

Running a simulation: tools and techniques

Working together to adapt to a changing climate: flood and coast

FCERM Research & Development Programme

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FRS17192/7

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Dr Robert Bradburne
Chief Scientist

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Introduction

About this document

This document is a practical guide to organising and facilitating a role play simulation designed to foster engagement with the challenges of surface water flooding in an urban context. It draws on work carried out in Surrey/London as part of the research project 'Working together to adapt to a changing climate: flood and coast'. The document sets out the steps involved, the materials used and the facilitation input needed to carry out a successful simulation activity.

The document is aimed at anyone who is interested in innovative methods through which communities, authorities and other stakeholders can work together to increase understanding and plan for future flood and coastal erosion risk. It should be particularly useful for engagement staff in risk management authorities and third sector organisations. It may also be of interest to individuals and community groups interested in or concerned about future planning and decision-making on these issues in their local area or beyond.

The purpose of this document is to:

- provide direction on how to carry out the simulation exercise developed in the project
- highlight points to consider when using the simulation exercise¹

Where this document has come from

This report is a final product of the action research project 'Working together to adapt to a changing climate: flood and coast'. The project was funded by the Flood and Coastal Erosion Risk Management Research and Development Programme (Environment Agency, Defra, Welsh Government and Natural Resources Wales) and implemented by the research and engagement company Icarus.

The research is a response to concerns about the impacts of climate change and the likelihood of significantly higher levels of risk to communities due to increased flooding or

¹ Nothing in this report implies (a) any additional duty on the Environment Agency, Defra, Welsh Government or Natural Resources Wales to engage with or consult authorities, partnerships, or wider communities or (b) any requirement for, or undertaking by, the Environment Agency, Defra, Welsh Government or Natural Resources Wales to carry out engagement or consultation in accordance with the methods in this report.

coastal erosion. It aimed to explore how authorities can engage effectively with communities on these issues, particularly where options for addressing increased risk may be complex or contentious.

The project is providing evidence for the implementation of the new Flood and Coastal Erosion Risk Management (FCERM) Strategy for England. Findings from the evidence review are featured in the strategy, along with a measure to share learning from the project. The research also addresses aspirations to make people and places central to decision-making and increasing local resilience to climate change.

The action research project included 3 phases:

1. a review of evidence on community engagement on climate adaptation (2018), to inform:
2. designing and implementing an innovative community engagement programme (2019 to 2021). Local communities and organisations were invited to apply to take part, and **2 pilot locations** were selected:
 - Caterham on the Hill and Old Coulsdon, Surrey and London Borough of Croydon - experiences surface water flooding
 - Hemsby, Norfolk – experiences coastal erosion and storm surges.
3. bringing together, reflecting on and documenting learning and practice (2021 to 2022)

Co-design and collaboration were integral to the project. This included setting up steering groups in each pilot location made up of authorities and residents. The steering groups helped to develop and trial a local engagement programme. The project took an action research approach, documenting learning throughout and adapting the work programme accordingly. Two-way learning was also instigated through quarterly webinars with a group of almost 200 FCERM practitioners. A project board including representatives from the Environment Agency, Natural Resources Wales and local authorities helped to steer the project throughout.

It is worth noting that different participants had different levels of involvement and influence throughout the project. Icarus led the implementation of the project and wrote these reports. The use of 'we' refers to the authors unless otherwise specified.

There are a number of products from the project that reflect on the research findings and learning and provide detailed information about the tools developed and tested. These are available on the [project webpage](#).

Document structure

Section 1 provides a short introduction to the simulation and our approach. Section 2 focuses on preparation for running the simulation. This includes finding participants and preparing them for the exercise. Section 3.1 looks at the materials needed to run the simulation, including materials we have prepared such as a facilitation plan and slide pack.

Section 3.2 provides tips on facilitating the exercise. Section 4 points towards other elements to consider.

This document focuses on preparing for and implementing the online version of the simulation exercise. It should be read in conjunction with 'Developing a simulation: review of learning'.

1. Background to the simulation

The simulation is a role-playing tool used to support stakeholders in their engagement with the challenges of surface water flooding in an urban context.

Our evidence review explored the complex challenges involved in climate change adaptation, with a particular focus on flooding and coastal erosion. This report highlighted the need for collaborative ways of working, involving multiple stakeholders. Drawing on experiences and research from a range of contexts, it includes a section on role-play simulations as one way of building readiness for such work. These are 'serious games'; short group exercises run by a professional facilitator that help participants explore the issues, options and potential areas of disagreement and tensions in a safe, supportive environment. The experience of and learning from participating in a simulation can then be used when engaging with the real issues in their own local area.

