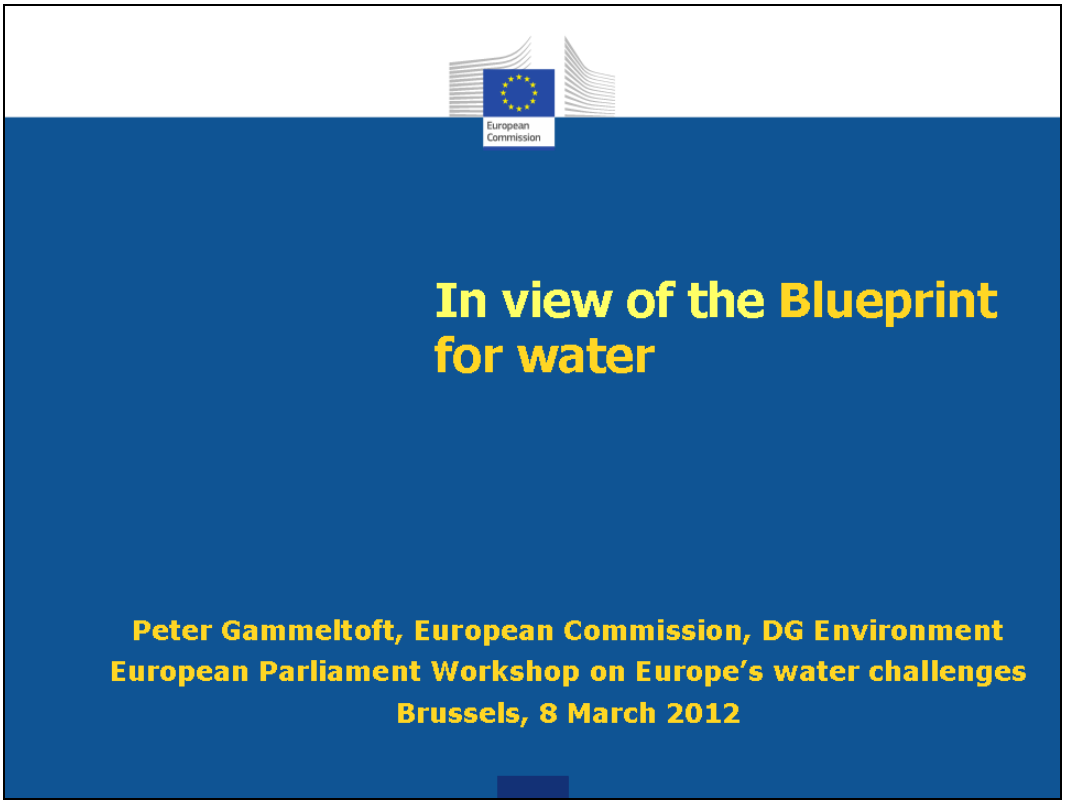
In some areas (e.g. monitoring of water chemical status), there is an established network for monitoring and reporting with detailed data available per monitoring station and on a regular and timely basis and the WFD is seen as an important factor in improving monitoring scope, frequency and coverage.

Yet significant gaps and fragmentation remain for water data in general. Data on leakage is illustrative in terms of an issue that is perceived to be a major issue for water policy yet there is very little data for policymakers to work with, as barely a quarter of countries provide any data.

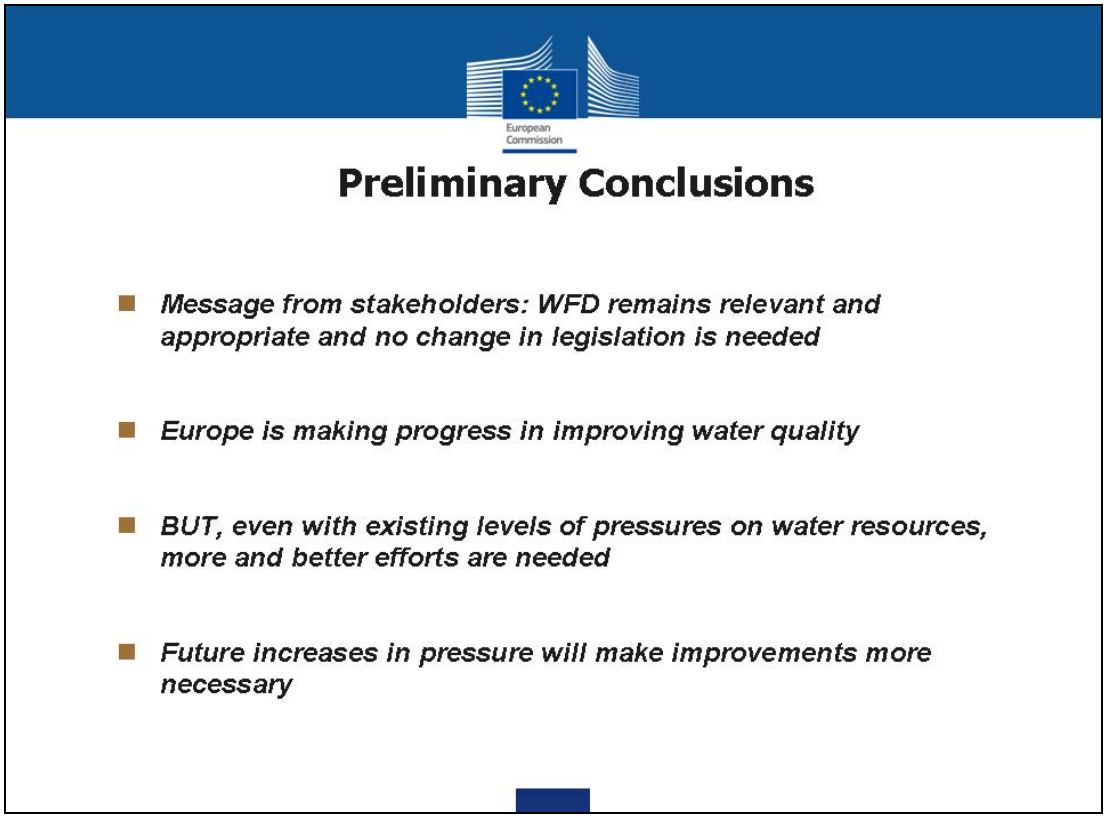
ECORYS


Thankyou
www.ecorys.com
erik.klaassens@ecorys.com
oscar.widerberg@ecorys.com
ECORYS

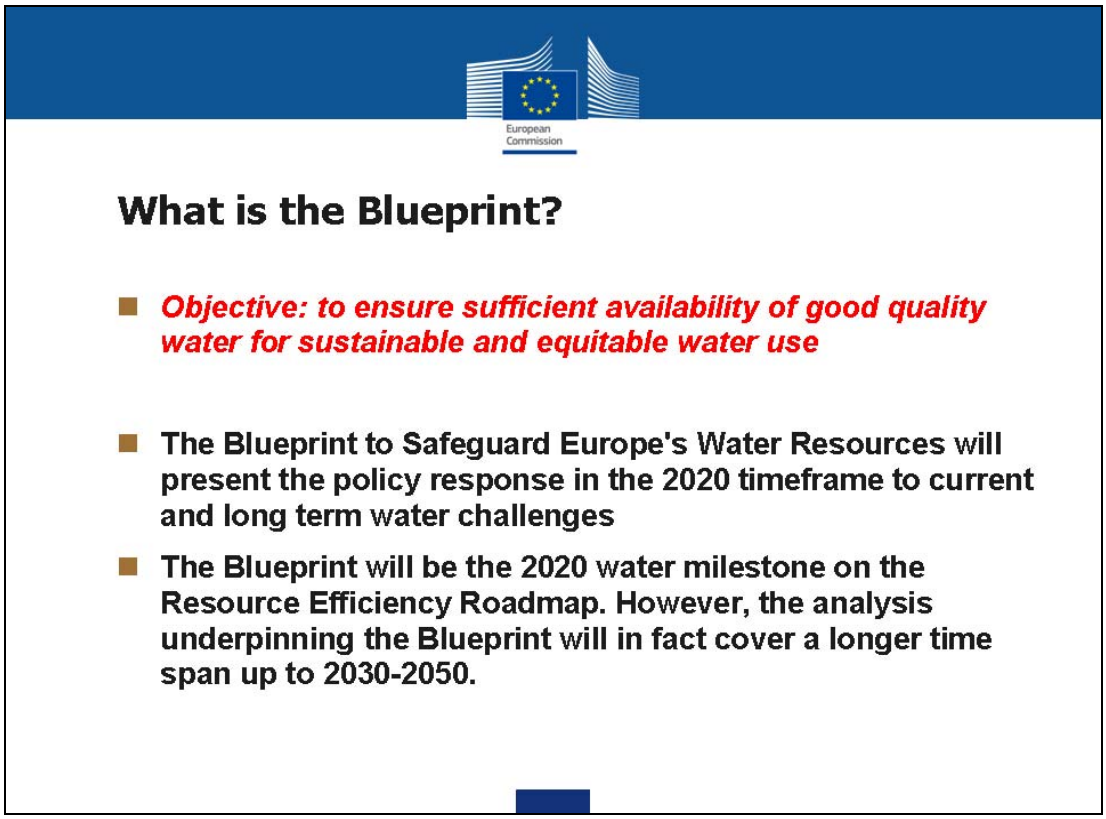
Presentation by Peter Gammeltoft, DG ENV, European Commission

