

The Sustainable Management of Scotland's Water Resources: Current Issues in Water Law and Policy

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Introduction

The legal and policy landscape regulating water is multi-faceted and complex. This governance framework has to appreciate all the roles which water plays in our lives, the economy and the environment. Further, the framework has to be adaptive to unpredictable challenges, such as a rapidly changing natural world or the political upheaval caused by Brexit. I am currently engaged in a project which is investigating how the law regarding [private water rights](#) in Scotland should be reformed and as part of this research, I been engaging with stakeholders from a broad range of policy, industry and scientific backgrounds.¹ In this policy brief, I provide an overview of current issues in water law and policy in Scotland which have been identified through this stakeholder engagement and consider how these issues will affect the future sustainable management of Scotland's water resources.

Water Governance and Brexit

A significant issue in relation to water law and policy is the uncertainty caused by the UK leaving the European Union. The implications of this in relation to environmental law generally have been well-documented.² In relation to water governance, much of Scotland's water regulation has originated from the EU, through implementation of the EU Water Framework Directive and related directives such as the Drinking Water and Floods Directive.

At the time of writing, it is unclear exactly what will replace the existing frameworks, targets and standards. Significant changes may not occur immediately and the Scottish Government's position is that it intends to keep pace with EU standards. However, there is a risk that over time there will be a divergence from the ambitious targets which have been set at the EU level. Ensuring a comprehensive and integrated governance framework will be key to the tackling the challenges outlined below.

Water Scarcity

Although Scotland is known for having abundant water resources, in recent years there have been periods of drought which have resulted in water scarcity. An example of water scarcity was the hot and dry summer of 2018 which affected private water supplies, crop

¹ This stakeholder engagement was funded by the Royal Society of Edinburgh.

² See A Savaresi, "Environmental Governance in Scotland after EU Exit" SPICe Briefing SB 20-02 (Jan 2020).

³ See S Hendry, "Brexit and Water Law: Implications for the UK and Scotland" Blog for Brexit & Environment (Sept 2018).

yields, distillery production, hydroelectricity generation and endangered species.⁴ In 2015, the Scottish Environment Protection Agency (SEPA) published Scotland's first National Water Scarcity Plan which outlines SEPA's approach to the management of water resources during periods of dry weather.⁵ This Plan sets out the hierarchy of action which SEPA will take during a period of water scarcity including limitations on abstractions and monitoring the ecology of affected waterbodies. However, there is an emphasis in the Plan that all water users have a responsibility in the management of water, and that there should be a collaborative approach between all stakeholders during periods of scarcity. As the pressures from climate change increase, there will a greater requirement to improve the efficient use of water resources including a need to strike the right balance between public and private water supplies, environmental needs, agricultural demands and industrial consumption.⁶

Private Water Supplies and Rural Places

The themes of water scarcity and climate change are connected to the sustainability of private water supplies in Scotland. Private water supplies are those which are not provided by Scottish Water and instead are the responsibility of the owners and users of the supplies. In 2018, local authorities reported that there were almost 22,000 private water supplies providing water to almost 200,000 people, which is around 3.6% of the population in Scotland.⁷ Such supplies can be used in a commercial or public activity such as hotels or caravan parks, as well as for domestic supplies. The percentage of the population dependent on a private supply varies between local authority areas but the majority of private supplies are in rural areas.

There are two current issues in relation to these supplies. The first is the quality of the supplies. Many private water supplies have not received sufficient treatment or are of poor quality, and as a result are not in compliance with drinking water quality standards for heavy metals such as lead, or may contain bacteria such as E. coli. Some private water supplies are therefore a risk to health.⁸ Responsibility for management and maintenance of the supply lies with the owners and users of the supply, and this can lead to complexity and uncertainty regarding who is responsible where the infrastructure and source of the supply are located on several different properties. The second issue is the pressures on private water supplies due to water scarcity. Between July and September 2018, over 500 private water supplies ran dry. This then required Scottish Water and local authorities to provide emergency assistance in the form of bottled water to those whose water supply had failed.⁹

With climate change increasing the vulnerability of these supplies, one way to combat these issues would be to connect more properties to the public supply.¹⁰ However, this may not be viable in places where the property is not reasonably close to the public mains

⁴ Scottish Government, "Significant Water Management Issues for Scotland" (Dec 2019) p6.

⁵ SEPA, "Scotland's National Water Scarcity Plan" (2015).

⁶ *Ibid* p6.

⁷ Drinking Water Quality Regulator for Scotland, "Drinking Water Quality in Scotland 2018: Private Water Supplies" (2019) p3.

⁸ *Ibid* p11.

⁹ *Ibid* p20.

