Turning up the heat: learning from the summer 2022 heatwaves in England to inform UK policy on extreme heat

Annex 1. Perspectives and experiences of the 2022 heatwaves from first responders, local and national government and agencies, utilities and civil society organisations

This Annex supports the main evidence report '*Turning up the heat: learning from the summer 2022 heatwaves in England to inform UK policy on extreme heat*' by providing sectoral-specific insights from on-the-ground responses to the 2022 summer heatwaves in England. These were captured via four focus groups with 21 participants and 38 separate interviews[1]. This Annex document presents the perspectives and experiences of four groups: first responders; local and national government and agencies; the utilities sector and civil society organisations, across our case study locations in England, London, Manchester, Yorkshire and Humber region. Annex 2 provides insights from each of the case study locations.

Summary

The four groups we spoke to expressed a range of concerns about the heatwave response, and also highlighted options to improve future preparedness. Common themes emerged across the groups as participants from each group cited concerns about lack of preparedness, funding and resources. All groups also spoke about the importance of better communication and engagement, building on past experiences, collaborating via existing networks and making improvements to policy and governance.

First responders were concerned that operational and strategic on-the-ground resources to respond to the extreme heat were severely stretched, with the ambulance and fire services under "severe pressure". They mentioned that resources, funding and capacity were inadequate given the severity of the event and felt there was overall a lack of preparedness which led to avoidable impacts. Several national and local government personnel also felt heat preparedness and strategy was inadequate, citing issues such slow or reactive decision-making processes, a lack of effective prioritisation and a lack of ownership of responsibility. Communities and civil society organisations also felt the preparedness and response was lacking. They highlighted the need to build upon existing networks and learn from previous and similar experiences of other risks and crises. They felt communication and engagement should be improved to shift attitudes, behaviours and wider culture to reduce vulnerabilities. Utilities stakeholders highlighted the challenges of multiple stressors, along with compounding and cascading risks which intensified the extreme heat. Drought was highlighted as a compounding factor which added pressure to the water sector at the same time as public demand for water increased.

[1] Fourteen interviewees also attended the focus groups.

First responders

The first responders we spoke to included NHS workers, fire and ambulance services, local resilience forums, and civil society organisations.

Key points

- Operational and strategic on-the-ground resources to respond to the extreme heat were severely stretched with the ambulance and fire services under "severe pressure".
- Resources, funding and capacity were considered inadequate given the severity of the event.
- There was overall a lack of preparedness which led to avoidable impacts.
- Communication, engagement and education around heatwaves must be improved to ensure an educated population about their vulnerability and exposure to extreme heat.
- Compounding and cascading risks were a key issue during the heatwaves of summer 2022 and further stretched resources as stakeholders had to navigate multiple simultaneous crises.
- Responses to heat must build on past experiences and networks, learning from other crises responses and countries.

Resources, funding and capacity

- Resources were severely stretched, and a lack of funding and capacity was a key issue for first responders. The fire service described the hottest day of the 2022 heatwave being their busiest day since World War II.
- There was a lack of experience in dealing with the heatwaves with a mismatch between resourcing available and the demands and severity of the hazard, which in some cases led to a dependence on volunteers.
- Equipment and uniforms required to respond to and manage the heat and associated impacts (e.g. wildfires) were reported as not fit for purpose in some cases, with equipment overheating and emergency services uniforms unsuitable to cope with the extreme heat, putting first responders at further health risk.

"Well [it was] our busiest day in history, I think it's been widely announced in the press and reported as, since the war, and that's without a doubt." First responder

"Well, we were under severe pressure within the ambulance service nationally because of the heatwave and the impacts of the drought, the fires, which from an ambulance service perspective didn't directly affect us but affected us through the patients that were impacted by all of the things through the fire service, as well." First responder

"...within the public sector, we're always expected to pick everybody up and we're underfunded on every front, we're not prepared either." First responder

Preparedness

- There was overall a lack of preparedness in England's heat responses during the unprecedented heat of summer 2022 leading to a number of impacts that could have been anticipated and avoided (e.g. through adequate resourcing, safe equipment).