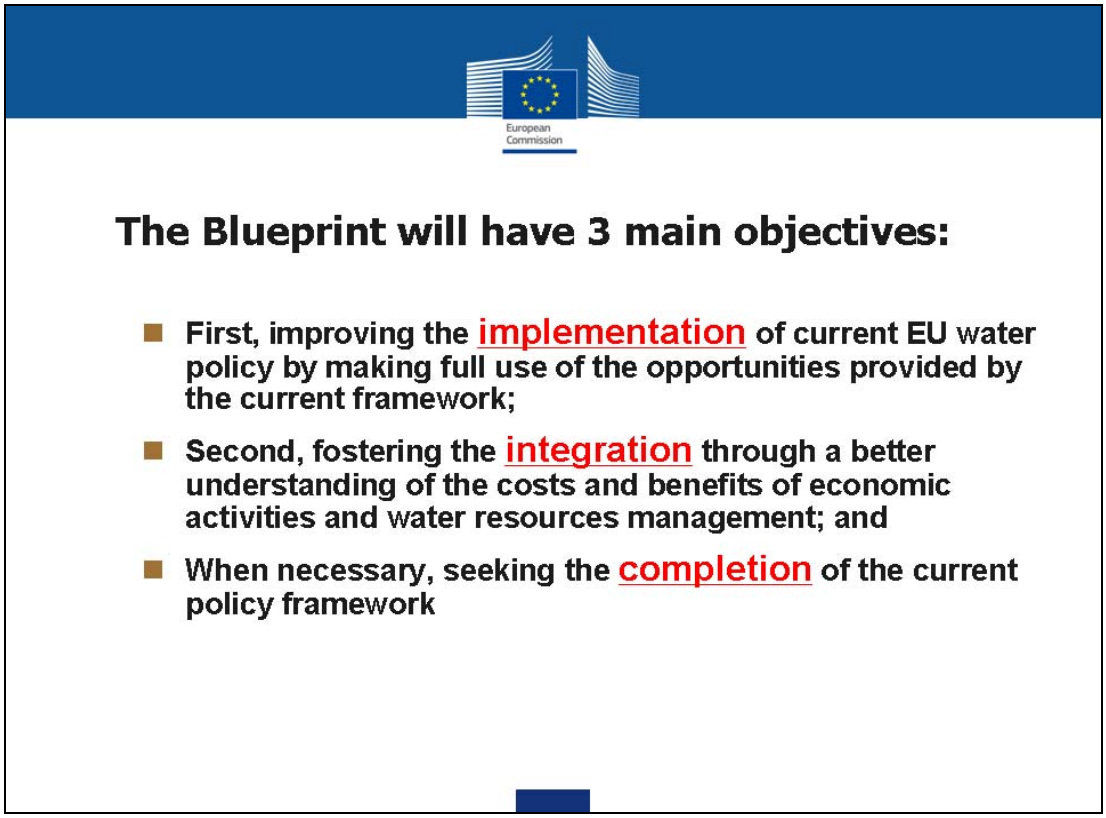



European Commission
Outcome of Fitness Check on EU freshwater policy
Water quality in Europe is improving, but the Good Status target for 2015 will not be attained everywhere
Improvements in implementation are first priority
There is not a sufficiently strong basis for tackling water scarcity and droughts
Synergies with regulation of chemical substances can be improved (REACH, PPP, pharmaceuticals etc.)
Need for improved coherence with CAP and Regional policy and better targeting of funds
Need for improved coherence with RE and Transport policies
Need for improved analysis of costs and benefits


European Commission
Preliminary Conclusions
Message from stakeholders: WFD remains relevant and appropriate and no change in legislation is needed
Europe is making progress in improving water quality
BUT, even with existing levels of pressures on water resources, more and better efforts are needed
Future increases in pressure will make improvements more necessary

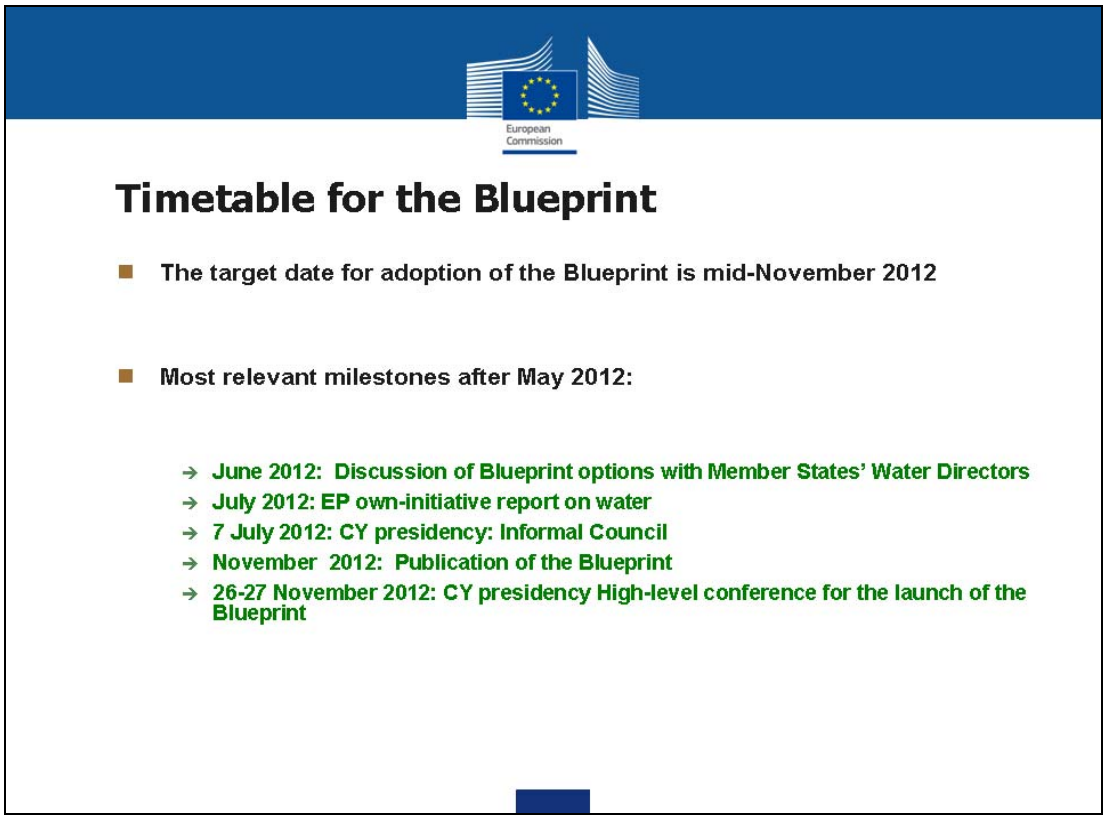

European Commission
Pressures on water resources will increase...
Global population and economic growth and climate change and land use change will put water resources under pressure
Water-Energy-Food nexus - Water Resources Group projects that BAU will mean a 40% global gap between water demand and supply in 2030
Challenge will be to identify policy direction that will be cost-effective in the longer term
Long lead times for change


European Commission
What is the Blueprint?
Objective: to ensure sufficient availability of good quality water for sustainable and equitable water use
The Blueprint to Safeguard Europe's Water Resources will present the policy response in the 2020 timeframe to current and long term water challenges
The Blueprint will be the 2020 water milestone on the Resource Efficiency Roadmap. However, the analysis underpinning the Blueprint will in fact cover a longer time span up to 2030-2050.


European Commission
The Blueprint will have 3 main objectives:
First, improving the implementation of current EU water policy by making full use of the opportunities provided by the current framework;
Second, fostering the integration through a better understanding of the costs and benefits of economic activities and water resources management; and
When necessary, seeking the completion of the current policy framework


European Commission
Policy orientations for the Blueprint
Better integration of quantitative management in RBMPs to tackle current and future increased pressures
Demand Management and Water Efficiency
Water Availability, Clean Water and Natural water Retention Measures and Ecosystem Protection
Economic Instruments (pricing, payment for ecosystem services and finance)
Governance
Knowledge Sharing, Research and Innovation


European Commission
Next Steps
Public Consultation on policy options March-June 2012
Discussions with Member States' Water Directors March 2012
Fitness Check Report April 2012
Launch of Innovation Partnership April 2012
Green Week 2012 22-25 May 2012
Stakeholders: 3rd European Water Conference 24-25 May 2012


European Commission
Timetable for the Blueprint
The target date for adoption of the Blueprint is mid-November 2012
Most relevant milestones after May 2012:
June 2012: Discussion of Blueprint options with Member States' Water Directors
July 2012: EP own-initiative report on water
7 July 2012: CY presidency: Informal Council
November 2012: Publication of the Blueprint
26-27 November 2012: CY presidency High-level conference for the launch of the Blueprint


European Commission
Thank you for your attention
http://ec.europa.eu/environment/water/blueprint/index_en.htm

Presentation by Beate Werner, EEA

Workshop on European water challenges

8th March 2012; European Parliament

Knowledge on EU water: lack of data - water use efficency

Beate Werner
Head of Group - Water, EEA

European Environment Agency

2012 EEA reports

1. Towards efficient use of water resources in Europe
2. Hydromorphology
3. Vulnerability
4. Status of Freshwater ecosystems and Biodiversity
5. Synthesis

European Environment Agency

EEA synthesis
→ Information background for the Blueprint

-Summary of TA
-Integration across policies and in economic perspective
-Relation to the main policy issues and responses

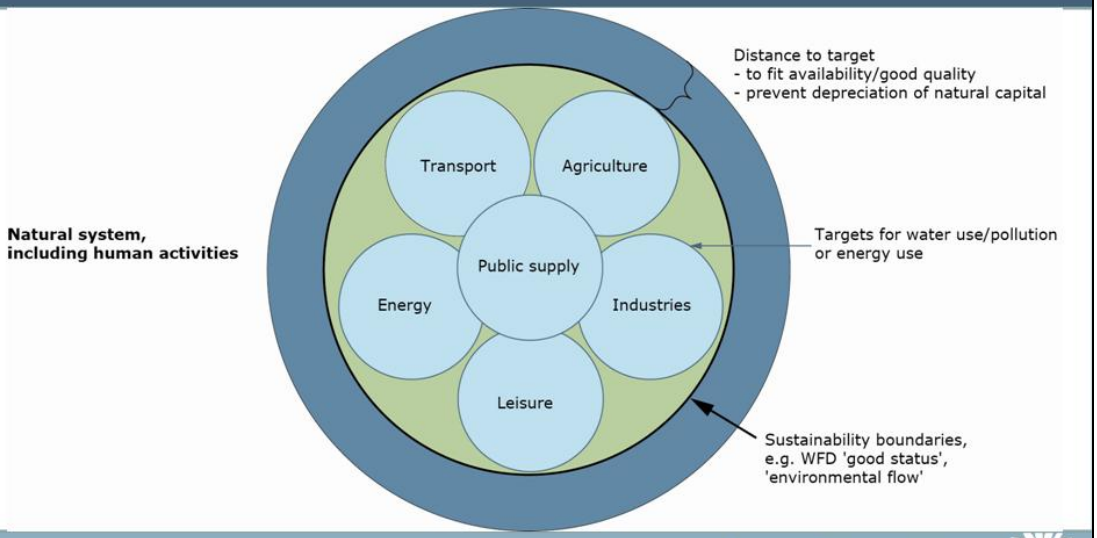
European Environment Agency

Efficient use of water resources in Europe

- **Resource efficiency technologies**
  - Efficient irrigation technics;
  - leakage reduction;
  - savings in urban water use (eco-design, urban planning);
  - energy ***and*** water efficiency in supply and sanitation; reduction at source
- **Economic instruments**
  - Water pricing to provide incentives for innovation;
  - full cost recovery (incl. environmental and resource costs);
  - full transparency of water prices and investments;
  - scrutiny on adverse subsidies;