¹⁰ C Holdsworth, "Private Water Supplies in a Changing Climate: Insights from 2018" ClimateX Change (2019).

and where the cost of connection would be disproportionately high. This has consequences for rural repopulation. It is difficult to implement rural regeneration if a reliable and safe water supply cannot be guaranteed. An additional option would be to explore community led management schemes in order to sustainably and effectively maintain and improve private water supplies.¹¹

Flooding and Resilience

Contrasting with the concerns of a reliable water supply is the risk of flooding. An estimated 284,000 properties are currently at risk of flooding in Scotland.¹² Flooding can have multiple negative effects on local communities. A recent study of the flooding which took place in the North East of Scotland in 2015/16 showed that people who experienced flooding required temporary accommodation for more than 6 months after the flooding, suffered anxiety and upset, and required emergency grant funding for repair, refurbishment or other costs associated with the flooding. Businesses were also affected by the disruption.¹³ The Scottish Government, SEPA, Scottish Water and local authorities work together to manage flood risk. SEPA produces national flood risk management strategies and local authorities create local flood risk management plans. The Scottish Government has also been piloting innovative natural flood management schemes such as the [Eddleston Water Project](#). However, the responsibility to protect individual properties from flooding lies with the owner.

As part of its commitment to build resilient communities and reduce flood risk, the Scottish Government has recently published a flood resilience action Plan¹⁴ which sets out a framework for the implementation of property flood resilience measures. This Plan aims to investigate the barriers to the implementation of resilience measures, provide guidance on undertaking such measures and support owners to make changes to their properties. The [Scottish Flood Forum](#), an independent Scottish Charity, also provides support and information in the event of flooding and encourages community resilience to flood events. Resilience measures and flood risk management support will become ever more important as climate change may result in increased flood risk from surface waterbodies while rising sea-levels will affect coastal communities.

Protection and Improvement of the Water Environment

Central to the challenges outlined here is a holistic approach to management of the water environment. To fulfil obligations under the EU Water Framework Directive, SEPA produces a River Basin Management Plan, which sets out the actions required to improve and protect Scotland's water environment.¹⁵ SEPA sees the River Basin Management Plan as having a key role in increasing the resilience of the environment and communities to

¹¹ P Teedon, M Currie, K Helwig and R Creaney, "Engaging Communities around Private Water Supplies" CREW Report (2017) p6.

¹² Scottish Government, "Living with Flooding: An Action Plan for Delivering Property Flood Resilience in Scotland" (2019) p2.

¹³ M Currie, L Philip and G Dowds, "Long-term impacts of flooding following the winter 2015/16 flooding in North East Scotland: Summary Report" CREW (2020).

¹⁴ Scottish Government, "Living with Flooding: An Action Plan for Delivering Property Flood Resilience in Scotland" (2019).

¹⁵ Scottish Government, "The River Basin Management Plan for the Scotland River Basin District: 2015-2027" (2015).

drought, floods and climate change. The Scottish Government, SEPA and other public bodies have been working with water users and landowners to improve the quality of water and the physical condition of waterbodies as well as address pressures on water flows and tackle the spread of invasive non-native species. Such actions include working with landowners and land managers to reduce diffuse rural pollution, restore natural meanders to rivers, and remove manmade barriers to fish migration. In 2018, 65.7% of Scotland's surface and ground waterbodies were assessed as being of good or high status, and 71.5% of waterbodies are expected to be of good or high status by 2021.¹⁶

Despite the variety of actions addressing the challenges to the water environment, there are still significant issues affecting the management of water such as water scarcity (identified above), rural land use, physically modified rivers and the use of water for hydropower.¹⁷ Further, Scotland's biodiversity is under considerable pressures with the latest State of Nature Scotland Report noting the continuing decline of the abundance and distribution of freshwater species.¹⁸ Once again, climate change will exacerbate these challenges by potentially increasing the competition between water users and the environment, and by affecting the ecological balance in sensitive ecosystems.

Conclusion

This stakeholder engagement has shown that there are a number of challenges facing the sustainable management of Scotland's water resources, with responsibilities for addressing these challenges spread across various government agencies as well as resting with individuals. These challenges and responsibilities will only be compounded in future due to the effects of climate change. HydroNation Scholar, Kerr Adams has noted that there is a "need to adopt a system-thinking approach to identify how the interactions between multiple driving forces might influence water pressures in the future. A better understanding of these interactions would allow stakeholders to better co-manage water resources and identify resilient water management and policy options."¹⁹ Indeed, land and water use can have multiple effects on the quality and availability of water for people, agriculture, industry and the environment, as well as having consequences on the resilience of communities against flood risk. Therefore, there needs to be an integrated and coordinated approach to water management which places sustainability at the core of its operation. The Scottish Government, SEPA, Scottish Water and other public bodies as well as individuals are currently working together to make progress towards such an approach. However, an adaptive and resilient response will be required to tackle current and future challenges.

¹⁶ Scottish Government, "Scotland's Water Environment 2019: A Summary and Progress Report" (Dec 2019) pp3-5.

¹⁷ Scottish Government, "Significant Water Management Issues for Scotland" (Dec 2019).

¹⁸ P Walton et al, "The State of Nature Scotland 2019" (2019).

¹⁹ K Adams, "How can Scotland Become a Resilient Hydro Nation? Stakeholder Perspectives" Blog for Scotland's Environment (Jan 2020).