Association of Drainage Authorities

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Consultation:	Future Flood Prevention		
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EFRA Committee Inquiry: Future Flood Prevention

Written evidence submitted by the Association of Drainage Authorities

0.01 The Association of Drainage Authorities (ADA) is the association for water level management organisations in the United Kingdom, with over 230 members. Our members include Internal Drainage Boards, the Environment Agency, Regional Flood & Coastal Committees, Natural Resources Wales, the Rivers Agency Northern Ireland, Local Authorities, and suppliers to the sector.

0.02 The different parts of a river catchment and the land uses within it are connected so that what happens in one area affects others. If not positively managed, these interactions can have serious negative impacts. For example, badly designed urban development, poor agricultural practice and a lack of proper upstream river management can all increase flood risk downstream. However bringing the different activities at the full range of spatial scales across a catchment into a management strategy that makes the most of the possibilities offered by the interactions can replace the negative impacts with long-term sustainable benefits.

0.03 ADA recognises that in order to deliver better management of flood risk in the future all the risk management authorities must work cooperatively with each other, communities and land managers to deliver Total Catchment Management from source to sea by:

0.04 1. **Working with farmers and landowners** to increase soil infiltration and store more flood water in the upper parts of the catchment to control run-off, reduce peak flows and reduce siltation whilst also providing farmers and landowners with a more balanced and reliable water supply.

0.05 2. **Restoring rivers** in parts of the catchment that are not artificially drained to reduce peak flows downstream (and provide other benefits for recreation and biodiversity).

0.06 3. **Providing flood storage areas** at critical points further down the catchment to retain water during times of high rainfall to prevent downstream flooding whilst also potentially providing both a range of habitats to enhance biodiversity and providing storage and release of water as a resource. This should include

providing assistance to farmers and landowners to adapt their businesses in areas used for flood storage.

0.07 **4. Promoting sustainable drainage systems (SuDS)** and district-wide strategic surface water management in towns to reduce urban run-off. Connecting open space in urban areas provides flow paths and water storage to manage flows and flooding whilst also providing green infrastructure, resilience to climate change and improved urban access. Sustainable drainage systems reduce run-off and store water, managing water at source to lower flood risk downstream whilst also providing pleasant open space to enhance the amenity, water quality and biodiversity of an area.

0.08 **5. Ensuring the effective maintenance of drainage ditches, channels and rivers in lowland parts of the catchment** where active management is required to control water levels for communities, businesses and the environment. The correct balance of conveyance, capacity and storage within such systems are critical to their effective functioning.

0.09 **6. Planning and designing for exceedance**. Making sure that a flood defence project is not just about the defences but also what happens when a defence is overwhelmed. For instance the tidal surge of 2013 illustrated the need to reduce the risk of coastal embankments breaching when they are overtopped. This can be achieved by creating both a wider crest and shallower landward slope less receptive to erosional pressures, and through effective maintenance that prevents bushes, trees and burrowing animals becoming established. For communities this will include facilitating flood resilience and property level protection in the whole catchment and, in extremis, assisting with the relocation of the highest flood-risk households out of the floodplain.

1.00 **Question 1. Predicting the future: Are the Environment Agency and Met Office models that predict rainfall patterns and the likelihood of future floods fit for purpose - and do they correctly calculate the costs of future flooding to communities?**

1.01 ADA recognises the value of accurate and detailed forecasting information on which planning decisions within flood risk management can be made in both the long and short term. Rainfall predictions have a statistical base which will always see fluctuations and as such current methods appear weakest in predicting rainfall intensities successfully for specific locations in advance but better at estimating overall regional weather patterns. Climate change predictions define the expected levels of variation and it is these predictions that need review through UKCP18. ADA is keen that whilst improvements in accuracy are sought, effort does not unduly expend time and money, and delay action.

1.02 ADA would welcome work to better understanding the interaction between different sources of flood risk (e.g. fluvial, pluvial and coastal) within the same area, which would help mitigate the current lack of clarity and risk of duplication that can occur in calculating benefits of areas impacted by multiple sources of flood risk. On our coasts the tidal surge of December 2013 served to highlight the value of better breach impact modelling.

1.03 In calculating the cost of future flooding to communities, ADA consider that a bigger issue is whether the current economic models used in FCERM benefit cost appraisals account effectively for the true economic losses and recovery period for associated damage to agricultural land, infrastructure, communities and health. The current Partnership Funding arrangements set out to support schemes predominantly with substantial cost benefit ratios which provide a varying standard of protection based almost exclusively on the highest financial return. These scores take a limited account of other wider impacts and 'trading' affectively occurs for the 'people and property' beneficiaries between schemes that have an overlapping area of benefit.

