climateXchange

Scotland's centre of expertise connecting climate change research and policy

Encouraging collaboration across policy domains

Gerard Couper, Anna Bullen and Isabel Bottoms
CAG Consultants, October 2019

Executive summary

Aims

Community resilience and climate policy has the potential to be complimentary and mutually beneficial. However, there has been limited attention from both research and practice on how to capitalise on the opportunities such synergies provide for achieving more effective outcomes, and on how they can be maximised through policy development and implementation processes.

This research reviews a wide range of tools and techniques for joined-up working in policy development and implementation; potential benefits, governance and decision-making processes, suitability at different stages in the policy process, and learning for developing collaborative approaches further within the Scottish Government.

Findings

We identified a spectrum of approaches and methods for joined-up working, based on the closeness of working together; from *co-operation* (shared information and mutual support) to *co-ordination* (common tasks with common goals) and *collaboration* (integrated strategies and shared purpose).

The majority of the literature reviewed describes traditional ways and structures of working together. We found that many of these references were vague about the level of joined-up working, and did not give details of the specific approaches used. However, we were able to identify nine methods or approaches to joined-up working that provide useful guidance.

These methods demonstrate potentially useful ways of collaborating across sectors to develop integrated solutions to complex problems. However, they are not a quick fix. At its root, collaboration requires the appropriate personal skills to engage and establish effective working relationships with individuals from other organisations. Building trust is particularly important, and this is why many of the methods we identified include creating a 'safe space' for participants. The review did not identify which approaches or methods are the most appropriate for the Scottish Government as that depends on the circumstances and resources available. There is also a significant gap in evaluation of the identified methods in terms of the quality of the collaborative process.

Nevertheless, the review identified five critical factors in creating a culture for collaboration:

1) An active commitment to collaboration
2) Actively shaped collaboration spaces
3) Support for creativity and innovation
4) Creating an atmosphere of continuous learning
5) Knowing who to collaborate with

Recommendations

When, why and how to collaborate depends on the issue and situation at hand. We recommend the Scottish Government focusses on creating a structure and a culture that supports and rewards collaborations, and learns from effective collaborations across sectors and issues.

This involves identifying or developing structures and practices that actively enable and reward effective collaborations, and learns and shares the lessons learnt from each collaborative effort. These structures and practices will need to span funding; physical structure, governance and organisational lines; reward mechanisms and performance monitoring; communications and data-sharing; training in facilitation and/or access to professional facilitation; and support materials like guides and templates.

Contents

1. The need to encourage joined-up working

The Scottish Government's National Performance Framework (NFP) sets out a framework around 'national outcomes'. These outcomes describe the kind of Scotland the Government aims to create, and are aligned with the United Nations Sustainable Development Goals. By their nature these outcomes relate to activities across policy sectors, thus to bring about these outcomes there is a need to embed a 'systems approach' across and within different policy processes to facilitate more joined-up policy development and implementation.

Improving resilience across the system underlies much of the NPF. This is particularly evident in terms of both resilience and climate change policies. Building community resilience to emergencies is an explicit theme within the Scottish Government's Resilience Division. It is also a key theme in climate change policy, which aims to manage the impacts of a changing climate and reduce carbon emissions. Climate change and resilience have the potential to be complimentary and should be considered together - no one programme, agency or sector can deliver either in isolation.

This report takes as its starting point the potential for resilience and climate policy to be complimentary and mutually beneficial. Case studies have highlighted the co-benefits from linking climate adaptation in housing and planning policy[1]. However, these co-benefits are not always 'by-design'. There has been limited attention from both research and practice on how to capitalise on the opportunities such synergies provide for achieving more effective outcomes, and on how they can be maximised through policy development and implementation processes.

2. Review of methods and approaches to joined-up working

2.1. What is joined-up working?

Joined-up working implies an effective level of working between two or more entities, centred around an issue, or issues, of common interest to the collaborators. This could be between teams, departments and/or policy sectors in an organisation such as the Scottish Government, or across organisations (for example, public bodies) or between public bodies and NGOs. It could also be vertically between organisations and community-based groups/third sector organisations.

In our research we identified a spectrum of joined-up working, based on the closeness of working together. It starts with co-operation (shared information and mutual support) and moves through co-ordination (common tasks with common goals) and collaboration (integrated strategies and shared purpose. More detail is given in Appendix 1.

This research focuses on collaboration, as this describes a high level of joined-up working which is needed to respond to the issues discussed above. In this research we have defined collaboration as:

> *a complex, dynamic and multilevel process for multiple actors to act on an issue they cannot affect alone.*

---

[1] https://www.climatexchange.org.uk/research/projects/delivering-adaptation-in-housing-policy/

2.2.   Research task

The research considered a wide range of tools and techniques for joined-up working in policy development and implementation. It identified the most useful methods, approaches and examples which:

- Support joined-up working and collaboration across sectors.
- Develop integrated responses to complex issues.

It also considered:

- The potential benefits different approaches for cross-sectoral working might provide;
- What governance structures and decision-making processes can support more collaborative working;
- Critical gaps in current knowledge about working in more joined-up ways.

2.3.   Overview of identified approaches

We reviewed a large number of references to joined-up working in order to identify helpful methods or approaches using the criteria outlined in Appendix 4. We found that many of these references were vague about the level of joined-up working, and did not give details of the specific approaches used. However, we were able to identify nine methods or approaches to joined-up working that provide useful guidance. In addition we reviewed other research on joined-up working which provided relevant learning. The nine methods identified include:

- three approaches or methods which can be used across the policy development and implementation cycle – Robust Decision Making, Social Labs and Theory U (summarised in the table below); and
- six other approaches or methods which are relevant to specific stages of the policy development cycle.

The table below shows these nine methods and approaches, and outlines their benefits for joined-up working. More details, including references, can be found in Appendix 2.

Table 1: Methods and approaches identified in the research

Method or approach	Summary	Relevant to what stages of the policy cycle?	How does it help support working across sectors?	How does it develop an integrated response to complex issues?
Useful in all stages of policy cycle				
Robust Decision Making (RDM)	A set of concepts, processes and tools for use in decision-making. Modelling and data are used to test options against a range of scenarios and evaluate trade-offs between actions.	All	RDM is underpinned by stakeholder interaction in the development of future scenarios. It encourages participants to be explicit about their goals and consider the most important trade-offs.	RDM provides a framework for decision making in systems where decision-making is challenging because they are characterised by 'deep uncertainty'. It is an adaptative process in that it helps identify both near-term decisions and guidance for how these responses should change or be augmented as the future unfolds.
Social Labs	A collaborative 'space' in which diverse stakeholders meet on a regular basis and, through a process of experimentation, develop systemic responses to a particular problem.	All	Stakeholders from different sectors work together in a context clearly defined as separate from participants' everyday organisational structures. Social Labs run over the course of a programme of implementation, learning and reforming together. Thus it builds the foundations for decisions being implemented collaboratively rather than forced through unilaterally.	The participants in a Social Lab work together to develop ideas, and test and implement solutions to complex challenges. Failure is accepted as an essential part of finding out what works. This is different from the conventional approach to strategic planning which creates a structured and unified strategy, and expects implementation by participants in a linear/non-experimental way.

Method or approach	Summary	Relevant to what stages of the policy cycle?	How does it help support working across sectors?	How does it develop an integrated response to complex issues?
Theory U	Theory U takes a group of stakeholders through a structured process to generate ideas to address a problem. Methods used include case clinics, dialogue interviews and prototyping (working with stakeholders on suggested solutions).	All	A non-hierarchical approach, which encourages participation from multi-stakeholder groups.	This approach supports creativity and innovation by developing leadership capacities in individuals as they go through the different steps of the process. It trains participants to listen to others and to access fresh and creative understandings within themselves.
Useful at specific stages of policy cycle				
Co-production	A general name for an approach in which stakeholders and service users are involved in policy development and making decisions on planning and designing services.	Decision making

Policy development | Involving cross-sectoral stakeholders in informing policy development and decision making is the essence of this approach. | By drawing on the understanding of a range of stakeholders, policies and decisions are better informed and take account of different perspectives. They are more likely to be implemented because of a stronger sense of ownership from the participants and improved social capital. |

Method or approach	Summary	Relevant to what stages of the policy cycle?	How does it help support working across sectors?	How does it develop an integrated response to complex issues?
Collaborative Action Research	Academic researchers support groups of practitioners to think about and work on an issue of common concern to them (conducting research). It uses an action research cycle (plan, act, observe, reflect).	Data collection Policy development	It creates a space for innovation and collaboration for practitioners of varying seniority, experiences and knowledge. It uses local staff knowledge, diverse sources of evidence, pooling resources and budgets.	It can deliver more than other research approaches, as it goes beyond 'what works' into how and why reforms work. Participants are facilitated to adopt an inquiring stance and use critical reflection skills.
Collaborative Sense Making	A practical method for the collaborative review of qualitative research data. It uses a workshop format to get structured feedback on data.	Data collection	The workshop format allows for different sectors to work together.	It helps reduce bias in analysing qualitative data. It is a fast and productive way to understand whether everyone sees the same issues from the evidence, gather different perspectives on the data and check that your analysis of the problem is thorough.
Participatory Modelling	Developing and using computer models to develop solutions to complex problems.	Policy development	Involves stakeholders working in close collaboration with a modelling team throughout the modelling process from identifying the problem to building, running and analysing the data. Can be	The participation of stakeholders helps reveal underlying perceptions and assumptions which carry through to the model and the choices inputted. By engaging them throughout the process, participants are encouraged to consider

Method or approach	Summary	Relevant to what stages of the policy cycle?	How does it help support working across sectors?	How does it develop an integrated response to complex issues?
			used in a wider collaboration process such as RDM.	multiple different pathways which they were previously unwilling to consider.
Participatory Scenario Planning	A strategic exercise to understand what might happen in the future if different factors are played out.	Policy development	Encourages participation by multi-stakeholder groups and draws out the policy drivers for each group. It can be used in a wider collaboration process.	A low pressure / non-political exercise about the future – not about the past or the present – meaning that no decisions have to be made during the process.
Participatory Systems Mapping	A method for developing, during the course of a workshop, a map of how different aspects of a system influence each other.	Policy and coalition development	The mapping of the system provides a detailed framework to support analysis on who needs to be engaged in policy development and implementation.	It identifies the key factors which affect an issue and the connections between these factors. This helps tease out what changes are needed and what policy levers are available.

2.4.　　Challenges in using these approaches

There are some significant challenges to adopting these methods. Key issues we identified in the research are:

- Substantial financial resources and time commitments are required for most of the methods.

- Most require a dedicated facilitator to manage and guide the process.

- To be effective, the organisations and individuals using them must be committed to the process (by being fully involved and by appropriately integrating it into wider organisational processes).

- Resource materials for many of the methods are difficult to understand and use a lot of jargon.

- While there is significant research on the value of collaboration, there is little evaluation to demonstrate the effectiveness of individual approaches.

2.5.　　Governance and decision making

*"Governance can be described as the processes, structures and organisational traditions that determine how power is exercised, how stakeholders have their say, how decisions are taken and how decision-makers are held to account." (*Gill 2002)

Governance and decision making are important to consider when examining what models can best support collaborative working. As joined-up working becomes more integrated, there is a need for a clear definition of roles and responsibilities in the joined-up working process. There is also a need for a clearly defined path for decision making**.** And, crucially, there is a need to give thought to how this integrates with the organisational cultures of the stakeholders involved in joined-up working.