> *"So in terms of heat, I've been in this team for about six years, and every year it seems to come around and someone says, "Oh, what's our heat plan?" and we intend to have this conversation which is we don't have a plan." – First responder*

Communication and engagement

- Some aspects of communication about the heatwaves were seen as effective, e.g. heat alerts were cascaded well to first responders.
- A lack of communication and education about heatwaves and heat risks was observed, with existing messaging under-representing the severity of the risk.
- Communications lacked effective, actionable and engaging content.
- Positive portrayals of the extreme heat in the media was problematic as it was seen to undermine the severity and harmful impacts of the heat to public health.

> *"It seems to be a little bit lacklustre, "Oh, it's going to be hot; make sure you open the windows." Well, yes, we could do that, but the education around it is not – I don't think it's being delivered in the right way. Explain why to open windows, explain some of the bits and pieces behind why their theories of opening a window helps; how does it help you, not just 'open a window'. […] So, yes, a little bit more scientific education on why, but then that's just a personal point of view. But no, I don't think there's enough going on." – First responder*

Compounding and cascading risks

- The heat led to wildfires, which were a challenge to contain, according to fire service representatives. The fires were made more likely to occur and spread more easily due to a period of drought coinciding with the heatwave events. The fires were reported to behave differently to what is typically dealt with by the fire service, due to their scale and the impacts of local winds.
- Additional stressors from the heat were raised such as heat impacts compounding the impacts of indoor air pollution, and the possible knock-on effects on health this could have, for example.
- Further cascading risks included the challenges of trying to keep patients cool in their homes, cool centres or ambulances, and offering practical support.

> *"…the way the fires behaved […] – they are unlike other fires in London. And that made it very difficult, because the London Fire Brigade is obviously very well-trained to deal with an urban setting. They're very well-trained to deal with problematic buildings, with older buildings, with historic buildings, with a range of London's built environment. What they are*

not expert on is climate-related fires and fires that behave differently. So the type of fires we had were ones you might find in places like Italy and Greece, where the climate's very different." – First responder

Learning from past and international experience

- First responders raised the need to build on past experiences and networks to enhance their response to extreme heat. In some cases, networks established during the Covid-19 pandemic to reach out to and support those most vulnerable were accessed and utilised to reach out to those groups during the heat events.
- The extreme heat brought to the fore a widespread acknowledgement of the lack of institutional knowledge and strategic and operational experience on preparedness and responding to extreme heat in the UK.
- The need to learn from other countries and to learn from other shocks was raised, with a call for emergency responders among others to build on and improve existing tools and resources.

"I think for all of us, each heatwave is going to be different, and I think it is still... Because it's not a frequent-enough occurrence, nobody's built up that kind of knowledge. I mean, if we look back through historic periods, you're probably talking five to ten years of stuff, so that institutional knowledge of what we did in that event isn't there" – First responder

National/local government

The policy-oriented participants we spoke to had roles relating to heat risk preparedness, management and response in national government, agencies and local authorities across England, Manchester, London and Yorkshire and Humber regions.

Key points

- Heat preparedness and strategy was felt to be inadequate. Issues such as slow or reactive decision-making processes had limited the response.
- Several issues relating to heat risk governance were raised, including a lack of effective prioritisation and a lack of ownership of responsibility.
- A lack of resources, funding and capacity has negatively impacted heat risk responses, with reported insufficient capacity to stay on top of workloads and lack of investment in preparing for and responding to heat risk.

Preparedness and strategy

- The majority felt that the UK is not ready for future heatwaves of similar or greater magnitude or longer in duration, and that preparedness to the heat and strategic planning were overall inadequate.
- Responses were considered reactive and that slow decision-making processes made it complicated to respond to multiple crises.
- A strategy is needed to make the heatwave preparedness 'business as usual', incorporated in year-long planning, and to balance long- and short-term thinking.

