RESPONSE TO CALL FOR EVIDENCE

The Committee on Land Use in England

How should we respond to increasing demands on land?

26th April 2022 by Sofi Lloyd

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1. About the Association of Drainage Authorities (ADA)

ADA is the membership organisation for drainage, water level and flood risk management authorities throughout the UK. Today ADA represents over 230 members nationally, including internal drainage boards, regional flood & coastal committees, local authorities and national agencies, as well our associate members who are contractors, consultants and suppliers to the industry.

Our purpose is to champion and campaign for the sustainable delivery of water level management, offering guidance, advice and support to our members across the UK, and informing the public about our members' essential work.

2. Summary & Introduction

All life depends on water. Farming, wildlife, habitats, people, industry, our way of life as we know it depends upon water. Plentiful water underpins life while extremes of surplus or deficit can destroy it.

Over 1 million hectares of the UK are in low lying areas that would be naturally flooded if it were not for pumping stations removing water from networks of drainage channels to keep ground water levels below the surface. The removed water is transferred to other catchments where it can eventually flow into the sea. Some of the UK's most agriculturally productive land is located within these low lying areas such as the fens. Villages, towns, cities, industry, power stations, transport infrastructure and much more also heavily rely on water level management in these areas.

It is encouraging to see that the 25 Year Environment Plan recognises water-level management as a vital priority. However, the theme does not appear to be continued as strongly through other key land use strategies and policies which claim to align to it. Greater emphasis on and recognition of the need for water level and resource management throughout all Government's land use policy is needed including farming, flood risk management, environment and development.

All land managers, including farmers, Local Authorities the Environment Agency and Internal Drainage Boards need to be properly supported and resourced to enable them to better co-ordinate and deliver the often conflicting priorities that are placed upon them. Land is finite so the only way to deliver more of the urgent priorities needed, is to support multifunctional solutions and this will require improved and careful policy integration to avoid the objectives of one policy being undermined by another.

3. Specific consultation responses

Pressures and challenges

1. What do you see as the most notable current challenges in relation to land use in England? How might these challenges best be tackled? How do you foresee land use in England changing over the long term? How should competing priorities for land use be managed?

ADA recognises that an increasing population, food security, climate change and providing sufficient room for species and habitats to thrive in order to secure the ecological services we all rely upon are some of the most pressing challenges in relation to land use that policy development must urgently address. Whatever the land use is now or needs to become, it is vital that the asset, be it natural or built, is resilient against the extremes of weather we expect from climate change. For this, policy review and improved policy integration is needed particularly in relation to water level and flood risk management.

Strategies such as the levelling up and the build back greener policies are aimed at improving the economic growth of particular regions in a way that is enhancing to the environment and public health. However, the incentives for businesses to expand or establish themselves in areas where there is a perceived high flood risk, or one that is perceived to increase in the future due to climate change is discouraging to investment so without addressing this, these polices could be undermined.

Environmental strategies such as Biodiversity Net Gain and the developing Environmental Land Management schemes are aimed at increasing the provision of land for biodiversity to recover and thrive. However there is insufficient support for the associated water level and flood risk management provisions to secure resilience for new or existing habitats against the extremes of water availability we can expect of climate change.

ADA strongly advocates the full and proper balance of priorities between economic, environmental and social needs.

We set out in our responses to following questions how policy could be reviewed to better address these climate change-related water-level and flood risk management challenges.

2. What are the key drivers of land use change which need to be planned for, and how should they be planned for? What is the role of multifunctional land use strategies in implementing these plans?