In the methods and approaches listed above, we found some different approaches to governance and decision making.

- Comprehensive approaches to collaboration across the policy development and implementation cycle which demonstrate the value of a formal governance structure and agreement on decision making processes (Rapid Decision Making as used by Water Resources East, see Appendix 2).

- Approaches across the policy development cycle which emphasise the value of non-hierarchical and collaborative decision making (Social Labs, Theory U and Co-production). Governance structures may still be required, for example Social Labs as they develop will consist of a lab team, a secretariat and prototyping teams as well as possibly legally constituted boards, advisory groups or informal groups of champions.

- Those at different stages of the policy development cycle which focus on making traditionally closed processes more participatory (e.g. Participatory Modelling, Collaborative Action Research and Collaborative Sense Making). These usually happen

within workshop settings, in which there is agreement on roles and how decisions are made.

- In addition, the research identified an example of collaboration which has some useful points on governance – the North East Wales Economic Ambition Board, see Appendix 2. The evaluation of the North East Wales Economic Ambition Board draws out the benefits of formal governance. Two key elements of the process were a clear governance structure and defined work streams with associated roles and responsibilities. Key roles were salaried and the project manager, who was allocated nearly a quarter of the budget, was identified as being a particularly important role in coordinating the process.

From the evidence available, it is not possible to make a judgement on which approach reviewed is more helpful to collaboration. However, a number of learning points can be drawn out:

- The Social Labs Fieldbook cautions against setting up legally constituted bodies too early in the process, as it "*risks the lab becoming too top heavy and bureaucratic when in fact these structures are not needed.*" (Hassan 2015 p25)

- There are many acknowledged benefits of a co-production process, which involves stakeholders and service users in making decisions in planning and designing services. These include better informed decisions, more integrated solutions and a stronger commitment to action. This is noted for example in research on rural land use and land management in Scotland (Pound et al 2016).

- Water Resources East (in their use of Rapid Decision Making) stresses the value of a collaborative governance model; *"In looking to create a more sustainable governance model for how water resources are managed, Water Resources East (WRE) works across sectors and collaboratively with all interested parties – those who use, have an impact on, and are affected by future water resource change."* (Water Resources East 2017 p8) They have recently been established as an independent, not-for-profit company.

More details of an approach to governance in the Rapid Decision Making method as used by Water Resources East is shown in the box below.

Table 2: Water Resources East governance example

Stakeholders work in various groups, structured according to the requirements of the project and stage of work. While governance models are open to change and flexibility as the project develops, there are currently four groups central to the project:

Leadership Group: This group includes representatives from a range of industries across water, the environment, drainage, agriculture, irrigation, retail, food production and energy, as well as regulatory bodies. The group sets the terms of reference and is responsible for overall governance. It considers and agrees responses to the recommendations brought by Water Resources East (WRE) sub-groups. The Leadership Group are the main external

spokespeople for the WRE project and have an important role to play in helping to influence policy changes and conducting high-level stakeholder engagement.

Delivery Group: The Delivery Group is the co-ordinating working body of WRE. It brings together all the work streams to support their delivery and co-ordinate communication and policy recommendations. The WRE project has a broad, complex scope and involves multiple stakeholders across diverse sectors.

Technical Steering Group: This group includes technical representatives from all the water companies in the region, agriculture, the environment, energy, and regulatory bodies.

Communications and Engagement Group: This group develops WRE visibility as a project, ensuring strong relationships are maintained and new ones are cultivated. As a project which supports local collaborative actions by a multitude of actors, the Communications and Engagement Group helps to set the precedent that WRE is an enabler of action by others and a supportive entity, led and driven by local and regional partners.

Task and Finish Group: WRE has complex, long-term objectives and requires activities across a large number of diverse partners at all levels. In addition to four other groups, there are partnership groups looking at modelling new ways of working, exploring policy recommendations and piloting integrated approaches at a catchment level.

In our research we identified the following specific challenges for developing governance in collaboration:

Transparency: Using an inclusive process for selecting stakeholder representatives, technical experts, and the facilitator can be an early opportunity to demonstrate transparency and accountability to both the stakeholders and the wider public. This will also assist with building trust (Cohen 2013).

Accountability: Accountability is a particularly complex issue for collaborations because it can be unclear to whom the collaborative is accountable and for what (Bryson et al 2015). However, this is addressed by the development of formal governance structures.

3. Designing-in collaboration

3.1. Changing the way we work

The approaches described above are very different to the traditional top-down and silo-based governance structures and hierarchical decision-making processes which mainly exist in public sector organisations. Traditionally, organisations are structured by subject matter, function and aims. Collaborative working requires that we broaden our aims and work together across department and sector and, in so doing, explore and utilise the connections between subject matter and function. Ultimately, it requires systemic and cultural change.

Whilst the methods and approaches are useful in terms of demonstrating how collaboration is used by different entities, they do not offer a quick fix. In fact, there are significant similarities in their approach which point to the underlying changes which are needed to design-in collaboration into decision-making processes.

Drawing on the lessons from these examples and our wider research, we have identified the following key points which are necessary steps to create a culture of collaboration.

3.2.   Establishing and maintaining effective relationships

At its root, collaboration requires the appropriate personal skills to engage and establish effective working relationships with individuals from other organisations. The depth and quality of the relationships needed varies according to the focus of the engagement.

Building trust is particularly important, and this is why many of the methods listed above create a 'safe space' for participants (see below).

Where collaboration is focused on controversial issues, generating early opportunities for parties to gain trust in each other and the process can make subsequent stages of collaboration more fruitful. Cross-interest work groups tasked with collaborating on less controversial (but still important) items to get things moving can be helpful in establishing effective working relationships before tackling the more contentious issues (Cohen 2013).

Conversely, 'Stretch collaboration' provides a different perspective. It notes that often parties come to the process on the back of conflict and mistrust. It suggests that it is possible to agree on the approach without trusting the collaborators you are acting with (Kahane 2017).

3.3.   An active commitment to collaboration

Building collaboration is an active process. As noted above, the methods identified in this research all require significant time commitments. Key points illustrated by these methods and described in wider literature (e.g. Cohen 2013) are:

- Effective engagement, whereby stakeholders understand the various perspectives and reach agreement, takes time.

- Time saved by avoiding resolution of the most contentious issues, or excluding some interests that are harder to reach or work with, is likely to be lost if such decisions result in ineffective policy, substantial stakeholder opposition or even legal action.

- Processes that are designed to simply gather stakeholder input (more towards cooperation than collaboration) almost always take less time than processes seeking consensus among stakeholders.

- An agreement-seeking process substantially increases the likelihood that stakeholders will understand the reasoning behind points of compromise and will support a final product even if it does not represent their ideal outcome.

- Increasing time investment in a collaborative process can sometimes achieve secondary goals, such as settling longstanding technical debates, improving and aligning related policies or regulations and improving relationships.

To be effective many of the methods also require other commitments such as:

- **A skilled process manager** (e.g. RDM, Social Labs) "*Often collaboration involves multiple related processes, technical complexities, and several levels of stakeholder engagement, which can result in a complex and dynamic collaborative process. Allocating resources for a skilled process manager to devote substantial time and effort to coordinate this can be integral to success*". (Carey et al 2015)

- **An independent facilitator** (a facilitator would be required for all the other methods) "*Independent facilitation can prove invaluable to the process, both in bringing an independent perspective with no vested interest, thereby gaining the trust of participants; and in ensuring effective coordination of the process*". (Bynner et al 2018)

3.4.   An actively shaped collaborative space

Many of the examples stress the benefits of developing a 'safe space' outside the normal working environment. Social Labs are a good example of this.

The collaborative space is not just the room that participants meet in, it is also the mental and emotional space for collaborating within. As such, it requires actively shaping to meet the needs of the task at hand, and the people involved. This is where the choice of engagement approach or method is crucial. Rather than just organising a meeting, sitting around a table, it is important to consider how different approaches would be most useful for encouraging collaboration.

Key aspects are fostering creativity and innovation and creating an atmosphere of continuous learning.

3.4.1. Creativity and innovation arises through including the personal

The Social Labs and Theory U approaches are designed to support innovation and creativity. They do this by using a structured process which supports the development of personal capacities to allow creativity to arise. These include capacities such as how to listen to others, and how to access fresh and creative understandings within oneself. This inclusion of the personal is unfamiliar in a traditional policy making setting – for example Theory U suggests that participants need "*to listen with your mind and heart wide open*". This approach may be what is needed to address complex issues such as climate change.

This understanding is also utilised by other engagement approaches. For example, ICA UK's Focused Conversation Method (©ICA:UK 2004) starts with the observation that it is not useful to jump to solutions when discussing an issue. The method is a facilitated process that takes participants through different stages:

- Objective – getting the facts, sensory impressions
- Reflective – personal reactions, associations, emotions

- Interpretive – meaning, values, significance

- Decisional – resolution, action, future direction

3.4.2. Creating an atmosphere of continuous learning

Continuous learning is also integral to Social Labs and Theory U. In a safe collaboration space, failure is seen as part of the process. In a more conventional framing, continuous learning is also key to most of the methods discussed above, for example:

- the action research cycle (plan, act, observe, reflect) of Collaborative Action Research;

- developing and refining scenarios in Participatory Modelling; and

- adaptative management approach of Robust Decision Making.

"Learning is a product of effective emergent planning… Learning is particularly important when goals and performance indicators either are not or cannot be known in advance." (Bryson et al 2015 p11).

Sometimes, the exercise of articulating the goals for a given process exposes that they need more clarification and may not even be consistent among those engaged in planning the process. Beginning the process by working to articulate common goals for the process, within and among the agency and stakeholder groups, whilst allowing some flexibility, will make selecting and designing a collaborative structure that is appropriate to the goal much easier.

Evaluating the process provides essential learning points and, if done properly throughout, enables the learning to be manifested during the ongoing process, rather than for the next project with the benefit of hindsight. Evaluating both successful and unsuccessful collaboration provides key lessons for future collaboration, and informs the current process (Marek et al 2014).

The physical space is also important. Rather than the traditional 'room with PowerPoints' approach, consider what is necessary to create a space that supports meaningful dialogue and allows constructive challenge to generate new understandings; see Appendix 5 for practical tips.
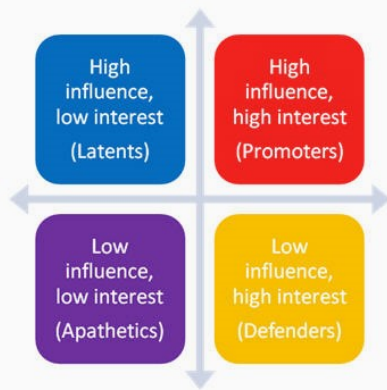
3.4.3. Who to collaborate with

The question of 'who' is important to ensuring effective collaboration. There are good examples of collaboration between public sector bodies, and longstanding collaborative partnerships in place. However, the reason that this research was commissioned is that there is an identified need for better collaboration between the range of organisations necessary to deliver climate change and resilience goals. This ranges from collaboration between departments in the same organisation, to collaboration between state and non-state actors (the third sector, including NGOs and community groups) and collaboration between national and local governments and local communities.

