



Water Scarcity and Droughts Policy in the EU

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Europe:

Diversity of regions, waters & river basins

Diversity of uses, aspirations, pressures & impacts



Agriculture



Flood protection



Industry



Navigation & hydropower



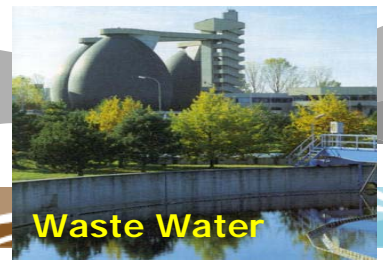
Tourism



Drinking water supply



Nature protection



Waste Water environment

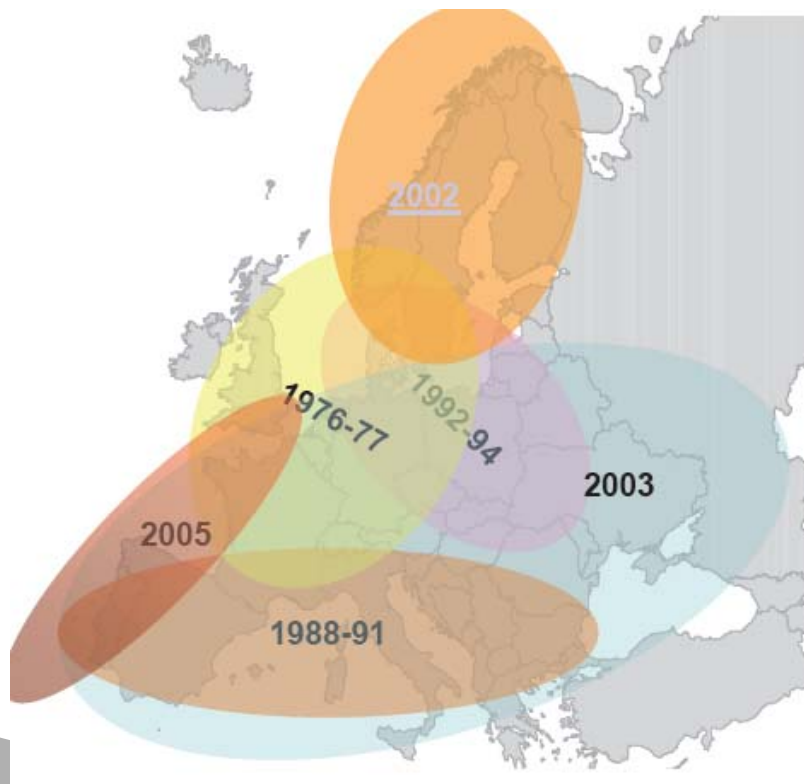
Why is water scarcity & droughts a concern in Europe?

- Balance between demand and availability has reached a critical level in many areas of Europe (water scarcity)
- More and more areas are affected by weather changes, in particular less rain (droughts)
- Climate change will almost certainly make the situation worse
- More frequent and severe droughts expected across Europe and the neighbouring countries
- Total water abstraction in EU 247 billion m³/year
 - 44% for energy production,
 - 24% for agriculture,
 - 17% for public water supply
 - 15% for industry

Business as usual scenario:

Total abstraction will increase by 16% by 2030

Water scarcity & drought in Europe



Reservoir,
Sicily



Reservoir,
Cyprus

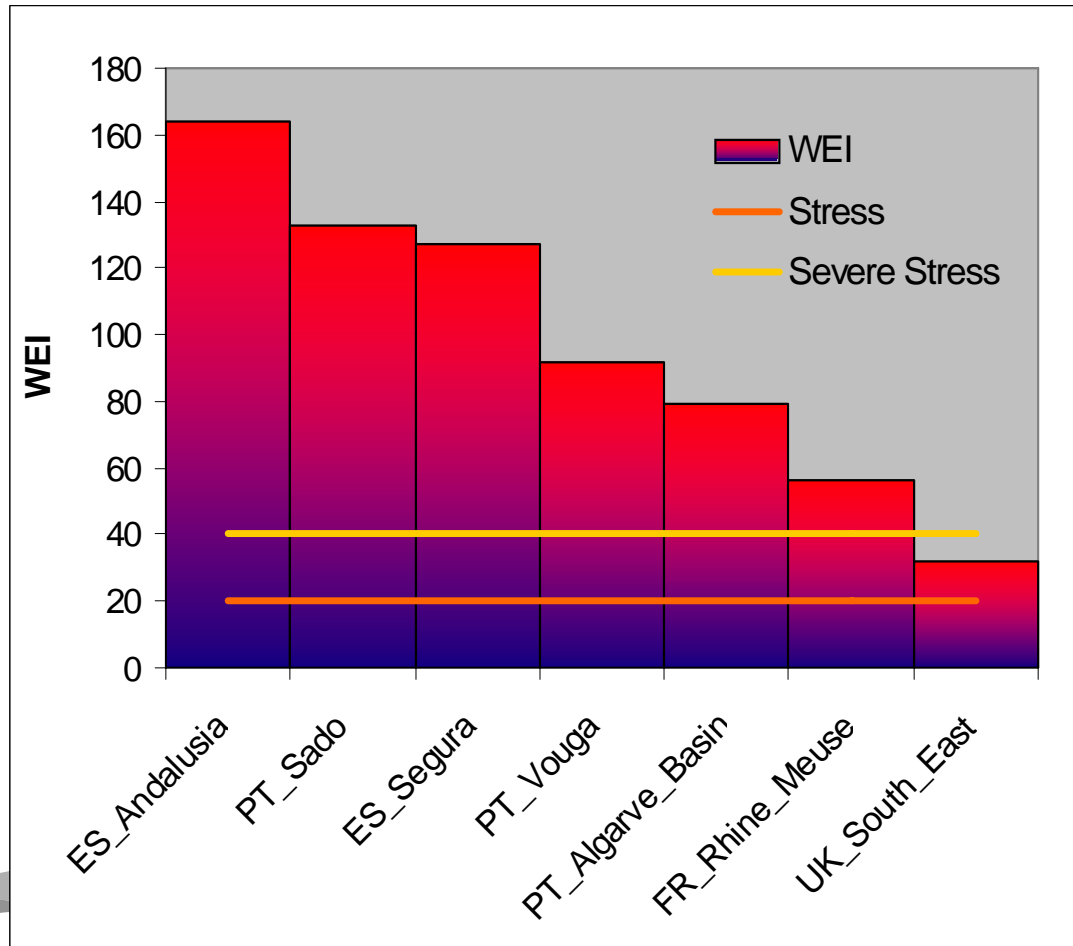
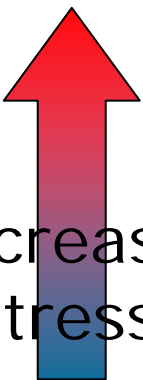