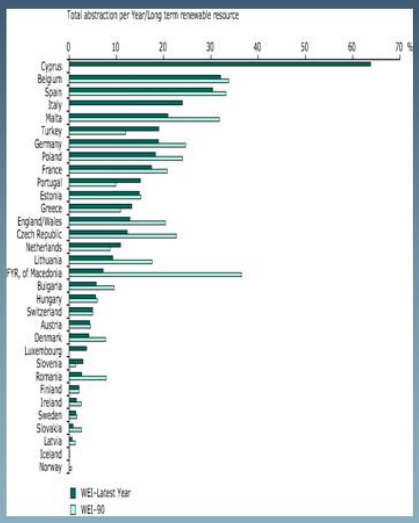
European Environment Agency

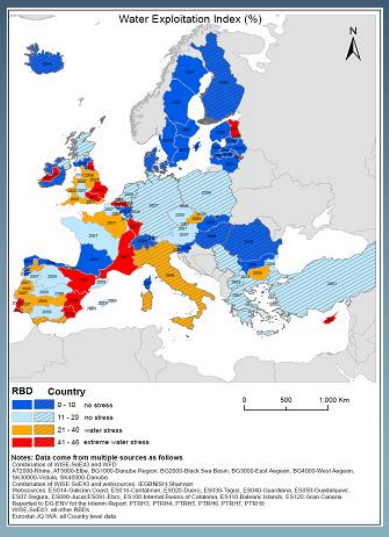
The Water Resource Challenge - management of competing uses within ecosystem resilience



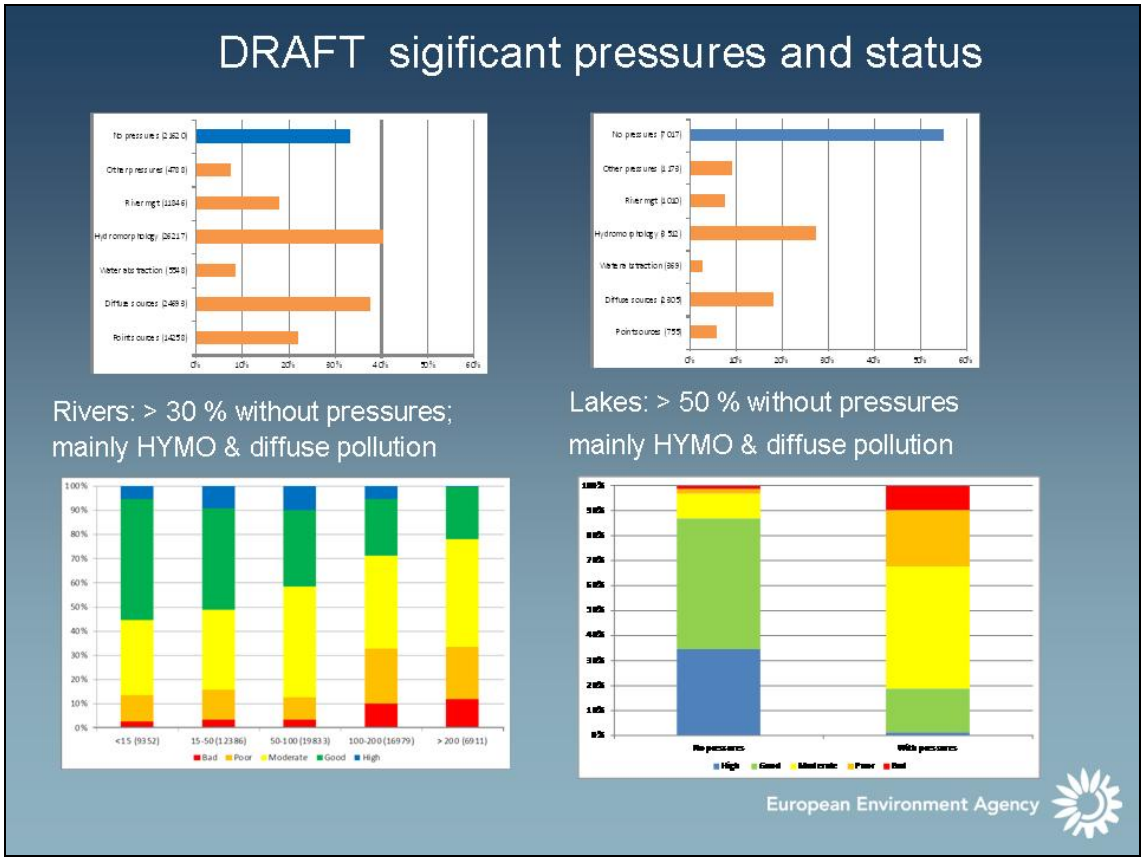
European Environment Agency

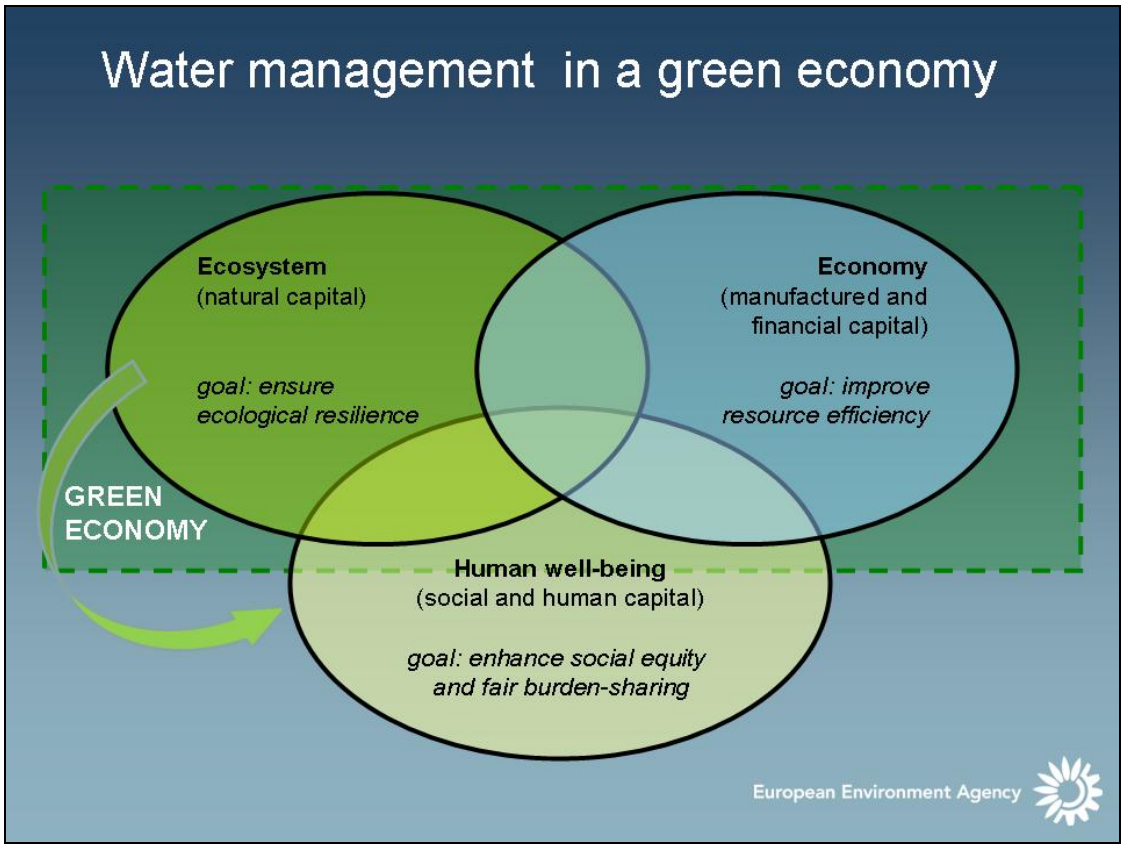
Water scarcity information needs regional and seasonal scale



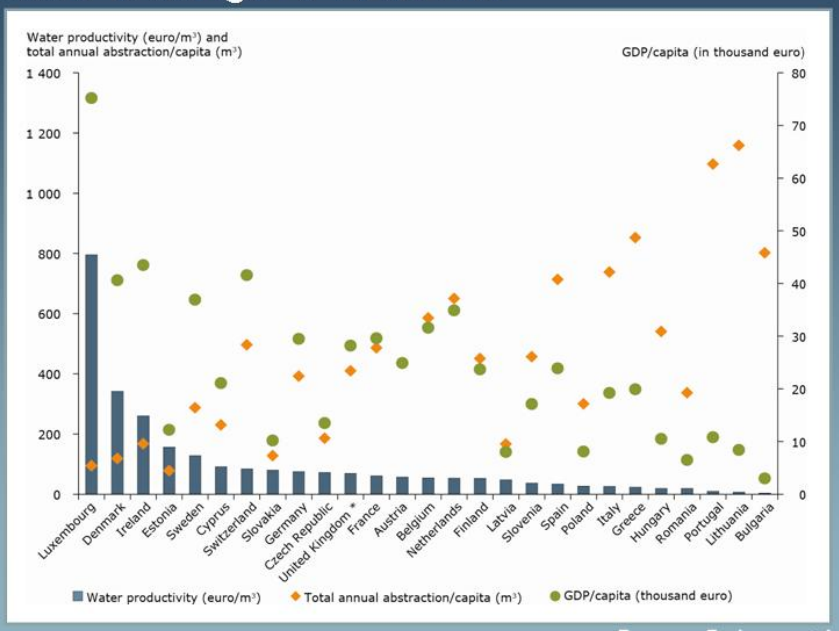


European Environment Agency


DRAFT sigificant pressures and status
Rivers: > 30 % without pressures;
mainly HYMO & diffuse pollution
Lakes: > 50 % without pressures
mainly HYMO & diffuse pollution
European Environment Agency


Water management in a green economy
Ecosystem
(natural capital)
goal: ensure
ecological resilience
Economy
(manufactured and
financial capital)
goal: improve
resource efficiency
GREEN
ECONOMY
Human well-being
(social and human capital)
goal: enhance social equity
and fair burden-sharing
European Environment Agency

Differences in Water productivity can have a range o reasons



European Environment Agency

Gaps in information and assessments what we have -- what we need

Ecosystem boundaries	
Good status	Environmental Flows
Data & Information status , pressure	
Water quality nutrients, biological, (hydromorphological) (WFD)	Water quality for chemicals, emerging substances
Water availability & abstraction (nationally by sector)	Water availability and abstraction on RBD level; all sectors
GDP globally and GVA by sector, some info on cost recovery (WFD)	Water prices, taxes and relevant subsidies on RBD level
Indicators and assessments	
Status indicators on water quality	Composite indicators on *resource efficiency*
National level water exploitation index	Water scarcity indicators on RBD level

European Environment Agency

Biggest challenges and gaps

- Track water resource efficiency development, regionalised water uses in all sectors (water accounts)
- Assess resource efficiency integrated with energy efficiency and land use.
- Integrated knowledge on water quality (WFD, UWWTD, Ba Wa, Ni Di) to tackle remaining quality hotspots;
- Indicators to track development of hydromorphological status

European Environment Agency

Thank you!