As a starting point you need to know who has skin in the game – who influences the issue and is affected by any interventions. This is usually called stakeholder mapping or a stakeholder audit. To be effective, stakeholder mapping should itself be a collaborative process, otherwise it is likely simply to identify the same old suspects. The process is likely to be iterative. It can be broken down into four phases (Morris et al 2012):

1. Identifying: listing relevant groups, organisations, and people (usually done as a brainstorming process, which means not screening out any suggests to start with).

2. Analysing: understanding stakeholder perspectives and relevance. There are different approaches to this with potential criteria including expertise, how affected they are by the issue, willingness to engage, the influence they have and the need to involve them.

3. Mapping: visualising relationships to objectives and other stakeholders. This can be done simply using a 2x2 quadrant as shown in the diagram (University of Kansas 2019) or using a systems mapping approach. The Participatory Systems Mapping Case Study describes a specific method of mapping the way different aspects of a system influence each other.

4. Prioritising: ranking stakeholder relevance and identifying issues.

A useful tool on stakeholder mapping can be found in

https://www.bsr.org/reports/BSR_Stakeholder_Engagement_Series.pdf. This provides detailed suggestions on how to undertake each stage.

4. Gaps in current knowledge about working in more joined-up ways

4.1. Defining collaboration

We found that collaboration is often used as a synonym for co-operation (sharing information) or co-ordination (sharing tasks). Collaboration, as we have discussed it in this report, refers to a closer working together with integrated strategies and a shared purpose. As discussed in the previous section, collaboration in this sense requires an active commitment, including the allocation of time resources and expertise. It also requires interpersonal skills that may need training and support to develop.

4.2. Evaluation

We found little evidence of evaluation of collaborative processes, and suspect that evaluation is not being incorporated as a key step in the process. In general, evaluations tend to focus on impact and outputs of policies and programmes not their development. Apart from the North Wales Economic Ambition Board and Collaborative Action Research, none of the other case studies appear to have been evaluated conventionally, so we do not have an independent assessment of their achievements.

It is recognised that resources are required to undertake evaluations, but there are simple tools available which enable evaluation to be easily incorporated in processes. See for example Evaluation Support Scotland.

The lack of evaluation of process is the most important gap in terms of assessing the approaches' effectiveness and suitability.

4.3. Details on collaborative methods

Furthermore, in our review of examples of collaboration, most of the examples concentrated on the outputs. Some included a broad description of the method, but few went into the level of detail that would have been beneficial to this study. Many of the examples we found described the outcomes without much detail of exactly how those outcomes were achieved.

5. Conclusions and recommendations

The methods and approaches identified in this research demonstrate potentially useful ways of collaborating across sectors to develop integrated solutions to complex problems.

However, they are not a quick fix. There are a number of challenges that must be addressed before the specific approaches can be considered. Drawing on the research review, we have pointed to the need to create a culture of collaboration based on effective working relationships. As we have outlined in the report this requires:

1. an active commitment to collaboration;
2. actively shaped collaboration spaces;
3. support for creativity and innovation;
4. creating an atmosphere of continuous learning; and
5. knowing who to collaborate with.

In the research we have not reviewed current collaborative activity by the Scottish Government. However, based on the review we recommend considering the following series of questions in order to create a structure and culture of collaboration:
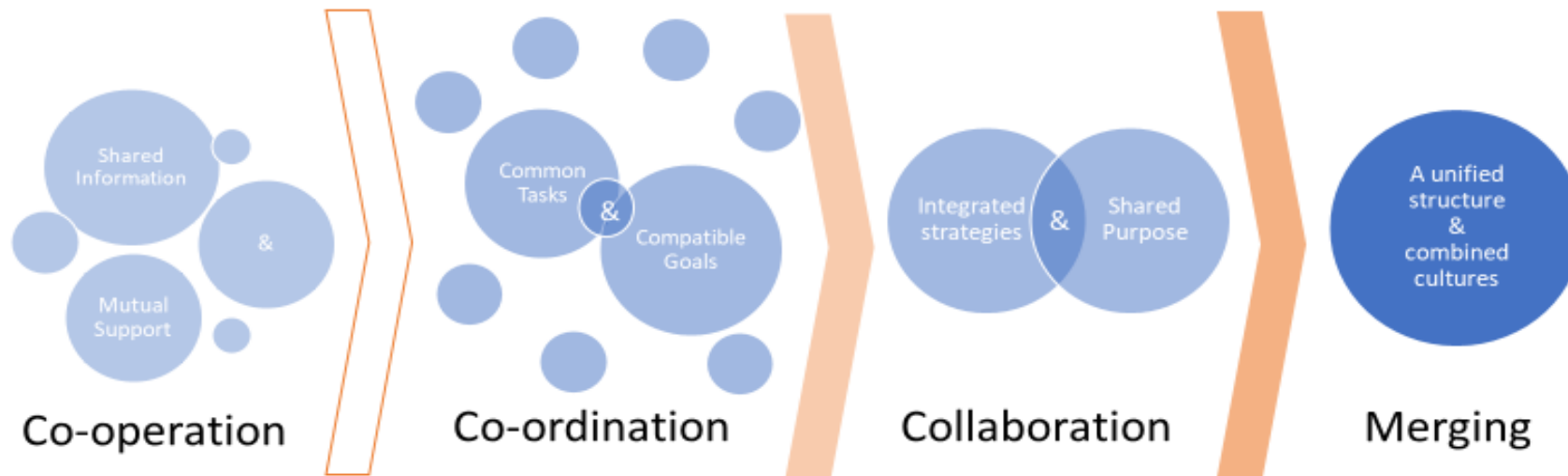
- How will collaboration help resolve the issue?

  o Why is it important that more than one division/team/organisation work on this?

- Who needs to be involved?

- Do any of the participants know of similar situations where collaborations have been used?

  o How can you learn lessons from those collaborations?

- What are the existing structures (geographical locations, decision making structures, organisational culture) and practices (policy development, data and information sharing, communication etc.) that impact on this collaboration?

  o How might these structures and practices act as barriers to collaboration?

  o How might the barriers be overcome to realise the opportunities offered by collaboration?

- How will the collaboration be **supported** within the Scottish Government policy development and implementation process?

  o What resources (financial, physical and training) are available to support collaboration?

  o How can organisers access facilitation training and/or professional facilitators, and support materials (e.g. guides and templates)?

  o What support mechanisms exist in the participating organisations?

- How will the collaboration be **rewarded** within the Scottish Government policy development and implementation process?

  o How is this reflected in e.g. performance monitoring mechanisms?

  o What reward mechanisms exist in the participating organisations?

- How will the collaboration be evaluated?

  o How and when will outcomes and resource use be measured?

  o How will the learning be shared with the participants?

  o How can learning be integrated into future practice?

Appendix 1 Spectrum of working together

Collaboration sits in a broad spectrum of joint working, as shown in the figure below.

Figure 2: The spectrum of working together (developed from Strategic Alliance Formal Assessment Rubic (SAFAR) (Gaida, 2004

The spectrum of working together....

Co-operation — Co-ordination — Collaboration — Merging

Appendix 2 Case studies

5.1.   Case study 1: Robust Decision-Making (RDM)

Summary

Robust Decision Making is a set of concepts, processes and tools for use in decision-making. They are typically applied in contexts where there is 'deep uncertainty', e.g. in relation to water resource planning, energy and climate change. RDM is underpinned by *"a decision support process called 'deliberation with analysis' that promotes learning and consensus-building among stakeholders."* (Lempert 2019)

The approach

What is unique about this approach

RDM provides a framework for decision making in systems where decision making is challenging because they are characterised by 'deep uncertainty'. *"Deep uncertainty is described as being where there is little agreement or consensus about the issues being examined; the things that might influence them or the value of alternative outcomes."* (Moncaster 2017)

It contrasts with traditional frameworks for complex decision-making which are typically expert-led and based on predictions of the future, which are seen to be prone to inaccuracy in a fast-changing and complex world.

Instead of seeking to identify 'optimal' strategies which deliver against a predicted scenario, RDM uses modelling and data to test options against a wide range of plausible scenarios. This then enables decision-makers to identify 'robust' strategies which deliver multiple objectives over multiple scenarios.

Instead of relying on expert analysis and predictions, RDM is underpinned by stakeholder interaction in the development of future scenarios, the development of potential strategies and the evaluation of trade-offs between different actions.

The essence of the approach

RDM follows a learning process called 'deliberation with analysis', *"in which parties to a decision deliberate on their objectives and options; analysts generate decision-relevant information using system models; and the parties to the decision revisit their objectives, options, and problem framing influenced by this quantitative information."* (Lempert 2019)

The RDM method was applied by Water Resources East, a multi-sector approach to long-term water resource planning in the Eastern region of England. Their 3-step approach to the use of RDM illustrates the essence of the method:

1. How might the current system perform in the future? A regional simulator was used to develop over 350 plausible future scenarios for climate, growth and behaviour and to assess how the key interests of each sector involved in the process would be impacted in these scenarios. The outcome of this first stage is a baseline vulnerability assessment, i.e. an assessment of what the future might look like without any investment to improve water resilience.

2. What interventions could we take to be more resilient in the future? A range of possible interventions were then incorporated into the simulator, such as new reservoirs, water transfers or increased demand management. Visualisation tools were used to explore the impacts on different sectors and discussions of trade-offs took place to find a small number of preferred strategies.

3. What is the long-term strategy? The preferred strategies were then stress tested in more detail under the future scenarios, to help identify which perform best across multiple sectors. These were then explored in stakeholder workshops, leading to the agreement of the overall strategy.

Pros and cons and benefits

Pros	It can help to underpin co-creation of long-term strategy across multiple sectors - encourages participants to be explicit about their goals and consider the most important trade-offs.
	It addresses the 'deep uncertainty' associated with climate change, such as the magnitude and speed of change, the implications for different geographies and the policies which should be implemented in response.
	Extensive use of technology enables the simulation of different scenarios and visualisation of the impacts of different strategies.
Cons	The process is time- and resource-intensive, particularly in relation to the computation requirements, although more streamlined approaches are being explored (Lempert 2019 p44).
Benefits to Scottish Government	RDM is a method which could underpin multi-sectoral decision making and long-term strategy development on topics where there is deep uncertainty, including climate change mitigation, water resource management and energy.

Links and contacts

Water Resources East [Guide](#) for innovative, multi-sector, regional resource planning (Water Resources East 2017)
[Article](#) on Robust Decision Making, giving a detailed description of the process, as part of a wider study. (Lempert, 2019)

5.2.   Case study 2: The Social Labs Approach

Summary

Social Labs address complex problems by bringing together a diverse group of stakeholders in an atmosphere of experimentation to develop systemic responses to a particular problem. The principles which define the Social Labs approach are outlined below.

The approach

What is unique about this approach?

Social Labs respond to the need for collaborative spaces which are separate from participants' everyday organisational structures. The 'space' refers to the physical/virtual space where participants are gathered, but also to the atmosphere and conditions in which they meet. For example, whether or not there is political support or funding for the process.

The participants in a Social Lab work together to develop ideas and test and implement solutions to the complex challenge. This focus on experimentation means the acceptance of failure as an essential part of finding out what works. This is markedly different from the conventional approach to strategic planning which creates a structured and unified strategy and expects implementation by participants in a linear/non-experimental way. As such, a Social Lab runs over the course of a programme of implementation, learning and reforming together. By

convening the decision makers in the system in a Lab setting, it builds the foundations for decisions being implemented collaboratively rather than forced through unilaterally.