River Elbe,
Dresden

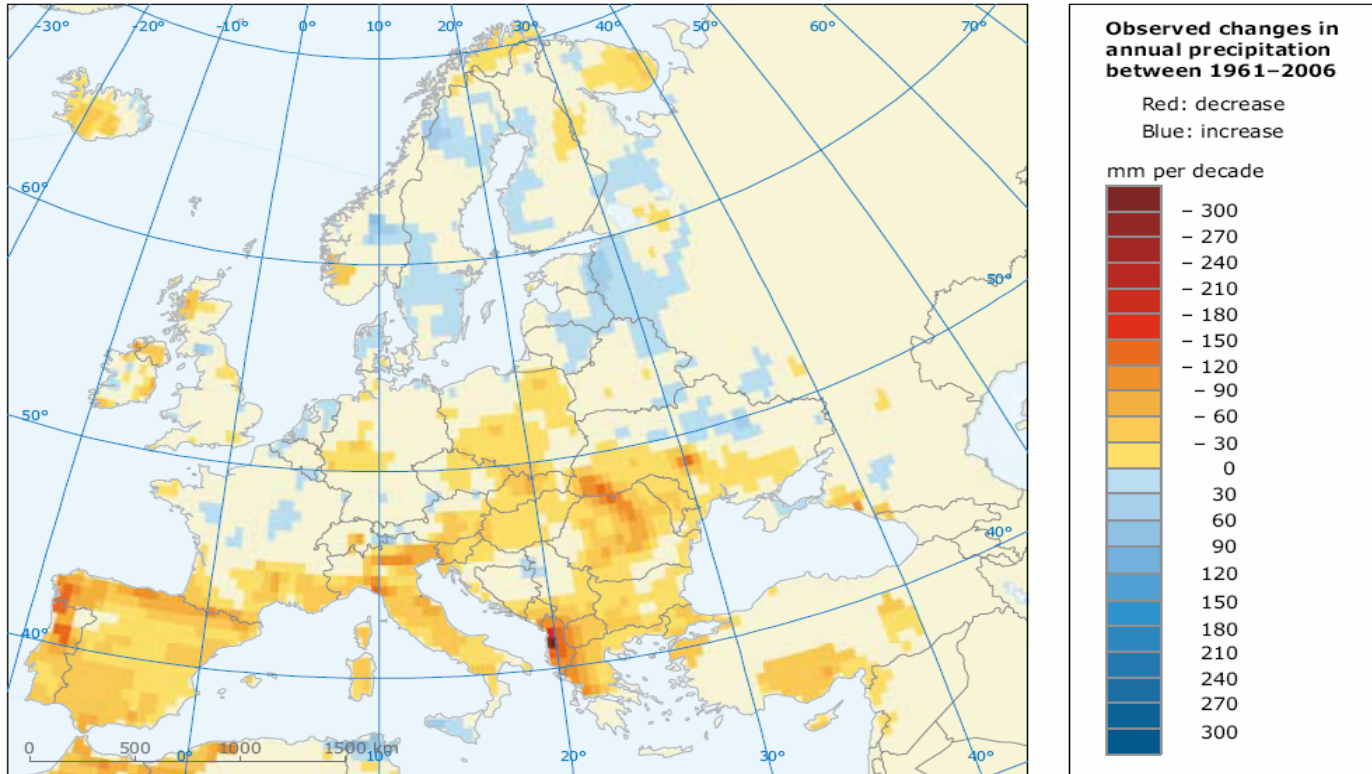
Spring. 2007

Water Exploitation Index

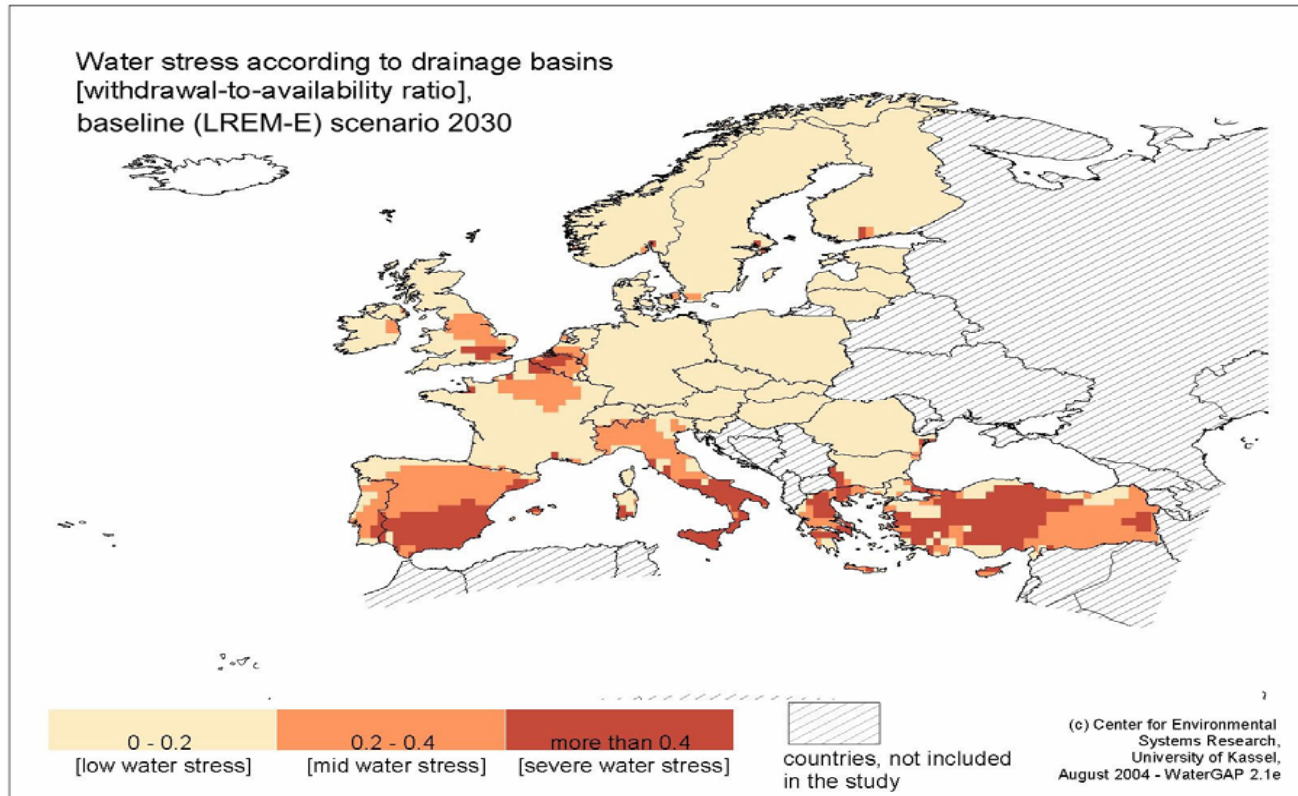
Increasing stress



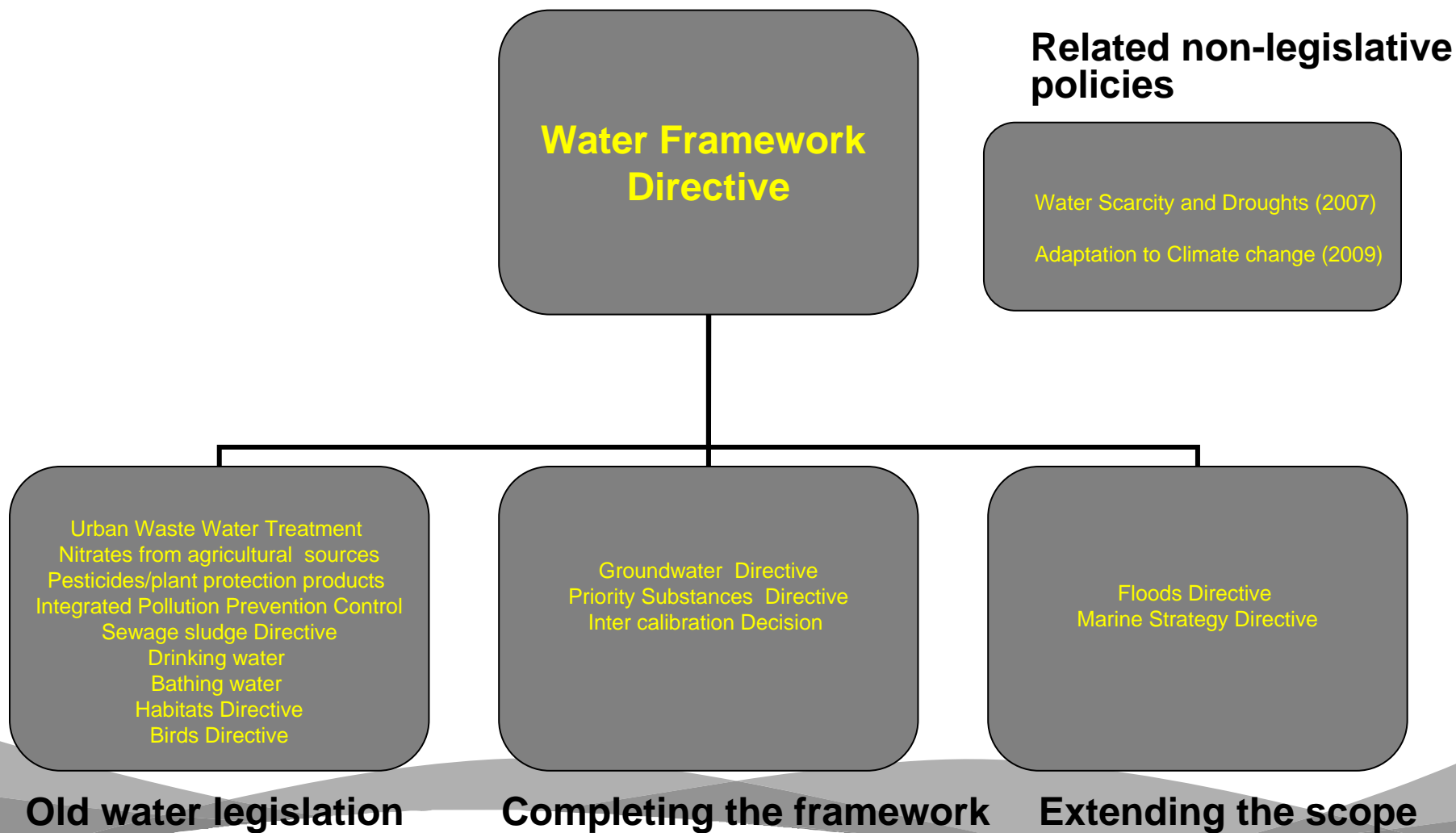
Climate change is already here



And it is getting worse.....



The current EU Water Legislation



2012: A Blueprint to safeguard EU Waters

■ The Blueprint will include the 3 reviews foreseen for 2012

- Assessment of river basin management plans
- Review of the Strategy for Water Scarcity and Droughts
- Review of the vulnerability of water and environmental resources to climate impacts and man-made pressures.

■ The Blueprint will:

- **Look back** and assess the implementation and achievements of policies and measures in place to ensure the protection and availability of EU water resources
- **Look forward** at the evolving vulnerability of the water environment to assess the sufficiency of existing measures and tools, and evaluate potential new instruments to ensure a sustainable use of good quality water in the EU in the long term.