See also eea.europa.eu/themesanddata/water

Beate Werner, EEA

European Environment Agency

Presentation by Stefan Scheuer, Independent Consultant

Water Policy Integration

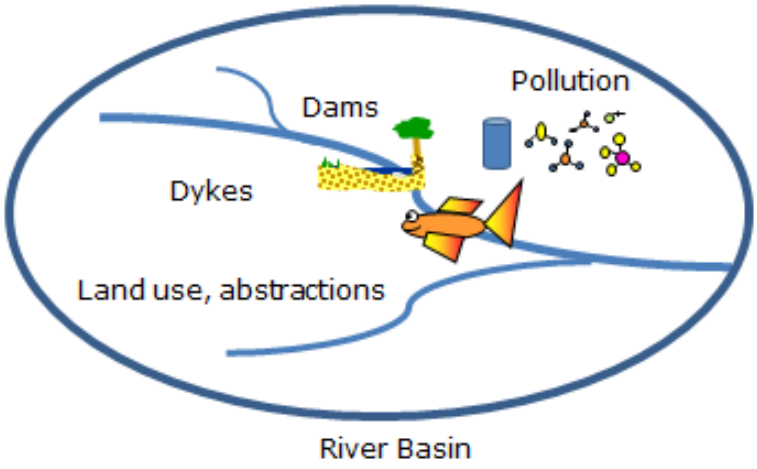
Workshop on Europe's Water Challenges

European Parliament, 8 March 2012

Stefan Scheuer
Consultant

1

- Increasing complexity



2

- Increasing conflicts with
  - Energy
  - Agriculture
  - Transport
- Requires clever use of
  - Planning and public participation
    - What are the decision making rules?
  - Economic instruments
    - Who pays for what service?

3

A Big Jump!

4

Presentation by Luis Bulhão Martins, COPA COGENA

copa cogeca
european farmers european agri-cooperatives

Water: an irreplaceable part of agricultural production

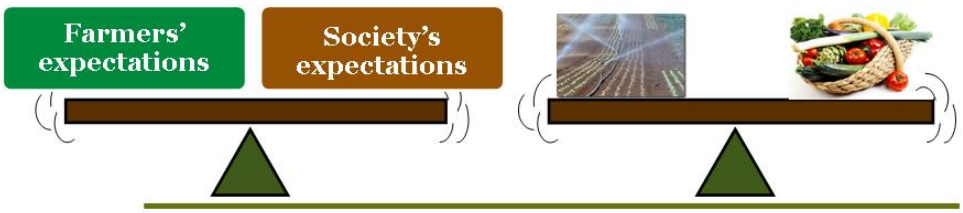
Luís Bulhão Martins
Chairman of the Copa-Cogeca Working Party on the Environment

Workshop on Europe's water challenges 8 March 2012

The need for water in agriculture

The production of agricultural products is inseparably linked to water supply with seasonal variations in demand

- Quality water in large amounts is essential for agricultural production
- A sustainable water supply is vital for agriculture
- Water quantity and quality: huge differences across Europe
- Agricultural areas: important sources for drinking water provision



08.03.2012 | Bulhão | 2

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european farmers european agri-cooperatives

Challenge 1- reconcile increasing productivity and agricultural product quality with efficient and economical water use

The suitability of a large toolbox depends on local conditions and the farming system:

– rainwater harvesting
– water storage either technically or as soil moisture by adopting water conservation cropping practices
– adapted crop rotations
– adjusting sowing dates according to temperature and rainfall patterns
– using crop varieties better suited to new weather conditions
– reusing water
– improving the performance of irrigation systems through better maintenance
– adapting the plant watering schedule
– planting hedgerows that reduce water run-off and act as wind-breaks
– modernisation of irrigation infrastructure

-> **high degree of knowledge at farm level required**

08.03.2012 | Bulhão | 3

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Challenge 2- consumers' views on water management by the agriculture sector

• Water for agriculture is of secondary importance where there is water scarcity;
e.g. if needed for tourism in the Mediterranean region

• Little knowledge about the biological process in plants to generate biomass depending on water (and sunlight)

• Water footprint discussion; water use is calculated on the basis of precipitation water as well as artificial water supply (irrigation, reuse)

• Demand for ready-to-eat products with high hygiene standards, e.g. pre-washed salads

• Weak link between daily food purchase and environmental thinking

• Overestimation of the impact of irrigation on the water cycle

08.03.2012 | Bulhão | 4

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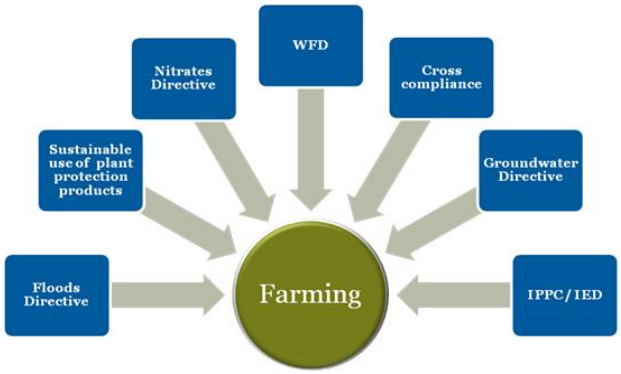
Great number of legislation to ensure water protection in the agriculture sector



The requirements have led to changed management practices, are making investments in new / adapted technology necessary
-> higher production costs

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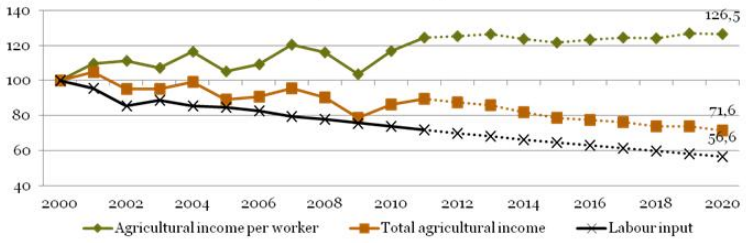
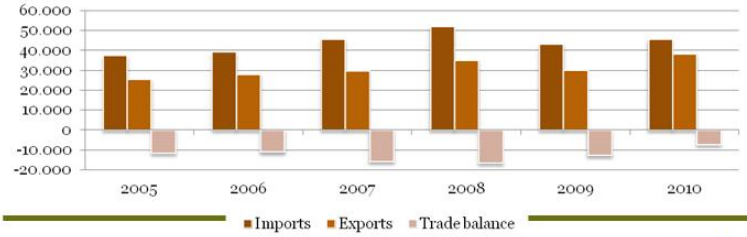
Agriculture EU trade and farmers income - Evolution and trends

Projected changes in agricultural income for the EU27
Index base year 2000=100, real terms



