

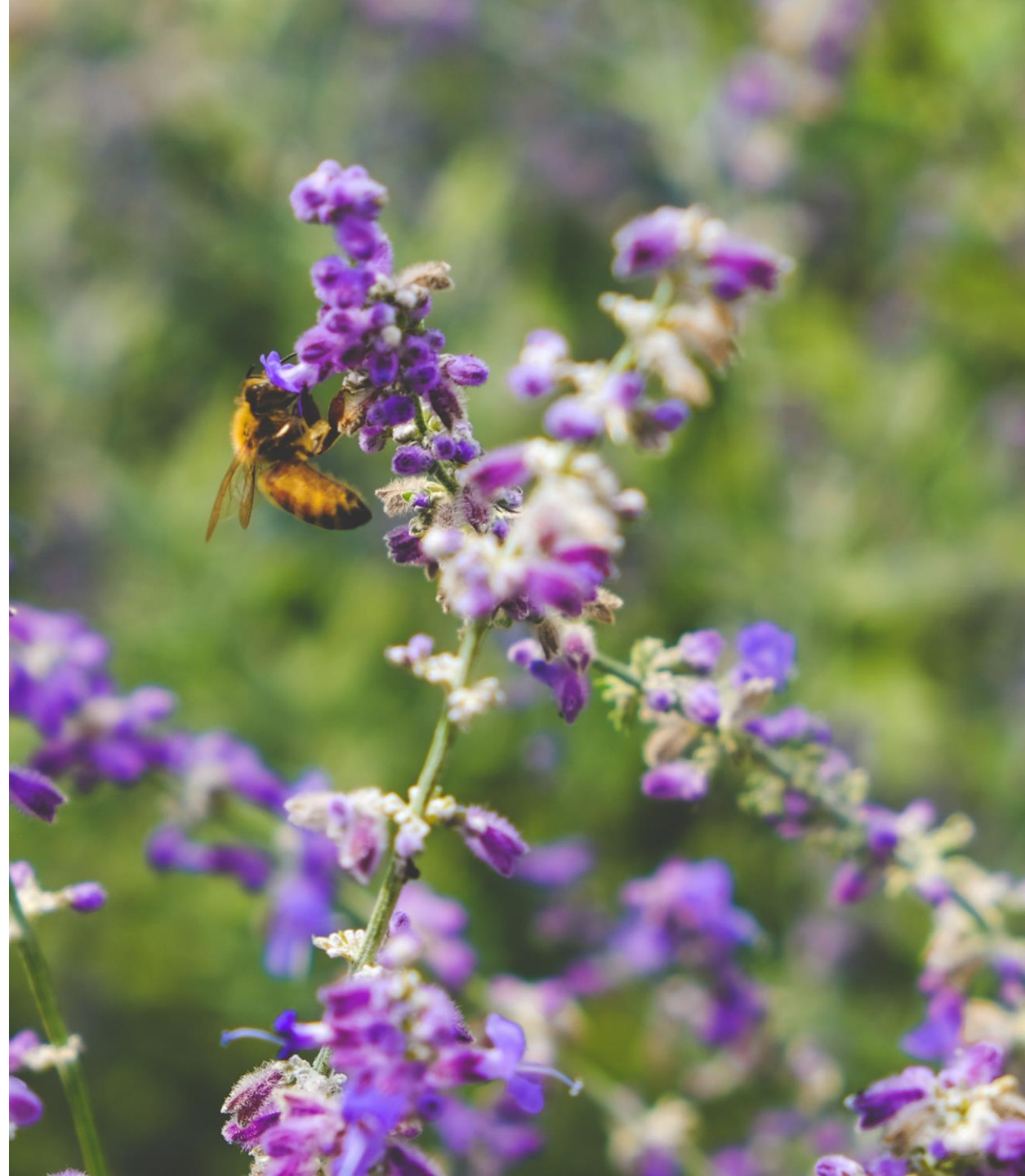
Pan UK Broadcaster Climate Research

June 2023

Background and methodology

At COP26, UK broadcasters and streamers came together and signed the Climate Content Pledge, committing to help audiences understand and navigate the path to net zero and inspire them to make greener choices. They will do this by using content to help audiences understand the challenges and opportunities of tackling climate change and how audiences can play their part.

