Position on the Blueprint to Safeguard Europe's Water

European Environmental Bureau, 22nd March 2012

1. WFD successes and failures

[1] Improvements in River Basin Management

The Water Framework Directive set Europe on track towards managing rivers, lakes, coastal waters and groundwater more sustainably and using water resources more efficiently. The WFD has been instrumental in improving water management and achieving progress at many different places in the EU.

In special, the **WFD has helped** to keep water issues on the political agenda and raise **awareness** of decision makers and the general public. It also contributed to improve the **knowledge base** on water. Undoubtedly it improved **transboundary cooperation** and progress was also made in the field of **public participation**. The **institutional** framework was strengthened, too and **some reduction in pollution** was achieved. However while the improvements have to be acknowledged, there is still room for improvement in these fields to achieve the obligations of the WFD.

[2] Policy integration still to be achieved

However **WFD has achieved little progress** in a number of other fields. Especially sectoral approach to water has not changed resulting in that the main pressures remain the same. **Integration of water with agricultural, energy and transport policies** is still at early stages and needs to be improved significantly. Agricultural pollution and intensification remain a huge challenge with increasing **biomass** production expected to add to the existing pressure. **Hydromorphological deterioration because of navigation and old and new dams** continues and will be intensified as an – often short sighted and false– response to climate change. Also, mutual benefits of water and biodiversity policies are yet to be achieved.

[3] Widespread use of exemptions and deadline extensions

Furthermore, the implementation of the Directive is fundamentally undermined by the wide-spread use of exemptions and the possibility given to Member States to postpone measures until 2027. As a consequence, **exemptions and postponing has become the norm under the WFD**. All over Europe, Member States are postponing

measures to the second and third cycles of River Basin Management Planning hoping that the understaffed European Commission won't be able to enforce the correct, timely implementation of the Directive. The low ambitions might be lowered even further by cuts in public budgets, as this is happening in the Netherlands now. Therefore most of us who read this position paper might see their hairs turning grey before the WFD delivers its benefits to society. Overall, the low level of environmental ambition of the first River Basin Management Plans is sobering.

[4] European freshwater biodiversity at alarming state

At the same time, we are witnessing a global freshwater biodiversity crisis that also has a dramatic European dimension: According to the European Red List and to analyses of the European freshwater fishes dataset published in November 2011, 37% of European freshwater fish species (and 40% of freshwater molluscs) are considered threatened. **Better integration with and support of biodiversity policies, especially the Natura 2000 network, is urgently needed.** Unsustainable water management has in the past been an important driver of biodiversity loss. Water authorities throughout the EU need to explicitly address the biodiversity targets of the EU in the future and better integrate them into river basin management.

[5] Insufficient use of economic instruments – a lost opportunity

The explicit integration of economic principles, tools and instruments into legislation was a novelty introduced into EU environmental legislation by the WFD. These provisions are an important step forward to make the polluter pays principle, a guiding principle of EU environmental policy, operational. However, Member States seem not to have waken up to this. For example the use of WFD economic instruments in German RMBPs was analysed in 2011 by Grüne Liga. The report[i] concludes, that *"the opportunities that are provided by the economic instruments of the WFD have not been seized in the first management cycle"*.

Based on this and other assessments it can be concluded that **water economics are not applied consequently** by the majority of Member States despite being probably the most effective, most market-friendly instruments currently included in EU environmental legislation.

EU and national funds contribute too little to achieving the objectives of the WFD or even provide powerful perverse incentives for water quality deterioration. The continued **economic crisis in Europe threatens the implementation** of planned WFD measures while **it could also provide an opportunity** for countries to use water economics better.

2. Way forward to strengthen the WFD implementation and to safeguard European waters

[1] Integrating water protection into the Common Agricultural Policy

Agricultural diffuse pollution with nutrients and pesticides is a major problem in nearly all European river basins. In water basins of the Netherlands, Belgium and parts of France and Germany this concerns up to 80% of all designated water bodies. The use of mineral fertilizers, slurry and manure, as well as soil runoff into rivers, lakes and groundwater causes eutrophication of water bodies and algae bloom. Thus eutrophication continues to be one of Europe's major environmental problems in both freshwater and marine waters. It has a negative effect on aquatic ecosystems and on wildlife but also on human health through pollution of drinking water.