Evolution of extra EU-27 trade in agriculture, 2005-2010 – value in million euro



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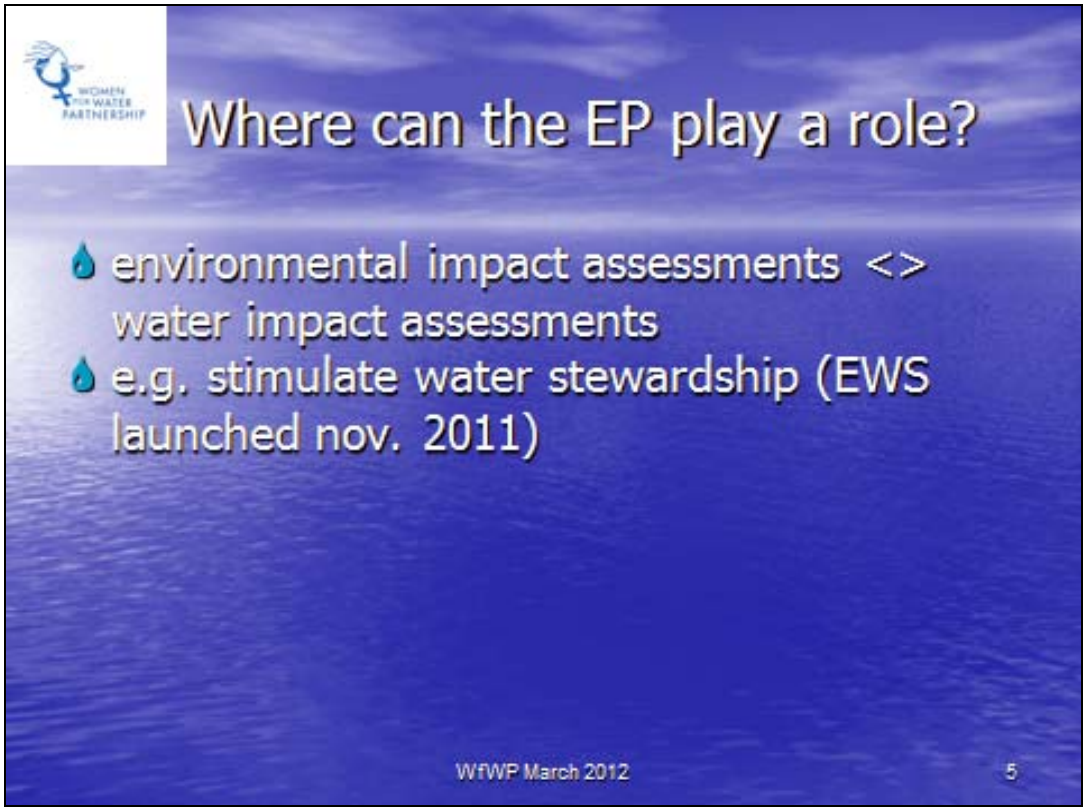
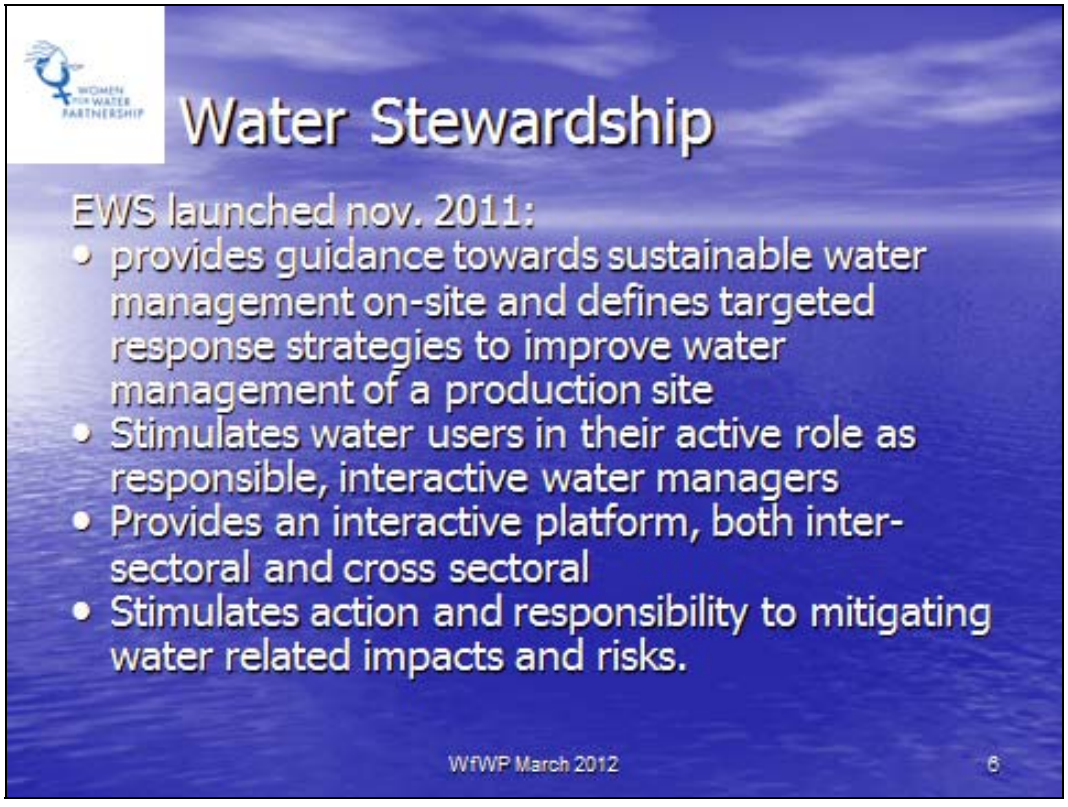
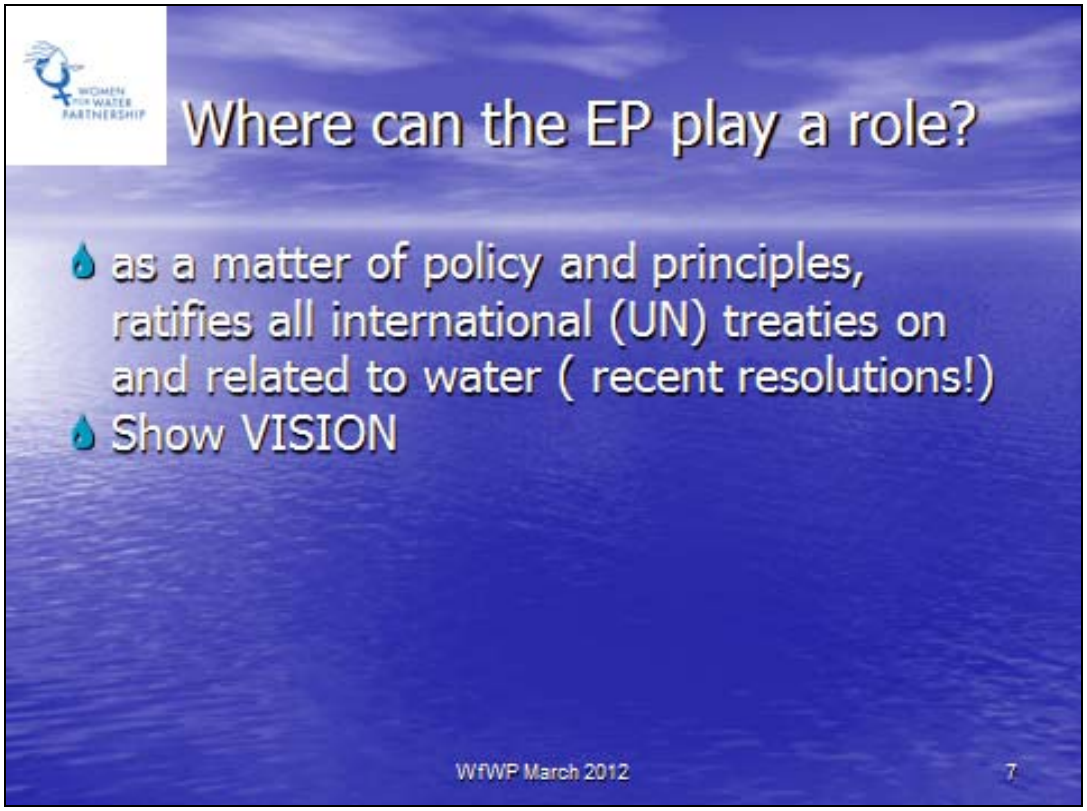
Presentation by Lesha Witmer, WfWP


Challenges
"Cost recovery" and Tariff structures: no incentive for users?
Ecosystem services and services for eco systems
Polluter pays
Horizontal coordination: ministries, DG's and policy areas lacking
"old fashioned" legislation: e.g. health legislation based on technology standards last century
WfWP March 2012
3


Where can the EP play a role?
Recommend and stimulate:
Development of new participatory approaches ("aquawareness" and use existing experiences other policy areas)
Allocation funds for capacity (development) for (local) government and major groups (agenda 21)
Re-set criteria for funding: process and outcome orientation allowed
horizontal coordination between policy areas >> water is cross cutting for "all" policy areas
WfWP March 2012
4


Where can the EP play a role?
environmental impact assessments <> water impact assessments
e.g. stimulate water stewardship (EWS launched nov. 2011)
WfWP March 2012
5

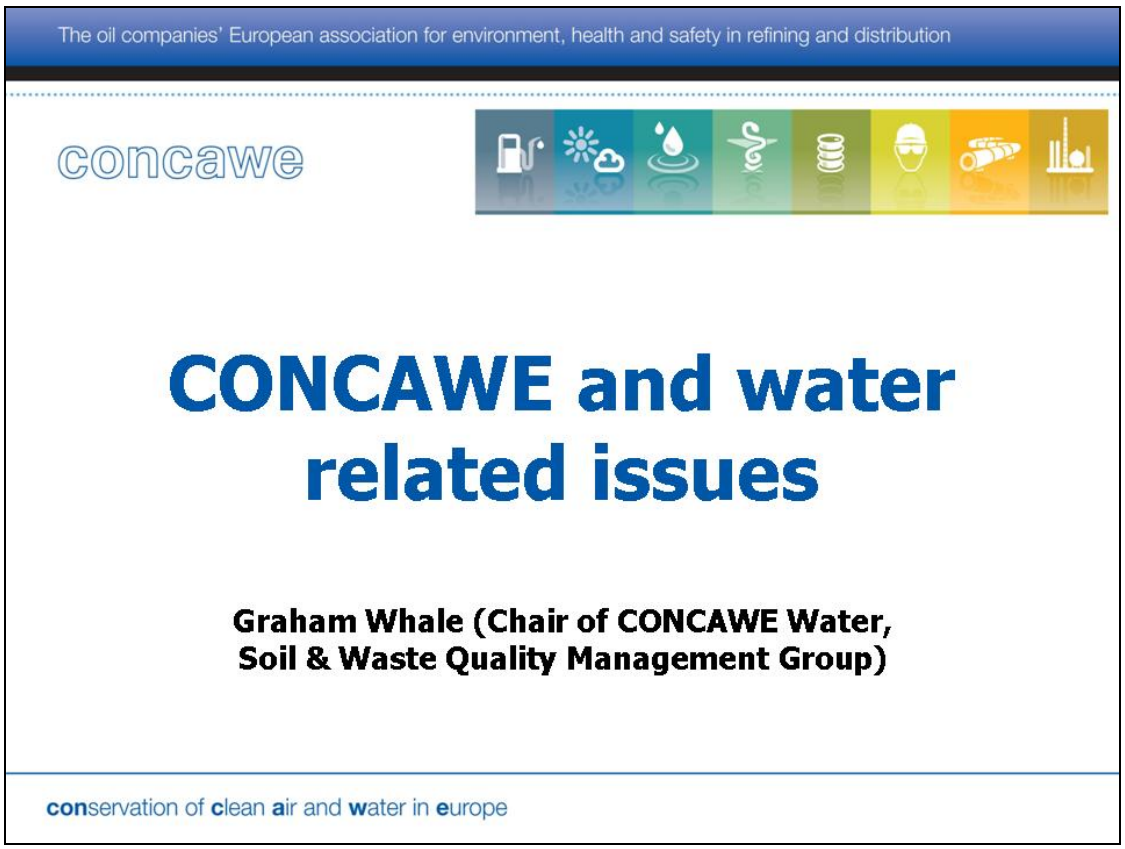

Water Stewardship
EWS launched nov. 2011:
provides guidance towards sustainable water management on-site and defines targeted response strategies to improve water management of a production site
Stimulates water users in their active role as responsible, interactive water managers
Provides an interactive platform, both inter-sectoral and cross sectoral
Stimulates action and responsibility to mitigating water related impacts and risks.
WfWP March 2012
6

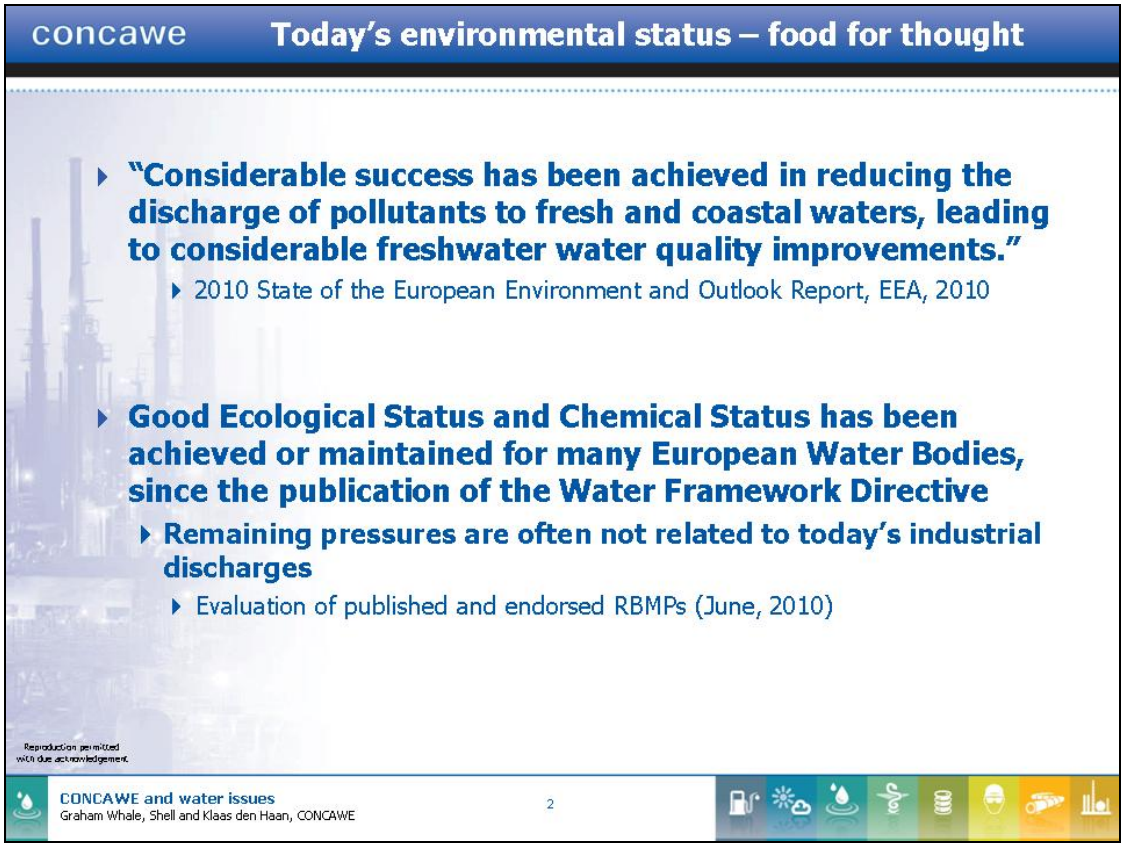

Where can the EP play a role?
as a matter of policy and principles, ratifies all international (UN) treaties on and related to water (recent resolutions!)
Show VISION
WfWP March 2012
7