In 2022, six of these broadcasters – the BBC, Channel 4, Channel 5, ITV, Sky and UKTV – commissioned Ipsos and the Centre for Climate and Social Transformations (CAST) to conduct an evidence review into what role broadcasters can play in inspiring audiences to make changes to tackle climate change and biodiversity loss.



1. Key findings

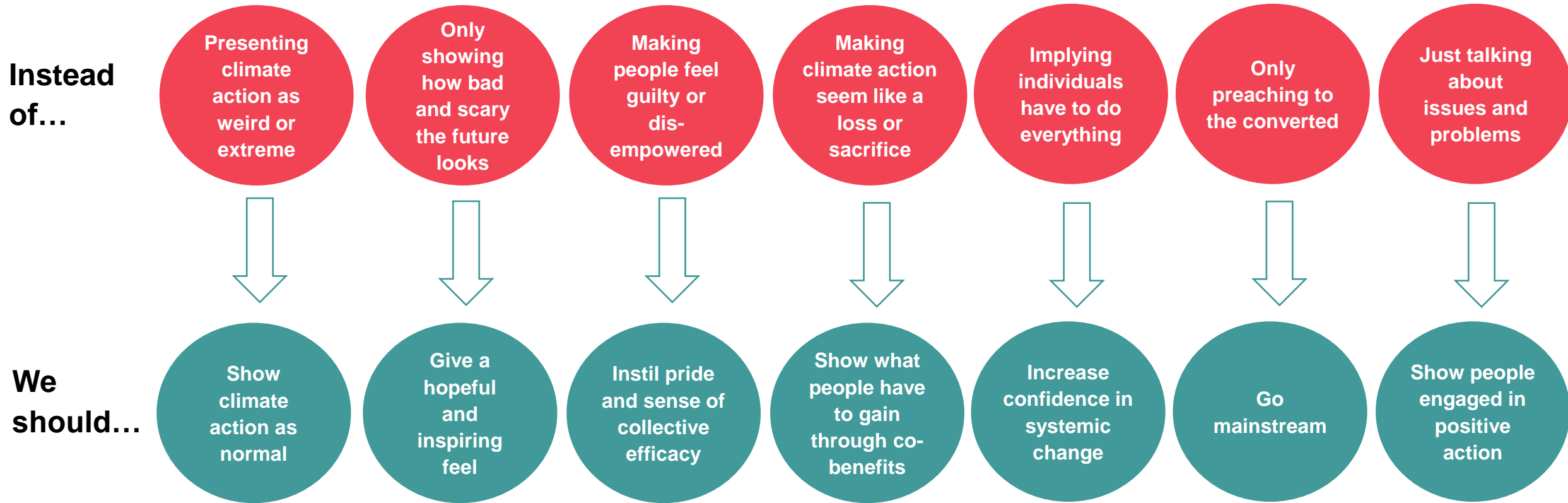


The different roles that media can play

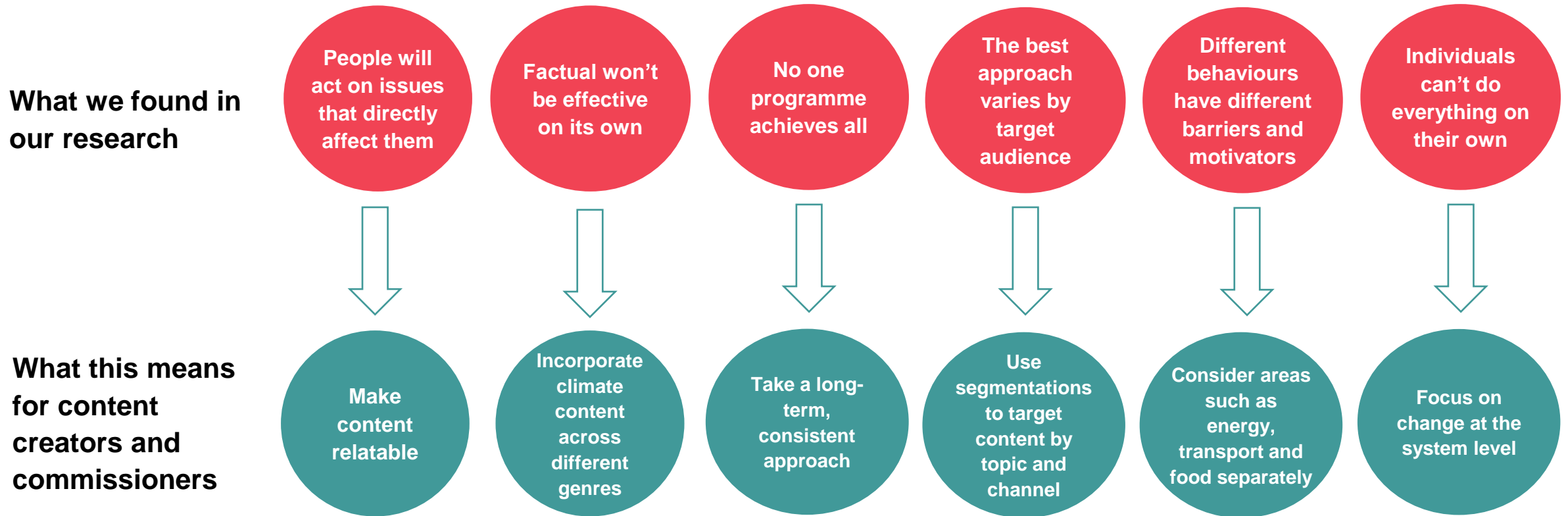
The visual storytelling power of broadcast media gives it a unique role in inspiring people and systems to address the challenges facing the environment. Its role includes:



Themes and approaches that work



The best approach will be coordinated across genres, channels and target audiences