The essence of the approach

The Lab is an approach which encompasses any number of methods and tools to create innovative solutions for that particular group of participants and the issue they are tackling.

"*What makes a Lab a Lab is:*

- *The focus on a specific challenge or domain;*

- *A stable space supportive of the practices required to address that challenge; and*

- *A disciplined practice of experimentation.*" (Hassan 2015)

The starting point for a Social Lab includes:

- Defining the resources needed;

- Identifying the challenge to be addressed;

- Getting the right people on board; and

- Deciding on the strategic direction (the best guess on what might address the challenge).

A Start-Up Lab will consist of key stakeholders, typically from civil society, government and business, relating to the challenge the Lab aims to address. They are supported by a Lab secretariat which provides a range of services, from facilitation to logistical support.

The stable space provided by the Lab provides a forum in which stakeholders regularly meet in order to create a prototype, test and implement potential solutions.

With a traditional planning process, resources are primarily invested in a group of experts (such as designers and planners) who are tasked with coming up with a solution which is then implemented. In contrast, with a prototyping process, a diverse group of stakeholders is supported in developing responses, which are then tested as early as possible. The Lab creates an inward facing space enabling experimentation and potential failure without publicity or shame.

Activities of Labs can include:

- Learning journeys: to understand different perspectives on the issue from within the system, go on a physical journey in a small group to have an immersive experience that relates to the issues being addressed by the Lab (e.g. go and spend a morning on a fishing boat to understand more about the fishing industry). Participants return to the Lab space and reflect openly in their groups and with other groups, on what they saw and felt (physically in their bodies and emotionally); and the interactions they had.

- Hosting representatives of the system(s) implicated by the issue the Lab is working on, for honest presentations/questions and discussions on their experiences (e.g. a shellfish seller, or a fisheries policy maker).

- Desk research, data collection and development of key statistics related to the issue(s), if required to move forward on finding solutions – but not necessarily needed at the outset. E.g. Lab participants find they can't decide whether to focus on the fisher people themselves to reduce by-catch waste, or to target further up the supply to chain; so a participant is tasked with finding out what data is available.

- 3D modelling of prototype solutions or approaches: this creates a physical object that stakeholders can react to, offer feedback on or take out into the wider world for whole communities of practice or local communities to respond to. (For computer modelling, see case study on participatory modelling)

- Prototyping: test a solution with those who will use, benefit or implement it. This will offer invaluable insight for further development and refining the solution. For example, the Finnish Government developed and tested a prototype of a 'basic income' welfare programme.

Pros and cons and benefits

Pros	Labs address complex issues more holistically than one department or person working alone.
Cons	This approach is resource and time intensive to setup and maintain over the length of period required to see changes in practice. The supportive materials are difficult to understand and contain a lot of jargon
Benefits to Scottish Government	This approach is very clear way of encouraging the participation of a diverse range of stakeholders. It also provides a long-term space for collaboration.

Links and contacts

The Social Labs Field book: a concise guide to creating a social lab platform

The Social Innovation Lab Guide: by Francis Westley for Rockefeller Foundation

Public and Social Innovation Labs: by Nesta

Other examples of Social Labs

e-Lab

Who:	An assembly of thought leaders and decision makers from across the U.S electricity sector, convened by the Rocky Mountain Institute, U.S.

What:	Considering the economic deployment of distributed resources in the U.S. electricity sector.

How:	Focussing on collaborative innovation to address critical institutional, regulatory, business, economic, and technical barriers.

Participatory City

Who:	The residents of Barking and Dagenham.

What:	A Living Lab in Barking and Dagenham, London, co-creating the first large scale, fully inclusive, practical participatory ecosystem.

How:	Builds on the 'hands on' projects that people have been creating over the last few years in their own neighbourhoods including sharing skills, spaces and resources, families working and playing more together, food growing and tree planting.

The North Sea Energy Lab

Who:	Initiated by Topsector Energy's Socially Responsible Innovation initiative, a public-private innovation program, and RVO, a Dutch government agency responsible for energy policy. The Lab is supported and facilitated by the consultancy Reos Partners.

What:	A multi-year Social Lab for shared learning and collaboration on innovative sustainable energy initiatives in the North Sea.

How: Six large Lab sessions brought together a diverse group of 180 key stakeholders working together in three innovation teams: Participation in Offshore Wind; the nexus of Fishing & Offshore Wind; and the nexus of Nature & Offshore Wind.

5.3.   Case study 3: Theory U

Summary

An approach designed to improve the decision-making processes of a group or organisation, using seven leadership practices.

The approach

What is unique about this approach?

Theory U works at the individual and group levels. Theory U develops leadership capacities in individuals, which enable deep listening, engagement and collective intelligence to emerge (Presencing Institute). It is unique in its emphasis on core personal skills to support collaborative working.

The essence of the approach

The approach describes one process, which forms the shape of a U, with five key moments that groups move through as they work together, as illustrated below.
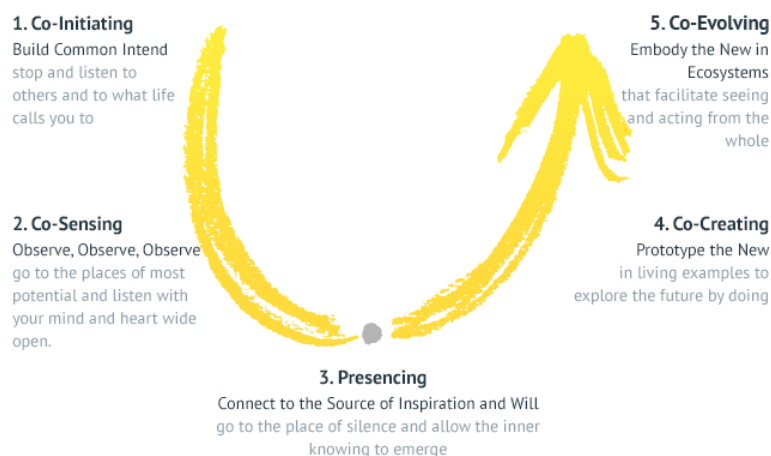

Image credit: The Presencing Institute website

The U describes and captures the essence of many groups' and individuals' creative processes: they generate ideas, trying to find a niche or address a problem. As they go deeper in refining their ideas and finding out what's already being done or is in development, there is a difficult moment at the bottom of the U, which some ideas fail to move past. To push through the bottom of the U requires the discipline of connecting to what's needed and experimenting with small scale prototypes. These provide a steep learning curve from which solutions are changed and refined.

Methods which bring out the individual leadership capacities above, and help groups move through the U together include:

- **A case clinic**. A group or three or four peers get together to hear and reflect on an immediate challenge experienced by the proponent of the case clinic. By following the five steps of the U process within the clinic, these peers help identify new ways of tackling the person's challenge. For example: a researcher has been having trouble getting replies to requests for insurance evidence from flooding victims in a village; she asks for a case clinic with three other group members, to reflect on what she's been doing, what's going wrong and how she might approach the issue differently.

- **Dialogue interviews**. This involves engaging interviewees in 'reflective' and 'generative' conversation, i.e. the interviewer is focused on developing a greater understanding of

the interviewee's ideas and perspectives. They can be used to prepare for projects, workshops, meetings, events where hearing and seeing diverse perspectives is helpful. As such, anyone who may be able to shed more light on an issue, a solution or an idea that is being focussed on, is a potential interviewee.

- **Sensing or learning journeys.** These understand different perspectives on the issue from within the system. For example, spending a morning on a fishing boat downstream from the flooding hotspot of a particular river.

- **Prototyping**. This involves engaging with potential stakeholders or beneficiaries to understand how the prototype makes them think about, feel and see the issue. The act of a potential solution interacting with a subset of its future users, beneficiaries or implementers will offer invaluable insight for further development and refining of the solution. As part of this, prototype solutions could be modelled in 3D. This would create a physical artefact for others to react to, offer feedback on, or to take out into the wider world without investing large amounts of money. For example, a 3D model of flooding prevention solutions in a river catchment area.

Example of the Theory U approach in practice- the Queen's Nurse Programme

Who: Staff from the Queen's Nursing Institute Scotland

What: Designing of the Queen's Nursing Institute Scotland Nurse Programme

How: The design process was heavily influenced by Theory U. The programme starts with a week's residential, where the space is thoughtfully created and managed ' by the facilitators to create a sense of safety. Participants are invited to embark on a creative and contemplative journey. Each day begins with a different form of mindfulness and moves into interactive sessions which explore aspects of person-centred culture. Each day includes time for personal reflection, walking and writing journals, and ends with storytelling from a range of inspiring guest speakers.

Pros and cons and benefits

Pros	A non-hierarchical approach, which encourages participation from multi-stakeholder groups.
	This approach supports creativity and innovation by developing leadership capacities in individuals as they go through the different steps of the process. It trains participants to listen to others, and to access fresh and creative understandings within themselves.
Cons	It can be a subtle process which requires buy-in and full engagement from participants because it requires participants to engage with themselves, not just a method or exercise external to them – it is personal as well as professional.
	The language used to describe the process can be off-putting and hard to understand.
Benefits to Scottish Government	The existing U.Lab Scotland is potentially a long-term mechanism for collaboration with a variety of actors.
	There are U.Lab 'hubs' all over the world, which form a community which can be engaged with and learnt from. There is also convening and methodological support for convening a Hub from MIT University.

Links and contacts

U.Lab – A self-paced, free, online course in Theory U

Library of [worksheets on each method](#) that supports putting Theory U into practice

5.4. Case study 4: Co-production

Summary

A general name for an approach in which stakeholders and service users are involved in making decisions on planning and designing services.