The cost of removing nutrients and pesticides from drinking water **is passed onto the individual customer** through the water bill, while **farmers** are asked to **contribute only little or nothing at all.** This means that citizens are paying twice: as tax payers supporting water pollution by agriculture and as water users for the water treatment. For example in France, additional households spending due to nitrogen and pesticides removal from wastewater is estimated between 1000 M € and 1500 M € a year, adding an extra 7 to 12 % to the average water & wastewater bill.[ii]

Reducing inefficient water use in agriculture is in large parts of the EU by far the most important challenge in the field of water quantity management. Irrigation for agriculture is often causing the over-abstraction of surface and ground waters, with disastrous ecological effects. Overabstraction is one of the major threats to aquatic biodiversity identified by the European Red List[iii]. In the Mediterranean countries agriculture consumes more than two thirds of the total water used. The expansion of irrigation has been promoted by the CAP, through support for water intensive crops and funding of new irrigation infrastructure, often in water stressed areas[iv].

Irrigation is often the main reason for too little or no water left to sustain rivers and wetlands. For example, estuaries of the Ebro and Guadalquivir rivers in Spain both receive so little water and sediments that their unique and protected ecosystems might collapse in the near future. So far it seems that **southern countries haven't found an effective solution to tackle the problem** of overabstraction by agriculture. This is especially worrying in view of climate change: up to 20% less annual rainfall in the southern Mediterranean countries is predicted. Continued enlargement of irrigation areas in this situation seems irrational and should be stopped. Other EU countries that face water stress in the near future[v] as a consequence of climate change should learn from the example of Southern Europe and start to introduce effective measures before the problem becomes unmanageable.

It is clear, that only **a thorough reform of the CAP could provide a solution** to the above challenges. CAP should stop subsidizing farming practices that contribute to surface and groundwater pollution and depletion of scarce water resources. In times of budgetary pressures we need to ensure that **public money supports public goods**.

This has to start with **the inclusion of the Water Framework Directive** (Effective measures to control diffuse pollution have been analyzed and successfully tested in a number of MS[i],) and the Sustainable Use of Pesticide Directive **in Cross Compliance and the maintenance of new GAEC 7** on the protection on wetlands and carbon rich soils to give a baseline. Irrigation agriculture in the south of Europe should not be supported anymore.

Then, to make sure that the CAP effectively supports those who farm sustainably and maintain high quality and quantity of water resources, the proposed **pillar I greening** component has to be maintained and translated into a strong and compulsory package of good agronomic practices (crop rotation, 10% ecological Focus Areas and maintenance of permanent pastures). Additionally **Pillar II** needs to be **sufficiently funded** and there should be a minimum spending for agri-environmental measures.

The right economic tools e.g. water pricing have to produce true incentives for water saving and integrate the immense environmental and resource costs associated with agricultural water uses (see more in part on water economics below).

[2] The energy challenge - hydropower and biomass

Europe is facing **a dual challenge** in meeting its energy needs as it must address the climate change mitigation imperative, as well as living up to its commitment to halting the loss of biodiversity and ecosystem services by 2020. Mitigating climate change is essential to avoid disastrous consequences for people and ecosystems alike. In order to achieve its decarbonisation objective, the EU will need to draw most of its energy supply from renewables in the coming decades. However, the loss of biodiversity and ecosystem services is an equal threat to that of climate change and the development of renewable energy must be compatible with the EU objective of reversing biodiversity loss.

In particular, Member States' **plans to build new dams** in order to deliver their renewable energy target could conflict with European objectives to halt and reverse the loss of biodiversity by 2020 as the threat to freshwater biodiversity is especially severe today.