1.04 A different and much wider approach would be to apply the same rules as those identified for environmental schemes or in other areas of the public sector (e.g. transport), where the investment must have a cost benefit above 1.5 and aim to provide the maximum standard achievable, e.g. in flood risk management terms as close as possible to 1 in 200 year return period (from fluvial flood risk) and 1 in 500 year (from coastal flood risk). This would still be an effective use of public money and should enable greater opportunity for schemes to innovate and deliver wider societal benefits but the downside of course is that it would require greater investment than is currently provided. A local prioritisation mechanism could offset this increased demand by including political and therefore public engagement on what would benefit a local area or catchment most.

2.00 **Question 2. Protecting communities and infrastructure: How adequately do defences protect communities and agricultural land from floods and do current funding arrangements target spending in the right way?**

Assessing all the benefits

2.01 Under Partnership Funding the benefit of schemes to agricultural land, roads, railways and other critical infrastructure are all lumped within Outcome Measure 1 that assesses the overall economic benefits whilst households better protected and habitat enhancement receive specific measures of their own. Hence the schemes coming forward are skewed towards reducing the risk to housing and for delivery of environmental improvements. There is a need to consider the future development and growth potential in assessing benefits and also the extent to which local economic outputs (such as agriculture) contribute to national economic activity (food production).

2.02 The current outcome measures targets relating to housing do not aim for a unified standard but instead aim for an arbitrary target which allows the claim to be made that houses that were previously protected are to continue to be protected as a result of a scheme which is in effect just the renewal of an existing asset. This gives a false picture of the progress being made. In fact it is conceivable with climate change that the existing targets could be met and that more houses finally end up at flood risk in real terms. A better measure would be perhaps to look at the total percentage of housing stock, e.g. 98% of all houses to have a minimum of 1 in 75 year level of fluvial flood protection by a given date.

Flood risk should be managed on a whole life approach

2.03 The current investment system does not encourage long-term thinking. We should adopt a more long-term approach to managing fluvial and coastal assets and systems based on capital expenditure combined with whole life maintenance costs. By managing investment in flood risk management on total expenditure would create a level playing field for making capital and revenue investment decisions. Evidence suggests that the current return on investment for flood risk revenue maintenance is a lot higher than for capital, so some rebalancing of capital and maintenance priorities would improve the overall return on investment and minimise the whole life cost of structures and systems.

'Invest to save'

2.04 Where Government withdraws from work because it is not deemed cost effective under their funding formula, they should liaise with local stakeholders and where there is an offer to take on long term maintenance, government should be prepared to 'invest to save' by bringing assets and systems into an adequate condition ready for them to be passed on, or provide a one-off contribution payment to assist others to do so. Public Sector Cooperation Agreements between Risk Management Authorities can act as a helpful mechanism to restore those systems prior to transfer, enabling both parties involved to better understand the function and management of the system.

2.05 ADA also hopes that the model of Internal Drainage Boards as locally funded public bodies that deliver the long term management of water levels within their district, and which directly involve the beneficiaries, can be expanded and learnt from in order that assets and systems can be transferred from a nationally governed system to a more locally driven delivery model that meet the needs of local catchments. Where local bodies working together take a greater ownership of managing strategic assets and systems in the future, there should be the incentive to reduce or redirect any ongoing charges (e.g. IDB-EA Precept) in acknowledgement of their increased contribution. There is the added advantage of also reducing unnecessary bureaucracy. We also welcome the Local Choices approach being applied by the Environment Agency in Cambridgeshire & Bedfordshire towards precept funding from local IDBs.

3.00 **Question 3. Managing water flows: How effectively do Defra and the Environment Agency's policies encourage innovative approaches to managing risk such as slowing the flow of water in urban and rural river catchment areas and promoting water storage?**

3.01 ADA recognises that the Environment Agency and Defra are good at identifying and promoting innovative thinking within flood and coastal risk management. However, in the delivery of schemes, the national model currently in use needs significant overhaul to be able to respond to local partnership working and local choices, and to attract the levels of partnership funding desired. It is currently seen as a "one-size-fits-all" system and there is considerable scope for a more considered division of work between the various Risk Management Authorities based on size, location and technical complexity of each project. ADA's members are reporting increasing examples of unnecessary process and administrative overhead which is stifling more efficient ways of delivering.

3.02 The Government should support investment in water level and flood risk management innovation to enable new techniques to develop but also recognise that this is a long term aspiration and that in the interim adequate funding is needed to maintain and improve assets and systems that we have in place at present. Recent press and public discussion regarding 'natural flood management' has highlighted the public interest in this area.

Natural Flood Management and flood storage

3.03 ADA strongly welcomes innovation in this area, and would be keen that attenuation solutions are explored throughout catchments. There are a number of excellent pilot examples being implemented at sites around the country such as the Slowing the Flow project at Pickering in Yorkshire, the Hills to Levels initiative in Somerset and Stroud Rural SuDS in Shropshire.

