

THE SCIENCE THAT STAKEHOLDERS WANT: INSIGHTS FROM SCOTTISH RIVER BASIN MANAGEMENT PLANNING

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INTRODUCTION: River Basin Management Planning involves negotiated relationships between holders of different knowledge. There are multiple and contested understandings of diffuse pollution from agriculture – these differences will be amplified by climate change.

- What causes the problem?
- What can fix the problem?
- How long will it take?
- Where should we focus our efforts?

What are Stakeholders saying?
(regulators; advisors; industry; NGOs;
Statutory Agencies)

- Is there *really* a problem here?
- Why is this a problem (for us)?
- Isn't this natural?
- What should be the objectives?

- What are the most appropriate programme of measures for multiple pressures?
- What are their interactions?
- What are the (un)intended consequences – spatially, socially, ecologically?



- Who is responsible?
- Who is going to pay to fix it?
- How are the costs and benefits distributed?

- Analysis:**
'Missing Science': Existing Conditions
- Classification and status boundaries still being finalised
 - Single point, single issue data
 - Systematic not systemic methodology
 - Separation of regulatory and non-regulatory measures
 - Focus on bio-physical data
 - Lack of tools to understand institutional design and human behaviour

- Analysis:**
Climate change increases challenge for scientists
- Adaptation: Increased uncertainty around what will happen; what measures will work; who will be impacted
 - Mitigation: Increased attention to carbon cost of measures and intergenerational equity

- Discussion:**
- Knowledge is a resource and is used strategically in these processes
 - Relatively little 'science' discussed – debate data but little learning about system processes
 - Difficulties integrating local knowledge claims with formal WFD compliant reporting
 - Different visions of resource use and rural livelihoods at heart of debates
 - Start with a focus on human- environment interactions
 - Support with applications of integrated bio-physical science

CONCLUSIONS: Stakeholders must understand system processes (integration of issues, space and time); Processes should engage with (a) multiple understandings; (b) socio-economic conflicts; (c) uncertainty and (d) adaptive management; Cultural and organisational change by **all** will be required.