> *"Our ability to cope with multiple different things at once is still really tested so I think there was, there was a whole discussion piece around black swan events, wasn't it, when COVID came along? And so we were busy dealing with COVID and a spattering of industrial relations issues when we were then presented, in the coming week, we're going to hit these kind of temperatures." – Policy professional*

Governance

- There has been a lack of leadership and prioritisation on heat, and many missed opportunities. Participants felt the issue of heat is not fully prioritised, with clearer leadership, ownership and responsibility for heat risk at national and local level lacking alongside a lack of ownership of responsibility on heat issues.
- Effective management, and long-term thinking is required, adopting a holistic approach involving joined up rather than 'siloed' thinking (e.g. addressing disjointed regional approaches), whole avoiding over-cautiousness and awareness of reputational risks which may lead to hesitation in some decisions.
- Some appropriate governance processes were mentioned, and changes in strategy were reportedly underway in some institutions.
- In addition to a widespread strategy on heat, a simplification of processes is required to adequately plan for the future and ensure equitable approaches are taken.
- Changes in work practices are also needed, including more flexibility and better safeguarding of staff to protect welfare with calls for a maximum temperature threshold.
- A stronger focus on delivery, rapid responses, ensuring resourcing is fit for purpose is required, with heat responses embedded as part of wider adaptation processes.
- Synergies between measures (e.g. climate mitigation and adaptation) are required and buildings and infrastructure in the UK are not fit for heatwave periods.

> *"But I think they were obviously wanting to protect their reputation and to make absolutely, absolutely sure that this – if they issued what was an unprecedented occasion, the first time ever red alert for heat health, and for heat, that it would not be considered afterwards a cry wolf type of situation." – Policy professional*

Resources, funding and capacity

- Issues highlighted included a lack of resourcing, insufficient personnel and capacity to deal with the heatwave response, and staff working very long hours to stay on top of the response work.
- Additional yet mandatory tasks, such as civil servants having to respond to parliamentary questions during the heatwaves, meant that resources were diverted away from responding to the immediate and severe impacts of the heat.
- There is a fundamental lack of investment in heat readiness and resourcing and with more skilled or trained staff working with heat-focused remits are needed.
- The heatwaves put a strain on workloads in the government sector and others, which led to disrupted productivity. There was a sense of 'crisis fatigue' when the heatwave hit due to residual strains caused by the Covid-19 pandemic.

> *"We all ended up working probably 12-hour shifts throughout most of the heatwave. And the one thing I haven't mentioned yet, and this is the real killer […] When the heatwave was really starting to kick in, we get all of a sudden this surge in Parliamentary Questions, I think it was of the order – it was nearly 20 or so in a couple of days. And they're non-negotiable, so you have to answer them within the timeframe, which is often a very rapid turnaround, like 24 hours or so. […] you basically have to drop everything, and you have to just focus on answering the PQ" – Policy professional*

Information and data

- Information sharing and cascading down of heat alerts was praised with rapid alerts issued alongside credible data available to inform responses.
- Blind spots in knowledge were mentioned, such as heat indicators, data on compounding and concurrent risks (e.g. cognitive function and air pollution), vulnerable groups and more specific data about hazard dynamics and how this would interact with other risks and/or compounding factors.
- More focused guidance and consistency in reporting is required alongside robust, rapid translation of data within the UK and from other countries to tangible, usable information, so that evidence more optimally supports strategic thinking.

> *"'Oh, we can expect to see temperatures increase by 'X' amount in the future," but how does that then translate into actual impacts, because that's then how they can start using the information for decision-making and planning. Part of the heat service that I generated was a set of factsheets, and, yeah, I guess the feedback on both parts of the heat service was they need that so-what message; that needs to come through in the information – what does this mean on the ground type thing." – Policy professional*

Communication, engagement and behaviours

- Communication was viewed as relatively successful, but clearer communication about heat risks and its impacts is required as well as better public education about heat.
- Heat risks are being given greater visibility, however a lack of knowledge and misperceptions amongst public perceptions exists.