- The Blueprint will synthesise **policy recommendations** drawing from the evaluation exercise, and will be accompanied by a number of reports and new initiatives, including of a legislative nature if appropriate.

Pillar 1: Review of the Implementation of the WFD

Potentially 170 River Basin Management Plans to be assessed

The analysis will cover:

- How MSs have changed their water management since the adoption of the directive
- The level of commitment to the measures (e.g. legal obligation v. voluntary nature, financial resource earmarked)
- Compare the overall level of ambition of MSs' action to identify areas where additional action is needed

Pillar 2: Water and environmental resources vulnerability

- **Assessment of vulnerability of water resources and ecosystems to impacts of climate change (quality and quantity)**
 - both medium term (2020, 2030) and long term (2050 or further)
 - High level of geographical and sectoral detail

- **Adaptation measures to be promoted/prevented at EU level**
 - Cost-effective measures
 - Measures to strengthen resilience

Pillar 3: WS&D - policy development

What have we done about water scarcity and drought problems so far?

- **Water Framework Directive – flagship legislation**

- **Commission Communication WS&D 2007 - 7 policy options**
 - Putting the right price tag on water
 - Improving drought risk management
 - Fostering water efficient technologies and practices
 - Fostering the emergence of a water-saving culture
 - Allocating water & water-related funding efficiently
 - Considering additional water supply infrastructures
 - Improve knowledge and data collection

- **Launch of Policy Review for 2012 in 2010**

- **The WS& D Policy review will be integrated in the revised European water strategy – a *'Blueprint to safeguard European Waters'***

Why we need to take action?