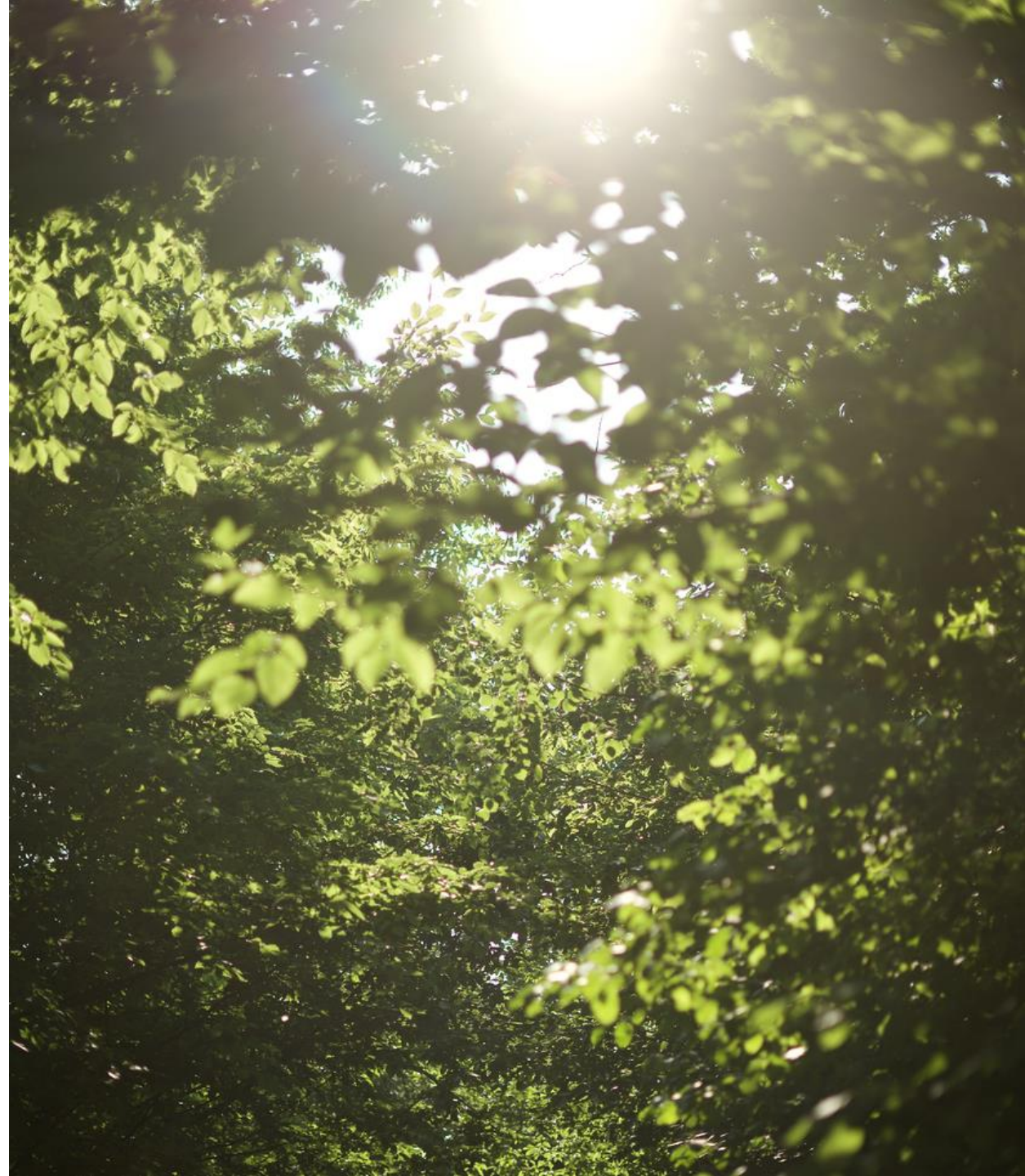
2. The role of broadcast media



Setting the public agenda

Broadcast media has a role in setting the agenda or mood thanks to its large viewership and its remit to cover the most important topics. Research on a range of topics has shown how coverage across media can set the agenda both directly and indirectly. The volume, urgency and prominence of coverage has an impact, shaping both public and political priorities.

This is not to say that media is all-powerful or can unilaterally decide what matters, or how people should think, feel and behave. It has to work with other actors and interventions, and also has to fit with - and be relevant to - people's day-to-day lives. Otherwise any coverage will have limited impact.



Educating and raising awareness

The role of broadcast media to educate and raise awareness of the challenges facing the environment can be thought of in three different ways:

Educating
people about
the problem

Telling the story of the challenges facing the environment. Mostly done through factual/news programmes but can be done throughout genres. Tells people what's going wrong and helps them understand why action is needed.

Telling people
what they can
do about it

Goes the next step to tell viewers what they can do to help tackle the problem. Typically focuses on individual behaviours such as diet, consumption, energy usage and transport. This is particularly important given low existing knowledge about the most impactful behaviours and the fact people think they are already doing enough.

Telling people
what
governments
and businesses
can do about it

Acknowledges that the way things are set up at the moment makes it very difficult for individuals to tackle the problem, recognises changes that governments, businesses and people with power can make to tackle the problem, and opens a conversation about wider structural changes that could deliver transformation.

Social norming

The literature makes clear the role that social norms play in determining our behaviours and habits, and whether we change those behaviours and habits.

A lot of the barriers to behaviour and systems change around the environment relate to social norms. Actions that contribute to climate change and biodiversity loss are often seen as 'normal' and actions that reverse it or reduce it are often seen as 'abnormal'.

Broadcast media plays a key role in social norming because it is one of the key forms through which we understand what is 'normal'. If we see something done repeatedly, our brains begin to internalise it as something typical that we ourselves may want to repeat.



Inspiring individuals

At its core, broadcast media is about individuals consuming content. Programming has the potential to reach mass numbers of people, especially when similar stories are told across multiple channels and programmes.

While, as we've seen, there is a role in educating and informing audiences about the challenges facing the climate and biodiversity and what can be done to address these challenges, this education isn't enough to drive change. This is because the link between changing attitudes or knowledge and changing behaviour is weak. Therefore as well as knowing the facts, we also need a sense of hope and positivity about the role we can all play.

Wildlife programmes have been described as inspiring interest in nature. However, it is not only factual programming that can do this and all types of content, from drama to lifestyle, can be used to inspire audiences watching. This can be done, for example, by seeing relatable people engaged in positive change and creating a sense of 'if they can do it, so can I'.