- Communication and engagement must address behavioural gaps and tackle risky behaviours (e.g. disposable BBQs increasing fire risks, swimming in reservoirs etc.).
- Dissemination of heat-related warnings need to be strengthened, considering accessibility of communications.
- Policy, governance and funding improvements are needed to support the effective communication of heat risk to convey the severity.
- Experience of heatwaves in the UK has increased political momentum/prioritisation around heat, which should be built upon.

> *"That kind of information, knowledge, behaviour change, techniques are going to be the main thing that we rely on for this. You know, just because you have a heatwave once every couple of years, you can't adapt every single building to have a full mechanical shading on the North side and replace all of the window and all of that kind of stuff. You have to rely on something a bit more responsive where you say, "OK, when there's a big event, then everyone needs to know the drill." – Policy professional*

Communities and civil society organisations

Civil society participants we spoke to included community interest groups, members of local climate commissions, charities and NGOs in England, Manchester, London and Yorkshire and Humber.

Key points

- Communities and civil society organisations feel that the UK is not yet prepared for future heat risk events if they are more extreme than what was experienced in 2022.
- Collaboration is key and must build upon existing networks and learn from previous and similar experiences of other risks and crises.
- Shifting attitudes, behaviours and the challenges of changing culture must be addressed.
- Communication, education and engagement on heat risks must be improved to help reduce vulnerabilities.

Strategy and preparedness

- Most civil society participants felt the UK is not prepared for heat risks if it is to experience similar events to the ones in summer 2022.
- Participants spoke about a general lack of preparedness and urgency, poor planning, high fatalities, there being "low-level interventions" only, a lack of inclusivity and an overloaded system.
- The issue of heat deserves more urgency in the UK, although this is acknowledged as competing with other pressures and priorities compounded by the complexity involved in preparing for heat.

> *"... Ordinarily you would have a protocol in place year-round for something like this and we*

didn't have, we don't really have a hot weather protocol, we kind of have a series of steps that we would have taken in the past. But it's been very much low-level interventions, so we'll drop some cream around to people that are rough sleeping, and we'll tell them that they can come into a shelter in the daytime to literally sit in the shade, and we'll drop water." – Civil society participant

Collaboration and building on networks and past experiences

- The importance of collaboration on heat risks was highlighted, although a lack of effective collaboration has persisted across sectors in operational, immediate responses and longer-term strategic planning.
- The UK must build on past experience of heat risks, learn from other countries, and build on networks built during the Covid-19 pandemic. For example, community champions that were seen as important during the pandemic could also help improve heat responses.

"... I think the aftermath of COVID as well, there's lots of different networks been set up. So I do know that some people still have those networks because those networks are just virtual so it might be a WhatsApp group and then they help with food or supporting people. So they can build that infrastructure, that community infrastructure still exists so I know some people were just checking in on people, saying they were part of a group." – Civil society participant

Attitudes, behaviours and culture

- While the community participants felt that people in the UK are more aware there is a lack of knowledge and understanding of the nature of heat hazards with inadequate behavioural responses, and also poor learning processes in the wake of heat events.
- Participants mentioned cultural barriers which problematise the UK's heat response, such as the inflexibility of life priorities, people's resistance to change and a lack of institutional and cultural experience and knowledge on heat.
- There are substantial challenges in trying to bring about this cultural shift, however some felt that people will ultimately find a way to adapt.

"People are a bit apprehensive about saying "no, I'm going to have to finish early because 'I've got to get home to my parents' or 'I just can't work in this condition.'" – Civil society participant

Communications, engagement and education

- There have been significant communication challenges, such as a lack of consistent messaging, ineffective communications at the national, regional and local scales (e.g. schools).
- Clear, accessible and engaging messages on the risk of extreme heat must be conveyed to residents, amplifying warnings.
- Media framings of heat risk do not portray heat risks in an appropriate way and must urgently be addressed.

