



A BLUEPRINT TO SAFEGUARD EUROPE'S WATER RESOURCES CONSULTATION DOCUMENT

1. INTRODUCTION

This paper provides an outline of the policy options that will be considered for the impact assessment of the Blueprint to Safeguard Europe's Water Resources. It builds on the preliminary results of the analysis of the key challenges faced by Europe's waters resources and identified in the implementation of EU water policy.

2. WHY A BLUEPRINT AND WHAT FOR?

The EU has developed over several years a comprehensive water policy that has gradually shifted from addressing mainly health concerns (e.g. quality of drinking water and of bathing water) to the environmental impacts of major water-using sectors (nutrients from agriculture, pollution from industry and urban waste water discharge from households).¹ Significant improvements have been achieved in all sectors covered by water policy and particularly in the quality of drinking water, bathing water and in urban waste water treatment although important gaps still need to be addressed. In particular, improvements have been achieved in chemical water quality and species like the salmon have reappeared in European rivers in which they could no longer be found.

Since 2000, with the adoption of the Water Framework Directive (WFD), water policy has made another step-change taking an integrated approach to water management, on the basis of the concept of 'river basin management' aimed at achieving good status of all EU waters by 2015. This is an ambitious objective which has brought about a revolution in water management in many Member States. The 2007 Floods Directive (FD) and 2008 Marine Strategy Framework Directive (MSFD) provide further legislative building blocks in this integrated approach. These have been complemented in 2007 by the Strategy on Water Scarcity and Drought (WS&D) and in 2009 by the White Paper on Adaptation to Climate Change.

The achievement of EU water policy goals is challenging due to, inter alia, a number of old and emerging water management issues². Pollution of water resources, degradation of hydro-morphology, over-abstraction, decline in soil organic matter are still occurring and

¹ Nitrates Directive, IPPC (now IE) Directive, Urban Waste Water Treatment Directive.

² EEA SOER 2010

have detrimental impacts on freshwater ecosystems and on economic activity, in particular through the nexus between water, food and energy production. Demographic evolution, land use change and economic development are projected to increase pollution and water shortages. This is expected to be exacerbated by climate change, particularly in the Mediterranean region, while increasing the intensity and frequency of floods in many parts of Europe. All this makes it increasingly difficult to achieve the WFD objective of good water status for all EU waters by 2015.

The Fitness Check of EU Freshwater Policy³ and the assessment of the River Basin Management Plans⁴ of the EU Member States conducted by the European Commission in 2010-2012 show that the adequacy of the current water legislative framework is not questioned, nor is its coherence with the rest of environment policy. However, there exist fundamental weaknesses in the implementation of the current water legislation as well as conflicts between water policy and other EU policies' objectives.

Improvements in implementation are the first priority. Member States need to meet their obligations under EU water law to ensure the instruments are effective and that the benefits of implementation can be realised. In relation to other policies, improved coherence is needed in particular with the Common Agriculture Policy (CAP) and with Regional Policy to ensure EU funds are better targeted at measures that deliver improvements to water and water law obligations are respected. Improved coherence is needed with renewable energy and transport policy to ensure that measures adopted for climate mitigation do not cause unintended negative impacts on water. Implementation can only be fully effective if all the inter-linkages between water policy, other areas of environmental policy and other policy areas outside environment are addressed.

With a view to respond to the above challenges and ensure the achievement of EU water policy objectives, it is necessary to clarify whether and what additional actions and tools are needed at Member States and EU level.

The Blueprint to Safeguard Europe's Water Resources will try to do this with the long-term aim **to ensure availability of good quality water for sustainable and equitable water use** in line with the WFD objective. The time horizon of the Blueprint is 2020 since it is closely related to the EU 2020 Strategy and in particular to the recent Resource Efficiency Roadmap. The Blueprint will be the water milestone on that Roadmap. However, the analysis underpinning the Blueprint will in fact cover a longer time span up to 2050.

Following the above analysis, the Blueprint will have 3 main foci:

- 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** of water and other policies' objectives. Trade-offs should be managed on the basis of a better understanding of the costs and benefits of both economic activities and water resources management; and

³ See http://ec.europa.eu/environment/water/blueprint/fitness_en.htm and <http://ecologic-events.eu/Fitness-Check-Workshop/about>

⁴ See http://ec.europa.eu/environment/water/participation/map_mc/map.htm

- When necessary, seeking the **completion** of the current policy framework, especially in relation to water quantity, efficiency and adaptation to climate change.

The knowledge base for this work⁵ is mainly provided by the assessment of the River Basin Management Plans under the Water Framework Directive; the Fitness Check of EU water policy; the review of the policy on water scarcity and drought; and several studies assessing the vulnerability of water resources to climate change and other man made pressures.