Multi-functionality has been a concept that ADA has consistently promoted as part of a more holistic approach to land use on a catchment-scale, particularly in relation to flood risk and water level management. There is an urgent need to move away from a binary attitude where either a landscape should be managed, engineered and developed or entirely natural, particularly in terms of water level and flood risk management. This attitude detracts funding and attention away from projects in lower catchments, where a landscape engineered or developed for the sake of flood risk and water-level management could be significantly enhanced for the benefit of the environment and society. It also increases the pressure in upper catchments to provide more land to meet more priorities including natural flood risk management, carbon sequestration, residential

and commercial development, biodiversity enhancement and food production. Lowland engineered, pumped catchments such as those found in the Fens are undervalued in terms of the contribution they could also deliver to biodiversity and the environment alongside their flood risk management and food production. Whilst for example channels may be engineered straightened they can still can be enhanced for the benefit of nature, the environment and society and be enhanced to deliver flood risk management solutions which mimic natural processes. We need to better understand and address the barriers to supporting projects to enhance these areas to enable them to maximise their delivery to a wider range of land use priorities and to decrease the pressure on land use in upper catchments.

Examples:

- Engineered spillways on embanked channels are a fantastic example of a blended approach to floodplain reconnection but rarely considered. Perhaps this is because the evacuation of water from floodplains only happens naturally in gravity-drained catchments, but we should not overlook the value of floodplain reconnection in the lowlands just because the inundation and evacuation of water is likely to require engineered and mechanical solutions.

- New and improved on-farm water storage could be designed to be multi-functional from the outset i.e. providing a pre-determined capacity for flood attenuation with remaining capacity for agricultural use, alongside space and provision for wildlife. Water could be abstracted at times of high flow, reducing potential flood risk downstream and to ensure that impacts to water quality and river habitats are minimized and stored for use at times of low availability. Otherwise initiatives such as the Felixstowe hydrocycle project could be supported which sees fresh water from drained land being pumped back to farm reservoirs rather than out to sea. This is a more sustainable way of ensuring that some of the drier regions which require irrigation to maintain agricultural production can be secured particularly with the increased threat of drought as a result from climate change. The water could also be potentially used for public water supply and is being used in a trail to recharge aquifers.

- Retrofitting and upgrading pumping stations with renewable energy-generating solutions and variable speed, fish-friendly pumps are multifunctional approaches which, alongside significant reduction in carbon emissions and biodiversity enhancements, could benefit the whole community if the surplus energy is made available to them. However, because such projects do not use approaches which mimic natural processes, they are often much less attractive for funding and are rarely able to be progressed using government funding such as FDGiA funding.

- The development of more “washlands” such as those situated near to Lincoln that help to defend the City from flooding from the River Witham should be encouraged. These are large areas of agricultural land which, under a set of specific triggers can be temporarily inundated to alleviate flood risk further downstream in vulnerable areas. Elms funding is ideally placed to support the establishment of earth bunds around the perimeter of the area which is to take the floodwaters, to prevent uncontrolled flow into undesired areas. Funding would need to cover the cost of development of the physical means of allowing water into the washlands, through the installation of a spillway for example, and the means by which the water can be

evacuated, such as a sluice or pumped outfall back into the watercourse to allow the land to return to its primary agricultural function ASAP and with minimal damage to growing crops. Over the long-term, funds would need to be provided to support the ongoing maintenance of these features to operable conditions. Such assets should be operated by a local RMA, such as an IDB. Finally, a means to compensate the land-owner periodically in terms of his commercial losses due to inundation are needed. This should include compensation of their income lost through crop losses but also the cover the costs of returning the land back to agricultural use.

- The Cottingham and Orchard Park Flood Alleviation Scheme (COPFAS) was developed to establish a series of of eight separate lagoons for rainwater storage across an area affected by surface water flooding in Hull. Together, the lagoons have the capacity to hold back 470,000 cubic metres of flood water. All of the lagoons in this scheme remain dry only to be filled during severe wet weather events. Many of the lagoons will remain as farmland, and will contain either arable crops or grazing land and one lagoon includes a landscaped area including a fishing pond, planted nature area and recreational land for the community.