Living rivers depend on the flow of energy that hydropower is aiming to extract from them. Rivers are highly dynamic ecosystems: erosion and sedimentation processes result in a continuously reshaped riverbed and floodplain. A river's energy and undisturbed water and sedimentation flow is essential to create the outstandingly rich diversity of both aquatic and terrestrial habitats along its course and in its floodplain.

Overall **37% of Europe's freshwater fish species are threatened** at the EU 27 level. Only molluscs (also depending on water) are threatened more than fish, while birds, mammals, butterflies or amphibians are all threatened less as a group[vi]. **Europe** (except Northern Scandinavia) **has lost most of its river biodiversity**[vii]. River deterioration caused by dams, navigation or flood protection are among the main causes of this situation. Technological solutions to mitigate the effects of dams (e.g. fish ladders) are not always effective and cannot, for all threatened species, provide a

solution[viii]. Thus **from an ecological point of view, Europe has largely exploited its hydropower potential**[ix]. While the planned new dams would contribute only marginally to Europe's renewables revolution, they could at the same time threaten Europe's last remaining free flowing river stretches which hold the remnants of Europe's characteristic freshwater fauna and flora.

Thus we believe that there is an extremely limited potential for building new hydropower plants in the EU. The remaining free-flowing and unregulated river stretches of Europe should be protected for their ecological/biodiversity potential. Europe should make significant efforts to restoring past damage by dams and other river infrastructure.

Sustainable use of renewable energy must be combined with ambitious energy efficiency objectives, to ensure that new renewable production does not contribute to a growing overall energy demand. New developments that only serve hypothetical future needs should be halted.

Firstly a binding energy reduction target in the framework of the Energy Efficiency Directive[x] should be agreed,

Secondly, planning and prioritization should take place on high level and take biodiversity and energy objectives fully and equally into account. High level planning should consider also economic costs, as new hydropower plants are often not the cheapest option for society. Planning has to ensure that not only the legislation but politically agreed objectives (e.g. the Target to halt the loss of biodiversity and ecosystem services by 2020) are met. High level planning should be followed up by appropriate assessment on the level of the individual plants.

Thirdly, Energy efficiency and energy saving should be prioritized everywhere over building new capacity. There is ample room to improve the energy efficiency targets of the national renewable energy action plans of individual EU Member States.[xi] Especially in cases where the damage to biodiversity caused by new plants would be unacceptable, energy efficiency and saving should be prioritized.

Fourthly, the Commission, as a guardian of the Treaties has to ensure countries comply fully not only with energy but also with biodiversity legislation and respective politically agreed objectives. The sustainability of hydropower projects has to be assessed in light of the damage that it causes to aquatic ecosystems and to the environmental and the social and economic costs it entails. Here in particular, a much stricter application of existing legislation, especially Art. 4.7 WFD is necessary. The EC must insist that member states fully document and prove that no energy saving or generating alternatives exist and be willing to challenge member states on their alternative energy options considered when it puts in question biodiversity objectives and water protection. If a new damaging development could be made redundant by increasing energy efficiency, energy saving or another, environmentally friendlier alternative, this has to be enforced. This is required by existing nature and water legislation[xii] but isn't implemented.

Examples from Europe show that currently the opposite is happening[xiii] [xiv]. High level planning taking into account both biodiversity and energy objectives is often missing

or is biased. Despite the existence of environmentally and economically better alternatives, new dams on ecologically important rivers have been pushed through. Existing legislation is often not fully implemented and the objectives of EU biodiversity, water and sustainability policy are overridden by climate objectives.

If the EU would like to achieve its biodiversity and climate objectives at the same time, all the above steps and criteria have to be taken and met.