The Blueprint, in line with the current approach of water policy, will propose EU action where it offers **added value** and will take fully into account the very significant differences between and within Member States in terms of water availability, quality, quantity, efficiency etc. Therefore, **it will not put forward a one size fit all straight jacket** but rather try to put in place the tool box that Member States can rely upon to improve water management at national, regional and river basin level.

The Blueprint will set the agenda for EU water policy for the years to come, in particular for the Common Implementation Strategy (CIS) that brings together the European Commission, Member States and stakeholders under the Water Framework Directive. On the basis of the assessments carried out so far in the Fitness Check, it will not suggest any fundamental overhaul of the current policy framework. Moreover, a full review and possible revision of the Water Framework Directive is legally required for 2019, after the results of its first implementation cycle will be available.

3. HOW ARE POLICY OPTIONS BEING DEFINED IN THE BLUEPRINT?

This paper is structured according to the five major themes expected to be covered by the Blueprint. It starts by considering what tools may be needed for the sustainable management of water resources (section 4). It then looks into ways of unlocking measures and relying on economic incentives to achieve such targets (sections 5 and 6). It finally focuses on governance and knowledge base as cross-cutting conditions for sound decision making and effective implementation (sections 7 and 8).

For each theme the issues and problems relevant to that theme are introduced and all options are linked to the specific problems that they address. The 3 themes of implementation, integration and completion cut across virtually all the problems and sets of options. **As this document is aimed at an open public consultation, the presence of an option on the list by no means imply that it is supported by the European Commission at this stage.**

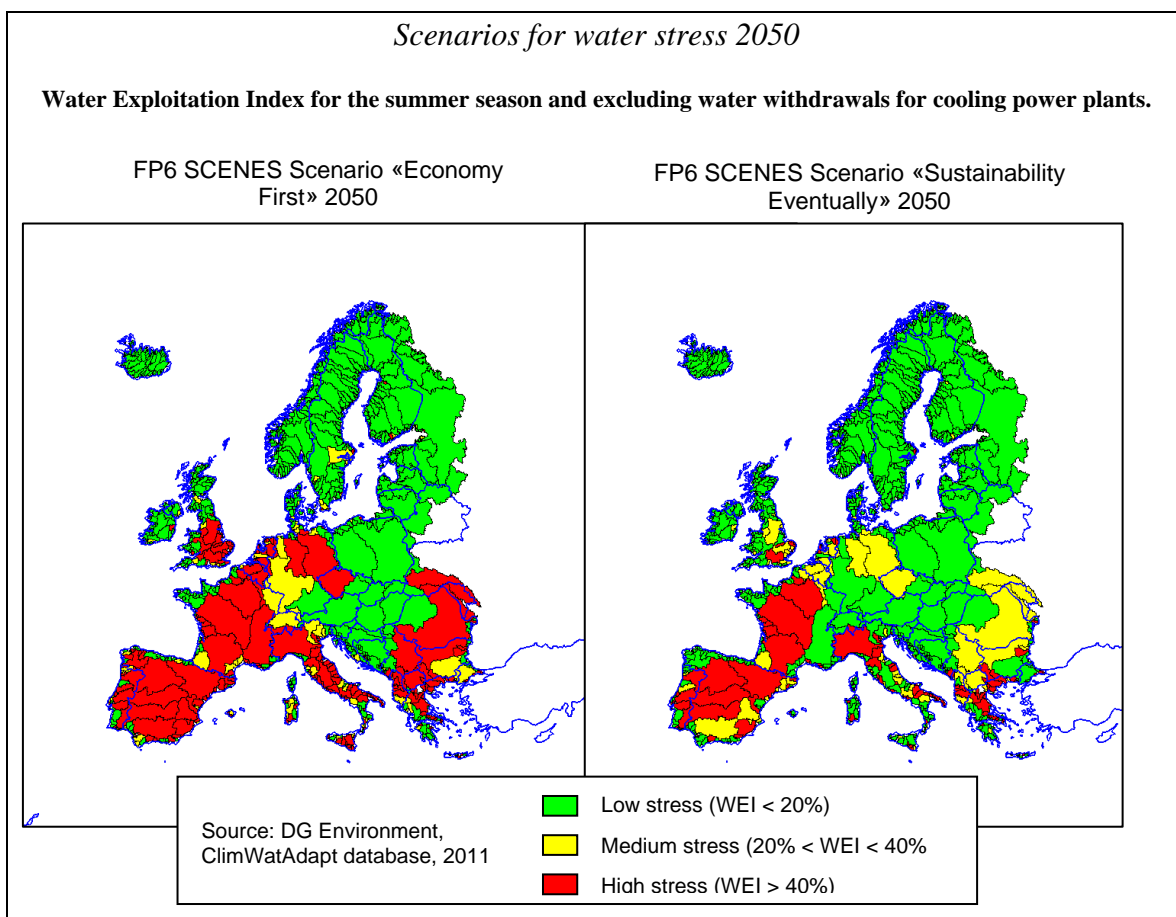
Policy options are distributed across the whole DPSIR cycle (**D**iving forces, **P**ressures, **S**tates, **I**mpacts, **R**esponses). They reflect different **intensities and timescale** ranging from options for actions which are process oriented, e.g. amending/developing a guidance document or undertaking further analysis, to possible amendments of existing legislation or enactment of new European legislation.