3. How might we achieve greater and more effective coordination, integration and delivery of land use policy and management at a central, regional, local and landscape level?

a) Policy efficiency is key to maximizing outcomes for land use

There is a wide and expanding range of overlapping land use policy which Risk Management Authorities (RMAs) such as Internal Drainage Boards have a duty to engage and comply with. There is a danger that without better policy integration and co-ordination, the burden upon such Authorities to address all such strategies, separately, will erode the resources available to deliver the objectives. Overlapping land-use strategies, such as the Water Framework Directive (WFD) and River Basin Management Plans (RBMP), Species Conservation and Protected Sites strategies, Local Nature Recovery Networks (LNRS), Nature Recovery Networks (LNRS), and ELMS (LNRS) to name but a few, have very similar objectives. We recommend that urgent consideration is given to how to make engagement with these strategies more efficient for RMA's and all stakeholders. LNRS aim to engage all local stakeholders on a regional basis and is the platform for national priorities to be considered and delivered in a local context. Could the LNRS be the overarching delivery mechanism for all other local land use to streamline the delivery of the overlapping objectives?

b) Flood and Coastal Erosion Risk Management Strategy – capital vs. revenue funding.

There is no question that major urban flood defences like the Thames barrier and Boston barrier are essential. Increased funding for new flood defences is welcome but increasingly less is being spent on maintaining the vital defences and river systems we already have. Finding the right balance is challenging, but a system is only as good as the weakest link. Some of our rivers and existing flood defence assets are in dire need of maintenance, refurbishment or replacement before it's too late, and more communities are devastated by flooding.

It is vital to ensure that the creation of “new” infrastructure to deliver improved flood protection and water level management for the benefit of all land uses does not detract attention and resources away from maintaining existing flood defence assets, now or in the future. Any new schemes should only be approved if the future maintenance and management funding needed to support the scheme over its whole life is fully considered, accepted and then included in the schemes’ long-term investment plans.

In recent decades, spending on flood defence asset maintenance appears to have been reduced in favor of capital project budgets, as set out in a recently published report commissioned by ABI and FloodRe1. The report, which focused on embanked rivers, calculates that £568 million each year is saved each year in flood losses due to those embanked rivers “performing as they were designed to do”. But it also states that with a reduction in maintenance spend on these defences, deterioration rates increase. The increased spend on capital flood defences exacerbates the revenue budget pressures as it creates more flood defences to maintain. The report predicts that for every £1 extra that is spent on flood defence maintenance, £7 is saved on capital expenditure, such as reconstruction or replacement. The National Audit Office’s November 2020 report2 on managing flood risk mirrored these concerns in its prediction that that the requirement for revenue funding is likely to increase as assets deteriorate more quickly due to climate change pressures and as capital investment growth results in more assets overall in need of maintenance. Research commissioned by the Environment Agency indicates that sea level rises, increased storm surges and river flows as a result of climate change are all expected to increase pressure on flood defence assets and this should be a consideration for all flood management approaches, both natural and engineered. The cost for flood defence asset maintenance and repairs could increase by between 20% and 70% a year as a result.

Increasing the current maintenance budget for linear flood defences by 50% is expected to extend their life by 8 years, the ABI-FloodRe report suggests. Recent research has also suggested that construction projects contribute the greatest percentage of all CO2 emissions for the water level management industry, up to 54% in some cases. As such, there are clear CO2 reductions to be made in lengthening the lifespan of flood defence assets and minimizing the need for capital expenditure to reconstruct or replace them.

Without the necessary maintenance of connected watercourses, the effectiveness of capital solutions will be gradually and increasingly diminished where the interconnected river system is neglected and deteriorates and climate change pressures increase. It is clear that revenue budgets need to be significantly increased in order to secure the required level of maintenance of flood defence assets and to better protect all land uses, improve resilience against predicted weather extremes, reduce CO2 emissions from construction and deliver good economic efficiencies.