Providing a narrative of the future

Part of inspiring individuals means telling narratives of what the future might look like, sharing stories of ‘signals of the future’ and transformation happening right now. Broadcast media has a role in painting a picture of how citizens, governments and businesses could work together – and those changes already underway – to address the challenges facing our climate, biodiversity and broader environment.

It can be hard for both individuals and structures to change if we do not have a vision and positive aspiration for what a different future might look like.

This plays a role in inspiring individuals about their own behaviour, whilst also improving understanding for what systemic and structural changes might be required for us to address the challenges facing our climate and biodiversity.



Holding power to account

A core role of broadcast media is to hold powerful institutions to account. This includes in the area of climate change where broadcasters can offer scrutiny and analysis of both commitments and action.

This scrutiny and holding-to-account of those with power can support viewers as citizens and also help improve structures and systems to facilitate viewers make the choices they want to make.

This may include outlining the case for climate justice or fairer systems, challenging narratives that push climate action as only an individual responsibility or highlighting structural reforms which may be much more effective at reducing emissions.

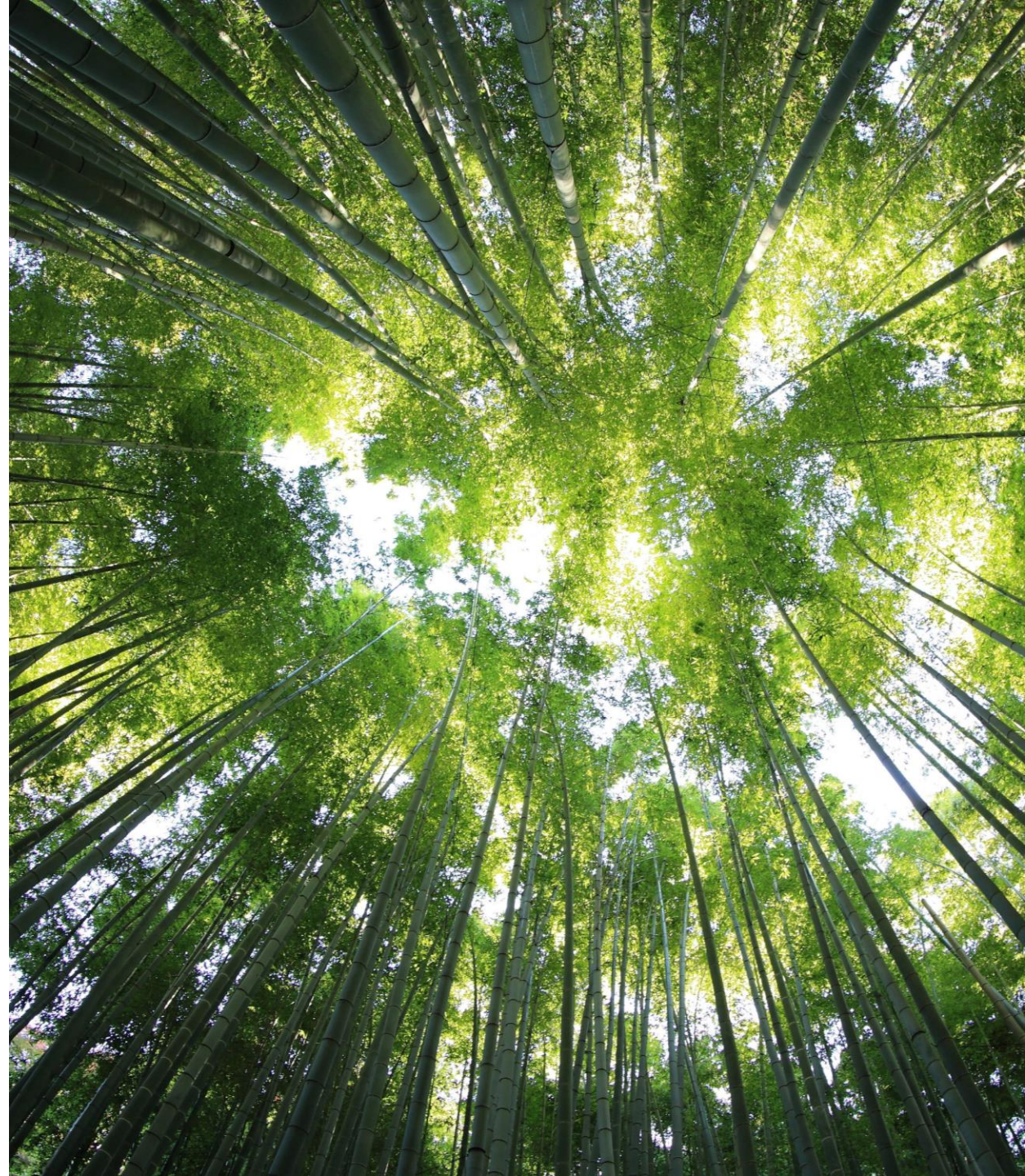


Tackling misinformation

Misinformation is a key barrier to action on climate change. This includes misinformation about the nature of climate change itself – for example the scientific consensus that humankind is contributing to climate change and global warming – but also about the best and most effective ways to tackle climate change.

Most people think recycling is the most effective action they can take to tackle climate change, when in fact it is one of the least impactful. At the same time, few are aware of the role of animal agriculture in global emissions, and therefore of the impact of switching to a plant-based diet.

Broadcasters have a role to play in tackling this misinformation by presenting the facts and encouraging discussion around controversial topics.