⁵ See http://ec.europa.eu/environment/water/blueprint/index_en.htm. The Commission is planning to publish the final report on the Fitness Check in April. It is also planning to publish, together with the Blueprint, a report on the assessment of the river basin management plans of the Member States and a review of the policy on water scarcity and droughts.

Options are not necessarily mutually exclusive and could often be combined or graduated over time. Water policy is such a crosscutting issue, relevant to many economic sectors, policy areas and geographical contexts, that the number of options under consideration is relatively high. The options presented here are already the result of a selection from a much broader list which has been narrowed down on the basis of the relevance and added value of the options considered, taking particularly into account the transboundary character of the majority of EU river basins. In the impact assessment of the Blueprint, the preliminary options presented below will be further packaged in a more limited set which can be assessed against its effectiveness in addressing EU water challenges as a whole.

4. IMPROVING THE TOOLS FOR BETTER MANAGEMENT OF WATER RESOURCES

The recently completed **ClimWatAdapt** project has modelled the water gap⁶ between water demand and water availability in Europe in 2025 and 2050, combining climate change and socio-economic scenarios.



The main message from this bold exploratory exercise is that even with strong improvements in water efficiency in all sectors – in particular agriculture - water stress (water scarcity and droughts) would be a problem in numerous EU catchments, including

⁶ See http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/climate_adaptation/climwatadapt_report&vm=detailed&sb=Title

in south, central, eastern and western Europe (see scenario on 'sustainability eventually' in the right map below). On the basis of a business as usual scenario ('economy first' in the left map), the areas potentially affected by water stress are much larger. This pleads for action to be taken on the basis of a more integrated analysis of the potential for increasing water availability, water retention, water efficiency and water savings taking fully into account the uncertainties linked to economic developments in various sectors and climate change.

In the context of the Blueprint, refining the result of ClimWatAdapt, a **baseline scenario** is being developed bringing together climate, land-use and socio-economic scenarios and looking at the implication for water resources availability and use under business-as-usual. Different policy scenarios with concrete measures (see section 5 below) will be evaluated against this baseline which puts together water quantity and water quality aspects, and builds on the information reported by the Member States in the River Basin Management Plans (RBMPs).

The Water Framework Directive (WFD) goal of achieving good status includes both qualitative and quantitative aspects. Water quantity is explicitly addressed for groundwater and is implicit for surface water as a minimum environmental flow is necessary to achieve good ecological status. However, there is, at the moment, no common definition and application of the concept of **environmental flows** (E-Flows) i.e. the quantity of water that nature needs for the good ecological status to be achieved and the provision of ecosystem services to be maintained.

The establishment of water balances and of **targets** on quantitative water management only takes place in a few river basins. Water stress indicators and targets developed and applied at river basin level to improve water efficiency could help prioritising and optimizing water uses and look at alternatives provided that a consistent approach is taken in particular in the transboundary river basins. However, target setting for (quantitative) water resource management is hampered by the failure of the current set of water quantity indicators to provide an adequate picture of the gap between water resources use and availability. Currently, most data are based on annual and country level statistics giving averages that do not reflect the situation at river basin level. Early efforts by the EEA to create water balances at sub-catchment level also face the problem of lack of reliable data and methodologies for water efficiency target setting.

While the above-mentioned water efficiency targets could bring about significant improvements in water management in water scarce areas, additional action may be needed to face extreme weather phenomena such as droughts to increase preparedness and reaction capacity by better integrating them into overall water management. By 2007, at least 11 % of Europe's population and 17 % of its territory had been affected by water scarcity, putting the cost of droughts in Europe over the past thirty years at EUR 100 billion.

Problem 1: Water balances and adequate water allocation are poorly implemented at river basin level. In many instances, river basin managers are not fully aware of how much water flows in and out of a river basin. Nor do they know how climate change will alter precipitation or how land use will affect groundwater recharge and therefore availability of water. Therefore, even when in charge of water allocation, they are unable to allocate the water resources efficiently or even fairly among water users including the

basic needs for nature i.e. the environmental flows. This is both a water quantity and quality problem since good water status cannot be achieved without adequate water allocation.