Increased biomass production can lead to agricultural intensification and can therefore create a further threat to water quality. Newly set incentives for enhanced biomass production on both national and European levels have considerably increased the pressure on land and water use, due to the lack of appropriate sustainability criteria. Arable land that was either used as grassland or had been set aside is now cultivated again for biomass production. In parts of the EU this is already happening on such a scale and with such intensity that all other measures for reducing nutrient emissions from agriculture will be overcompensated. The development of bioenergy must be limited to sustainably available levels. European NGOs have been asking for all forms of biomass to be subject to sustainability criteria, in order to support sustainable forms of bio-energy while making sure that practices that are not environmentally friendly and that do not deliver carbon reduction are not supported. Such criteria should include a full accounting of carbon emissions from bioenergy, including the carbon debt, as well as emissions resulting from indirect land use change.

[3] Inland navigation

Common river regulation techniques and practices aimed at improving navigability tend to negatively impact the hydromorphology and ecology of rivers. Alteration of rivers to enable shipping mostly aims to create a deep and straight canal out of a river. Often banks are strengthened with infrastructure and continuous dredging is needed. This modifies the natural dynamics of rivers and floodplains, with consequences for river and floodplain ecosystems, e.g. loss of characteristic flora and fauna, lowered water tables and consequent reduction of drinking water resources, or higher flood risk downstream as an effect of the canalisation of the river. This can jeopardises the achievement of the objectives of the EU's Nature and Water Directives. It furthermore reduces resilience of the ecological and socio-economic system to the impacts of climate change.[xv]

Also, the climate-friendliness of navigation and its potential for developing sustainable transport in Europe has to be questioned. In some cases, shipping emits just slightly less carbon than road transport and is still far from the effectiveness of rail. It is not proven, that shipping could take over large amounts of transport from road. Also, climate change might alter flow regimes in the future in a way which makes rivers too unpredictable for shipping.

The International Commission for the Protection of the Danube River has developed principles for sustainable navigation[xvi] [xvii]. Yet these principles are not widely applied and old, traditional river engineering methods prevail, for example on the Danube, Elbe (Labe) and Sava rivers. EEB thinks that the sustainability of developing inland

navigation has to be assessed including all ecologic and socio-economic aspects and costs. It is possible to improve inland navigation sustainably if the ecological integrity of the river waterway is respected.. E.g. applying shallow draught ships for both bulk and container goods are technically feasible and a good option for fleet upgrade or replacement. We have to "fit the ships to the river, not the river to the ships".

[4] Avoiding delays and exemptions

Member States have the possibility to postpone the achievement of targets under the Water Framework Directive, if implementing measures would be either technically not feasible; or disproportionately costly; or impossible because of natural factors. [xviii] Postponing is possible until 2015, 2021 and 2027 respectively, according to the three management cycles of the WFD. Also, there is possibility given to aim for lower standards in already damaged rivers.

Postponing and exemptions should be exceptional and only granted if all conditions are justified, however EEB thinks that **it has actually become the norm**. Deadline extensions were applied to a strikingly high percentage of water bodies in the first round of River Basin Management Plans. For example The Netherlands, Czech Republic and Flanders postponed reaching the objectives of WFD beyond 2015 in 70-90% of their water bodies[xix]. This is far away from "exceptional use" of this possibility. In a number of particularly worrying cases[xx] intact rivers (e.g. Sava, Lower Danube) were classified as degraded ("heavily modified") in an attempt to secure the possibility of future damage. E.g. The Netherlands only characterized 5% of its water bodies as 'natural' to avoid having to set ambitious objectives for river restoration and to change land use. The motivation to implement the WFD is severely hampered by this practice.

The European Commission should be given more resources to handle the misuse of delays and exemptions by Member States. It should be able to analyse if delays and exemptions are granted or not and strictly enforce if this opportunity is misused. We expect the **European Commission to significantly improve its enforcement action** on the WFD to make it work and to achieve the improvement of Europe's waters in our lifetime.

[5] Using water economics wisely in the times of austerity

The next phase of WFD implementation is likely to take place during a time when the economy will remain a primary concern to decision makers. Although this will make it harder to secure sufficient investments into river basin planning from public coffers, it will also make it harder to continue shying away from using the economic instruments the WFD has introduced.