As part of our work in the pilot location of Caterham and Old Coulsdon, Surrey/London Borough of Croydon, we developed a simulation designed to encourage thoughtful engagement with the challenges of surface water flooding. The local steering group that was closely involved in this work included residents, Caterham Flood Action Group, A Better Caterham, Tandridge District Council, Surrey County Council, Caterham on the Hill Parish Council, London Borough of Croydon, Thames Water and the Environment Agency.

We recommend that the simulation is used as part of a planned process of engagement, with a clear plan for how the experience of running simulation will be used.

2. Preparing to run the simulation

Finding participants

Overview

- Each simulation session needs 6 people, one person for each role.
- Participants need to commit to 30 to 60 minutes advance preparation, reading the briefing document sent out in advance.
- Participants need to commit to taking part in the 2-hour online meeting.

Overcoming barriers to taking part

The idea of role play can be off-putting for some people. We found the following helped to encourage people to take part.

- A clear advance briefing about what taking part involved. It isn't about playing or acting out a completely different character to yourself but representing certain views about how to tackle flooding. It is also important to explain the purpose of the exercise and how it fits into wider engagement and decision-making processes.
- The simulation briefing documents clearly explain what is involved and give clear information about the views and positions each role holds.
- Good facilitation will put people at ease. In each session there is an introductory section to clearly explain what is involved and put participants at ease. In the simulations run to date feedback has been positive about the ease of taking part and, once involved in the exercise, participants have enjoyed the experience.

There are different options for recruiting participants.

- Involving participants from organisations with paid staff is relatively straightforward to organise as it is possible to work through one person who liaises with their colleagues. They take part during their working day so do not have to give their time voluntarily.
- Working through existing community groups or clubs can work in a similar way, with one member organising a group to take part.
- Promoting the simulation exercise to the wider public and running sessions with people who were not part of the same organisation takes more time and effort. It may be possible to use local media outlets, social media networks and organisations who can better reach the general public (such as local authorities and the voluntary sector).

Promotion materials

- A one-page succinct briefing note should be written that describes the simulation activity. It should set out what is involved, the aims of the activity and the commitment

needed to take part. This is a useful overview to send to potential participants or the person coordinating a group of participants.

- A short, [animated film](#) that was made to promote community conversations about flood risk and climate adaptation. It has a deliberately general focus so that it can be used to develop interest in this simulation exercise or other facilitated conversations/ collaborative planning processes around these issues. This can be sent to individuals or used through social media to promote interest in the simulation exercise.
- Articles in the local press and social media to explain the project and promote interest in the simulation.

Preparing participants

Once the simulation team of 6 people is in place and committed to take part, there are preparatory tasks to carry out to ensure a successful session.

Joining instructions

Each participant is sent an email thanking them for taking part, confirming the time and date and attaching the one-page briefing sheet. This advance note also explains that they will receive a briefing pack that needs to be read in advance of the simulation. This will contain details of the scenario, their role and preferences for action.

This note also provides the link to the meeting on the video conferencing platform, for example Zoom or MS Teams. It is worth suggesting to participants that they join using a laptop or tablet, which will enable full participation.

Selecting roles

The facilitator/s selects who will play which role in the simulation. There are 6 roles:

- local authority planner
- chair of the local flood action group
- chair of the local business association
- member of the local climate action group
- chair of the Friends of the Park
- water company officer

If the participants are known, or you are working through someone who knows those taking part, aim to allocate a role that is different from their experience in real life. One of the aims of the simulation is for participants to experience what it feels like to see things from a different perspective, with different concerns and priorities.

Briefing pack

Each participant is sent an advance briefing pack (available on the [project website](#)) specific to their character. Aim to send this out at least a week before the meeting. This is

a 15-page document that includes everything the participant needs for the simulation. It's clearly laid out and easy to read.

The briefing pack explains:

- an introduction to the simulation
- how the session will be run and what to expect as a participant
- how to join the workshop and the equipment needed to access the online platform
- information about the scenario and the options
- the individual participant's role and their views and preferences on the options and funding sources that they need to reflect during the simulation
- who participants should contact if they have any questions or queries before the meeting

3. Running the simulation

Materials

Facilitation plan

There is a detailed facilitation plan for the whole meeting that must be used when running the simulation (also available on the [project website](#)). This is a detailed guide for the facilitators (not the participants) setting out:

- the objectives of the meeting
- what participants will have prepared before the meeting
- what will be happening in each part of the meeting
- the roles of the 2 facilitators running the meeting
- an indication of the timings of each part of the meeting
- the resources and instructions needed at each stage

Slides

There is a slide pack for the simulation to be used in the following ways:

- To talk through introductory material - scene setting, the meeting objectives, running order and simulation rules.
- To remind participants of the situation in Springhill (the fictional place where the simulation is set), the flood risk and climate adaptation challenges and the options available.
- A final slide is used in the debrief to pose a few questions to participants in relation to their experience of taking part.