The approach

What is unique about this approach

Traditionally, policies and strategies have been developed by 'the experts' in silo, in a top-down approach, which often triggers negative reactions and blocks to progress. Co-production recognises that communities and stakeholders are an integral part of social-ecological systems, who hold valuable knowledge and resources, and have the right to be involved in changes that affect their lives, livelihoods and environments. It also recognises the value of cross-sector working in order to achieve the most efficient and effective outcomes.
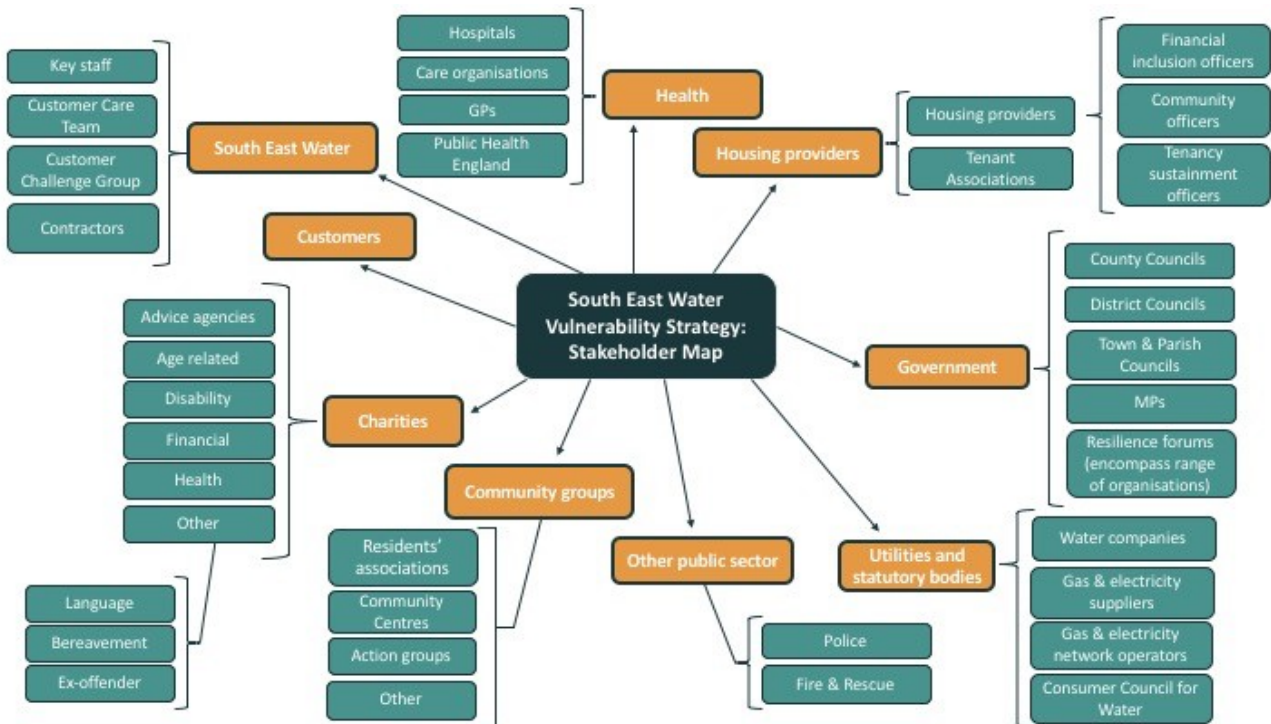
The essence of the approach

Co-production can be delivered with different levels of collaboration, from co-design, whereby stakeholders inform and influence the final product, to full collaboration, whereby stakeholders have shared control over activities and significant input into the final product. To give a sense of what it might look like in practice, we given an example of its use below.

An example of its use

CAG Consultants led a co-production process for South East Water to inform South East Water's Vulnerability Strategy, which forms part of their Business Plan. The co-production approach ensured that the actions listed in the Vulnerability Strategy were targeted, effective and realistic. By working across multiple sectors, this approach meant that the correct processes and relationships were in place to continuously review the strategy and ensure it remains fit for purpose into the future.

In general, a co-production methodology will incorporate a range of participatory methods designed to maximise input across agencies and from a range of stakeholders. In this case the following methods were used:

- **Stakeholder mapping** – to identify the relevant sectors and associated organisations that need to be engaged in the process (see map overleaf);
- **Data gathering** – to identify existing services offered, gaps in those services and potential solutions. This was achieved through focus groups, phone interviews and face-to-face interviews;
- **A series of multi-sector stakeholder workshops** – to explore ways in which agencies and South East Water could work collaboratively to design the strategy and improve the delivery of services;
- **A set of recommendations** informed by the above activities;
- **A second set of multi-sector stakeholder workshops** to test the recommendations and further explore opportunities for partnership working;
- **A follow-up focus group** with Customer Care Team staff to test the findings and finalise recommendations, ensuring they were both fit for use and deliverable;
- **Close working with key senior staff** and the Customer Challenge Group throughout the process.

South East Water Vulnerability Strategy: Stakeholder Map

Pros and cons and benefits

Pros	Because of the range of stakeholders included in the process, the final product is more likely to be effective and fit for use.
	Stakeholders relied on to assist in its implementation feel a sense of ownership and therefore willingness and responsibility to implement it.
Cons	It can be resource and time intensive to implement. In the example above, South East Water did not have time available to enable key stakeholders to directly contribute to the writing of the strategy.
Benefits to Scottish Government	While frequently used for engagement between public agencies and communities, it is equally relevant to engagement across sectors.

Links and contacts

For resources on co-production, see the Scottish Co-production website: http://www.coproductionscotland.org.uk. The site has a suite of resources on co-production: Co-production – how we make a difference together.

The research Engaging and empowering communities and stakeholders in rural land use and land management in Scotland (Pound et al, 2016) recommends that opportunities for co-production be maximised.

5.5.   Case study 5: Collaborative Action Research

Summary

Collaborative Action Research (CAR) is a core component of a model for improvement for Scotland's Public Services. It is an approach to doing social research which involves collaboration and action research.

The Approach

What is unique about this approach?

CAR is an approach in which academic researchers support group of practitioners to think about and work on an issue of common concern to them (conducting research), and to then take action as a result. It is different from the normal hierarchical, expert-led approach to research.

The essence of the approach

CAR offers a framework that can draw on a range of research methods. The underpinning CAR rationale is that practitioners have ownership of the research process. They conduct the study through a facilitated process, drawing on a range of evidence types and research methods and reporting their findings. In its most common form, a researcher works closely with the group acting as a facilitator. This approach was adopted in the What Works Scotland CAR Programme (see link at the end of this case study). CAR is an integral part of a broader three-step model of change which considers:

Community Development Worker (Housing Association 1)

Health Improvement Worker (NHS)

Analyst (Cultural Services)

Democratic Services worker (Council)

Community member/citizen

Researcher/ facilitator (WWS)

Community Development Worker (Housing Association 2)

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we then make that will result in improvement?

It involves practitioners/citizens following an action research cycle (plan, act, observe, reflect) on a topic of their concern. Participants adopt an inquiring stance and use critical reflection skills.

See image above for an example of a single Collaborative Action Research group (Bennet 2017).

Learning points

Research for What Works Scotland (Brunner et al 2018) identified the following learning points:

- Collaboration in research has implications for professionals with traditional policy and research roles. For example: longer lead-in time; building relationships; explaining collaborative processes; and positively conveying uncertain outcomes.

- All CAR groups included members with diverse prior involvement (or none) in undertaking research. Facilitation of groups was essential to sustaining inclusion.

- Cross CAR group exchange and learning was integral to the What Works Scotland CAR approach. The programme demonstrates the potential for wider collaboration, although this

requires future facilitation and resourcing. Examples from the What Works Scotland programme include:

- o Communities of Practice: building topic-focussed communities of practice across practitioners in Scotland;
- o Facilitative Leadership Training: building a wider network of practitioners skilled in facilitation and collaboration and the principles of dialogue and deliberation.

Pros and cons and benefits

Pros	This approach creates a space for innovation and collaboration across practitioners of varying seniority, experiences and knowledge
	It can deliver more than other research approaches, going beyond 'what works' into how and why reforms work
	It highlights the value of facilitation skills to support collaborative working and improve the quality of dialogue and deliberation in partnership work.
	It uses local staff knowledge, diverse sources of evidence, pooling resources and budgets.
Cons	This approach requires substantial time commitment from those involved.
	It requires a dedicated facilitator.
Benefits to Scottish Government	The CAR approach is very helpful for collaboration in policy development and has already been well explored in Scotland.

Links and contacts

To find more about the What Works Scotland approach to CAR see
http://whatworksscotland.ac.uk/the-project/our-approach-to-collaborative-action-research/

To read the findings of the What Works Scotland programme of CAR based on work with four Community Planning Partnerships (Brunner et al, 2018) see http://whatworksscotland.ac.uk/wp-content/uploads/2018/12/WWSCollabARCrossSiteFinal.pdf

5.6.   Case study 6: Collaborative Sensemaking of Data

Summary

Sensemaking is a collaborative technique used to validate, organise and interpret research data.

The approach

What is unique about this approach?

Research data needs to be analysed and interpreted so it becomes useful to the team and can guide the way they design and deliver a service.

Analysis should be unbiased and objective, and should be completed rapidly. A researcher could try to do it on their own, but this creates problems: their personal biases and opinions will influence their interpretation; their logic may not make sense every time; and they will not have time to explain all your decisions — no one will be able to judge whether the analysis is robust.

Collaborative sensemaking overcomes these problems. In a sensemaking workshop, data is shared with different people who are asked them to do the analysis with the researcher in a structured way. This is a fast and productive way to understand whether everyone sees the same issues from the evidence, gather different perspectives on the data and check that the analysis of the problem is thorough.

The essence of the approach

Sensemaking workshops can be used as part of research analysis after any significant piece of user research when there is a need to either: make sense of the research; or validate conclusions have already made about the research.

There should be a maximum of nine participants per facilitator, who can be split into smaller groups for some activities. A mix of people from different disciplines, roles, or with different relationships to the service, is essential to provide the perspectives needed. The participants are facilitated to review and sort the data into themes. A guide for facilitators is available: Collaborative sensemaking

Pros and cons and benefits

Pros	User research activities can result in a large, sometimes overwhelming amount of data. Sensemaking is a collaborative technique used to validate, organise and interpret research data (Mygov.scot).
Cons	This approach requires resources to set, up, facilitate and report on the workshop.
Benefits to Scottish Government	This is a useful method for reducing bias in analysing qualitative data.

Links and contacts

Details of how to run a sensemaking workshop: see Mygov.scot resource page.

5.7.   Case study 7: Participatory Modelling

Summary

The co-production of assumptions, perimeters and actions for a system represented in a computer model.

The approach

What is unique about this approach?

Traditionally, stakeholders decide parameters and provide inputs to a modelling team which then carries out the modelling in an opaque process. Modellers often have an elitist view of expertise, which restricts the potential for participants to be involved in the process. By contrast, participatory modelling involves genuine collaboration with stakeholders.

The essence of the approach

A key element of designing a participatory modelling experience includes defining how stakeholders will be involved, including:

- Defining the characteristics of the interaction between participants and model;
- Describing the level of participation upfront; and

- Defining the relationship between the participatory modelling and the relevant decision-making process.

Participatory modelling involves the following steps:

1. Engage early with stakeholders and the project team to decide on the problem;

2. Identify project goals;

3. Identify and invite stakeholders;

4. The project team chooses the modelling tools;

5. Collect and process data;

6. Discuss the system being modelled with all participants in a face to face workshops with stakeholders and build a conceptual model;

7. Run the model and discuss results with all participants;

8. Discuss and refine scenarios;

9. Analyse the model and discuss improvements;

10. Present results to other stakeholders who did not attend the workshop, and decision makers, to gauge responses, inconsistencies, gaps; and

11. Promote the results by feeding into decision making processes, publishing results, writing in the media and other creative forms of communication.

Where computer modelling and simulations form part of a collaboration, making the data exploration and simulation inclusive (rather than the preserve of the usual technical elite) aids the collaboration as a whole.

Pros and cons and benefits

Pros	The participation of stakeholders helps reveal underlying perceptions and assumptions which carry through to the model and the choices inputted. A participatory process opens up participants willingness to consider multiple different pathways which they were previously unwilling to consider.
	This approach builds long term technical literacy in wider group of stakeholders.
	It ensures modelling assumptions are clear and transparently communicated.
Cons	It can be resource and time intensive to setup model and to bring all participants up to speed with basic technicalities.
	Participatory modelling does not necessarily involve collaboration on its own.
Benefits to Scottish Government	As impacts of climate change and adaptation needs evolve, participatory simulation can open up discussions on the implementation of solutions and difficult trade-offs that need to be made.

Links and contacts

The following links give examples of participatory modelling

Water Resources East: long term water resource planning (Anglian Water, May 2017)

Who: Led by Anglian Water, bringing together all the relevant water companies, along with representatives from the agricultural, power and environmental sectors.