3.04 ADA is keen to ensure that measures to slow the flow are not viewed narrowly in terms of simply tree planting or moorland grip blocking, but as a range of measures that include cropping and ploughing arrangements and a whole suite of rural SuDS techniques as set out in the Environment Agency's Rural SuDS Report and SEPA's Natural Flood Management Handbook. It is crucial that farmers and landowners are encouraged and incentivised to play an active part in this aspect of land management.

3.05 At a larger more strategic level there is also the need to reopen discussions regarding the payment for flood storage on agricultural land through washlands. Here funding solutions need to be explored that provide for either:

a. an annualised return based on the estimated loss incurred and the return period of a scheme, or
b. a compensation package that remunerates the farmer/landowner directly for losses incurred as and when the washland is inundated.

3.06 ADA would also highlight that measures to 'slow the flow' must continue to be viewed as part of a package of measures that make up a Total Catchment Management approach that includes more traditional hard defences and the maintenance of our watercourses, defences and assets as well. This is critical as whilst there is growing evidence that natural flood management techniques can be effective at a range of catchment scales some techniques will inevitably take a number of years to mature in order to provide the anticipated flood risk management benefits desired; some will provide fluctuating levels of flood risk reduction dependent on the season; and some measures such as woody debris dams may bring with them increased maintenance requirement at structures and pinchpoints downstream.

Utilising preventative maintenance regimes would allow for the optimised use of assets and better value for money

3.07 The maintenance regime for our watercourses and structures remains the primary concern to ADA and a large number of systems and structures are being maintained only to a minimal level. Consequently the useful lives of those assets is being reduced. The effect of this lack of maintenance leads to capitalised maintenance projects, which are both a more expensive way of operating and increase flood risk by allowing assets to operate closer to their limits. It can also give a false impression of additional properties being defended, when they are

	simply being restored to a previously intended standard of defence. There are many examples countrywide of well-designed systems and structures significantly exceeding their expected life durations as a result of good, regular maintenance operations.
3.08	Whilst ADA welcomes assurances from the Government that revenue maintenance investment will be retained at least at the current £171 million per year in real terms, ADA is very concerned that with the removal of the revenue support grant to Local Authorities, this allocation actually represents a significant potential reduction in maintenance funding over time. A thorough strategic assessment of maintenance, especially around channel capacity and conveyance, has not been made and thus long term planning for preventative interventions is difficult.
3.09	Another area for innovation is in the way we undertake the maintenance and management of our assets and systems. Here we need to look at more efficient techniques and less intrusive methods of maintenance such as agitation dredging, and suction dredging techniques that de-water, compact and contain the dredged materials as undertaken in the Netherlands. We need to explore barriers within existing national procurement pathways to delivering more for less and utilising local skills, equipment and labour.
3.10	Here ADA, supported by the EA, has strongly promoted greater partnership working between risk management authorities by utilising section 13 of the Flood & Water Management Act 2010 to stimulate co-operative working between authorities. Public Sector Cooperation Agreements (PSCA) are unlocking local efficiencies by providing the legal framework for IDBs to undertake work on main river and coastal defences for the Environment Agency, for IDBs to gain expertise and equipment for works on their channels from the EA, and similar agreements established with local authorities. Currently 45 PSCA agreements are in place with the potential for many more to be enacted this year.
4.00	**Question 4. Planning for floods: How well do planning policies ensure new buildings are not put in areas of high flood risk nor where they would increase risk to others – and how well do new developments incorporate sustainable drainage and flood-resilient buildings?**
4.01	Planning for floods remains an issue and ADA considers that work is needed to strengthen the powers available to Risk Management Authorities through a revised Planning Policy Statement 25 (PPS 25). Whilst it is recognized by planning authorities that they must consider this and with the technical knowledge that the risks exist, the systems in place still seem to allow illogical decision making and the clear linkages to planning guidance and local policy documents. There is often a fear that to do so could stifle development and growth. The reality is that without the confidence of developers that long-term investments can be made with full and fair knowledge of the risks involved, short-sighted planning may cost more to the State in the long-term. The approach to SuDS and resilience varies from authority to authority and the lack of Government being able to deliver the creation of SuDS Approving Bodies (SABs) has been seen as a major setback for water level management. The introduction of partnership funding which encourages developers to offer financial support to FRM schemes where the scheme can be extended to

	release flood plain for development has also been too slow in gathering pace and arguably stifled by lack of incentive to developers. ADA recommends that the committee take time look at the efforts made by the Bedford Group of IDBs to realise strategic flood risk management for an area of new development through the Marston Vale Surface Waters Plan.