Interactive white board

It is recommended that an interactive white board (such as Mural) is used to help visualise and guide the group discussions. This is set up as a template that can be used for every simulation exercise using the materials provided. In advance, the facilitator only needs to insert the names of the participants next to their role.

This interactive white board (Figure 3.1) is shared on screen by one of the facilitators so everyone can see it as the discussions progress. The facilitator team is able to move option cards and funding tokens around the screen in response to ideas and proposals made by the group to show possible packages that emerge and to show how they could be funded.

Participants can also be sent a link to access the interactive white board themselves, but it works well with the facilitator team sharing a screen.

Local Authority Planner	Community Activist/ flood victim	Chair, Springhill Business Association	Climate Activist	Chair, Friends of Springhill Park	Water Company
Name	Name	Name	Name	Name	Name
Do nothing Cost:	Property Flood Resilience Cost:	Community awareness building Cost:	Springhill Park Water storage Cost:	Sustainable drainage homes and businesses Cost:	Community based flood resilience Cost:
Catchment wide - slow the flow Cost:	Remove Permitted Development Rights Cost:				

Funding opportunities

Existing local authority budget (2) 	Increase council tax (5)
Reallocate budget from other areas of council spending (5) 	'Community Infrastructure Levy' (levied on new developments) (8)
Government grants. Allocate 1 You will only be able to allocate this budget if your bid is successful. (10) 	Self funded by residents, businesses or community projects (2)

Discard

All agree

Discuss



Figure 3.1: Example of a simulation interactive white board

Facilitation

Roles

The simulation works best with 2 facilitators. The main facilitator will manage the meeting as a whole – the introduction and the simulation exercise. The second facilitator will manage the online tech – enabling people to join the meeting, advising on the platform's functions, sharing the slides and the interactive white board. An important role for the second facilitator is managing this interactive white board during the meeting. This will involve moving the option cards, indicators of support tokens and funding units around to reflect the conversation as it develops.

The main and second facilitator need to work well together to manage the whole meeting. When the simulation is running the second facilitator is listening closely to the main facilitator to establish how the interactive white board should look and taking any notes that are needed. They have their camera off and are managing the interactive white board behind the scenes.

Swapping facilitator roles for the debrief session works well with the second facilitator now taking the lead role and the other facilitator making notes.

Skills

Facilitation enables and supports the group to do its best thinking and maximises the potential of the discussion. The simulation therefore requires the main facilitator to have good facilitation skills. The meeting is likely to be less successful if the person running the simulation is an inexperienced or poor facilitator. An experienced facilitator will have a range of approaches, tools and ways of working with a group to support these outcomes. Although the facilitation plan describes what happens, what needs to be said and what materials to use, it can't anticipate what is needed to effectively support and manage a free-flowing group discussion. An experienced facilitator will know what questions to ask, when to prompt and when to listen, how to maximise the participation of everyone and manage a process that encourages expansive and exploratory thinking, reflection and a path towards possible group resolutions or recommendations.

Session elements

The 2-hour session has several distinct sections.

- Introduction (out of role)
- The simulation exercise (everyone in role)
- Debrief (out of role)

Introduction

This is a 15-minute slot to say hello, welcome people and put them at ease by:

- welcoming participants to the session
- explaining what it's hoped will be achieved
- going through the running order
- explaining the 'rules' of the simulation
- providing a few minutes for people to review their role and get ready to introduce themselves in role when the simulation starts

There are slides to support this introductory session. Refer to the facilitation plan for the full description of how to run this section.

The simulation activity

This is the main part of the meeting and is in role. The main elements are as follows:

- Introductions in character: An introduction to the simulated meeting from the facilitator. This covers: thanking people for attending, setting out the purpose of the meeting, asking people to introduce themselves in turn (as their character) and a reminder of the flood risk/climate adaptation challenges.
- Options preferences: Asking each participant to say which options they support, would like to discuss further, or don't support. This gives everyone a chance to speak (in role) early in the meeting and express their preferences. The preferences are shown on the interactive white board so the whole group then has a good idea as to which options (collectively) are strongly supported, are open to discussion, or not supported. This gets the meeting to a good point from which the facilitator is able to open out the discussions from a position of everyone having expressed their opinion and preferences.
- Group discussion: A facilitated group discussion with the facilitator drawing out the opinion of the group on the initial options analysis and prompting a discussion on topics such as where there might be agreement, which options might form a package of approaches, what would need to change to make certain options acceptable, which options should be rejected and why. It is here that good group discussion facilitation skills are needed as each conversation in each simulation run will be different. The second facilitator, as the discussion develops, is moving the option cards around the interactive white board, to reflect option packages that are emerging or being explored. They can add comments, rank options in order, create clusters, rewrite options or develop new ones as the group's ideas develop. This provides a good visual representation of the group's thinking and progress and is helpful in supporting the conversation.
- Funding options: Once possible areas for agreement emerge (if they do) the facilitator can then direct the group's thinking as to how these preferred packages of options can be funded. The funds available (shown as funding units) have been set out, as well as where these funds come from. Each option also has an indicative price tag. This part of

the simulation involves participants in the challenge of discussing and deciding where funds should come from as there are a range of trade-offs and consequences to consider if, for example, money is reallocated from other project budgets, has consequences in the community, or raises local taxes.