Options to address the problem:

- a) Develop guidance through a working group under the WFD Common Implementation Strategy to support the use of water accounting and E-Flows at river basin level (including specific tests in pilot river basins); to agree a methodology for efficiency target setting at river basin level; and to update reporting to the EC to include E-flows and river flows.
- b) Develop a Recommendation on the use of water accounting, efficiency target setting and environmental flows at river basin level and an indicative EU water efficiency target.
- c) Specific recommendations are considered for Member States on water accounting, efficiency target setting and environmental flows at river basin level in the context of the European Annual Growth Survey for the European Semester.
- d) Adopt technical annexes to the WFD on E-Flows that will require water accounting for river basins; specify the protocol for establishing E-Flows, making the use of the E-Flows definition compulsory in all water stressed river basins; and require the setting up of water efficiency targets on the basis of an agreed methodology.

Problem 2: Droughts have been more frequent and severe in large parts of Europe in the last few years, and the severity and frequency is expected to increase in the future as a result of climate change, changes in land use and water abstraction. This has and will have important social, economic and environmental consequences for the affected Member States.

Options to address the problem:

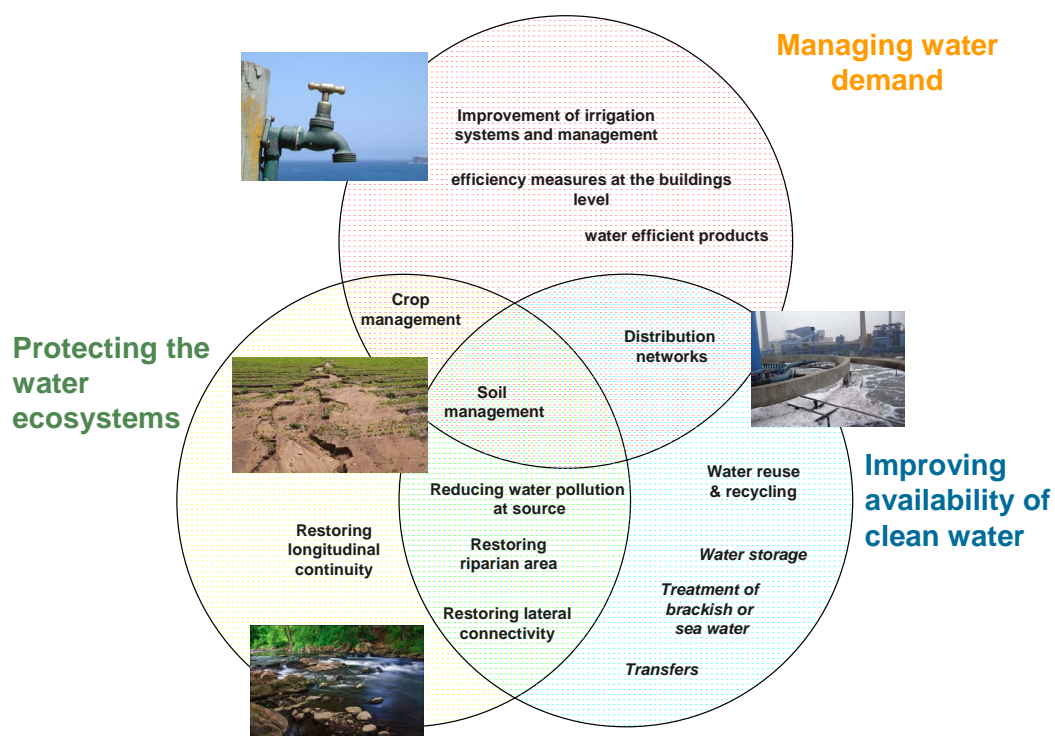
- a) Enhance drought management planning into the next cycle of River Basin Management Plans under the Water Framework Directive for all droughts affected/potentially affected Member States.
- b) Develop a European wide early warning system for droughts to timely alert Member States on the need to take counter-measures.
- c) Establish a drought emergency fund which would group in a single instruments and enhance the funding possibilities currently available under the EU Solidarity Fund and rural development funding. The Fund would include appropriate conditionalities on drought prevention measures being taken.
- d) Establish a drought management directive to require Member States to develop and implement river basin drought management plans with specific drought measures to be reported to the Commission.

5. UNLOCKING MEASURES IN KEY SECTORS

In order to deliver objectives and targets for Europe’s waters, a range of different measures in key policy sectors can be considered at EU level to **improve water resource efficiency and sustainability**.

Some of these measures will need to be unlocked through innovative process. This task will be taken up, in particular, by the European **Innovation Partnership (EIP) on Water** that will complement the Blueprint by integrating in its Strategic Implementation Plan the policy recommendations identified by the Blueprint. The EIP on Agricultural Productivity and Sustainability will also play an important role in this regard, especially by promoting innovation at farm level.