WFD economic instruments are based on the polluter pays principle. Sound economic analyses of water uses are an essential basis for management decisions and applying exemptions, while water pricing can create powerful incentives for more efficient water use. Cost recovery of water services helps to balance competing water uses and

internalization of environmental costs of water services contributes to minimizing their environmental impact.

However, economic tools don't seem to been applied well in Europe yet. As a consequence, **it is still mainly households and industry that are required to pay for water use while other sectors like agriculture, mining, navigation or hydropower get away without paying their fair share**.

For example in Wallonia, the taxation scheme for industries in order to clean their sewage has not been indexed since 1990. On the contrary, households are regularly indexed. This results in households paying for over 90% of the cost of cleaning sewage, while industry pays for about 20% of their cost. The estimated missed income for the administration is about 11 millions € per year. In the Netherlands the national taxes on groundwater use for drinking water and industrial applications were abolished for political reasons. Regional taxes only cover about 10% of the management costs to keep the water clean and restore the adverse effects on nature. Agricultural groundwater use is exempted from these taxes.

A good example is provided by Germany where the impressive reduction of household water use over the last 20 years (with a current per capita average of 122 l/d) is primarily due to consumer water prices that fully recover the cost of both drinking water supply and waste water treatment, while quantity-dependent pricing schemes set incentives to save money by reducing water use. These **economic incentives triggered innovation** and fostered the widespread use of new technologies and services.

Only **the application of a wide definition of water services and the full application of effective water pricing** would avoid households across Europe making a disproportionate contribution to Europe's water management. Member States have to apply economics in the second cycle of RMBPs much better and the Commission has to support them in this regard, e.g. when conducting the re-evaluation of economic analysis of water uses in 2013.

In light of the pressures put on Europe's water resources particularly through agriculture, energy production and navigation, it is paramount that both EU and national governments **assess and revise harmful subsidies** in a number of policy fields. There is a need to develop and introduce further economic instruments to reduce environmentally detrimental activity and incentivize more sustainable use of water resources. Taxing environmental 'bads' will reduce the risk of unintended subsidisation of environmentally harmful alternatives, as well as reduce the need for public funding[xxi].

Since 2011, the EU has developed the **European Semester** as a new mechanism for coordinating national economic reform efforts. Although not binding in nature, the European Semester can create a powerful support for the accelerated introduction of effective water pricing instruments at Member States level. For example the 2011 Country Recommendation for Cyprus includes a point on water pricing. The future cycles of the European Semester should make such recommendations systematically to all EU member states.

Through strict enforcement the EU should ensure that **large budget cuts** that were introduced due to the economic crisis **doesn't adversely affect the implementation of nature and water legislation** and that EU objectives are met as much as possible despite economic crisis.

Living rivers and lakes provide a wide array of important ecosystem services of great economic value for society. However so far there wasn't enough attention given to **estimate the improvement in socio-economic benefits which would result of implementing the WFD**. Hence, these benefits are not widely known. A thorough cost-benefit analysis is often missing from RMBPs, too which often creates the impression that WFD implementation is disproportionately costly. An assessment of the benefits of implementing RMBPs on national and European levels should be carried out (**Water-TEEB**). Member States and the EU should devote more resources to communicating the socio-economic benefits of better water protection towards the general public. Furthermore, **improved cost-benefit analysis** should be part of second cycle of RMBPs and of any infrastructure or development project affecting water.

3. Conclusion

EEB believes the WFD is an effective tool to tackle both existing and future water related challenges if rightly implemented. However a detailed look at the efforts and achievements made during the last 12 years doesn't provide us with an optimistic view for the future. If current tendencies continue European citizens won't benefit from a healthy water environment in the foreseeable future but will keep bearing most of the socio-economic costs of mismanagement. Europe as a whole needs to considerable stepping up its commitment as soon as possible to achieve sustainable water management.

