

INTRODUCTION: WWF AND OUR ROLE

1. WWF-UK works on freshwater conservation and management in the UK and countries across the world. Our response to the Cave Review is drawn from a combination of this domestic and international experience.
2. Our comments are divided into two sections: firstly, our response to the a number of the individual questions set out in the call for evidence; and, secondly, a more detailed discussion of the abstraction and licensing issues. These latter issues cut across a number of the specific questions in the call for evidence, and are an area in which WWF has the most significant international experience.
3. In addition to our individual evidence, WWF-UK has also submitted joint evidence with Waterwise and OFWAT.

PART 1: RESPONSES TO QUESTIONS

Questions 1 and 2: The existing framework

4. In common with many commentators, we recognise and applaud many of the achievements of the current regulatory regime. This regime has resulted in very significant investment in a neglected infrastructure, leading to improvements in the quality of both the natural environmental and drinking water standards.
5. However, we believe that meeting a number of the challenges now faced by the water sector in England and Wales are not adequately incentivised by the current regime. There remain significant problems of over-abstraction in England and Wales, and there has yet to be a genuine and significant national effort to reduce water demand. On-going population growth and climate change are likely to result in increasing pressures.
6. The current regime strongly incentives capital expenditure over operational expenditure. We believe that this introduces a general bias in favour of capital intensive solutions and away from more sustainable and often better value approaches. We have good reasons to believe that some water companies in some cases are choosing not to adopt sustainable approaches such as demand management and source control because of this issue, even though these water companies know that such opex-based approach are cheaper and present better value for customers.
7. We do not believe that companies have sufficient direct incentives to account for and reduce the impact of their activities on the environments from which they are abstracting and to which they are discharging. Under the current regime, water companies are players in a confrontational regulatory regime between two government agencies, with few incentives to reduce their impacts on the environment through proactive, innovative approaches.

Question 3: How could the current regime of comparative competition be improved?

8. We believe that a range of possibilities exist within the current regime for incentivising companies far more strongly towards identified policy objectives. We identify three in particular.
9. Firstly, we believe that the whole water sector could be placed on a more sustainable footing through a thorough rationalisation and reform of the water licensing and allocation regime. This could introduce novel forms of sustainability competition between companies. See the discussion of the abstraction regime in part 2 of this note.
10. Secondly, we believe that there is scope to encourage innovation by more directly incentivising companies around the state of the environment from which they abstract and into which they discharge. Such incentives could be tied to the achievement of WFD standards.
11. Thirdly, we believe that there exist possibilities to incentivise companies more strongly within the existing regime to support demand reduction and move towards a water services model. We note that the introduction of metering – which we support – while creating the correct incentive structure for consumers may create increased challenges in providing incentives for companies to sell more water.

Questions 4 and 5:

12. No comment.

Questions 6 to 13: The potential for increased competition for and in the retail market

13. We recognise the significant potential that exists for using vertical separation of water companies to move towards the development of a water services model for retail customers.
14. In particular, the separation of retail companies could allow for the development of a pricing structure that encourages and incentivises the development of water services companies that make their profits in part from delivering water demand reduction.
15. For example, retail companies could be required to split bills between a fixed connection charge including a certain target volume of water consumption, and an additional metered amount of water. If retail companies had to purchase water at a higher price than the metered price they could charge customers, they would have strong incentives to help customers to reduce water use, sharing the profits.
16. At the same time, we retain significant concerns over the introduction of competition in the retail end of the market through vertical separation of water companies. These concerns revolve around the complexities of co-ordination, information and accountability that would arise if separation between water resource providers and retail companies was introduced.
17. There are already significant problems in addressing sustainability in the UK water sector that arise from separated and un-integrated responsibility. No government agency or firm is able to take clear responsibility for addressing sustainability concerns, and typically we find that each individual entity (whether public or private) is able to blame others when there is inaction. Disaggregation risks exacerbating this issue, further increasing the ability for the buck to be passed.