What:	This project looked at long-term water resource planning.

How:	It involved modelling the implications of a range of possible future climate, growth and behavioural scenarios on the water industry, agriculture, power and the environment. Each sector has agreed a small number of key metrics that are used to provide an indication of how their interests are impacted in the alternative futures modelled.

Climate Change Mitigation Action Plans and Scenarios Project Brasil

Who:	Independently facilitated and implemented by the Brazilian Forum on Climate Change, involving more than 100 experts from all sectors of the Brazilian economy.

What:	Increasing Participation in the Production of Evidence for Climate Change Decision Making in Brazil.

How:	Through an iterative multi stakeholder and modelling team process.

Energy Swarm

Who:	Developed by the Making Pathways Programme for Rockefeller Brothers Fund, used by a range of governments, civil society stakeholders and others.

What:	Modelling sustainable energy futures at the sub-national level.

How:	The online platform contains an energy model, a control panel from which you can create new projects with up to four scenarios per project and invite collaborators, and a dashboard for setting targets and goals and understanding technology lead times for the scenarios you have modelled.

Participatory Modelling of Wellbeing Trade-Offs in Coastal Kenya

Who:	Funded by the UK Research Council ESPA (Ecosystem Services for Poverty Alleviation) involving a wide range of stakeholders.

What:	Ecological system modelling of coral reefs and the socio-ecological system in coastal Kenya with the relevant stakeholders.

How:	A thinking tool for deep discussion and identification of trade-offs.

## 5.8.	Case study 8: Participatory Scenario Planning

Summary

Scenario Planning is a strategic exercise to understand what might happen in the future if different factors are played out. Participatory Scenario Planning involves including stakeholders in developing these different possible futures.

The approach
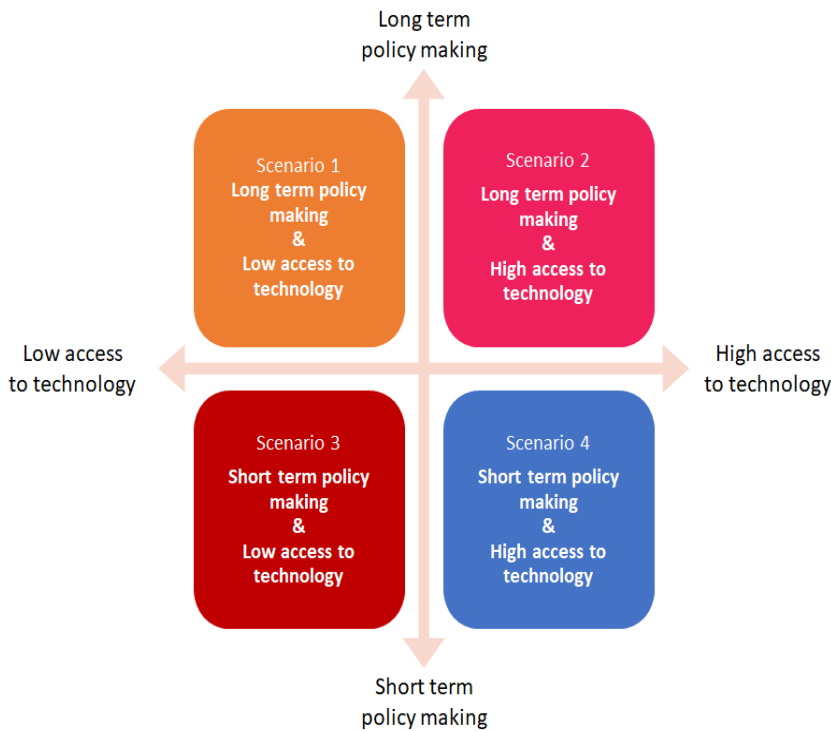
What is unique about this approach

Scenario planning is a method used by the military, businesses and, increasingly, the environmental sector. It offers insights into different possible futures, enabling different strategic choices to be tested against each of these. It is an open process; expertise is useful, but no-one knows for certain what may happen in the future. This creates a different quality of relationship and atmosphere in which to explore collaborations.

The essence of the approach

Scenario Planning consists of four distinct steps:

1. Scanning the horizon of the future for different signals of change (FAO Glossary, 2017) including:

- Trends (i.e. a broad direction of movement across society. A trend cannot be impacted by one person or entity, and they can be strong or weak, increasing, decreasing or stable);

- Mega trends (i.e. a trend that is global and sustained in nature; examples include climate change, internet connectivity or urbanisation – half the world's current population lives in an urban area);

- Weak signals of change with a potential impact (e.g. the number of community-run local shops opening in the UK); and

- Unpredictable disruptive events (known as 'black swans').

These signals of change are categorised according to whether they are political, economic, social, technological, environmental, cultural (PESTEC).

2. Creating an axis with four quadrants, one for each of the four scenarios, and selecting two high impact and high uncertainty drivers of change to put on the axis to create four distinct future scenarios. 'Impact' varies according to the subject (see diagram to the left). Discuss the drivers of change in your group to subjectively decide which are high impact for the human or natural systems you are concerned with.

3. In your scenario groups, explore and construct a narrative for each of the four scenarios. Ensure they are distinct from each other, internally consistent and credible based on the drivers of change used from the first exercise.

4. Use each of the final scenarios as 'scenes' through which to test how policies, ideas or possible events will interact with them.

At any point in the scenario planning process, it can be made more or less participatory. The underlying principle is that participation builds collaborations. By including stakeholders in developing possible future scenarios, they are more likely to be engaged in the medium/long term in creating or avoiding these futures. Ensuring a diverse range of participants – beyond the 'usual suspects' - will enable broader discussions than by simply involving those who have previously worked together. This will generate more nuanced scenarios.

Pros and cons and benefits

Pros	A non-hierarchical approach, which encourages participation by multi-stakeholder groups.
	A low pressure / non-political exercise about the future – not about the past or the present – meaning that no decisions have to be made during the process.
	Scenario planning is particularly useful in relation to climate change because it allows different groups like communities, academics, local and national

	government, agencies or businesses, to look at possible futures together. They all bring different and relevant knowledge and expertise to inform the discussion from different angles, such as climate, economic development, demographics, local history etc (Bergseng 2019).
	It can work at different geographical scales – local, national and global, in different contexts, and looking at shorter or longer term timelines. Shorter time horizons work best at the local scale, while longer term scenarios are more suited to the national and global scale (Bergseng 2019).
Cons	Ideally it requires a time commitment of about 2-4 days from all participants.
	It requires skilled facilitators to manage all the stakeholders in the process.
Benefits to Scottish Government	It is an increasingly used and recognised strategic exercise with many examples around the world.
	If done in time to feed into decision making processes or before crises, it enables foresight which can be acted on for more strategic policy making and collaborations.

Links and contacts

The Futures Toolkit is a toolkit of different foresight methods – including horizon scanning and building scenarios, by the UK Government Office for Science.

The Stockholm Resilience Centre has published a think piece assessing 23 case studies on how to develop Participatory Scenario Planning for exploring futures in natural resource management.

The James Hutton Institute has a range of papers and resources on Scenario Planning

Some examples of scenario planning are provided below:

Méxicos Posibles

Who: Led by consultants Reos Partners, bringing together more than 100 leaders from across the political, geographic, and socio-economic spectrum in Mexico.

What: Developing possible scenarios for Mexico. This was a Transformative Scenario Process.

How: Participants worked together to develop scenarios about possible futures for the country, looking specifically at illegality, inequality, and insecurity.

Participatory Scenario Planning workshops in Kenya

Who: Care International

What: Used as a process for collectively sharing and interpreting climate forecasts.

How: Workshops are conducted as soon as seasonal climate forecasts are made available by meteorological services, meaning they occur as frequently as there are rainy seasons in that particular area.

- See also this case study on Participatory Scenario Planning from Humanitarian Futures.

5.9.   Case study 9: Participatory Systems Mapping

Summary

A participatory modelling methodology in which a group of stakeholders collaboratively develop a causal map (showing the ways different aspects of a system influence each other) during the course of a workshop.
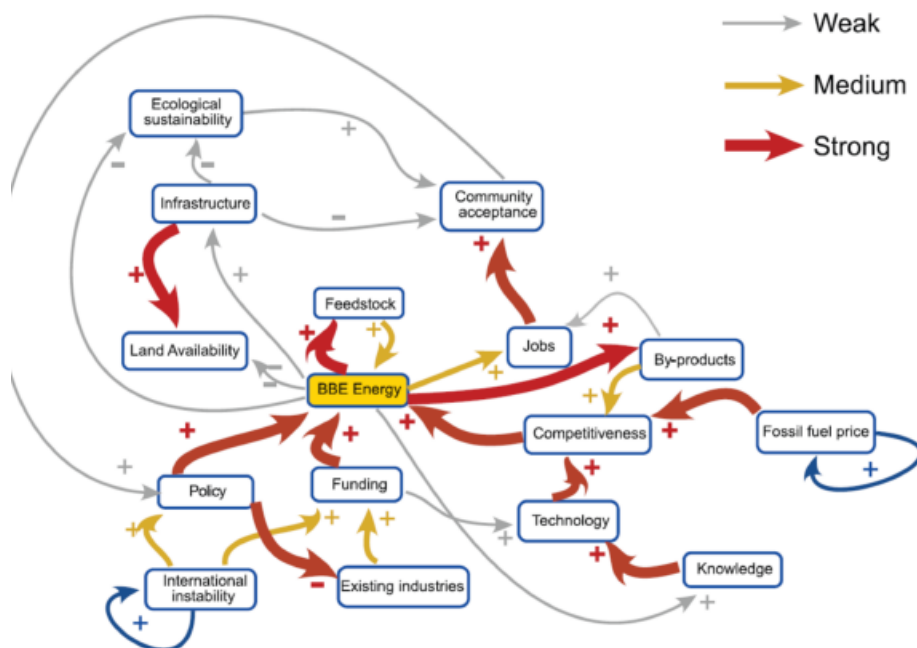
The approach

What is unique about this approach

This approach has been developed to support a collaborative approach to modelling complex systems. It provides a way of discussing and exploring complex issues and to aid understanding of whole systems approaches.

The essence of the approach

The mapping approach involves teams of up to twelve stakeholders collaboratively constructing a causal map of their system of interest. They do this in a workshop setting, around a table with post-its, white-board or paper, and pens. The map produced reflects the views of the stakeholders that built it. The map is then digitised, for wider sharing and use.

The diagram above (Penn et al, CECAN) is an example map exploring the factors that influence the creation of bio-based energy. We can see the factors in the system represented by the rectangles, and the connections between them by arrows denoting the strength, direction, and nature (positive or negative) of the casual influence.

There are eleven steps in creating Participatory Systems Maps in a workshop setting:

1. Choose an issue to explore; for example, the development of the bio-based economy in a particular region.

2. Gather knowledge relating to that issue from the stakeholders present.

3. Pick one or more focal factors - a variable which is important to you and central to the problem area. For example, the amount of production of bio-based energy.

4. Brainstorm the factors that impact the focal factor, as well as any factors impacted by the focal factor.

5. Consolidate the factors by grouping them if they duplicate the same idea.

6. Consider connections between the factors.

7. Check the connections through reflection and discussion at the workshop.

8. Consider collecting more information on the factors and their links, for example which factors particular stakeholders have influence over.