The impact assessment of the Blueprint will focus on measures for which – while not necessarily being innovative - there is a need to better understand the **costs and benefits**, the **trade-offs and synergies** with other policies, as well as their contribution to a greater **resilience** of environment and society to climate variability and change. Such measures fall within 3 categories exemplified by the picture here below: 1. Managing water demand; 2. Protecting water ecosystems; 3. Improving availability of clean water. They cover water qualitative and quantitative aspects which are inextricably linked.



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A number of measures relate to land use, be it in relation to urban, industrial or agriculture activities. Land use planning and management, if it does not factor in water policy objectives, could have major negative effects on water, including pollution,

⁷ Longitudinal continuity of a river is hindered when a physical barrier to the flow, e.g. a dam, is put in place that prevents the movement of fish and other aquatic organisms. Lateral connectivity is the connection between the river and its natural floodplain that may be interrupted by, e.g., embankments. A riparian area is the interface between land and a river or stream.

interruption of river continuity (e.g. dams) or connectivity with the rest of the land (e.g. dykes or embankments).

In this respect agricultural activity stands out as a major pressure on water quality and quantity as the sector is Europe's biggest land user/owner, a big water user⁸ as well as the biggest water consumptive user⁹. Agricultural impacts include eutrophication due to fertilisers, contamination by pesticides, soil erosion and hydromorphological changes in the majority of river basins. Measures to address such impacts involve a more sustainable use of fertiliser and pesticide inputs, maintaining soil organic matter levels, changing crop patterns, enhanced use of buffer strips, improved irrigation practices, wetland restoration, restoration of riparian areas, etc. Some of these measures address impacts which are directly or indirectly covered by the WFD objective of good ecological status, and therefore are often found in the RBMPs reported by Member States. However, preliminary assessments indicate that the uptake of some of the key measures, in particular those related to some of the most innovative elements introduced by the WFD such as hydromorphology, is not sufficient to achieve a sustainable situation.

In water stressed/potentially stressed areas, water efficiency measures are also required in relation to distribution networks, where large amounts of water continue to be wasted through leakages, and in buildings, where the water using appliances or the design of the building is not promoting water savings. This causes a considerable waste of water and energy used to heat the water. Heating water constitutes 15%-30% of the household energy demand.

Waste water re-use has the potential to contribute to the irrigation requirements of agriculture in some river basins or to industrial uses provided that all relevant safety standards are respected. However, there are no EU level standards for water re-use and some Member States are adopting/have adopted their own standards while others have not done so. Without common EU standards, a potentially significant source of water is not being tapped into and an adequate soil and water protection may not be guaranteed. Moreover, there is a potential for some Member States to object to products grown with reused water in other Member States thereby generating an obstacle to the internal market. In addition, the water industry needs certainty for future use to make the necessary investments to enable water re-use and respect safety standards.

Problem 3: Land use impacts and in particular agriculture's impacts threaten water quality and quantity across much of Europe and deregulate water flow increasing water scarcity and flood risks.

Options to address the problem:

- a) The Commission to develop guidance clearly defining and providing a EU framework for green infrastructures that promotes natural water retention measures

⁸24% of total water abstraction in Europe, up to 80% of total water abstraction in southern Europe (EEA, 2009, Water resources across Europe — confronting water scarcity and drought).

⁹ Around 70% of water used in agriculture is consumed and not returned to the environment (EEA, 2009, Water resources across Europe — confronting water scarcity and drought).

such as floodplains and wetlands restoration; sustainable drainage, the restoration of riparian areas and the re-meandering of rivers.

- b) The Commission to develop guidance for integrated water – land use management, bringing together spatial planning and RBMPs in co-ordination with other aspects of EU environmental policy (biodiversity, nature, soil).
- c) Develop guidance through the agriculture working group under the WFD Common Implementation Strategy on the effective application of measures by farmers to deliver water quality and quantity objectives at catchment level. These measures include changing crop patterns, buffer strips, restoring riparian areas, increase irrigation efficiency, etc. In that respect, particular emphasis will be put on the use of the Farm Advisory System set up under the CAP.
- d) The European Innovation Partnership on Agricultural Productivity and Sustainability and the European Innovation Partnership on Water develop and disseminate innovative solutions to ensure agriculture's negative impact on water is removed or minimised and beneficial effects are maximised.
- e) Enhance the application of Environmental Impact Assessment to irrigation projects.
- f) Enlarge the scope of the Strategic Environmental Assessment Directive to cover all hydropower development plans.
- g) The Commission to ensure that the implementing rules for the post-2013 CAP I and II pillars support and target the necessary measures to deliver water quality and quantity objectives.¹⁰

Problem 4: The design of building and water using appliances does not sufficiently factor in water efficiency. This causes water waste that could be up to 10% or more of water consumption which is problematic in areas which are water stressed or at risk of becoming water stressed. It also causes a waste of energy used to heat the water.