Women for Water: who are we?
Members: 24 Women's organisations (directly) and approx. 90 through umbrella organisations indirectly
Diversity: from grassroots to academic women, from spanning the globe to local
> 87 countries; Estimated women connected: 2.5 million
Partners: UN Water, UNESCO –IHE, IWA, WASTE
Founded 2004 as a network
Type 2 Partnership, registered with UN DESA
Federation / Legal entity in Netherlands since 2009
Registration Chamber of Commerce NL and international NGO in Tanzania
Strategic partner European Water Partnership
www.womenforwater.org
WfWP March 2012
8


Tell me, and I will forget.
Show me, and I may remember.
Involve me, and I will understand
(Confucius)
Thank you for your attention and commitment
WfWP March 2012
9

Presentation by Graham Whale, CONCAWE





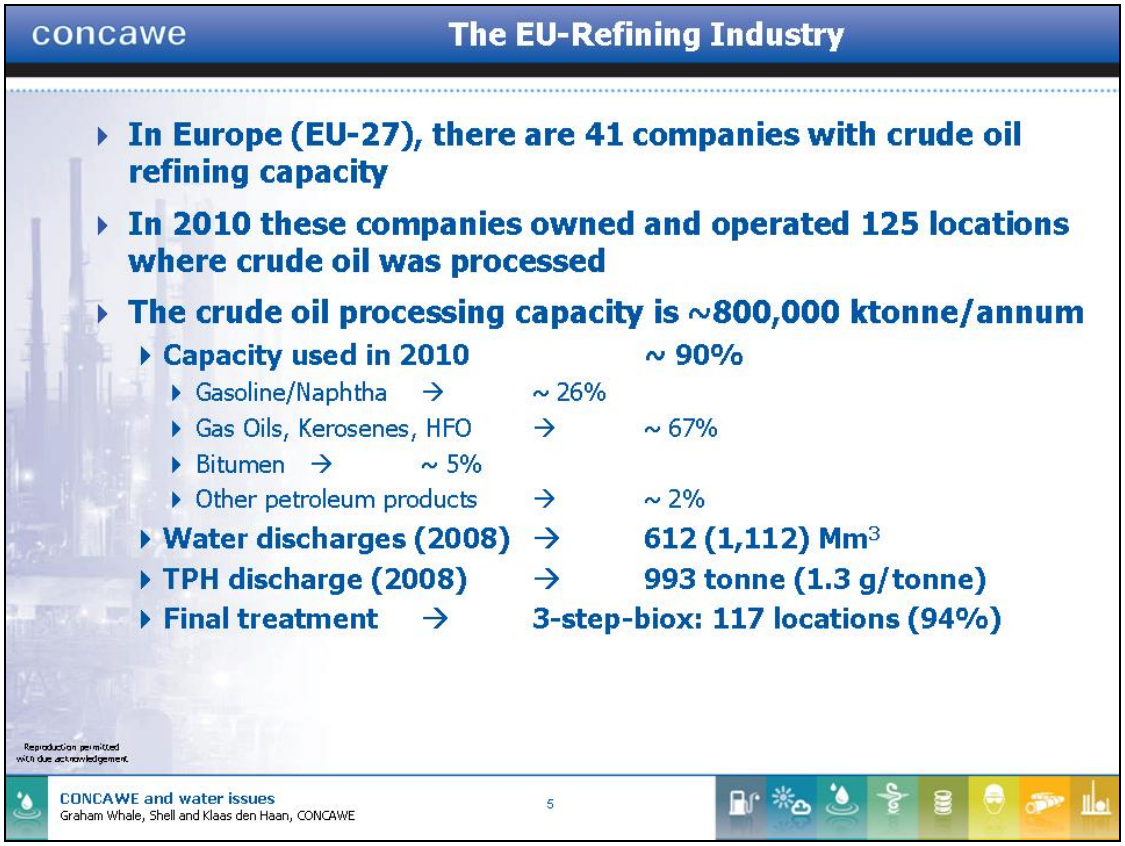
concawe

Industry perspective on EU water

- Introduction
  - CONCAWE
- The European regulatory environment
  - Substances
  - Emissions
  - Water & Groundwater
- Refinery discharges
- Current environmental issues
  - Resource efficiency
  - Enhanced monitoring efforts
- Conclusions

concawe

European Refineries on Cross Country Pipelines


concawe
The EU-Refining Industry
In Europe (EU-27), there are 41 companies with crude oil refining capacity
In 2010 these companies owned and operated 125 locations where crude oil was processed
The crude oil processing capacity is ~800,000 ktonne/annum
Capacity used in 2010 ~ 90%
Gasoline/Naphtha → ~ 26%
Gas Oils, Kerosenes, HFO → ~ 67%
Bitumen → ~ 5%
Other petroleum products → ~ 2%
Water discharges (2008) → 612 (1,112) Mm3
TPH discharge (2008) → 993 tonne (1.3 g/tonne)
Final treatment → 3-step-biox: 117 locations (94%)
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CONCAWE and water issues
Graham Whale, Shell and Klaas den Haan, CONCAWE
5


concawe EU legislative instruments relevant to industrial water use
Main legislative instruments that influence the activities of today's industry in Europe in the field of water
Substances: REACH
Substances on the EU-market (CMR, R50 or >1,000 tonnes/annum) are registered
All registered substances are required to be assessed by the registrant and demonstrated to be safe with appropriate risk management, as applicable
Evaluation of the assessments provided by Industry is on-going
Emissions: E-PRTR and Industrial Emissions Directive
E-PRTR - Reporting of emissions and transfers above regulatory thresholds
IED - Reduction of Industrial emission by use of Best Available Techniques
Environmental Quality: Water Framework Directive, Groundwater Directive, Environmental Quality Standards Directive, QA/QC-Directive, Marine Strategy Framework directive.
WFD - Member State obligation to achieve Good Water Quality (Chemical & Ecological) and reduce discharge, emission and losses of priority substances
GWD – Protection of groundwater bodies and achieving good quality
EQSD – Setting EQSs for priority substances (Cf. WFD Annex X) and Member State obligation to set-up inventories of discharges emissions and losses of these
QA/QC Directive – Member state obligations on analytical requirements for the monitoring of priority substances
MSFD – More or less equivalent legislation to the WFD for the marine ecosystem
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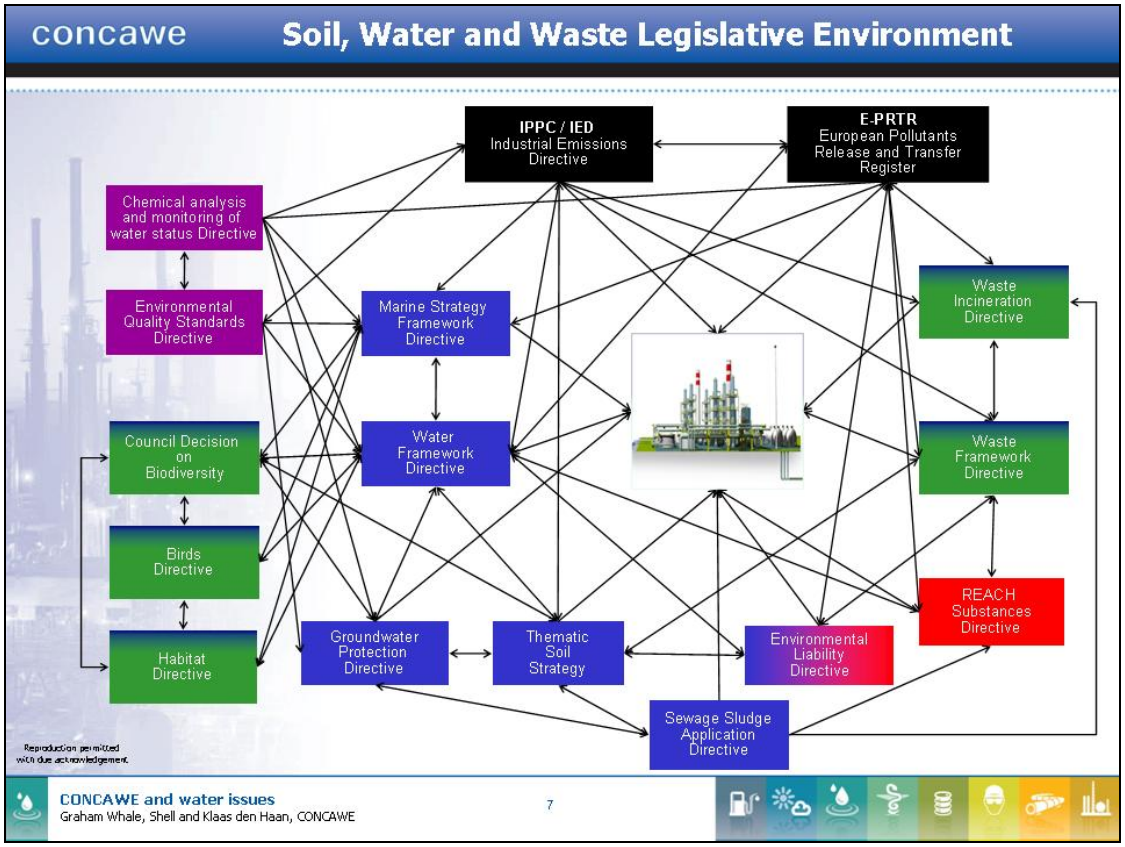
CONCAWE and water issues
Graham Whale, Shell and Klaas den Haan, CONCAWE
6


