



# **‘Sustainable’ upland estates in Scotland**

## **Using Delphi to operationalise sustainability within an collaborative learning environment**

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# Sustainable Estates for the 21<sup>st</sup> century

- Brief introduction
- Research questions
- Operationalising sustainability: a collaborative learning approach
- Using Delphi to implement the approach
- Results of the first two survey rounds: emerging themes
- Next steps





## A brief introduction

- 4 PhDs at the Centre for Mountain Studies in Perth
- Landownership in Scotland: history
- Integrated study of upland estate management
- Private, NGO and community ownership
- Case study approach
- Working with an Advisory Board





# Research questions

1. How can sustainability be 'operationalised' in the context of upland estate management?
2. What are the most suitable assessment criteria for measuring sustainability progress at the estate scale?
3. To what extent is the management of upland estates owned by non-governmental organisations sustainable?





# Research questions

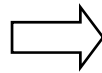
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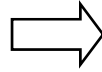
# Operationalising sustainability: a collaborative learning approach I

**Complexity of land use governance**



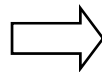
Co-management increasingly combined with learning-based approaches (Berkes 2009)

**Contextual and local nature of knowledge**



Process-oriented co-production of knowledge and collaboration grounded in experience (Bruckmeier & Tovey 2008)

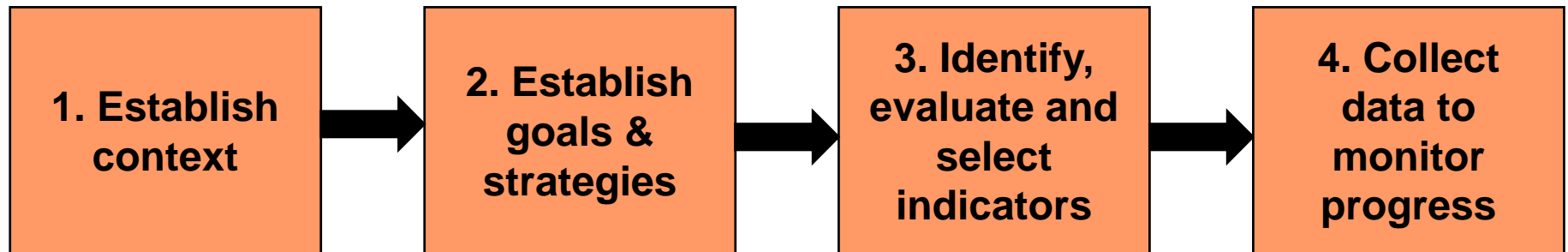
**Importance of reflectivity and iteration**



Continuous reflection on actions and ideas with new information at each iteration (Keen et al 2005)

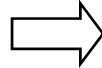
# Operationalising sustainability: a collaborative learning approach II

*Reed et al (2006): Adaptive learning approach to sustainability indicator development*



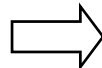
# Using Delphi to implement the approach

**Complexity of land use governance**



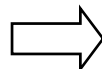
- An iterative and deliberative process that explores complex issues to generate new knowledge and shared learning

**Contextual and local nature of knowledge**



- Working with diverse knowledges: academics, practitioners and policy makers

**Importance of reflectivity and iteration**



- Using feedback and response adjustment through open discourse over a series of rounds





# Round 1: Establishing a context

- Panel overview
- Establishing personal rapport
- Exploring sustainability perceptions in the context of their knowledge
- Suggesting goals and management strategies
- Exploring constraints



**1. Establish  
context**

# Round 1: Results

## *Perceptions*

Problems with definitions and need for more understanding

Moving away from the status quo: focus on innovation

Balanced approach or environmental primacy?

## *Constraints*

Complex estate economics: most run at a loss

Sustainability hindered by cultural issues and mindsets

No incentive for ecosystem service management



## Round 2: Sustainability goals and strategies

- Comprehensive feedback document with interspersed questions
- Refining and clarifying ideas, exploring consensus and disagreement
- Developing a coherent set of strategies
- Emergence of themes



## Round 2: Results

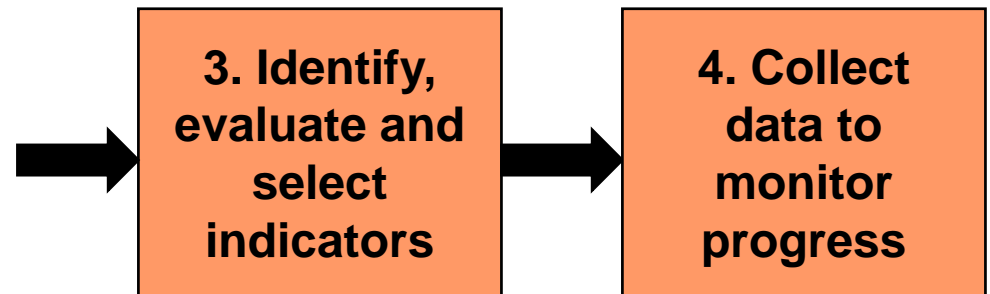
Sustainability theme	Example strategy
Resilient rural businesses that can withstand future shocks	Diverse income streams where possible
An ecosystem services approach	Conserve and enhance valuable habitats
Sustain upland communities	Facilitate localisation and self-sufficiency
Improved governance and knowledge sharing	Enter into partnerships where appropriate





## Next steps

- Round 3: further feedback and questions
- Translation of themes and strategies into assessment criteria
- Rounds 4-5: discussion of criteria
- Implement criteria on 10 upland, NGO-owned estates to measure sustainability progress





## Key messages

- Delphi can provide a valuable method for generating knowledge and sustainability strategies in a collaborative learning environment
- Collaborative exploration of sustainability perceptions and management strategies establishes a good context for the development of assessment criteria
- Researcher can play an active role in facilitating transdisciplinary research when engaging user groups in solving complex problems



# Thank you

**Glass, J.H., Scott, A.J. and Price, M.F., 2009. 'Sustainable' upland estates in Scotland: using Delphi to operationalise sustainability within a collaborative learning environment. Paper presented to the 15th International Symposium on Society and Resource Management, Vienna, 5-8 July 2009.**

## References:

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- Bruckmeier, K. and Tovey, H., 2008. Knowledge in Sustainable Rural Development: From Forms of Knowledge to Knowledge Processes. *Sociologia Ruralis*, 48(3), 313-329.
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- Reed, M.S., Fraser, E.D.G. and Dougill, A.J., 2006. An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecological Economics*, 59(4), 406-418.



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