18. There are significant dangers if the entity responsible for extracting water from rivers – and therefore for any associated environmental damage – ceases to become customer-facing. This may significantly reduce the connection between consumers and their resource, and make it far harder for consumers or civil society to hold the abstraction company to account. In our experience, companies with retail exposure are significantly more subject to pressures on their social and environmental record than companies that do not. Vertical separation therefore raises real concerns over visibility and accountability. In the absence of a more robust water allocation system for protection environmental water needs, vertical separation risks removing an important existing driver for sustainability.
19. Similar concerns exist over the safety of treated water supplies: separating the responsibility for assuring the safety of water quality from the entity responsible for water retail risks removing a very strong existing driver that protects customer health.
20. We share with other commentators concerns over the obvious risks of cherry-picking in the context of competition in the market. In the context of demand reduction, significantly cheaper demand reduction can be achieved in suburban properties than in many urban contexts. Incentivising demand reduction in a market competition context might result in more innovative approaches being targeted exclusively at affluent suburban populations.

Question 14: upstream competition in water resources and water treatment

21. We believe that significant improvements are possible in the water trading regime, which could improve both environmental and economic outcomes. See part 2 of our response.
22. However, unless and until the necessary reform of the current water allocation regime takes place, we believe that there are very significant dangers from a move to a more liberal trading regime or the introduction of significant upstream competition. See part 2 for a more extended discussion.
23. We also note that even reformed trading and pricing of water licenses may not ultimately have a strong incentive effect on the overall structure of the water market. In most international contexts, the price of raw water is only a small percentage of the overall costs in the supply chain, and this is almost certainly the case in England and Wales. The limited value-added of the abstraction segment of the market when compared to water treatment and distribution costs means that trading and/or competition in the water abstraction segment of the market may not result in signals of sufficient strength to influence behaviour. This does not mean that there are not significant gains from a reformed and rationalised allocation regime. But, it does mean that market structures may be more likely to be determined by costs of physical infrastructure, including sunk costs of existing infrastructure, than by market signals alone around scarcity.

Question 15: competition in the sewage market

24. No comment.

Questions 16 to 18: Pricing and trading

25. See part 2.

Questions 19 and 20: access pricing

26. No comment.

Question 21: risks to customers

27. See §19 above.

Question 22: impact on financing

28. No comment.

Questions 23 and 24: Vertical separation

29. No comment.

Question 25: what programme would you introduce?

30. We would strongly support a move towards a modern licensing and trading regime as set out in part 2. We believe that this would support both environmental and economic goals simultaneously, and is long over-due. We also note the possibilities for competition between companies to achieve demand reduction that could be introduced under the approach that we propose.

31. We recognise the potential afforded by competition in retail markets. However, we have concerns as to whether these sufficiently outweighed the risks posed by separation. We believe that a number of the objectives may be achievable through a stronger set of incentives and reform of the existing disincentives within the current system.

Questions 26 to 35: encouraging innovation

32. Our most substantive thoughts on innovation are largely covered above. We do not believe that the current approach incentivises innovation in environmental sustainability. It is currently acceptable for companies to act as largely passive players in a negotiation between the EA and OFWAT, seeing sustainability purely in terms with compliance with licensing regimes as set out be the EA and financed by OFWAT. There is not a strong role in this process for companies to take a lead in identifying and adopting innovative solutions that reduce environmental impact.

33. A more sophisticated approach might require companies to be more closely concerned with the environmental quality of the water resource from which they abstracted and to which they discharge. Significant possibilities exist for companies to be more sophisticated in the way in which they operate. Further consideration needs to be given as to how such an approach might work, but it is likely to include a significantly more detailed understanding of the links between company activity and impacts on ecosystems in specific localities.

Questions 36 to 40: cross-cutting issues

34. International experience teaches us that reform should be cautious and sequenced. Water markets involve a very complex set of relationships and incentives. Unwinding these almost invariably

leads to unanticipated consequences. This is not to argue in favour of inaction; merely to argue in favour of an adaptive and evolutionary approach.

