ROOTING OUT RESILIENCE

Stream

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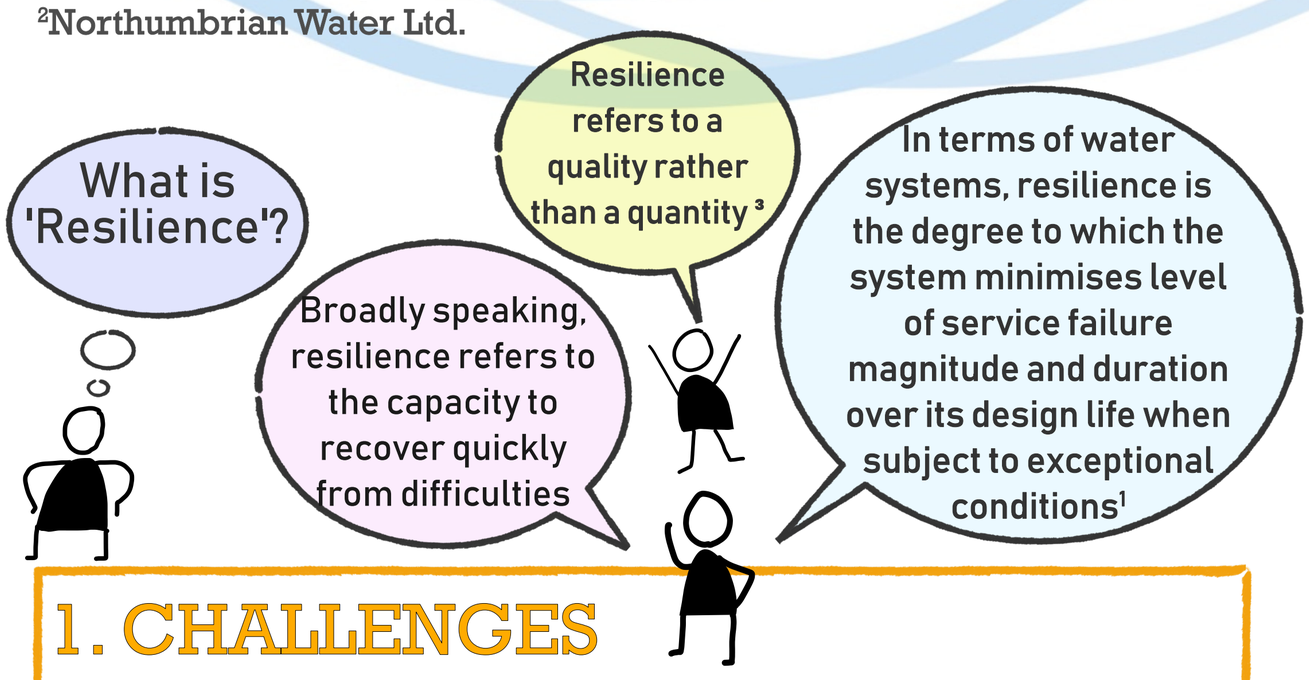
The Industrial Doctorate Centre for the Water Sector



1. CHALLENGES

Background

Global challenges, such as climate change and urban densification, continue to pose increasing and significant threats to the UK water industry.

Need for Change

Ever increasing challenges and costs that need to be addressed within a constrained regulatory and political framework have resulted in a wide acknowledgement that a response to these issues and threats requires a significant shift in paradigm .

Policy and Regulation

Changes to the Water Act 2014 resulted in the requirement for companies to be 'actively seeking resilience' becoming statutory, with Ofwat (sector regulator) being awarded the primary duty to enforce this.

Properties and Performance

Traditional resilience efforts have focussed on system properties, e.g. diversity of source and connectivity, however their presence alone does not guarantee required levels of system performance.

Systems based Approach

Although the UK water industry has traditionally focussed its efforts on asset based risk management, and individual technical properties, a more holistic systems based approach is required if systems are to maintain required performance during periods of disturbance.

2. PROJECT AIM

To develop a tool that can be used to assess the resilience of socio-technical systems.

3. METHODOLOGY

Development of tool

The tool will be developed in VBA combining the Safe & SuRe framework[2] and Resilience Analysis Grid[3].

User group identification

User groups will be identified from within Northumbrian Water.

Workshops

Workshops will be held to introduce the framework to users and how to use/ apply the tool.

Interviews and focus groups

Interviews and focus groups will be held with users to discuss the tool and their experience etc.

Synthesis of user results

Results will be analysed and used to inform further development and implementation of the framework tool.

5. EXPECTED OUTCOME

Development of an operational method that can be implemented to asses levels of resilience across Northumbrian Water.