- **Potential for water savings in the EU nearly 40%**
 - technological improvements alone
 - Further increased by changes in human behaviour or production patterns
- **Water Supply infrastructure: potential saving up to 33% of today's abstraction**
- **Agriculture: potential saving 43% of current agricultural abstraction from:**
 - Improved efficiency - 15% to 60% of water use.
 - changes in irrigation practices (30%),
 - use of more drought-resistant crops (up to 50%)
 - reuse of treated sewage effluent (around 10%)
- **Industry: estimated savings 15 - 90% average 43%**
- **Tourism: potential of 80-90% savings**
- **Irrigation of golf courses and sporting areas: 70%**

Water Scarcity in 2010

The situation reported concerning water scarcity:

- **3 Member States reported that they faced continuous water scarcity (CZ, CY, MT);**
- **5 Member States reported that they faced droughts or rainfall levels lower than the long term average (FR, PT, HU, ES, UK);**
- **4 Member States experienced local/ limited water scarcity occurrences (FR, NL, RO and SE).**

2012 Policy Review WS&D– Vision

- to introduce a water-efficient and water-saving culture in Europe and achieve a drought resilient society
- to ensure demand management allowing to provide good quality water in sufficient quantities for all essential uses even under aggravated climatic conditions
- Original policy options remain valid – and new to be identified

WS&D - the basic principle: the water hierarchy

■ Address demand side measures first:

- demand management
- water-saving
- water efficiency
- water-pricing

■ Only then additional water supply infrastructures:

- water transfers
- desalination plants
- waste-water re-use
- etc.

What are we looking at?

WS & D GAP Analysis:

- Overview of problem & existing measures
 - Where is WS&D a problem & how big is the problem?
 - What are the driving forces?
 - What & how big are the pressures?
 - What are the impacts?
 - Which measures are already in place?
- All sectors need to contribute - Agriculture is especially important as it is responsible for almost two thirds of EU water consumption
- Identification of gaps
- Proposal of new measures - Measures to improve water efficiency of supply systems, of buildings, equipments and in agriculture should form part of the initiatives to be identified
- Assessment of Impact of new measures

Water Efficiency

■ Water Supply Infrastructure

- Estimate water & economic loss + impact
- Study best practices for minimising water-losses
- Provide recommendations on the possibilities to reduce losses

■ Buildings

- Analysis of information (available & gaps)
- Identification & analysis of options
- Assessment of the social, economic and environmental impacts
- Stakeholder consultation on initiatives

■ Agriculture

- Water pricing in agriculture
- Options for water savings in agriculture

Assessment of non conventional water supply options

- **Assessment of four alternative water supply options in Europe (2008)**
 - desalination, wastewater re-use, rainwater harvesting, groundwater recharge

- **Aspects considered:**
 - Risks and impacts
 - Mitigation options
 - Sustainable development

- **Outcome - Report on DG ENV website**

Issues investigated

- **Can alternative water supply options improve water resources?**
- **What are the associated risks and impacts (environment, economics, society)?**
- **Can negative impacts be mitigated?**
- **What are the conditions for sustainable development of alternative water supply options?**

Findings on Desalination

- **Several countries in southern Europe are increasing national capacity (Spain will increase to > 700 M m³/day)**
- **Suitable replacement for mains supply drinking water, but supply regime rigid and inflexible, best suited for supplying fixed amounts of water**
- **Environmental and economic concerns about high energy use**
 - Mitigation measures include improving efficiency and tapping renewable energy supplies
- **Environmental concerns about brine disposal**
 - more research needed on marine impacts if disposed at sea

Costs of Desalination

Energy type	Estimated costs (€/kWh)
Electricity from fossil fuels (hard coal, lignite, gas)	0.03 to 0.05
Electricity from wind or hydro power	0.06 to 0.11
Electricity from solar (photo voltaic cells)	~ 0.36
Electricity from solar (parabolic through)	~ 0.12