PART 2: THE ABSTRACTION, ALLOCATION AND TRADING REGIME

35. As identified by a number of commentators, the current water allocation¹ arrangements in England and Wales do neither adequately protect environmental needs nor facilitate the most efficient use of water.
- Water continues to be significantly over-abstracted from many water courses, often leading to significant damage to ecosystems and resources of very high social and environmental importance. The current arrangements that are in place to redress this situation are inadequate: the current approach is highly contested and probably far from the most economically efficient mechanism to reduce over-abstraction of the resource.
 - The current context does not permit transparent trading of licenses.
 - There are few economic signals to indicate to water users the relative scarcity of the water that they are using.
36. The flaws in the current system are not due to the policies of any one Agency, but rather are the result of the overall existing legal and policy framework and the policies of a number of government agencies.²
37. We propose below a phased reform of the allocation regime that we believe can address many of the policy flaws identified above. This process of reform would involve three stages: firstly, establishment of a modern licensing system and caps on water abstraction; secondly, use of regulatory and market mechanisms to reduce water use to the level of the cap over a period of time; and, thirdly, liberalisation of the trading regime. These proposals are based on emerging international experience, and combine market mechanisms with regulation to establish the necessary enabling conditions for efficiency water use in the context of environmental limits.
38. Markets and trading (formal or informal) play a role of some form in almost all water use contexts across the world, and there is increasing sophistication in their use to achieve social, economic and environmental policy goals. However, there is a litany of examples across the world where ill-thought through reforms of water rights regimes have led to perverse and unanticipated social and environmental outcomes. In almost all cases, these failures have occurred where reforms have failed to take account adequately of the particular characteristics of water as an economic good.

The nature of water externalities

39. The external impacts of water use are highly local in both space and time. The impacts of the actions of one user on both the environment and other users will depend on a range of factors,

¹ By 'allocation' arrangements, we refer to the policy and market mechanisms which are used in any given context to determine who is entitled to abstract water and under what conditions. This includes the full suite of issues around licensing, pricing and trading of water.

² We note, in particular, criticisms made by OFWAT (May 2008) and Professor Yarrow (April 2008) of the EA's approach of reducing abstraction through reductions to licenses in the process of trading. While this may not be the optimal mechanism for reducing over-abstraction, we believe that decisions taken by the government and other government agencies over a number of years have foreclosed a number of more efficient and rational options and have left the EA with few alternative options.

including: the precise location of abstraction; the time of abstraction; the current state of the resource from which water is being abstracted (e.g. pollution levels, recent precipitation); and the quantity, quality and location of any return flows. This reality is central to the establishment of any sustainable allocation regime. Many international failures in water rights reform have been undermined by the failure to realise this truth.

The basis of the allocation system: price vs. 'cap and allocate'

40. Whilst almost all allocation systems are based on a mixture of regulatory and market mechanisms, nevertheless there remain two broad ways in which water (or any other economic good) can be allocated.
41. Firstly, water can be allocated on the basis of price. Under this approach, a price for water is set that is sufficiently high to prevent over-use of water, thereby identifying the most efficient users of water by discovering those users prepared to pay this price.
42. Alternately, a cap can be set on the amount of water that can be abstracted from any given locality, and then a range of mechanisms established for allocating this available quantity of water. A range of allocation possibilities exist and can be combined, including permits, auctions and trading.
43. We believe that there are a number of reasons why the second of these approaches (cap and allocate) is to be preferred:
 - Any pricing system would need to reflect the differing impacts of water used in different times and places, and the extent and condition of any return flow. Whilst theoretically possible, high transaction costs would be involved in establishing and monitoring the necessarily complex set of prices. Ultimately, such an approach might result in more complex and less secure regulatory interventions than a number of 'cap and allocate' alternatives. Pricing may in fact require more central planning, not less.
 - In order to act as the primary basis of allocation, prices would have to be set at a significantly high level. This would have negative impacts on water consumers and result in very significant on-going rents to government or its agencies.
44. These concerns need not apply if price is used as part of the package of measures within a 'cap and allocate' approach.
45. We make two further general theoretical comments. Firstly, the *Call for Evidence* suggests that the "efficient use of water depends on it being priced appropriately" (2.22). We disagree. We believe that the efficient use of water depends on it being allocated appropriately; a cap and trade mechanism, for example, with little use of pricing may well be the most appropriate way of ensuring efficient use of water.
46. Secondly, in the significant majority of England and Wales, water resources are already adjudged to be over-allocated. If we accept the need for a reduction in this over-abstraction, the primary economic challenge facing the regulatory system is not to establish more precisely the true economic value of water that is (over) abstracted. Rather, the challenge is to identify the least cost way in which abstractions can be reduced to a sustainable level. This requires clearer identification of the true costs of alternative mechanism for reducing current levels of over-

abstraction (i.e. increased storage vs. demand reduction), rather than identifying the true economic costs of the abstracted water.