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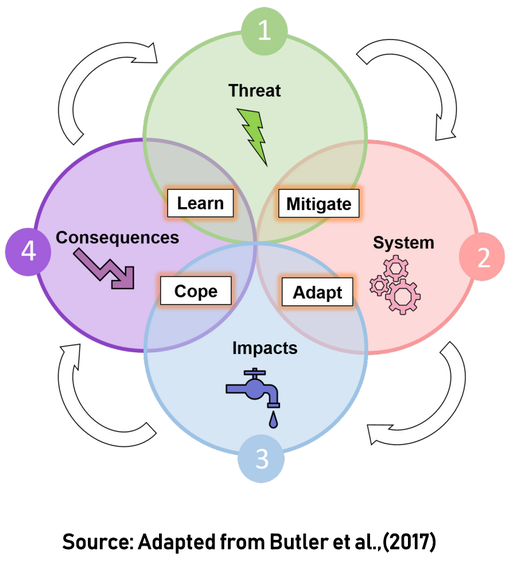
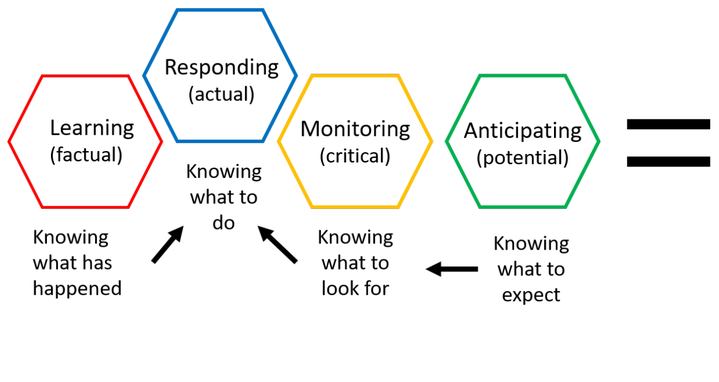
4. RESILIENCE TOOL

Safe & SuRe Intervention Framework

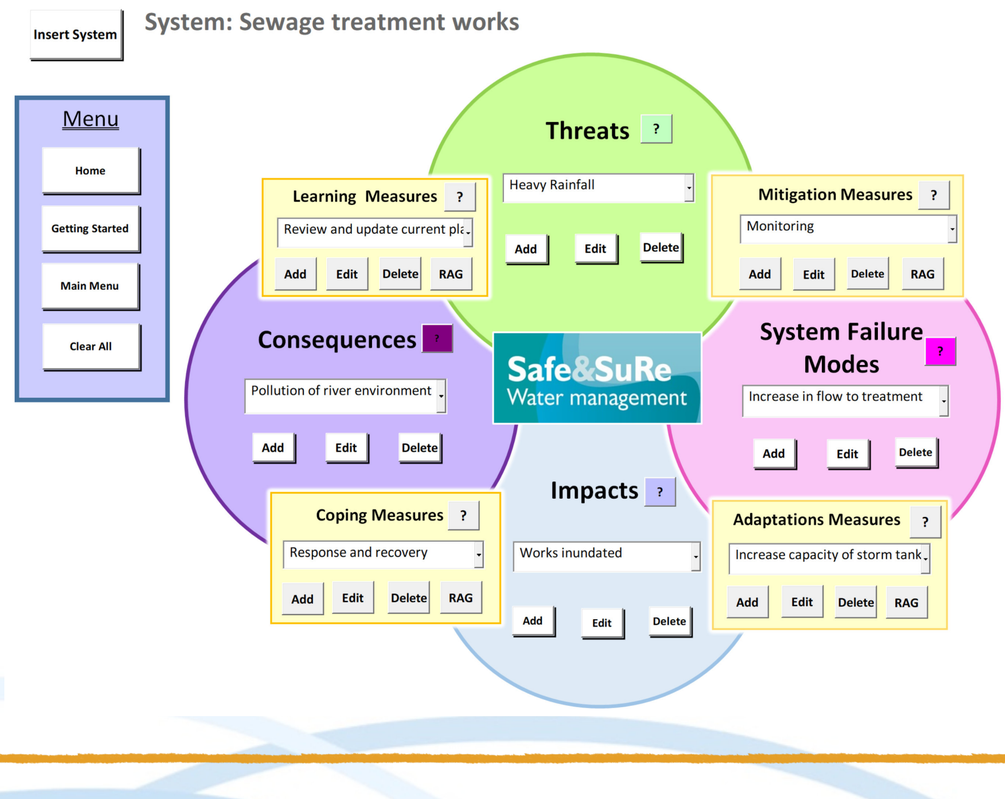


Source: Adapted from Butler et al.,(2017)

Resilience Analysis Grid (RAG)



Source: Adapted from Hollnagel, (2008)



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Northumbrian Water living water