Re-imagining stormwater management within the water industry in England: remits, responsibilities and the need for change

Repenser la gestion des eaux pluviales dans le secteur de l'eau en Angleterre: attributions, responsabilités et nécessité de changement

Brian Smith[1], Lian Lundy[2],

[1] Yorkshire Water Services, Western House, Halifax Road, Bradford, BD6 2SZ
[2] Middlesex University, The Burroughs, Hendon, London NW4 4BT

RÉSUMÉ

Selon les prévisions, le Royaume-Uni, qui compte actuellement 66 millions d'habitants, devrait voir sa population augmenter de plus de 10 millions d'ici 30 ans. Pour faire face à la crise du logement, le gouvernement britannique s'est donc engagé à construire chaque année 300 000 logements jusqu'à mi-2020. Ce niveau de croissance exercera une pression considérable sur des infrastructures d'assainissement déjà saturées, d'autant plus que, en vertu de la législation britannique, les promoteurs et les constructeurs de logements ont le droit absolu de relier leurs propriétés au système d'assainissement public. Par conséquent, les compagnies des eaux n'ont pas le contrôle des débits d'eau dans leurs réseaux, et leur manque de contrôle des eaux pluviales apparaît ainsi comme un défi. Selon les prévisions actuelles en matière de changement climatique, les logements actuels et futurs en Angleterre seront de plus en plus exposés au risque d'inondation par les eaux de surface. L'amélioration de la gestion des eaux pluviales apparaît plus que jamais comme une nécessité. L'approche actuelle de la gestion des eaux pluviales est fracturée et fragmentée, et aucune entité n'en a la responsabilité globale. Les avantages, les risques et les opportunités d'avoir un seul organisme responsable du système d'assainissement en Angleterre sont exposés. Avec une bonne surveillance et une gouvernance efficace, les compagnies des eaux sont les mieux placées pour coordonner et jouer ce rôle intégré, mais cela exigerait également la mise en place de nouvelles et meilleures méthodes de réglementation.

ABSTRACT

With a population of 66 million projected to grow by upwards of 10 million people over the next 30 years, the UK government has vowed to build 300,000 homes every year until the mid-2020s as it seeks to tackle the housing crisis. This level of development will place considerable demand on an already stretched drainage infrastructure, not least as, under UK legislation, developers and house builders have an absolute right to connect their properties to the public drainage system. As a result, water companies do not have control of flows into their networks, with a particular challenge their lack of control over stormwater inputs. Under current climate change predictions, existing and future homes in England will be under increasing levels of risk from surface water flooding. Improving the management of stormwater is an increasing imperative. The current approach to the management of stormwater is fractured and fragmented, with no one body having overall responsibility. The benefits, risks and opportunities of having a single, responsible, accountable body for drainage in England are presented. With good oversight and governance, water companies are ideally placed to co-ordinate and deliver such an integrated role, but this would also require a new and better way of regulating.

KEYWORDS

Legislation; regulation, stormwater, sustainable drainage systems

1. INTRODUCTION

The UK is not one seamlessly integrated country, comprising of England, Wales, Scotland and Northern Ireland, each with their own devolved Governments. On many matters, including water, each territory has a different legal framework. The water industry in the UK is hence subject to a fragmented legislative and regulatory system, developed over a long period of time through a succession of legislative instruments and a substantial amount of case law. The central role of water companies is to provide an essential service to society by managing sewerage and water supply systems. This function is critical to human health, flood protection and environmental management. There is growing pressure to affordably maintain and enhance this service, within an ageing infrastructure that is inflexible to urban development and climate change. Key drivers shaping the industry's development have been the industrial revolution, rapid rates of urbanisation, increased demand (driven by economic development) and the need to achieve increasingly stringent environmental quality standards. The Water Act 1973 reorganised the industry in England and Wales, establishing 10 regional water authorities, under state control whose role was to manage water resources and sewerage services on an integrated basis. The industry in England was privatised in 1989 in response to the need for more investment than the government was prepared to fund from public finance. To ensure the interests of customers and the environment were secured, further restructuring separated out the role of regulation. The independence of regulators (i.e. Ofwat, the Environment Agency and the Drinking Water Inspectorate) from Government allowed the industry to deliver its obligations free from political interference and created a stable operating environment for investors.

2. THE UK WATER INDUSTRY TODAY

Since privatisation, substantial investment has helped balance past under-investment, meet new regulatory obligations and delivered considerable improvements to the quality of drinking water, rivers and bathing water. Long-term challenges range from population growth and rising customer expectations, to addressing impacts of climate change and increasingly demanding environmental standards. Coupled with this are the more established challenges of customer affordability, both water scarcity and flooding and diminishing financial efficiencies. The political and regulatory landscape continues to change. Primary legislation associated with privatisation set down several core requirements, one of which was to provide an essential service for society, to 'effectually drain'. In response to widespread flooding of 2007 and recognising the current approach as unsustainable due to future pressures, government and regulators clarified, updated and extended existing legal and regulatory requirements to be achieved by the water Industry. The delivery of these requirements will require a radically new approach, particularly in regard to stormwater management. The Drainage Strategy Framework (Ofwat and Environment Agency, 2013) set expectations for Water and Sewerage Companies (WaSCs) to have strategies in place for stormwater management and recognise the need for sustainability to be considered in asset management planning. The industry now has regulatory obligations to meet the social, financial and environmental challenges of the future in addition to delivering high-quality services while causing as little damage as possible to the environment. The current legislative and regulatory system is fragmented and, despite consolidation of key pieces of legislation in 1991, new legislation remains disparate and not conducive to modern, integrated management of a resilient drainage system.