Options to address the problem:

- a) Voluntary labelling of water using appliances
- b) Mandatory labelling of water using appliances
- c) Establish a WFD Common Implementation Strategy working group on water use efficiency for preparing “BREF-like” notes on water use/conveyance efficiency.
- d) Minimum water efficiency requirements for water using appliances, e.g. under the Ecodesign directive
- e) Voluntary performance rating for buildings

¹⁰ This option is without prejudice to the on going discussion in the Council of Ministers and European Parliament on the reform of the Common Agriculture Policy proposed by the European Commission.

- f) Mandatory performance rating for buildings
- g) Minimum water performance requirements for buildings
- h) A directive on water efficiency requirements in buildings including a requirement on water companies to reduce final water consumption

Problem 5: Significant leakage in water infrastructure in some parts of the EU causes significant waste of water which is problematic in areas which are water stressed or at risk of becoming water stressed. As much as 50% of water abstracted is lost in distribution but with significant differences between Member States.

Options to address the problem:

- a) Promote leakage reduction in water stressed/potentially water stressed areas by prioritising it in the use of Cohesion and Structural Funds.
- b) Promote leakage reduction investment on the basis of public/private partnerships, Eurobonds and/or European Investment Bank loans.
- c) Develop guidance on best practices in leakage reduction.
- d) Develop a harmonised method for determining the level of water leakage under the WFD Common Implementation Strategy at EU level and encourage Member States to integrate it into their water management.

Problem 6: The lack of common EU standards for waste water re-use for agriculture and industrial uses limits a potentially important alternative water source (especially for water stressed areas), threatens farmers exporting crops within the single market and prevents industry from making long-term investment decisions. Moreover, an adequate soil and water protection may not be guaranteed.

Options to address the problem:

- a) Develop EU guidance on certification schemes for water re-use
- b) The Comité Européen de Normalisation (CEN) to adopt standards for use of recycled waste water in agriculture.
- c) An EU Regulation establishing standards for waste water re-use.

N.B. All options above would need to fully respect relevant public health (e.g. food safety) and environmental standards.

6. ECONOMIC INSTRUMENTS

On the basis of the analysis of the RBMPs and the review of Water Scarcity and Drought, the following findings have emerged.

Current water pricing levels and structure do not provide sufficient incentives to increase water efficiency (this includes the identification of subsidies e.g. in energy and agriculture). In some cases, water users are either not charged at all or are not charged in relation to the quantity of water used.

There are still gaps in the quantification of environmental and resource costs, which are often linked to the quantification (and when possible monetization) of the benefits of **ecosystem services**. This prevents the development of tools such as 'Payments for Ecosystem Services schemes' linked to reduced water resource depletion or land-use changes, which may result in cost-effective solution for the achievement of WFD objectives and other environmental or climate objectives. In many cases there is likely to be a strong economic argument for adopting water protection measures. Therefore, it is appropriate that Member State authorities are provided with the tools to understand their benefits and so be able to judge this against arguments of cost.

Currently, water allocation schemes, where they exist, are often inefficient for the reasons explained in section 4 above on tools. The assessment and distribution of water rights may be linked to charging and, in order to foster more efficient water use, an economic instrument such as water rights trading may be used. However, water trading schemes only work if the spatial distribution of trading does not cause an environmental problem i.e. when the overall allocation of water rights in a given river basin does not put at risk the e-flow. Thus such schemes are only practical at river basin scale (and potentially at even smaller scales), but can be supported by EU level action.

Many economic instruments cannot be introduced or work effectively if certain conditions are not met. Any charging scheme for water use requires accurate metering of that use and, therefore, expansion of metering will be needed. Illegal abstraction is a big problem in some basins. Being illegal, new law is not required but strong enforcement is needed (see 'governance' below).

Problem 7: Absence of metering for individual users is a key barrier for the effective implementation of pricing schemes that incentivise water efficiency. Illegal abstraction in some parts of the EU is a large phenomenon that puts at risk water availability.

Options to address the problem:

- a) Mapping all EU large irrigated areas via the GMES initiative and match these areas with water abstraction permits to help Member States enforce them and tackle illegal abstraction.
- b) Making EU funding for irrigation projects conditional upon the installation of metering devices for individual users e.g. via the CAP implementing rules.¹¹
- c) Making CAP direct payments to farmers (pillar I) conditional upon the installation of metering devices for individual users e.g. via cross compliance rules for the WFD.¹²

¹¹ This option is without prejudice to the on going discussion in the Council of Ministers and European Parliament on the reform of the Common Agriculture Policy proposed by the European Commission.