Trading

47. Trading of water rights takes place almost everywhere in the world, whether formally or informally. The UK is probably one of the contexts in which it is a relatively minor feature of the water resource landscape. In general, therefore, the question is not whether trading is or is not a Good Thing *per se*, but rather what are the conditions under which trading may be permitted.
48. Trading can have an important role to play in achieving efficient allocation of resources and allowing water to migrate to higher value users. We note, however, that it may not play as strong a role in driving changes in resource use as some commentators imply. In particular, the cost of raw water resources is only likely to be a small fraction of the total value chain in the water market. As a consequence, the ‘signal’ provided by a more robust water trading and pricing regime may be insignificant compared to other costs, for example the costs of stranded assets. In addition, public water supply utilities hold a very high percentage of the water rights in much of the country, and so markets may be small. Some caution is therefore necessary in assuming that trading alone can drive sustainability in the UK water sector.
49. Despite these cautions, we nevertheless believe that trading may have an important role to play in generating improved information about the value of water uses and reducing damaging over-abstraction. There are, however, a number of possible unintended impacts from inappropriately regulated trading, and we outline four considerations below. It is important that a robust set of preconditions are in place before trading – or upstream competition in general – can take place that address these considerations.
50. **External impacts.** Firstly, as noted above, the impact of water use varies very significantly depending on a variety of factors. If these are not recognised in the trade, unintended impacts can occur for other users and the environment. For example, a water right may be traded upstream in a catchment, to a location where there is insufficient water available to satisfy that right. Alternatively, shifting the point of the water withdrawals may impact on downstream users or the environment through significant reductions in river flow levels. Similar considerations apply in a variety of dimensions, for example return flows. These factors are not well accounted for in the current licensing regime.
51. **‘Sleeper’ licenses.** As is well recognised, in much of England and Wales there remain a significant number of ‘sleeper’ licenses that, if used, would significantly increase the problems of over-abstraction of rivers. The opening up of trading without addressing these sleeper licenses would have very significant adverse impacts.
52. **Assurance of supply.** Differing water users require water to be available with different assurance of supply (or reliability). A farmer, for example, can operate with a water license that only yields water a certain percentage of years, with alternative cropping patterns being adopted in other years. The same does not apply to domestic users, where failure of supply is not an option. These differences need to be taken into account in a trading system.
53. **Speculation.** International experience suggests that a liberalised water trading regime can lead to speculation in water rights, with unwanted social impacts. Where constraints on public water

supply are threatened, a speculator could hold water supply companies and/or the government to ransom under conditions of water scarcity.

54. Given these concerns, a liberalisation of the trading regime under the current licensing and allocation regime should not be considered. The EA's current regulatory scrutiny of trades is a necessary check on an inappropriate licensing context. Before a more transparent and less regulated trading regime can be introduced, a number of reforms are required, including:

- The development of more sophisticated water rights which include appropriate conditions: time and location of water withdrawal; hands-off flow conditions; quantity, location and quality of return flows; and, assurance of supply.
- Resolution of the problems of sleeper-licenses and over-abstraction.
- Mechanisms to prevent speculation.

Our preferred approach

55. In the context of the above discussion, we propose a three-stage process for the reform of the existing allocation system. International experience suggests that reform should be phased rather than undertaken in a single process, and we believe that an appropriate period of time will be required to undertake the full suite of reforms.

- A new and more sophisticated water licensing regime is introduced, including time, location, hands of flow, return flow and assurance of supply conditions on licenses. Ultimately, all existing licenses should be 're-licensed' to this new regime. A more sophisticated assessment of the necessary 'cap' on water abstraction to meet environmental needs would be developed. This should be associated with WFD standards.
- A process is established to adjust existing water licensing and use to the level of the 'cap'. A range of possibilities exist for this process. Approaches may need to combine regulatory, pricing and market, for example a reverse 'auction'. One approach would involve a timed reduction in water use being set out, in order to meet sustainability targets by 2027; a pricing system would be introduced that charged significantly higher prices where water is abstracted *in excess* of the identified cap; the revenue generated from the pricing would be used to purchase back or amend water rights, through a process of reverse auction where existing rights holders would make water available at a certain price.³
- Once water use had been reduced to the sustainable cap in any given catchment, trading would then be permitted on a transparent basis. Transparent safeguards based around the conditions of the water rights would be needed, but regulatory discretion could be reduced to a minimum.

56. Under such an approach, consideration would need to be given as to how to a) avoid windfall profits to companies holding licenses; b) avoid 'out-pricing' the environment if all sustainability reductions depend on a voluntary reverse auction.

Tom Le Quesne, WWF-UK
August 2008

³ If established on a national basis, this scheme could result in competition between companies through the pricing and auction process to achieve sustainability reductions in the most cost-effective way.