The water industry in England and Wales is diverse, and in the drive to mimic and create competition, economic regulation has become very complex. It is unclear whether economic regulation has overall become more or less burdensome for water companies and what the impact is. However, any change in regulation for a sustainable water industry needs to be a pragmatic, long-term change, led by a strong, independent regulator. The financing arrangements of some water companies fall below the standards expected from providers of an essential public service. High levels of executive pay, shareholder dividends and debt ratios risk reducing public trust. The Secretary of State considers water companies should instead invest more in their businesses. A recent statement from the Environment, Food and Rural Affairs Committee noted "Ofwat should have firmly tackled the imbalances in the financial models of some water companies much earlier" (EFRA, 2018). In the absence of real competition in the sector, Ofwat must strike a difficult balance between consumer interests and making it financially worthwhile for water companies to satisfy their investors.

3. WHAT DOES THIS MEAN FOR STORMWATER MANAGEMENT?

Stormwater is an uncontrolled demand on sewer systems and the dominant cause of hydraulic incapacity. This will have greater consequence in the future as the effects of climate change and

development growth increase the risk of flooding and pollution where the sewer network is close to, or exceeds, capacity at times of peak volume. It is widely recognised by regulators, government and water companies that continuing solely with an approach of maintaining and enhancing the traditional sewerage network is unsustainable. Ofwat's (2011) review of international management of surface water drainage found that alternative management of stormwater delivers multiple benefits. Of note is the statement "The principle that...sewerage systems should accommodate future flows is unsustainable in the long-term context of climate change". The new vision for stormwater drainage systems is to use blue-green infrastructure to deliver maximum benefits via modifying cities for the provision and control of water quantity, quality, amenity and biodiversity. (Bacchin et al, 2016). This approach offers opportunity to deliver sustainable, intelligence driven solutions to protect communities and the environment but requires coordinated action by all with responsibilities for managing land, rivers and drainage systems. Lead Local Flood Authorities (county and unitary authorities) have the leadership role on surface water management. Water and sewerage companies, the Environment Agency, highways authorities, district councils and Internal Drainage Boards also have important roles as Risk Management Authorities (RMAs) within surface water management planning (Defra, 2018).

4. CHALLENGES AND SOLUTIONS

Responsibilities for the management of stormwater are fragmented, and a shared problem. The Flood Risk Regulations (2009) transposed the Floods Directive into law for England, bringing together the Environment Agency, County Councils and Unitary Authorities and partners such as water companies to manage flood risk from all sources, to reduce the consequence of flooding on human health, economic activity, cultural heritage and the environment. The responsibilities between the different parties can become blurred, particularly when the source of flooding is unclear (Defra, 2018). The importance of planning is often overlooked. The planning process does not adequately address the barriers to implementation of stormwater management and fails to deliver the desired increase in sustainable drainage systems (SuDS) for new development sites. Stormwater management needs to become a material consideration in the planning process. To ensure efficient infrastructure investment and affordability objectives are met, there is a need to adapt to modern solutions through a multi-objective, multi-stakeholder approach. Stormwater and its effective management present a series of strategic opportunities. An integrated approach will reduce flooding and pollution; and deliver EU Water Framework benefits through pollutant management and improved chemical and ecological status of water bodies. In the long term, this will reduce energy costs and carbon emissions; and adapt activities to the effects of climate change, ensuring sustainability of future growth. Cultural and institutional change is required within companies to a point where stormwater reduction will be part of all intervention planning and capital delivery solutions.

Progress in sustainable stormwater management over the past 20 years has been slow and fragmented. Following the 2007 floods, there is clear recognition at national Government level that the current approach needs to change. The national review undertaken following the 2007 floods (Pitt Review, 2008) made several recommendations in relation to the control of surface water, including the need to address the question of responsibility for the creation and maintenance of SuDS. Following the demise of Schedule 3 Flood and Water Management Act (2010) (which would have allowed local municipalities to undertake this role), Defra considered that the most likely entities to adopt SuDS were WaSCs. However, a lack of legal certainty over ownership presented a significant barrier to the uptake of SuDS. As a response, the industry considered whether it could take a broader interpretation of drainage systems. A review of sewerage legislation by WaSCs in England was undertaken by David Hart QC in 2015. This concluded that while WaSCs can only adopt "sewers" - a term contained but not defined in legislation - some sustainable drainage assets could fall within the definition of a sewer and be adopted as such provided they fulfil a sewerage function. The water industry recently published a new guide to adoptable surface water sewers which includes a range of sustainable drainage systems which meet the water-industry developed criteria. There is now a consistent national set of criteria to which property developers can work, on the basis that ultimate responsibility for drainage system, including stormwater, will be transferred to relevant local water company. This work aligns with key governmental objectives. WaSCs will now be responsible for sewers and sustainable drainage systems serving new developments.