[i] Economic Instruments in the Water Framework Directive: An Opportunity for Water Protection Shortcomings in the First Management Cycle and the Need for Action
Policy Paper from GRÜNEN LIGA e.V. on the German River Basin Management Plans
[ii] Coûts des principales pollutions agricoles de l'eau, Service de l'Économie, de l'Évaluation et de l'Intégration du Développement Durable (SEEIDD) du Commissariat Général au Développement Durable (CGDD) Olivier Bommelaer et Jérémy Devaux, Septembre 2011
[iii] Freyhof, J. and Brooks, E.: European Red List of Freshwater Fishes. Luxembourg: Publications Office of the European Union. 2011
[iv] The Truth behind the CAP – 13 Reasons for Green Reform, Coalition of NGOs, 2011
[v] Because of the draught hitting France in 2011 President Sarkozy announced a new plan to build dams to store water for agriculture. Source: Irrigation et stockage de l'eau : FNE demande toujours un débat public Communiqué de presse-Vendredi 10 juin 2011

[vi] Overall, at least 37% of Europe's freshwater fishes are threatened at a continental scale, and 39% are threatened at the EU 27 level. A further 4% of freshwater fishes are considered Near Threatened. About 50% of the species found in the 27 Member States of the EU are endemic to the EU (which means that they are unique to the EU and are found nowhere else in the world). Source: Freyhof, J. and Brooks, E. 2011. European Red List of Freshwater Fishes. Luxembourg: Publications Office of the European Union.
[vii] C. J. Vörösmarty, P. B. McIntyre, M. O. Gessner, D. Dudgeon, A. Prusevich, P. Green, S. Glidden, S. E. Bunn, C. A. Sullivan, C. Reidy Liermann & P. M. Davies. 2010. Global threats to human water security and river biodiversity. Nature 467: 555-561. (30 Sep. 2010)
[viii] An example: the Huchen or Danube salmon (Hucho hucho) is a very rare and endangered fish species that only lives in the Danube and its tributaries. Naturally reproducing populations became very rare, the population is maintained largely by stocking. The Huchen is adapted to undisturbed, fast-flowing montane and sub-montane rivers. Dams alter the flow of the rivers which cause the Huchen to disappear. Fish ladders often won't help as the natural habitat of these species became already too rare. The habitat has to be secured if the fish is to prevail. Nevertheless, further dam building is planned and is going on in one of its last habitat in the river Mur, Austria. Source: http://www.rettetdiemur.at/ and Ten Rivers – a Review of Europe's new Water Protection, European Environmental Bureau 2011

The most obvious detrimental effect of hydropower infrastructures is the fragmentation of the river, turning it in to a sequence of artificial lakes. Migratory fish (which most fish species are) depend on longitudinal continuity in order to complete their life cyle, e.g. to reach their spawning grounds. Fishpasses can only partially compensate this. Particularly for downstream migrations (e.g. juvenile salmon, adult eel), it is largely impossible to bypass hydropower infrastructures. Even with fish passage solutions in place, the cumulative effect of a series of dams will always result in a drastic reduction of the migrating fish: Even with survival rate as high as 90%, the number of fish migrating upstream would drop to 53% after five hydropower infrastructures.

[ix] A research on more than 9000 sites in >3000 European rivers conducted in the framework of a Sixth EU Framework Programme for Research and Development (FP6) concluded that around 80% of rivers are affected by water pollution, water removal for hydropower and irrigation, structural alterations and the impact of dams, with 12% suffering from impacts of all four. Source: Schinegger, R., Trautwein, C., Melcher, A. & Schmutz, S. (2011). Multiple human pressures and their spatial patterns in European running waters. Water and Environment Journal. DOI 10.1111/J.1747-6593.2011.00285.x.
[x] COM (2011)370
[xi] Energy saving targets vary widely between EU member states. While France set itself the target to save 40 477 Ktoe by 2020, the UK only plans to save 4 900 Ktoe in the same time. Energy saving ambitions should be pushed up especially in Belgium, Hungary, Portugal and the UK. Source: BirdLife Europe (2011) Meeting Europe's Renewable Energy Targets in Harmony with Nature (eds. Scrase I. and Gove B.). The RSPB, Sandy, UK, p. 63
[xii] See Habitats Directive Article 6. and Water Framework Directive Article 4.
[xiii] Andrew L.R. Jackson: Renewable energy vs. biodiversity: Policy conflicts and the future of nature conservation, Global Environmental Change 21 (2011) 1195–1208