[1] https://www.abi.org.uk/globalassets/files/publications/public/flooding/modelling-the-impact-of-spending-on-defence-maintenance.pdf

[2] https://www.nao.org.uk/wp-content/uploads/2020/11/Managing-flood-risk.pdf

Farming and land management

4. What impacts are changes to farming and agricultural practices, including food production, likely to have on land use in England? What is the role of new technology and changing standards of land management?

Over 1 million hectares of the UK are in low lying areas that would be naturally flooded if it were not for pumping stations removing water from networks of drainage channels to keep ground water levels below the surface. The removed water is transferred to other catchments where it can eventually flow into the sea. Much of the UK's most agriculturally productive land is located within these low lying areas such as the fens. Villages, towns, cities, industry, power stations, transport infrastructure and much more also heavily rely on water level management in these areas.

A well maintained as a river system may be, if the pumping station at the end of the system is ageing and inefficient then it could undermine the effectiveness of the system upstream. To avoid being the weak link in an efficiently managed river network, many pumping stations are in urgent need of improvement to ensure that they remain capable of managing the increasing volumes of water that are conveyed to them, as we expect from predicted weather extremes. Some IDB pumping stations are in this category and are in urgent need of upgrading. Many operate diesel pumps which make obvious contributions to CO2 emissions.

Flood Defence Grant in Aid or FDGiA is the primary funding mechanism available to IDBs to support their capital project portfolios. The current FDGiA "green book" cost benefit analysis scores an application for funding against a number of outcome measures such as number of properties protected (outcome measure 2), amount of habitat created or restored (outcome measure 4), and the value of land protected (outcome measure 1). The higher the score against these outcome measures, but particularly outcome measure 2, the more likely that funding will be granted and the higher the contribution of the overall project cost will be made. This means that large rural agricultural catchments with a lower density of properties, characterised by lowland pumped catchments, are much less likely to qualify for FDGiA funding for flood defence projects despite the significant contribution to improving and protecting high-grade agricultural land, infrastructure, freshwater habitats, improving climate change resilience and reducing carbon emission the project could make.

As an example, a typical rural pumping station which services a large but mostly agricultural catchment may have 1300 properties that meet the criteria to be considered "better protected" against outcome measure 2. However this number of properties would result in a low score against the outcome measure. **The land in the same catchment could be some of the most productive high grade agricultural land in the country delivering many millions for pounds of agricultural benefit but the FDGiA cost benefits analysis counts only 6% of the "retail" value of that agricultural land against outcome measure 1.**

Recent geo-political developments are also signaling the critical importance of securing our native food production. UK policy for the allocation of flood risk and water level management funding must recognise this situation by giving increased scoring to the protection of land valuable to flood production through enhanced management and maintenance of our rivers and watercourses.

CO2 reductions are a consideration within FDGiA applications. However, while applicants are expected to complete a complex carbon calculation to demonstrate that CO2 reductions can be made, the result, regardless of how much CO2 can be reduced, is not currently a scored element of the application. There are already significant pressures on land use to support food production, land for renewable energy installations, room for biodiversity and carbon sequestration such as peatland restoration and tree planting so to relieve some of this pressure, policy must be more supportive of reducing carbon emissions across all sectors.

We recommend that the value placed on agricultural land by the FDGiA cost benefits analysis is significantly increased to properly recognise the importance of these areas to our national food security and the rural communities who rely on them. Particular attention needs to be paid to how FDGiA will support and value biodiversity net gain and other environmental net gain provisions as they come on line through development, within development boundaries and elsewhere, such as on farmland, as landowners and farmers diversify and become more involved in the delivery of biodiversity net gain including conservation covenants.

We also recommend that the FDGiA CBA introduces an outcome measure which scores and prioritises the delivery of carbon reductions if the government is to meet its net zero objectives.

Finally, increasing the “stand-alone” asset replacement fund and/or extending it to cover the upgrade of non-qualifying IDB assets would further support the progression of such projects to the same benefits, particularly if CO2 reductions were included as an objective. This would ensure that assets were considered and prioritised on a catchment basis rather than a management system basis.