3. What works



Showing pro-environmental behaviours as normal

Social norming is a crucial component of behaviour change. Avoiding portraying pro-environmental behaviours as extreme or abnormal may help inspire people to make positive choices in their own lives, but also to support the structural changes needed to address climate change and biodiversity loss.

Broadcast media can portray the normality of pro-environmental behaviours in a whole range of ways across programming. This may include showing everyday, relatable characters but also aspirational influencers and celebrities.

As well as portraying pro-environmental behaviours as normal, it may also be beneficial to show high carbon behaviours as abnormal or negative character traits – or refrain from showing them at all.

Social norming can also support ‘social learning’ – we are social creatures and can learn effectively about the roles we can play by watching others.

"If you think about seatbelt wearing, for example, a very simple thing, we wouldn't normally show someone driving a car not wearing a seatbelt unless that perhaps signified a negative character trait. I could imagine someone being in a getaway car from a bank robbery might not have a seatbelt on. You're showing irresponsible behaviour and negative character traits so thinking the same way with climate, what are those opportunities to normalise behaviour and show actions?"
Steve Smith, Sustainable Production Consultant, Picture Zero

Giving a hopeful and inspiring feel

There is a significant lack of awareness and knowledge about the environment. However, increasing knowledge about the problem is not enough to inspire people to make pro-environmental choices.

People who are more concerned about the climate aren't necessarily more likely to make choices to help it and so providing facts about climate change is necessary but not sufficient. Fear and hopelessness characterise how many feel about the environment and these feelings do not generally inspire action.

Providing a more positive, hopeful and inspiring tone through programming may help overcome this. This doesn't mean avoiding showing the extent of the problem, but a balanced approach may help people feel empowered and therefore take action.