concawe
Soil, Water and Waste Legislative Environment
IPPC / IED
Industrial Emissions Directive
E-PRTR
European Pollutants Release and Transfer Register
Chemical analysis and monitoring of water status Directive
Environmental Quality Standards Directive
Marine Strategy Framework Directive
Waste Incineration Directive
Council Decision on Biodiversity
Water Framework Directive
Waste Framework Directive
Birds Directive
REACH Substances Directive
Habitat Directive
Groundwater Protection Directive
Thematic Soil Strategy
Environmental Liability Directive
Sewage Sludge Application Directive
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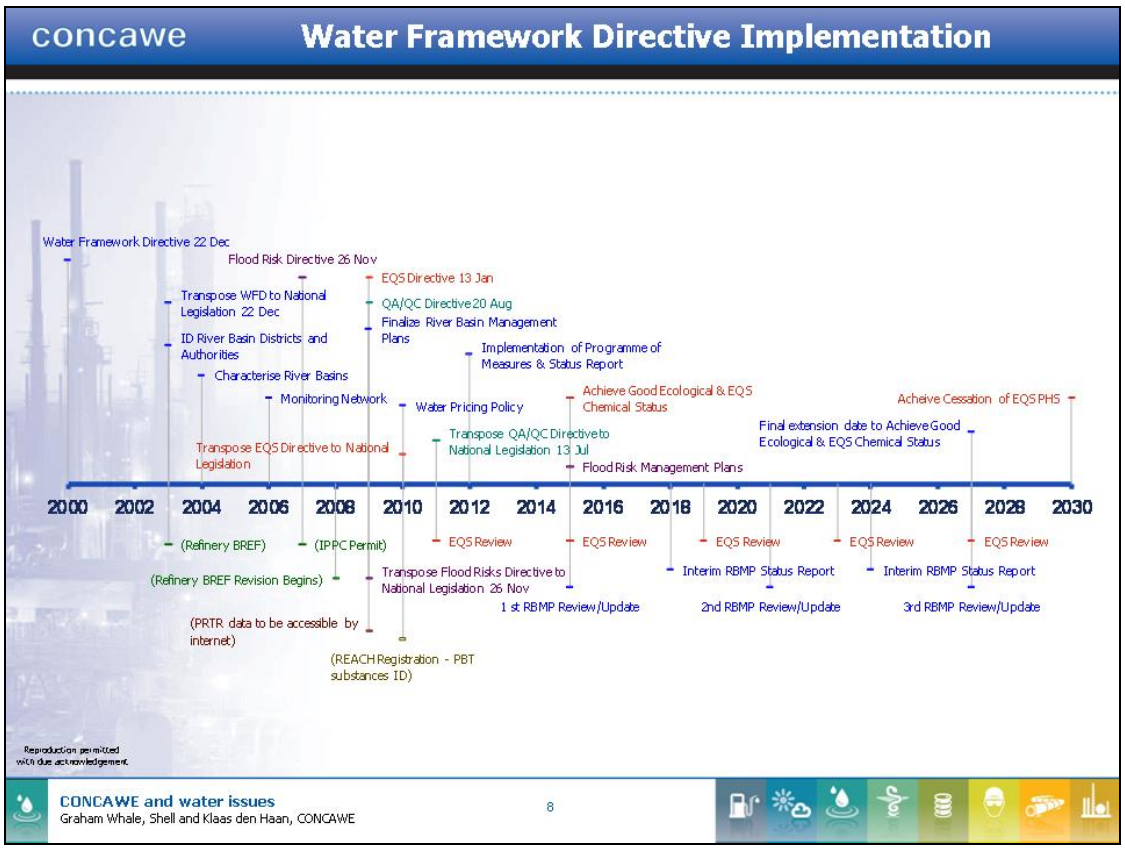
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Water Framework Directive Implementation
Water Framework Directive 22 Dec
Flood Risk Directive 26 Nov
EQS Directive 13 Jan
Transpose WFD to National Legislation 22 Dec
QA/QC Directive 20 Aug
Finalize River Basin Management Plans
ID River Basin Districts and Authorities
Implementation of Programme of Measures & Status Report
Characterise River Basins
Monitoring Network
Water Pricing Policy
Achieve Good Ecological & EQS Chemical Status
Acheive Cessation of EQS PHS
Final extension date to Achieve Good Ecological & EQS Chemical Status
Transpose EQS Directive to National Legislation
Transpose QA/QC Directive to National Legislation 13 Jul
Flood Risk Management Plans
2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030
(Refinery BREF)
(IPPC Permit)
EQS Review
EQS Review
EQS Review
EQS Review
EQS Review
(Refinery BREF Revision Begins)
Transpose Flood Risks Directive to National Legislation 26 Nov
Interim RBMP Status Report
Interim RBMP Status Report
1 st RBMP Review/Update
2nd RBMP Review/Update
3rd RBMP Review/Update
(PRTR data to be accessible by internet)
(REACH Registration - PBT substances ID)
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Refinery discharges

- **Type of discharges**
  - **Process water (Treated or transferred)**
  - **Cooling water (Treated, monitored or untreated)**
    - Once-through or recycle bleeds (always treated)
  - **Domestic water (via in-house WWTP or into public sewer system)**
  - **Pluvial water (Treated or as received)**
  - **Other water**
    - Ground water remediation projects, etc.
- **Monitoring**
  - **Only known and relevant parameters**
    - E-PRTR reportable (Although reporting on estimations are allowed)
    - Parameters specifically mentioned in operating permits
    - Company policy requirements
- **For 2010 CONCAWE is analysing refinery discharges on quantity and 50 quality parameters including the WFD-PSs**
  - As a mature Industry understanding of the activities and discharges exists

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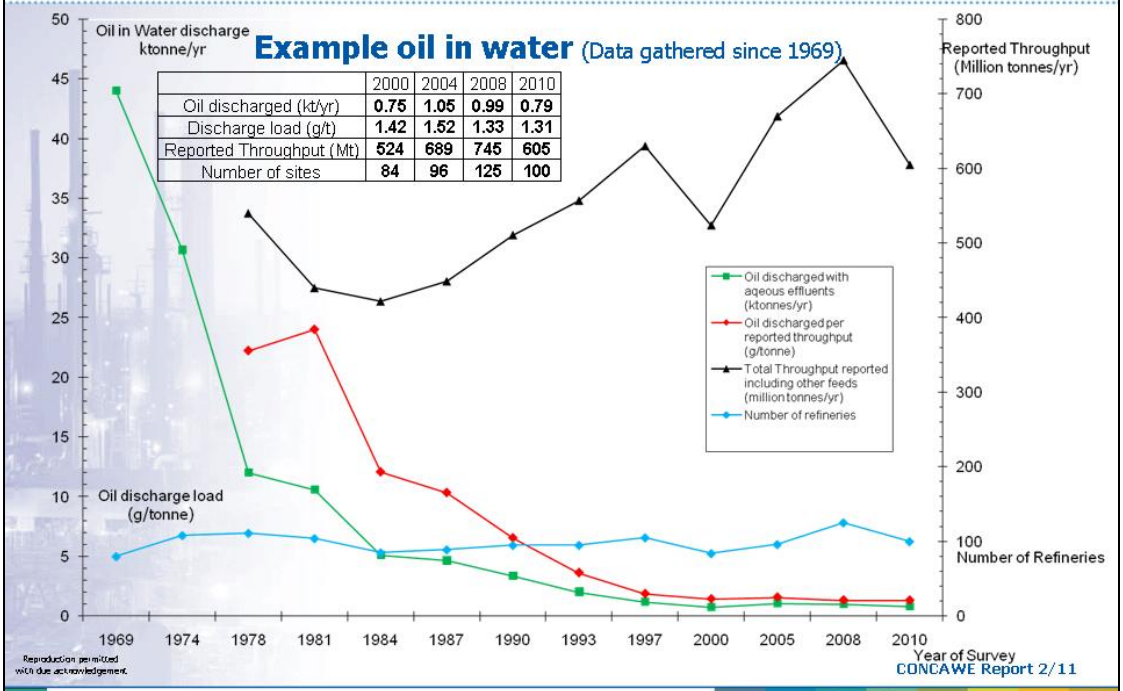
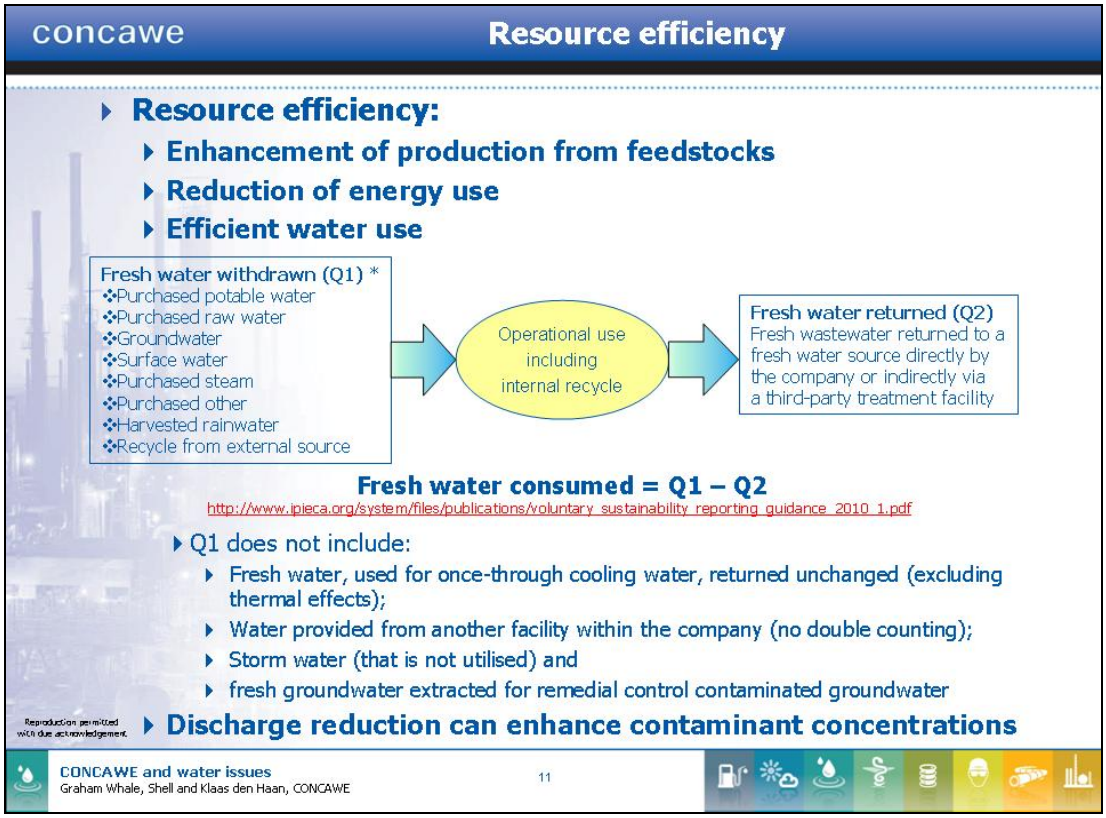
Trend in refinery effluent loads