Unit costs and water fees from case studies

Case study	Unit costs (€/m3)	Water fees (€/m3)
Cyprus (2007)	1.02	0.77 (house)
Malta (2008)	1.28	0.38 (house)
Spain (2008)	1.00	0.3-0.4 (farmers)

■ Source: European CASES project
 (www.feem-project.net/cases/)

Conclusions of the study

- **Alternative water supply options can be successfully used to solve water management problems, related to droughts, storm water management and water quality issues**
- **For some of the regions, alternative water supplies are becoming the largest contributors to meeting water demand – ‘water hierarchy’ has to be respected**
- **Due to the overriding importance of local factors there is a need to find local solutions to local problems: mitigation measures have to be designed to deal with local conditions - it is not possible to provide an EU wide set of best available mitigation options**
- **Alternative water supply options may be more expensive than conventional options, but subsidies to compensate for price differences should serve only for helping the users in the transition towards a more sustainable use of water where the price of water reflects its true cost**
- **The requirements of the WFD to implement integrated water management and cost recovery programmes will contribute to a better appreciation of the benefits of alternative supply options – complementary technologies.**
- **The role of the alternative water supply options will grow in the future due to climate change and the reduction of water availability so particular attention should be paid to their implementation and the continuous improvement of knowledge in the field.**

Better planning

■ Demand management - integration WS&D in RBMP

- Institutions and laws – permitting & control
- Market-based measures – prices, tariffs & water subsidies (depends on the existence of metering)
- Non-market measures – information, regulations, quotas
- Direct intervention by governments - installing & maintaining equipment, managing operations, control land use

■ Drought management

- Integration of drought management plans in River Basin Management Plans
- European Drought Observatory

■ Improvement of data collection, indicators and water accounts

- indicators needed for the evaluation of water scarcity and for droughts respectively
- accounts to quantify water availability and use by all sectors, at a river basin scale and on a monthly basis to identify 'hotspots' of water stress and to quantify over-exploitation

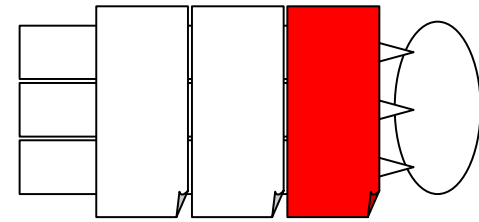
■ Land use planning

- Assessment of measures to better integrate water management issues in the land use planning