- d) Amend the WFD to make it explicit that the Art.11 requirement of a permit for water abstraction also includes mandatory metering of the quantities abstracted.
- e) Amend the WFD to require metering of individual water consumption and/or use where relevant.

Problem 8: Current water pricing levels and structure do not provide adequate incentives to increase water efficiency. This includes the identification of subsidies e.g. in bio-energy and agriculture, which is a big water user as well as the biggest water consumptive user. In some cases, water users are either not charged at all or are not charged in relation to the quantity of water used/consumed.

Options to address the problem:

- a) Implement the proposed rules for Cohesion & Structural and Rural Development funds to make the establishment of incentive pricing compulsory for (relevant) projects in areas with water deficit.
- b) Add national water pricing obligations for farmers, based on Art.9 of the WFD, to cross-compliance rules under the CAP for the WFD.
- c) The Commission to promote the use of trading in water rights at river basin level through the development of guidance and tools under the WFD Common Implementation Strategy.
- d) The Commission to develop criteria for the sustainable production of bio-energy crops with specific reference to water protection.
- e) Specific recommendations are considered for Member States on water pricing policies in the context of the European Annual Growth Survey for the European Semester.
- f) Amend the WFD to require that the price of water reflects volumetric use.

N.B. The above options should be seen as complementary to and not a replacement of the enforcement of the current provision on incentive pricing under article 9 of the WFD.

Problem 9: Costs and benefits of inaction and of water related measures are not properly understood or quantified. There is a lack of a methodology to calculate the adequate recovery of environmental and resource costs, which prevent a further implementation of economic instruments for water resources management.

Options to address the problem:

¹² This option is without prejudice to the on going discussion in the Council of Ministers and European Parliament on the reform of the Common Agriculture Policy proposed by the European Commission.

a) The WFD Common Implementation Strategy to develop guidance for the next cycle or RBMPs and a methodology for the calculation of an adequate contribution of the different water uses to the recovery of the costs of water services, including environmental and resource costs and ecosystem services' benefits.

b) The Commission to propose an amendment of the WFD (an Annex) containing a mandatory methodology for the calculation of an adequate contribution of the different water uses to the recovery of the costs of water services, including environmental and resource costs and ecosystem services' benefits.

7. GOVERNANCE

Effective governance is necessary to deliver the implementing of existing and any new policies that might be included in the Blueprint. EU level action to influence water governance in Member States is not an objective in itself – rather it may be needed to support other policy objectives while respecting the principle of subsidiarity. Importantly, ineffective governance will undermine attempts to enhance target setting, unlocking specific technical measures and the application of some economic incentives.

The Fitness Check has highlighted the role that implementation failure plays in undermining the effectiveness of EU water policy. In concrete terms, this focused on implementation failures of transposition, interpretation and delivery of specific planning or operation requirements of Directives. The appropriate Commission response of infringement action against Member States is also highlighted in the Fitness Check. It is also appropriate to highlight it as a key 'strand' in the Blueprint. In addition, many of the options presented in the previous sections have suggested ways to improve implementation.

However, there are also much wider concerns over effective water governance. These have been highlighted within the analysis of RBMPs and Water Scarcity and Droughts (WSD) Gap Analysis. These include concerns of fragmented institutional structures, poor intra and inter-institutional relationships and capacity (personnel, technical capacity, training, etc.) which undermine the ability of authorities to perform the detailed analyses necessary to implement the WFD, perform the necessary monitoring, develop and implement RBMPs and develop amended plans in an effective adaptive management framework. Moreover, it has proven often difficult for MS to remove or change water rights/concession which have been in place for a long time. Such rigidity in the concessional system may hinder the efficient allocation of water resources. Furthermore, the current financial crisis is impacting on the budgets (and capacity) of governmental bodies across the EU with unknown consequences for water governance.

There is also a particular issue with governance of transboundary river basins. There are positive examples of co-operative assessment and planning, but this is not the case across the whole of the EU and more coordination and joint planning in transboundary river basins are necessary as evidenced by the RBMPs assessment.

Problem 10: Governance of water and sectoral policies at MS level is, in some cases, fragmented and faces a lack of capacity and resources to fully address water management objectives. There is lack of coordination in river basin shared between different

administrative entities within Member States, between Member States and with third countries.

Options to address the problem:

- a) On the basis of the Commission assessment of the RBMPs, the WFD Common Implementation Strategy to identify and disseminate best practices in the EU.
- b) To develop a peer review process for river basin district authorities within the context of the WFD Common Implementation Strategy with a view to help them identifying ways of improving their coordinating role.
- c) Specific recommendations are considered for Member States on water governance in the context of the European Annual Growth Survey for the European Semester.
- d) Develop initiatives on inspections and surveillance to improve the means of detecting and responding to water-related implementation problems such as over-abstraction.¹³
- e) Continue to promote the river basin management approach and the implementation of the EU water *acquis* through EU enlargement policy and international rivers agreements.
- f) To amend the WFD to strengthen the coordination powers of River Basin District authorities and the obligations for combined RBMPs in transboundary contexts.