9. Undertake an early 'quick and dirty' structural analysis to help think about your problem.

10. Sense check the map with all the stakeholders present.

11. Consider what might happen with future possible change scenarios – how would the map by structured differently in that case?

Pros and cons and benefits

Pros	The mapping process gives great value to those involved in its creation; the act of building a map can lead to important conversations, developing shared understanding and consensus.
Cons	The resulting map can be very complex and does not necessarily encourage engagement.
Benefits to Scottish Government	These types of models provide thinking tools which can be used for discussion and exploration of complex issues, as well as sense checking the implications of suggested causal links. Such 'hands on' complexity science can increase stakeholder motivation and understanding of the scope of whole systems approaches (Penn et al, CECAN).

Links and contacts

Participatory Systems Mapping: a practical guide (Penn et al, CECAN)

A detailed example can be seen in: A participatory systems map of the Energy Trilemma (Barbrook Johnson et al 2018)

5.10. Case study 10: North Wales Economic Ambition Board

Summary

The aim of the Economic Ambition Board (EAB) is to work collaboratively across the six local authorities, the private, public and third sectors and higher and further education, to transform the economy in North Wales.

The approach

What is unique about this approach

The board members are committed to working collaboratively for the common purpose to facilitate and accelerate economic growth. The collaboration is cross-sector, with the regional partners combining resources in strategic transport planning, economic development, employment and skills and strategic land use planning to support collaborative planning and delivery. The collaboration employs key members of staff to co-ordinate the collaboration and ensure delivery of work; this is funded by the Regional Collaboration Fund (Welsh Government funded).

North Wales Economic Ambition Board governance structure
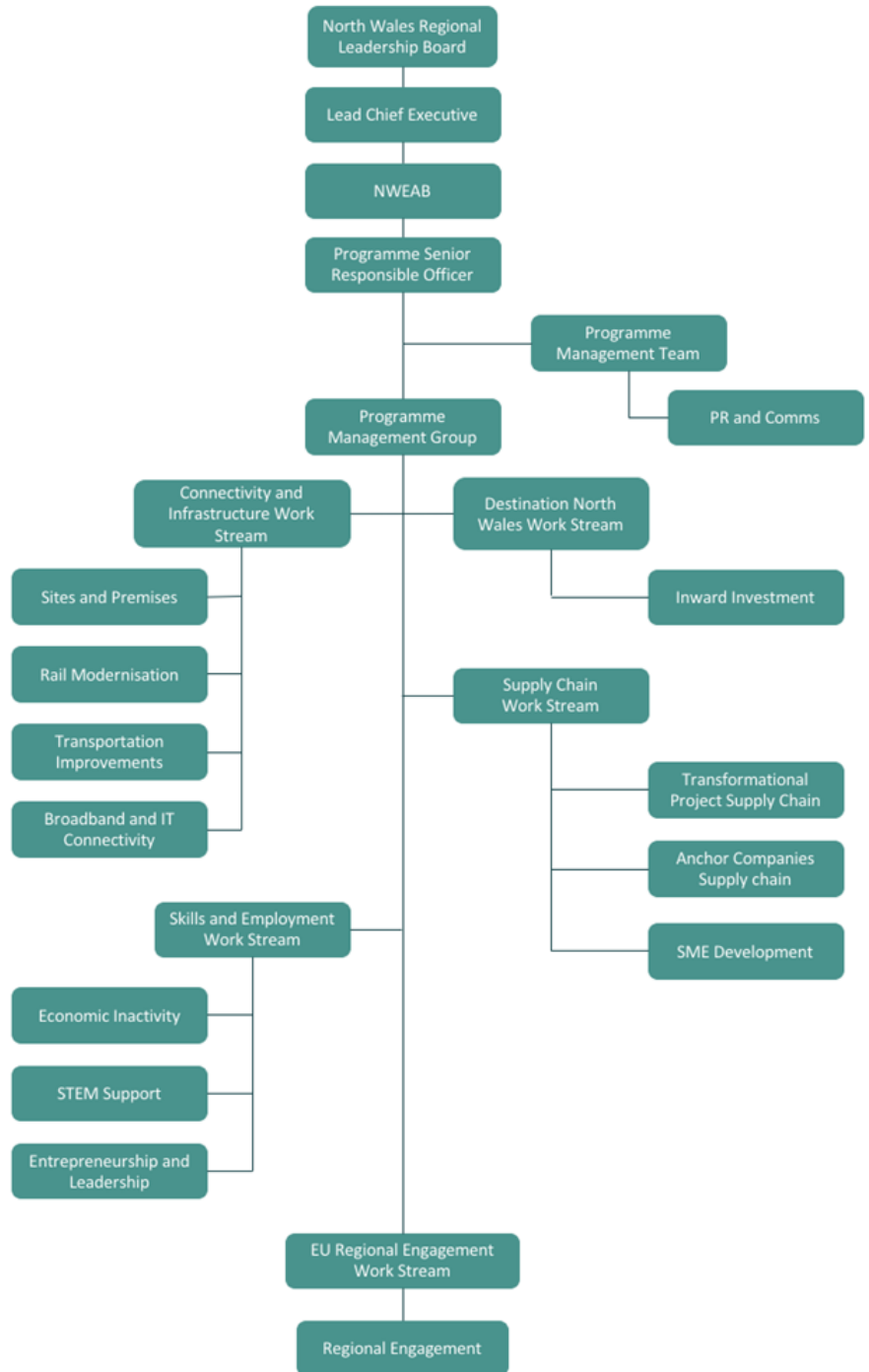
The essence of the method

The EAB is a new way of working in the region which recognises that many elements of economic development such as skills and employment, infrastructure, tourism etc. make sense at the regional, rather than the local level. After lengthy discussions the board was formed, with an initial key task being to secure funding for the development of the collaboration and ultimately to produce and deliver the Growth Deal for North Wales.

Two key elements of the process were a clear governance structure (see figure 3) and defined work streams with associated roles and responsibilities. Key roles were salaried and the project manager, who was allocated nearly a quarter of the budget, was identified as having a particularly important role in coordinating the process.

Together they have developed 'A Growth Deal for North Wales', setting out a clear framework for strategic interventions for the economy of North Wales, which is co-owned by key stakeholders across the sectors and has been accepted by Welsh and UK governments.

Key factors identified (Downe et al 2016) in the success of the collaboration include:

- Effective governance;
- Effective leadership;
- Key staff;
- Government funding;
- Political will;
- Continuity of senior officers;
- Getting the right people around the table; and
- Inter-personal relationships.

North Wales Regional Leadership Board
Lead Chief Executive
NWEAB
Programme Senior Responsible Officer
Programme Management Team
PR and Comms
Programme Management Group
Connectivity and Infrastructure Work Stream
Destination North Wales Work Stream
Sites and Premises
Inward Investment
Rail Modernisation
Supply Chain Work Stream
Transportation Improvements
Transformational Project Supply Chain
Broadband and IT Connectivity
Anchor Companies Supply chain
SME Development
Skills and Employment Work Stream
Economic Inactivity
STEM Support
Entrepreneurship and Leadership
EU Regional Engagement Work Stream
Regional Engagement

Pros and cons and benefits

Pros	The clear governance structure with paid staff has enabled them to make significant progress in achieving their aims.
Cons	They have been reliant on government funding.
Benefits to Scottish Government	This is a good example of the value of a formal governance structure to support joint working across different organisations.

Links and contacts

An evaluation of five different collaborative projects, funded by the Regional Collaborative Fund, was undertaken and can be found here.

Appendix 3 Approaches, methods and examples reviewed but not included as full case studies

As noted in the methodology, a large number of approaches, methods and examples were reviewed. The following table gives information about some examples which were considered in the final research stage, but were not included as case studies.

Approach	Summary	Reference
Building climate resilience in the Caribbean	This report is the result of interviews with 10 stakeholders about their experience of building resilience in the Caribbean. It draws out insights from the process of developing a strategic framework to address climate change.	DFID, *Building Climate Resilience in the Caribbean - The story of collaborative climate action in the Caribbean (2007-2015)*. Accessed from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/501183/Climate-Resilience-in-the-Caribbean05Feb16.pdf
Collaboration for Resilience	This report includes six cases studies from the US, Australia, Tanzania and Mexico, and includes a set of recommendations 'to clear the pathway for a collaborative agenda on resilience'.	Smith M, (2016), Collaboration for Resilience, How Collaboration among Business, Government and NGOs could be the Key to Living with Turbulence and Change in the 21st Century, International Union for Cooperation with Nature. Accessed from: https://portals.iucn.org/library/sites/library/files/documents/2016-047.pdf
Collaborative approaches to Environmenta	This report contains 12 case studies of collaboration in the environmental sector in New England. It was produced as a guide for state agencies wanting to	Cohen S (2013), Collaborative Approaches to Environmental Decision-Making, A State Agency's Guide to Effective Dialogue and Stakeholder Engagement, MIT-Harvard Public

l Decision-Making	use collaborative approaches. Our report draws on learning points, but does not include specific case studies from this report.	Disputes Program. Accessed from: https://www.cbi.org/assets/files/NE%20Agency%20Guide%20to%20SE_FINAL.pdf
Enlarge Project	An EU funded project, which reviews participatory governance with a focus on sustainable energy. The project identified 31 case studies of participatory approaches to sustainable energy. The project report and manifesto identifies barriers to participation and necessary pre-conditions.	Enlarge (2018) Collaboration with civil society in policymaking: an overview of approaches and tools, European Union. Accessed from: http://www.enlarge-project.eu/wp-content/uploads/2017/02/WP1-Report-ENLARGE.pdf
Freshwater Case Studies: Collaboration Approaches in different US river basins	This report draws out collaboration best practice and challenges from 15 case studies.	The Consultative Group on Biological Diversity, The Funders Network, Environmental Grantmakers Association (2016) *Freshwater Case Studies, Exploring Effective Advocacy and Collaboration Approaches*. Accessed from: https://ega.org/sites/default/files/page/attachment/Freshwater%20Case%20Studies%20-%20Exploring%20Effective%20Advocacy%20and%20Collaboration%20Approaches.pdf
The Canterbury Model for integrating health and social care	This is an acclaimed approach to collaboration in the health sector. We researched it in producing our report, but were unable to identify transferable learning points on the process of collaboration.	Timmins N, Ham C (2013) The quest for integrated health and social care, A case study in Canterbury, New Zealand, The Kings Fund. Accessed from: https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/quest-integrated-care-new-zealand-timmins-ham-sept13.pdf

Appendix 4: Methodology

The research comprised the following stages:

Scoping

An initial online scoping was conducted with one researcher consistently using the defined search terms (see below) to search on Google, and the Irish, Scottish, Welsh and UK government websites, and the Stockholm Resilience Centre website, for links with further relevant information. The search results were all recorded in a spreadsheet, which was then added to by the other two researchers conducting the same word searches on YouTube and Twitter social media platforms. The boundaries of the searches were defined as:

- Dated between 2010 –2019
- Referring to any of the following terms:
    o 'collaboration'
    o 'joined-up thinking'
    o 'joined-up working'
    o 'multi sector planning'
    o 'multi sector implementation'
    o 'implementation platform'
    o 'collaborative platform'
- The source must include a specific method, structure, framework or example relating to joined-up working.