- Recommendations: The final part of the meeting is to direct the group to consider the package of options and funding that they will recommend back to the council. In some simulations, the group may reach consensus on this and put forward a clear funded package. Other groups may only partially reach agreement or hardly at all. The aim isn't to ensure full agreement as the simulation reflects a real and complex situation. There is equal learning for the group in not achieving agreement as in reaching agreement. This can be explored further in the debrief.
- Closing: The meeting is drawn to a close by the facilitator after 75 minutes with a summary of what the meeting achieved and next steps fed back to the group. Everyone is thanked for taking part and the simulated element of the whole meeting ends and everyone can return to being themselves.

The debrief/reflection

After the simulation ends a 5 to 10 minute break is recommended. This is not just a tea/comfort break, but it also enables people to come out of their role and the intensity of the simulation and to be ready to reflect on the experience.

When reconvening for the debrief/reflection session it is a good idea to swap the main facilitator so that a different person is facilitating this session. A general question of 'how was it for you?' usually starts a productive conversation and there are other pre-written prompt questions on the debrief slide to review the experience in a more structured way. These include:

- the most interesting thing I have learnt from taking part
- a question that the simulation has raised for me
- something I will try to take back into our real-life situation

It is helpful to take notes from this session to learn from people's experience of participating. This can be fed back into modifications of the process but also there is learning about how this type of community conversation could be taken into the real world to convene collaborative planning to address flood risk and climate adaptation issues.

4. Other elements

Pre- and post-simulation survey

An online survey can be created to send to participants before and after they take part in the simulation. This can be used to track any changes in perception, thinking or behaviour that the simulation may have influenced.

Making it real

The aspiration is that participating in the simulation is a safe place to rehearse real-life conversations about these issues. Hopefully, there are possibilities to use the simulation exercise as an early stage in the process of a real-life community planning process. This will need to be discussed with the organisations/partnerships who have responsibility for these issues and processes in the locality where the simulation is used. It could be possible to integrate a series of simulations at an early stage within an overall stakeholder /community planning process.

Managing difficult situations

In any facilitated meeting where contentious issues are being discussed, there may be a need to manage conflict and be aware of the emotions that may be generated. An experienced facilitator will be able to recognise if the meeting is not working well or individuals are finding it difficult to participate. The facilitator will have strategies to address a range of issues. If the meeting or individuals are particularly struggling it is always possible to stop, come out of role, and have a short break to reduce any tensions.

Face-to-face simulations

The simulation exercise was initially conceived as a face-to-face workshop with a round table discussion. The early pilots worked in this way and the feedback was positive. The development of the online version was a response to the restrictions of the Covid-19 pandemic. As face-to-face meetings become possible again, this exercise could easily be adapted for an in-person round table discussion, although some new materials would be needed such as:

- printed briefing packs for participants
- name cards to display which role each person is playing
- a large chart and moveable cards to replace the interactive white board
- posters showing the options and funding available.
- a map showing the main features of the town

It is also possible to involve more people with 2 participants taking on each role and working together.

Even when meeting restrictions are not in place it is still useful to have an online version as it can be more accessible and time efficient for some groups.

Glossary

Adaptation to flooding and coastal change – Anticipating appropriate action to prevent or minimise the likelihood and consequences of flooding and coastal change, both now and in the future.

Authority – An organisation with official responsibility for a particular area of activity. This particularly includes government organisations.

Climate adaptation – Changing lifestyles, economy, infrastructure and local places to make us more resilient to the future consequences of climate change.

Community – Residents, businesses and groups living or based in a particular area.

Flood and coastal resilience – The capacity of people and places to plan for, better protect, respond to, and recover from flooding and coastal change.

Partners – Individuals, groups and organisations that help to carry out a particular area of activity. This includes private and third sector organisations.

Practitioners – Individuals working within authorities.

Readiness – How prepared people, communities and organisations are, in this context, to engage in conversations about and planning for the long-term response to increasing flood and coastal erosion risks due to climate change.

Risk management authority (RMA) – Organisations that are responsible for managing the risk of flooding and coastal erosion. This includes public and private sector organisations.

Stakeholder – Any individual, group or organisation that believes they could be affected by, interested in or could affect or influence the project or issue.

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