Understanding knowledge needs for Scotland to become a resilient Hydro Nation.

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1. Introduction

Freshwater resources provide valuable ecosystem services that support Scotland's natural environment and economy. Indirect drivers for change such as climate, land-use and population lead to pressures that threaten the ability of freshwaters to provide these services.

To protect and enhance freshwater resources, Scotland: The Hydro Nation aims to maximise the value of Scotland's water resources. To achieve this, Scotland must become resilient to future change, where resilience is the expectation of change leading to a better focus of adaptive management and policy recommendations[1].

Understanding stakeholder knowledge needs is fundamental when identifying adaptive solutions[2]. As the contribution of stakeholder knowledge needs are often limited, improved stakeholder engagement practices are required[3,4].

Aim: to collaborate with water stakeholders to understand their knowledge needs on how Scotland can become a resilient Hydro Nation.

2. Methods

To achieve the aim of this research, telephone and face-to-face interviews were conducted. Questions asked during the interviews can be found in the supporting material below this poster.

Transcribed interviews were then analysed in NVIVO using the following process:

Knowledge Need Themes

- Stakeholder research questions (4)
- Future scenario research (7)

Knowledge Need Interpretation

- Previous research (3)
- Drivers (5)
- Pressures (6)
- Study Area (8)
- Time horizon (9)

3. Results

A total of 27 stakeholders participated in the interview process. The following headline knowledge need was identified:

Influence of multiple drivers	• How will the interactions between multiple drivers for change influence pressures on freshwater resources in the future?

Stakeholder also identified specific knowledge needs (right) and the key pressures they believe will have the greatest impact on Scotland's freshwater resources (Figure 1).

Future water demands	• How will future water demand be influenced by changes in multiple driving forces and increased consumer competition?
Working with nature	• What are the impacts of large-scale land-use change on both water quality and quantity?
Water value	• How do the people of Scotland value their water resources and what influence does this have on water use efficiency and pollution?
Integrated development planning	• Can an integrated approach in the design of urban areas improve water quality, reduce flood risk and increase water use efficiency?
Asset condition	• How resilient are water industry and infrastructure assets to the impacts of multiple future changes?

4. Next Steps

The project will now aim to address the headline knowledge gap to consider catchment resilience, involving stakeholders using the following three steps :

Scenario Development → Participatory Modelling → Resilience Recommendations

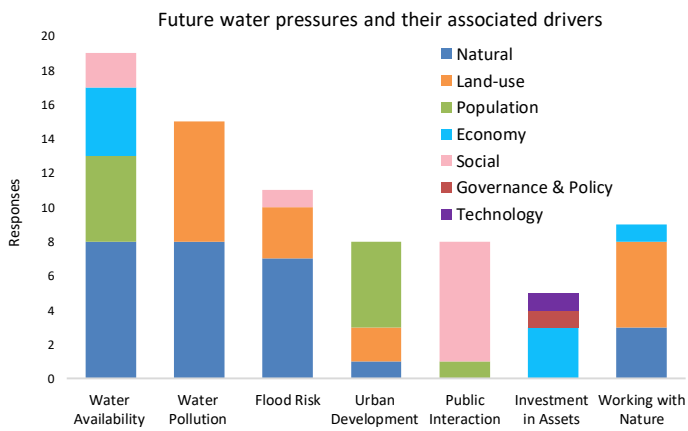

Figure 1: Future water pressures and their associated drivers described by stakeholders

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