5. NEED FOR A NEW FINANCE AND BUSINESS MODEL

The industry faces unprecedented challenges and uncertainty in a changing environment. "Future shocks" could have a damaging effect on finance-ability and investor confidence. The way the industry operates its business needs to change. The industry and its infrastructure need to be flexible and adaptive; prepare for the unexpected and able to respond quickly to change and external circumstance.

Failure to be flexible and to adapt makes it increasingly difficult to compete and grow. New thinking and alternative ways of managing water are critical in protecting, and fundamental to providing resilient infrastructure to ensure long term security and support optimal social, economic and environmental outcomes. The effective management of stormwater underpins this. Never has there been such a strong imperative to develop a coherent, sustainable strategy for the integrated management of water. Working in the same way and hoping conditions will improve will not work. It is a never-ending debate about public versus private ownership and the balance between government funding and shareholder returns. Numerous mixed models and wholly public models, globally, work very successfully, such as regional public ownership or municipalities. It does not necessarily have to be wholesale renationalisation. Questions arise about public interest-oriented companies, directors fiduciary duty to investors, the problem of financial engineering, policies, plans and regulations. Is it useful to spend time trying to define a preferred ownership model when various public equity, infrastructure fund and private equity models have much in common (Helm, 2018)? It's about control, not ownership. What is needed is a better way of regulation with strict economic and environmental regulatory controls There are broad linkages between stormwater management systems and those of spatial planning and flood risk management. The benefits, risks and opportunities of having a single, responsible, accountable body for drainage should be explored to develop a viable long-term funding model encompassing investment planning, funding mechanisms, integrated water management and integrated infrastructure investment prioritised. i.e. a body responsible for SuDS, sewers, highway drains and watercourses. Local authorities are subject to significant fiscal constraints, whereas WaSCs have the ability to raise finance in the debt and equity markets. This would overcome the problem of trying to align funding cycles. Greater control of inputs to and outputs from these interconnected systems will provide robust stormwater control and improved water level management.

6. CONCLUSIONS

It has taken nearly 200 years for the UK Water Industry to reach the strong position in which it now finds itself. The benefits of billions of pounds of investment over the last few decades are now evident with increased protection and preservation of the environment and delivery of a safe, secure supply of high quality drinking water. The journey has not been easy. Re-composition and privatisation enabled much-needed finance to be raised and invested. The establishment of independent regulators was a crucial step in ensuring proper governance and controls, enabling delivery of environmental improvements, water resource protection and improved water quality. New emerging pressures must be prepared for now to ensure continued security and quality of water supply and intergenerational equity. More people, larger towns and the effects of climate change will mean a greater demand for water. The water available is not being managed in an optimal manner. There is a pressing need to better understand future needs and maintain balance of supply and demand, and a need to expand knowledge on integrated water management. The key to delivering these ambitious objectives is systems thinking and financing. This can be achieved with appropriate controls and financing through good governance, regulation and legislation. These tools are fundamental in underpinning the protection of water sources and security of supply with sustainable stormwater management playing a central role. This, however, requires working in partnership with the UK's governments, regulators and community groups. However, any change in regulation for a sustainable water industry needs to be a pragmatic, long-term change. A first step in delivering this change would be a review of all current drainage legislation to assess its fitness for purpose to respond to emerging pressures. This should be undertaken from an integrated perspective, with a focus on identifying and mitigating tensions between different parts of the drainage sector to ensure the future delivery of a more integrated management of drainage systems.

References

Bacchin T, Ashley R, Viklander M and Gersonius B (2016). Green-blue Infrastructure For Sustainable Cities: Innovative Socio-technical Solutions Bringing Multifunctional value. 9th Novatech Conference, Lyon, France, June 2016. Available at: http://documents.irevues.inist.fr/handle/2042/61874

EA and Ofwat (2010) Drainage Strategy Framework, Good practice guidance. Available at: https://www.ofwat.gov.uk/wp-content/uploads/2015/12/rpt_com201305drainagestrategy1.pdf

EFRA (2010) Environment, Food and Rural Affairs Committee, Regulation of the water industry. Available at: https://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/inquiries/parliament-2017/regulation-of-the-water-industry-17-19/

Act of Parliament, Flood and Water Management Act (2010) Available at: https://www.legislation.gov.uk/ukpga/2010/29/contents

Helm, D (2018) Cross Regulation Network paper 11. Who owns the water companies? Available at: http://www.dieterhelm.co.uk/natural-capital/water/who-owns-the-water-companies/