Example oil in water (Data gathered since 1969)

	2000	2004	2008	2010
Oil discharged (kt/yr)	0.75	1.05	0.99	0.79
Discharge load (g/t)	1.42	1.52	1.33	1.31
Reported Throughput (Mt)	524	689	745	605
Number of sites	84	96	125	100

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Resource efficiency
Resource efficiency:
Enhancement of production from feedstocks
Reduction of energy use
Efficient water use
Fresh water withdrawn (Q1) *
Purchased potable water
Purchased raw water
Groundwater
Surface water
Purchased steam
Purchased other
Harvested rainwater
Recycle from external source
Operational use including internal recycle
Fresh water returned (Q2)
Fresh wastewater returned to a fresh water source directly by the company or indirectly via a third-party treatment facility
Fresh water consumed = Q1 – Q2
http://www.ipieca.org/system/files/publications/voluntary_sustainability_reporting_guidance_2010_1.pdf
Q1 does not include:
Fresh water, used for once-through cooling water, returned unchanged (excluding thermal effects);
Water provided from another facility within the company (no double counting);
Storm water (that is not utilised) and
fresh groundwater extracted for remedial control contaminated groundwater
Discharge reduction can enhance contaminant concentrations
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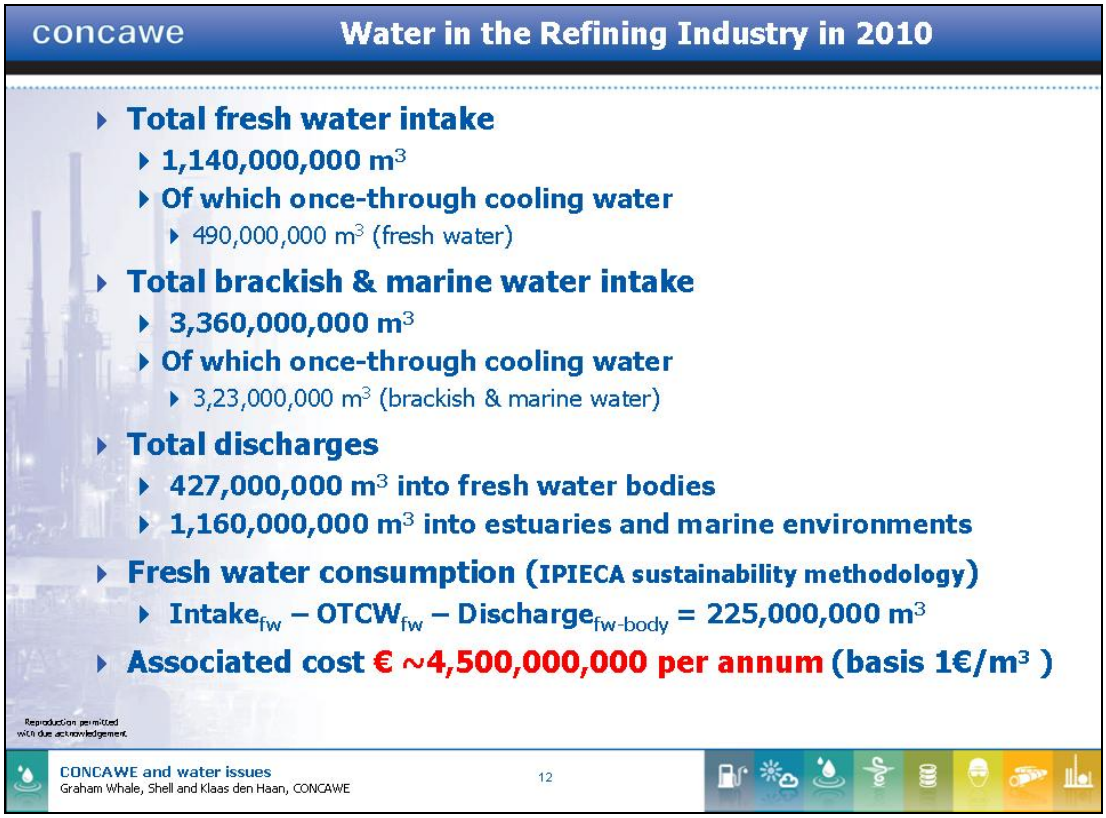
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Water in the Refining Industry in 2010
Total fresh water intake
1,140,000,000 m3
Of which once-through cooling water
490,000,000 m3 (fresh water)
Total brackish & marine water intake
3,360,000,000 m3
Of which once-through cooling water
3,23,000,000 m3 (brackish & marine water)
Total discharges
427,000,000 m3 into fresh water bodies
1,160,000,000 m3 into estuaries and marine environments
Fresh water consumption (IPIECA sustainability methodology)
Intake$_{fw}$ – OTCW$_{fw}$ – Discharge$_{fw\text{-}body}$ = 225,000,000 m3
Associated cost € ~4,500,000,000 per annum (basis 1€/m3)
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Monitoring

- **Enhanced monitoring:**
  - **The obligations to assess the water quality under the WFD and associated legislation lies with the Member States**
  - **Industry will only monitor inside the environment for which they are responsible**
    - Discharge monitoring will be constrained to the techno-sphere
    - Analytes included in this monitoring can only be restricted to those contaminants that are potentially present in their effluents
    - A causal relation between an observed environmental stressor and the activities of an Industrial site is needed before a requirement to expand any monitoring effort can be discussed or substantiated

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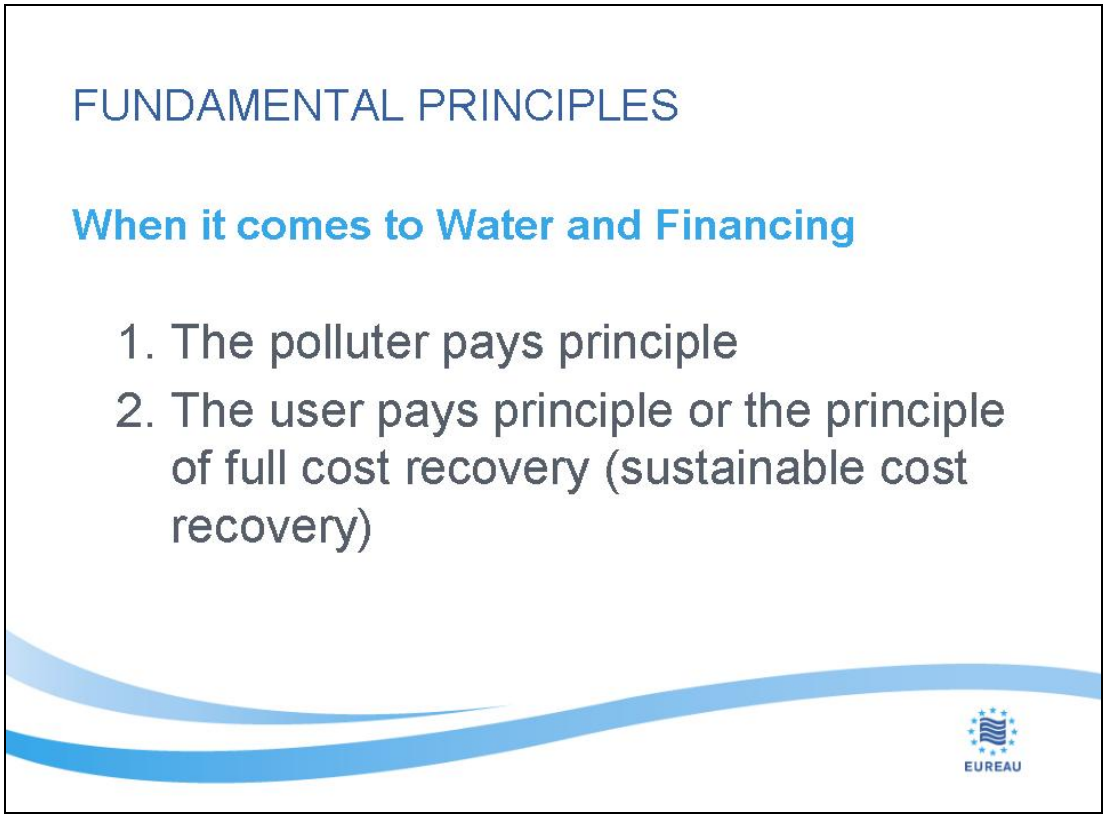
CONCLUSIONS

- **Europe's waters are constantly improving and the current regulatory environment has all the elements to achieve its intended goals but requires consistent implementation and delivery by MS to achieve the desired objectives**
- **The oil refining industry has been active in reducing their emissions and discharges to water for several decades**
- **CONCAWE has an almost 50 year history of working with regulators on scientific and technical water issues and looks forward to continued cooperation in this field**

Presentation by Carl Emil Larsen, EUREAU



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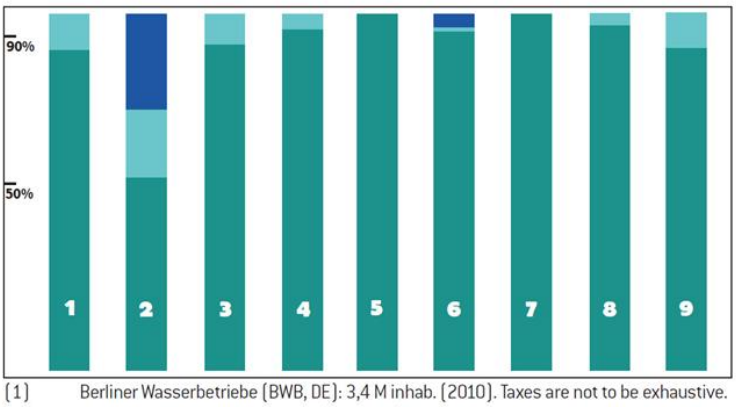

(1) Berliner Wasserbetriebe (BWB, DE): 3,4 M inhab. (2010). Taxes are not to be exhaustive.
(2) Metropolitan area of Barcelona. (ES, 2009)
(3) Brest Métropole Océane (FR): 210,000 inhab. (2010)
(4) Vitens (NL): Provinces of Friesland, Overijssel, Flevoland, Gelderland and Utrecht; a number of municipalities of Noord-Holland and Drenthe. (2010)
(5) Bristol Water (UK): 1 million customers. (2010)
(6) Wodociagi Warszawskie (PL), City of Warsaw. (2009)
(7) Vand Center Syd, City of Odense (DK): 155,000 customers. (2010)
(8) Publiacqua, Tuscan region (IT): 1,277,000 inhab. (2010)
(9) Public water and waste water services (FR), FP2E. (2008)

Tariffs
Taxes
Transfers

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