Additional links were suggested by members of the project Steering Group.

The initial scoping produced over 110 results.

Qualitative analysis

The next stage involved qualitatively measuring each source against an evaluation framework which contained the following evaluation questions:

Evaluation questions
Does the approach demonstrate collaboration (integrated strategy and collective purpose)?
Used to address climate, adaptation or resilience issues?
Information on collaboration across sectors?
Information on use in different settings?
How different from business as usual?
Why was it developed?
Does it include process skills training?
What teams and groups does it involve? Do they normally work together?
How long has the approach been used?
What evidence of effectiveness is there?

Selecting examples and references for the report

Using this information, the initial list was reduced to a shortlist of 36 sources which contained potentially useful content for the purposes of this study. Key requirements for inclusion in the shortlist were that the sources were either relevant research on collaboration or examples that:

- Demonstrated collaboration;
- Were relevant to policy making on climate change and resilience in Scotland.

These sources were then reduced further to produce the nine case studies and relevant background references. The criteria used at this final stage were that:

- The examples were distinct methods or approaches that demonstrate collaboration;

- The examples and references provided transferable learning points on what works in collaboration;
- Where possible the examples provided evidence of effectiveness.

Some of the sources discarded in this final sift are listed in Appendix 3.

Appendix 5 Tips for creating the physical collaboration space

The physical collaboration space is important. These practical tips consider what is necessary to create a space that supports meaningful dialogue and allows constructive challenge to generate new understandings:

1. Choose a place to meet that is neutral for all collaborators, or choose a place that offers learning opportunities, e.g. the site of the issue.
2. Choose a location that is accessible and reduces the need to travel for as many participants as possible, and/or offer virtual attendance.
3. Arrange the collaboration event in advance with a clear idea of what is required (what will be addressed, what the activities might be, etc.).
4. Select a facilitator for each meeting; either an independent facilitator or someone who can take off their organisation 'hat' for the duration of the meeting.
5. Spaces with natural light, access to nature and peaceful surroundings are more conducive to creative and relaxed expression.
6. Ensure in advance that you have people's needs taken care of (disabled access, toilets, food and drink, water, close to public transport, projector, internet etc.).
7. Circulate any data, notes, research, key points, etc. for collaborators to read, a week or more in advance of the meeting.

Appendix 6 Glossary

Approach: a set of characteristics, assumptions and the bigger picture which can contain multiple methods and tools in support of that approach. E.g. collaboration is an approach, but there are many different ways and methods of achieving collaborative working.

Black Swans: unpredictable disruptive events.

Collaboration: a complex, dynamic and multilevel process for multiple actors to act on an issue they cannot affect alone.

- **Conventional collaboration**: an aligned team moving in the same direction, with high levels of agreement on the problem and the response to it.
- **Stretch collaboration**: when there is no agreement between parties but multiple true perspectives on the problem are recognised. Without seeking to control, responses are experimentally collaborated on, finding a way forward alongside each other.

Collaboration space: the physical, thinking and emotional space created for collaborating within, not just the room you meet in.

Convener: a person who has the power and skill to bring people together.

Co-production: when both those who can influence the process and those implicated by the outcome are directly involved in jointly producing policies and strategies.

Mega trends: a trend that is global and sustained in nature.

Method: a specific process for achieving an outcome. Methods can be broken down into steps and followed exactly.

Model: a representation of something – whether physical (a 3D model) or computer simulated (an energy model).

Operating environment: the surrounding context of politics, culture, economics, natural environment etc.

Participatory: a process characterised by participation.

Prototyping: a first version from which other forms are developed.

Resilience: the capacity to deal with change and continue to develop.

Scenario: a possible sequence or development of events and narrative.

Sensemaking: the act of validating, organising and interpreting data collectively.

Social-ecological system: linked systems of people and nature. The term emphasises that humans must be seen as a part of, not apart from, nature — that the delineation between social and ecological systems is artificial and arbitrary. It represents the interaction between a biological, geological and physical system (e.g. a river ecosystem) and its associated social actors and institutions.

Spectrum: a scale between two extreme points.

Stakeholder: a person with an interest or concern in something.

Synergy (ies): the interaction or cooperation of two or more organizations, substances, or other agents to produce a combined effect greater than the sum of their separate effects.

Trend: a broad direction of movement across society. A trend cannot be impacted by one person or entity, and they can be strong or weak, increasing, decreasing or stable.

References

Anglian Water (2017) Ground breaking multi-sector approach to long term water resource planning, Wildlife and Countryside Link. Accessed from: https://www.wcl.org.uk/ground-breaking-multi-sector-approach-to-long-term-water-resource-planning.asp

Barbrook-Johnson P & Penn A (2018) A participatory systems map of the Energy Trilemma: A CECAN report for BEIS. December 2018

Bennet Dr H and Brunner Dr R (2017) Co-producing evidence with public services: insights from What Works Scotland – Nurturing the buffer zone, What Works Scotland. Accessed from http://whatworksscotland.ac.uk/wp-content/uploads/2017/11/WWSCARCoproducingEvidencewith-PublicServices-Insightsfrom-WWSNurturingTheBufferZone.pdf

Berseng A M(2019) Decision-making for uncertain futures: practical application of scenarios, ClimateXChange, unpublished

Bodin O (2017) Collaborative environmental governance: Achieving collective action in social-ecological systems, Stockholm Resilience Centre. Accessed from: https://www.stockholmresilience.org/publications/artiklar/2017-08-18-collaborative-environmental-governance-achieving-collective-action-in-social-ecological-systems.html

Bryson J, Crosby B, Stone M, Brunner R, Bennet H (2015), Designing and Implementing Cross-Sector Collaborations: Needed and Challenging, Public Administration Review, The American Society for Public Administration. Accessed from: https://www.hhh.umn.edu/sites/hhh.umn.edu/files/designing_and_implementing_cross-sector_collaborations_needed_and_challenging.pdf_0.pdf

Bynner C and Henderson J (2018) Collaborative Action Research and public services: insights into methods, findings and implications for public service reform, What Works Scotland. Accessed from http://whatworksscotland.ac.uk/wp-content/uploads/2018/12/WWSCollabARCrossSiteFinal.pdf

Carey G and Crammond C (2015) What Works in Joined-Up Government? An Evidence Synthesis, International Journal of Public Administration. Accessed from: https://www.researchgate.net/publication/281214555_What_Works_in_Joined-Up_Government_An_Evidence_Synthesis

Cohen S (2013) Collaborative Approaches to Environmental Decision-Making, A State Agency's Guide to Effective Dialogue and Stakeholder Engagement, MIT-Harvard Public Disputes Program. Accessed from: https://www.cbi.org/assets/files/NE%20Agency%20Guide%20to%20SE_FINAL.pdf

Co-production Scotland (2015) Co-production – how we make a difference together. Accessed from http://www.coproductionscotland.org.uk/resources/

Downe, Dr J and Hayden C (2016), Welsh Government. Accessed from: https://gov.wales/sites/default/files/statistics-and-research/2018-12/161110-evaluation-regional-collaborative-working-en.pdf

edX, u.lab: Leading Change in Times of Disruption, Accessed from: https://www.edx.org/course/ulab-leading-change-in-times-of-disruption

FAO (2014) A glossary of terms routinely used in Futures Studies. Accessed from: http://www.fao.org/docs/eims/upload/315951/Glossary%20of%20Terms.pdf

Gajda R (2004) Utilizing Collaboration Theory to Evaluate Strategic Alliances, American Journal of Evaluation. Accessed from https://journals.sagepub.com/doi/abs/10.1177/109821400402500105

Gill M (2002) Building effective approaches to governance, Non-Profit Quarterly

Hassan Z (2015) The Social Labs Field Book, Social Laboratories Ltd. Accessed from: https://bluesolutions.info/images/Social-Labs-Fieldbook-D11.pdf

ICA:UK (2004) Focused Conversation Method Structure. Accessed from: https://www.ica-uk.org.uk/images/stories/mgilbraith/ToP_method_overviews/ToP_method_overview_-_FC.pdf

Kahane A (2017) Collaborating with the Enemy, Berrett-Koehler publishers

Kela, Basic Income Experiment 2017-2018, www.kela.fi/web/en/basic-income-experiment-2017-2018

Lempert R J (2019) Robust decision making, in Marchau V, Walker W, Bloemen P & Popper S, Decision Making under Deep Uncertainty: From Theory to Practice, Spinger. https://link.springer.com/content/pdf/10.1007%2F978-3-030-05252-2.pdf

Marek L, Brock D, Salva J (2014) Evaluating Collaboration for Effectiveness: Conceptualization and Measurement, American Journal of Evaluation. Accessed from: https://journals.sagepub.com/doi/abs/10.1177/1098214014531068

Moncaster S J (2017) Water in the American West: Balancing the competing need for water in water scarce catchments, Winston Churchill Memorial Trust. https://www.wcmt.org.uk/sites/default/files/report-documents/Moncaster%20S%20Report%202015%20Final.pdf

Morris J, Baddache F (2012) Back to Basics: How to Make Stakeholder Engagement Meaningful, BSR

Mygov.scot, Collaborative sensemaking, https://resources.mygov.scot/37f87d5/designing-public-services-in-scotland/how-to-design-services/collaborative-sensemaking/

My home life Scotland, Collaborative Sense Making Tool,
http://myhomelife.uws.ac.uk/scotland/resources/collaborative-sense-making-tool/

Nesta, Public and social innovation labs, https://www.nesta.org.uk/feature/innovation-methods/public-and-social-labs/

Penn A, Barbrook-Johnson P, Participatory Systems Mapping: a practical guide, CECAN. Accessed from https://www.cecan.ac.uk/sites/default/files/2019-03/PSM%20Workshop%20method.pdf

Pound D, Reed M, Armitage L and Pound J, Dialogue Matters (2016) Engaging and empowering communities and stakeholders in rural land use and land management in Scotland, Scottish Government. Accessed from: https://www.gov.scot/publications/engaging-empowering-communities-stakeholders-rural-land-use-land-management-scotland/

Presencing Institute, About Theory U website page. Accessed from:
https://www.presencing.org/aboutus/theory-u

Presencing Institute, Resources website page. Accessed from:
https://www.presencing.org/resource/tools

Presencing Institute , Theory U image. Accessed from:
https://www.presencing.org/aboutus/theory-u

Sport Scotland, Participatory Tools for community sports hubs and sports clubs. Accessed from:

https://sportscotland.org.uk/media/1718/tool_7_-_stakeholder_mapping.doc

U.Lab Scotland, Theory U in practice, https://ulabscot.com/2018/07/11/theory-u-in-practice/

University of Kansas (2019), Community Tool Box. Accessed from: https://ctb.ku.edu/en/table-of-contents/participation/encouraging-involvement/identify-stakeholders/main

Voice Scotland, National Standards for Community Engagement. Accessed from:
http://www.voicescotland.org.uk/Seven-NS/

Water Resources East (2017) New models for collaborative working: A guide for innovative, multi-sector, regional resource planning, An Anglian Water Perspective.
https://www.bitc.org.uk/sites/default/files/anglian_water_water_resources_east_toolkit_aw_wre-compressed.pdf

Westley F, Laban S, *Social Innovation Lab Guide.* Accessed from:
https://assets.rockefellerfoundation.org/app/uploads/20150610111553/10_SILabGuide-FINAL-1.pdf