5. What impact are the forthcoming environmental land management schemes likely to have on agriculture, biodiversity and wellbeing? What do you see as their merits and disadvantages?

The developing Environmental Land Management (ELM) schemes should be a key source of funding to help to secure the continuity of food production in agricultural areas but also to fund multifunctional water level and flood risk management approaches for the benefit of all other land uses, as a public good. ELMS could help to fund the maintenance, management and restoration of rivers and coastal areas such as reconnecting floodplains, provide areas for flood alleviation and attenuation and to improve on-farm water storage. Examples of these approaches can be found in more detail in our response to question 2.

Unfortunately, it is still unclear whether these and many other water-level and flood risk management approaches will be supported through the ELMs schemes. We recommend the urgent prioritization of such measures through the ELMs and are very willing to contribute towards the development and design of such approaches through the ELMS development stakeholder working group and are actively seeking an opportunity to do so.

Greater emphasis on water level and resource management throughout all Government's farming and environmental policy is needed, given the importance of water to both farming and the environment, and all need to be better integrated and aligned.

Nature, landscape and biodiversity

6. **What do you see as the key threats to nature and biodiversity in England in the short and longer term, and what role should land use policy have in tackling these?**

Please see our earlier responses to questions 3 and 4 and other responses.

7. **What are the merits and challenges of emerging policies such as nature-based solutions (including eco-system and carbon markets), local nature recovery strategies and the biodiversity net gain requirement? Are these policies compatible, and how can we ensure they support one another, and that they deliver effective benefits for nature?**

Please see our response to question 2.

Environment, climate change, energy and infrastructure

8. **How will commitments such as the 25-year environment plan and the net zero target require changes to land use in England, and what other impacts might these changes have?**

Our responses to previous questions present detail on this.

9. **How should land use pressures around energy and infrastructure be managed?**

Please see our responses to earlier questions, particularly 2, 3b and 4.

Land use planning

10. **What do you see as the advantages and disadvantages of the existing land use planning system and associated frameworks in England? How effectively does the system manage competing demands on land, including the Government's housing and development objectives? What would be the merits of introducing a formal spatial planning framework or frameworks, and how might it be implemented?**

ADA welcomes the review of schedule 3 of the Flood and Water management Act in order to address some of the challenges, particularly experienced by Internal Drainage Boards, around the provision and management of Sustainable Urban Drainage Systems and their role in delivering effective flood and water level management.

11. What lessons may be learned from land use planning frameworks in the devolved nations and abroad, and how might these lessons apply to England?

There could be opportunities to improve the multifunctionality of land uses by exploring the potential of hydropower turbines at pumping stations to generate electricity to drive the pumps and to make the extra available to the local community, as has been done in Italy and the Netherlands.

Also, the use of wind energy should also be considered much more widely for water pumping, as has been employed in the Schleswig-Holstein area of northern Germany.

And in Spain, for example, on the River Guadalquivir near Cordoba in the arid region of Andalusia, a pumped-storage mechanism operates at the San Raphael dam to make use of surplus power to pump water from the major river into Lake San Raphael de Navaliana for future multi-functional use and insurance against drought.

In the Netherlands, the Room for the River programme took a long-term 25-year investment approach where over 2 billion Euros was ring-fenced and spent in future-proofing the economy, the environment and peoples' lives to the increasing threat of flood risk through adaptation and resilience to the threat. As the project title suggests, more room was made for floodwater alongside provision for that extra room to remain functional for other land uses with the planned, known risk that flooding might occur on that land and the means to deal with it.

Conclusion

12. Which organisations would be best placed to plan and decide on the allocation of land for the various competing agendas for land use in England, and how should they set about doing so?

ADA believes that the most suitable organisations to make such decisions are those which are capable of engaging all local stakeholders to consider and prioritise land-use in a holistic way, on a local or catchment level, and which prioritises water-level and flood risk management to underpin their decisions.