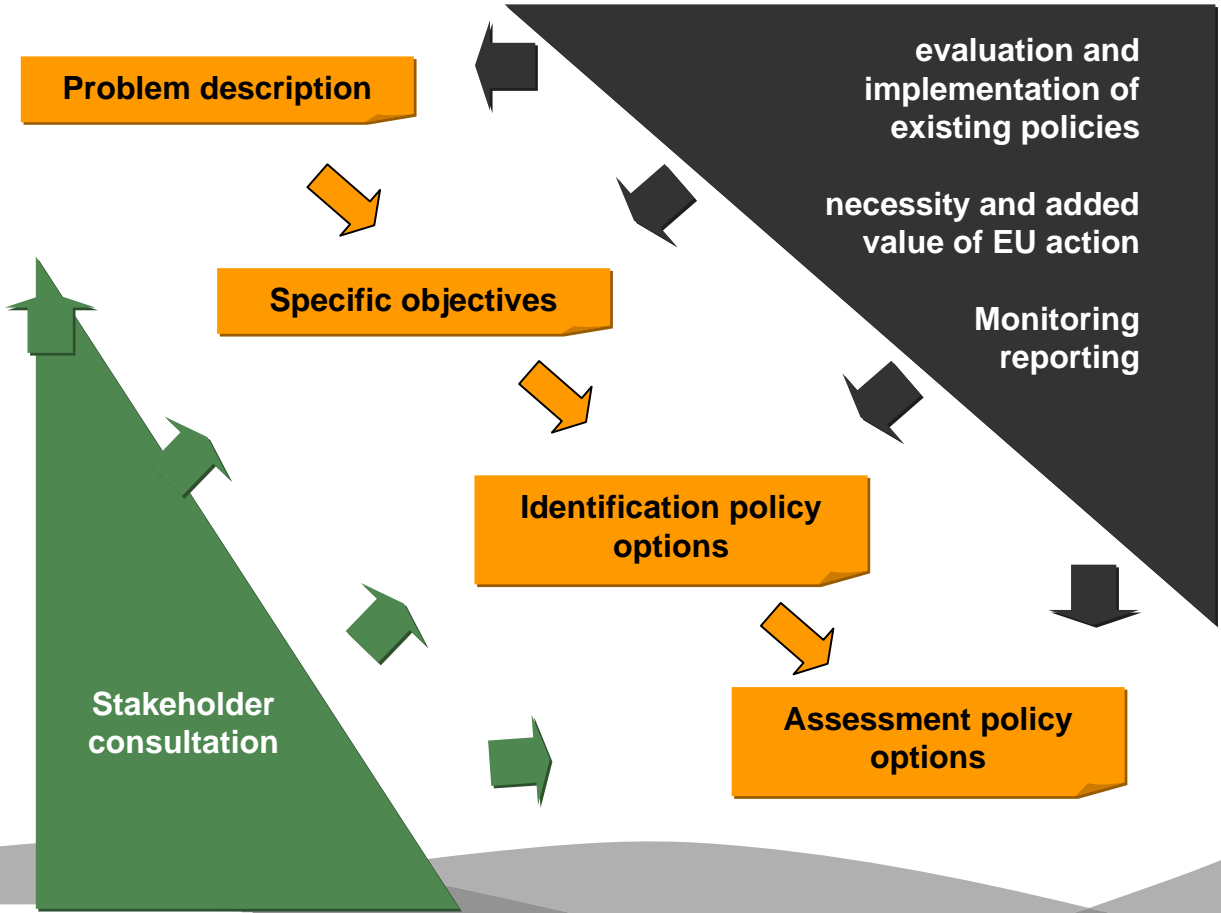
Instruments

- Financing - European and national funds offer more and more opportunities (Cohesion policy, CAP, Solidarity Fund, EIB)
- Water pricing - water-tariffs have been introduced recently (AT, BG, BE, EE, ES, NL, SE, UK) or are under development (CY, CZ, IE, RO, SK) in order to ensure cost recovery for water services
- Water allocation – in the use of an authorization procedure for water abstraction is becoming widespread in the EU, restrictions in water use are applied in order to preserve aquatic life and ecological status in more and more MSs
- Research and education

Policy options of the Blueprint



- Land-use management
- Economic Incentives
- Target to protect water resources
- Governance of water policy
- Knowledge Base
- Innovation
- Global Dimension



Work ahead

In the next months, the European Commission will focus on

- filling knowledge and data gaps (studies, assessments, calls for evidence)
- conducting an impact assessment for the policy review
- consulting stakeholders

The Blueprint will just be the starting point.

- **The Blueprint will :**
 - make use of all relevant scientific knowledge
 - identify the gaps and set a research agenda for the next 10 years,
 - facilitate the implementation of an integrated and adaptive management approach for water resources.
- **Interaction with policy making should happen both:**
 - at EU level to support a strategic vision for EU Water policy,
 - at river basin level, for the next generations of RBMP (2015, 2021).
- **Need to improve the interaction, not only between science and policy makers, but also with end water users:**
 - Need for targeted communication of scientific evidence, as they will have to implement and bear the cost of the measures.
- **Transform WISE in a real knowledge sharing platform**
 - Access to results of research projects, demonstration studies, etc. in a structured way
 - Link with data from monitoring and indicators, and guidelines for policy making.
- **The policy options will be mainstreamed into the Europe 2020 priorities of the EC**

→ For more information on water policy in the EU:

http://ec.europa.eu/environment/water/water-framework/index_en.html

Thank you for your attention