[xiv] The Portuguese National Hydroelectric High Power Dams Programme (known as the PNBEPH) was created by the Portuguese Government in 2007, supposedly to reduce energy dependency and greenhouse gas emissions, improve the renewable share of energy production and complement wind power with hydroelectric pumping. The set target of the program (never justified) was an increase of 1100 MW in hydroelectric power capacity, over pre-existing 5900 MW. No energy target was defined, and no alternatives to large dams were studied. Including the already completed project of the Baixo Sabor Dam seven new dams are foreseen in the Douro River Basin alone. These dams will artificialise huge stretches of the few remaining free river tributaries to the Douro with an enormous impact on the Douro river system and the rivers ecosystems and surrounding terrestrial habitats – including the habitat of critically endangered species such as the Iberian wolf.

Together with two previously approved dams (Baixo Sabor and Ribeiradio Ermida), the electricity generated by the whole large dam program would amount to 1.7 TWh/year, that is 3.2% of the 52.2 TWh Portuguese electricity consumption in 2010 (DGEG 2011); corresponding to only 0.7% savings on greenhouse gas emissions and 0.8% reduction in fossil fuel imports (percentages computed from EC 2010). This pitiful contribution to the energy system is offset by just nine months worth of increase in electricity demand. The same effects could be obtained with much less expensive investments, best of which the efficient use of energy. Furthermore, it is proven, that existing dams would provide enough pump-storage capacity for the planned wind power development. No new dams are needed for pumping.

The new hydropower plants are significantly more expensive than other options: a kWh produced in a new dam is about twice the cost of a kWh produced in the existing electric system; and 10 to 15 times more expensive than a kWh saved with energy efficiency measures. the cost of a kWh generated in the upgraded power plants in old dams is about five times less expensive than a kWh generated in the new dams. The significant negative socio-cultural and economic effects (e.g. on local tourism) have not been taken into account during the decision to build the dams.
The European Commission has failed to enforce that Portugal searches for alternatives and has given its approval for the project. It also withholds important information regarding alternatives which were formally requested by NGOs.

[xv] Save the Danube as a lifeline! - steps towards sustainable navigation. Common NGO position on navigation in the Danube basin. 15 October 2009
[xvi] Development of inland navigation and environmental protection in the Danube River Basin. Joint Statement on Guiding Principles, ICPDR, Vienna
[xvii] ICPDR (2010): platina Manual on Good Practises in Sustainable Waterway Planning
[xviii] Art 4 (4) of the WFD sais: “The deadlines established under paragraph 1 may be extended for the purposes of phased achievement of the objectives for bodies of water, provided that no further deterioration occurs in the status of the affected body of water when all of the following conditions are met: Member States determine that all necessary improvements in the status of bodies of water cannot reasonably be achieved within the timescales set out in that paragraph for at least one of the following reasons: (i) the scale of improvements required can only be achieved in phases exceeding the timescale, for reasons of technical feasibility; (ii) completing the improvements within the timescale would be disproportionately expensive; (iii) natural conditions do not allow timely improvement in the status of the body of water.”
[xix] PLUNGE INTO THE DEBATE Conference Report 2nd EUROPEAN WATER CONFERENCE 2-3 April 2009
[xx] Important examples are Sava river in Croatia and the lower Danube between Romania and Bulgaria with new planned infrastructure for navigation
[xxi] OECD (2008): An OECD Framework for Effective and Efficient Environmental Policies. Meeting of the Environment Policy Committee (EPOC) at Ministerial Level. Environment and Global Competitiveness. 28-29 April 2008.