8. KNOWLEDGE SHARING AND RESEARCH

EU Water Policy is an adaptive framework where measures are based on detailed analysis and require refining through a cyclical planning process. This is only possible on the basis of detailed and up to date information about a wide range of issues.

Improved knowledge is the focus of a number of options developed in the earlier sections (e.g. lack of specific data for target setting or cost/benefit analysis).

In addition to enhancing the knowledge base as such, there is also a need to improve knowledge sharing. As about 60% of the river basins covered by EU water policy are transboundary, it is essential to have an effective knowledge sharing system between Member States, European bodies and third countries with whom the EU shares such basin or inconsistent policies may be developed. For knowledge to be shared effectively, inter-operability of data bases based on the INSPIRE Directive and the Share Environmental Information System (SEIS) principles is needed. The Global Monitoring for Environment and Security (GMES) initiative can contribute with specific data and information.

In order to respond to emerging and future knowledge needs, it is also necessary to identify research priorities for the next research funding period and improving the science policy interface.

¹³ See responsiveness section of the Commission's Communication COM (2012) 95, "Improving the delivery of the benefits from EU environment measures: building confidence through better knowledge and responsiveness"

Problem 11: There is insufficient dissemination and sharing of compatible data and other information between Member States, European bodies and third countries leading to an incomplete understanding of the problems facing Europe's waters or, potentially, to incoherent water management choices. Data provision is not timely and different systems prevent data access. New and emerging knowledge needs must be addressed through research activities.

Options to address the problem:

- a) Improve the sharing of data and other information by further developing the Water Information System for Europe (WISE) Implementation Plan.
- b) Enhance minimum WFD reporting requirements and statistical obligations (e.g. through framework regulations on environmental accounts & statistics), especially with regard to inter-operability of data. This includes harmonising the reporting timetables of the Urban Waste Water Treatment, Nitrates and Water Framework Directives.
- c) Develop a fully inter-operable, SEIS based, shared water knowledge system, reducing reporting requirements while prescribing interoperability standards for the information produced at local and national level and through GMES.¹⁴
- d) Develop a roadmap for water research priorities to be integrated in the next research funding cycle at EU and Member States level taking into account the need to improve the science policy interface.

9. GLOBAL ASPECTS

The options included in the previous sections related to the EU and the neighbouring countries with which it shares transboundary river basins, since this is the main geographical focus of the Blueprint.

At global level, the EU is committed to the achievement of the Millennium Development Goals (MDGs) of halving by 2015 the proportion of the population without sustainable access to safe drinking water and basic sanitation and is actively involved in the preparation of the Rio+20 Conference (June 2012).

In addition to the need to satisfy basic human needs related to water, another major global problem concerns water availability. As recent studies show, "Competing demands for scarce water resources may lead to an estimated 40% supply shortage by 2030".¹⁵

¹⁴ See knowledge section of the Commission's Communication COM (2012) 95, "Improving the delivery of the benefits from EU environment measures: building confidence through better knowledge and responsiveness"

¹⁵ Charting our Water Future, McKinsey 2010.

The EU can contribute to addressing this problem by supporting **integrated water management in developing countries** in its development cooperation policy (e.g. via a renewed EU Water Initiative). This is particularly important if one considers the **virtual flow of water** embedded in traded agricultural and industrial products. Both virtual water importers and exporters share the responsibility of not depleting water resources in the exporting countries. Mismanagement and wastage of water in water scarce countries could have very negative consequences on local development and even be the cause of migration flows. Therefore, the development of sustainable water management in the exporting countries, e.g. by increasing water efficiency and improving the choice of crops and other products, seems the most promising option.

While the EU already has in place a framework for the sustainable management of water, the issue of virtual water is not only of global relevance but is also important within the EU, in relation to water balances (section 4. above) for agricultural and industrial products. Therefore options b) to d) below are also relevant within the EU.

Problem 12: Competing demands for scarce water resources may lead to an estimated 40% supply shortage by 2030. Mismanagement and wastage of water in water scarce countries could have very negative consequences on local development and even be the cause of migration flows from developing countries.

Options to address the problem:

- a) Help developing countries to put in place integrated sustainable water management through EU development cooperation.
- b) Raise consumers' awareness of the water footprint of products.
- c) Keep under review water footprinting tools with a view to test their usefulness for voluntary product labelling (e.g. as part of EU Ecolabel).
- d) Mandatory labelling of most embedded water intensive products.