> *"I think the messaging was a bit messy but then, we've always struggled with that, I think, and there's always a conflict; some schools said we are going to stay open and some schools didn't open at all. So it confuses the public as well, so surely this is one public health message that's right so how do they make that judgement? And sometimes, that judgement is parents' pressure because people can't afford to take a day off; that won't be allowed "I need to be at work." - Civil society participant*

Utilities

The utilities sector workers we spoke to included personnel from water companies and regulators.

Key points

- There were mixed opinions about how well prepared the UK was for the 2022 heatwaves.
- Participants highlighted multiple stressors, along with compounding and cascading risks which made the extreme heat worse. Drought was highlighted as a compounding factor which added pressure to the water sector at the same time as demand for water increased.
- Utilities participants highlighted issues in terms of public perceptions and behaviours, and emphasised the need for better heat risk communication and educational campaigns to help tackle this.

Preparedness, strategy and readiness

- The heatwaves of summer 2022 placed excess pressure on the water sector, which was made worse by a drought and increased water demand.
- Some utilities stakeholders felt that forward planning for the summer 2022 heatwave period was good as they were already planning for the impacts of the drought that was happening prior to the heatwaves. They had enough capacity built in to recover from the heat impacts.
- Others felt there was a lack of preparedness for the heatwaves particularly relating to advance warning about the timing, intensity and duration of the heatwave and other climate impacts. Most felt the utilities sector isn't ready for future events if they are of a greater magnitude.

"So the forward planning was really good, it always gets us, we fill everything up, like I said we had double stand-by so we try and get some of the jobs in the basket pushed through that we think might undermine resilience. So I think the forward planning really helps us and we've got very, it's a very well-oiled machine, the incident management process." – Utilities sector participant

Compounding and cascading impacts

- During the 2022 heatwaves, water demand increased substantially and compounded a prolonged period of below-average rainfall.
- The increased pressure on the water resource management sector, led to infrastructure and resources being stretched, and continued pressure after the heatwaves were over.

> *"I think had we got another two or three days of really hot weather, I don't think we would have lost supply but we would have got maybe some low pressure in some areas, that kind of thing. We might have seen more impact and certainly we would have lost storage, because it depletes a little bit every day and you can take so much, we've got some very big storage. But we then get to the point where recovery is really difficult because you might be only doing five to 10 percent more than demand. So after a big event like that, it's not just the event you know, it's managing the system afterwards, if that makes sense." – Utilities sector participant*

Public attitudes and behaviours

- There was a lack of public understanding – or a perception gap – among the wider public about the types of actions and behaviours that are appropriate to minimise exposure and vulnerability during extreme heat.
- Public actions were said to have put significant pressure on energy and water resources, with problematic behaviours further increasing risks to individuals (e.g. people trespassing on land to swim in reservoirs).

> *"... It's people showering twice a day. You get home on a really hot day you have a second shower before you go to bed, maybe. Or you're in the garden more, and you're watering the lawn, you're watering your flowers, you're watering your vegetables, whatever it is you're doing, you're filling the paddling pool up for the kids, it's those sorts of things that we see. And the key, the leakage of it, the component we would call it, is use of water outside the home. That's the big driver." – Utilities sector participant*

Communication, engagement and education

- Communication with customers during heat events is crucial, however this needs to be underpinned by and support a wider targeted public campaign to tackle misperceptions, bolster awareness and improve understanding.

> *"There is a huge gap around the public understanding of their climate risks. How severe they are. How soon they are. They're impacting on us, they're happening now, and we need a big public education campaign so that the public understand what their climate risks are. And therefore, they support the necessary action to adapt to those climate risks. So they understand the value of water, how precious it is." – Utilities sector participant*