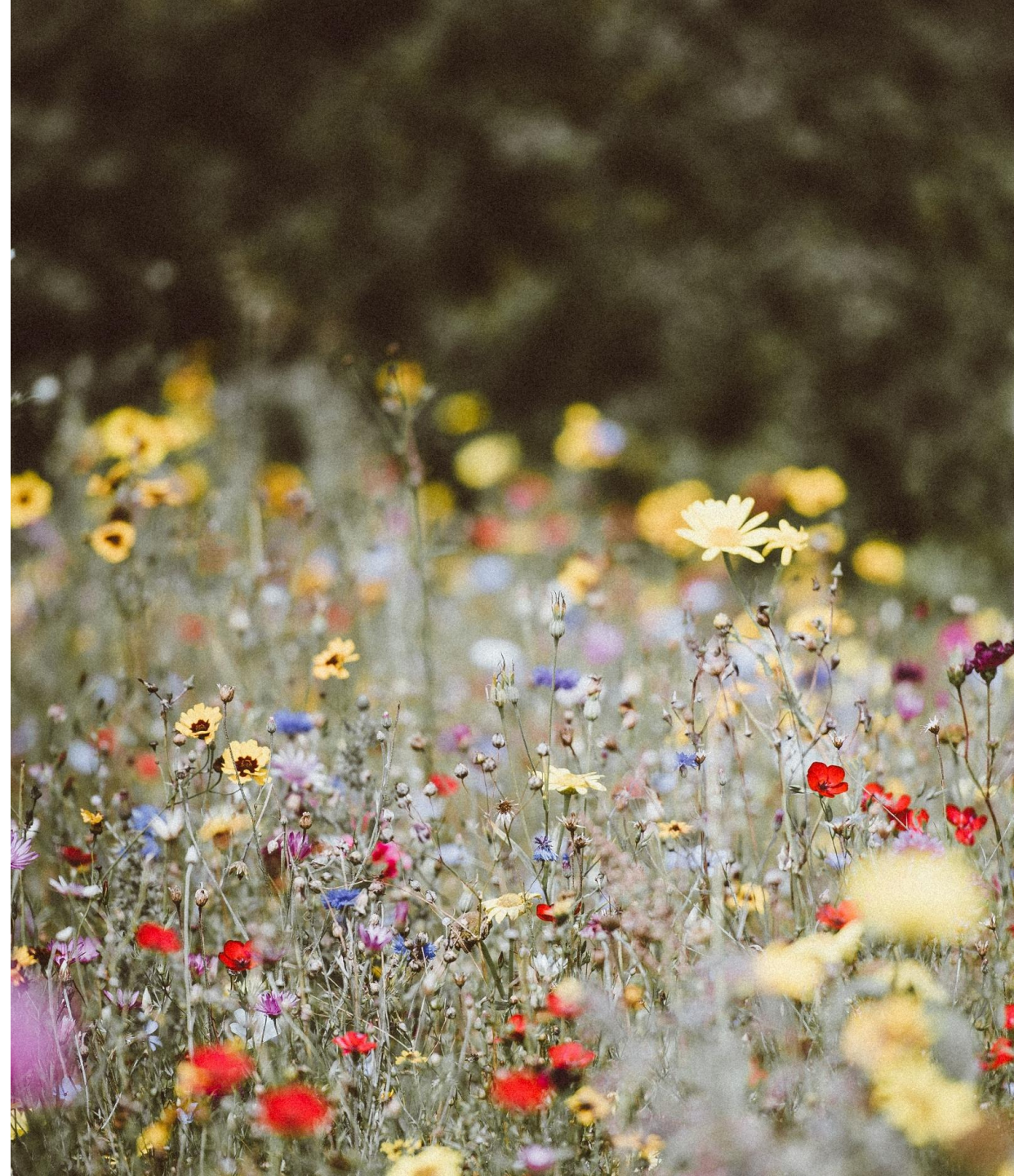
The other upsides of having a positive and hopeful approach to programming are that it may reach more viewers and that it suits the entertainment genre well.

“We are not a hard-hitting documentary. We are entertainment. We're quite light. We're quite positive. We're quite enjoyable, and people are tuning in not because they necessarily have a huge interest in green issues, because there's a different world for them to go into if that's what they have a particularly keen interest in. These are just everyday viewers. So when we're creating items on the show in whatever kind of context, we have to make sure that they're going to enjoy it.”
David Smyth, Commissioner (Entertainment), ITV

Increasing confidence in systemic change

Another barrier to action for many is the sense that the onus is on individuals and households to make changes in the face of huge structural barriers such as cost and infrastructure. Even if we know that we need to act, know how to act and are motivated to do so, if facilities are not available or cost is prohibitive we won't be able to do so.

At the same time, some of the changes required are not necessarily understood or supported by the general public either because the need for change is not sufficiently understood, or because the changes are seen as unfair. Broadcasters can help improve understanding and confidence in these changes by shining a light on the challenges and opportunities.



Instilling pride and a sense of collective efficacy

In the same way that appealing to fear doesn't work to motivate most people to take action, appealing to guilt or shame also tends not to work. When we feel guilty or shamed, this may activate our defensive motivations which make us want to defend our current behaviour rather than making us curious and empowered to change.

There is also evidence from other policy areas such as health that shame or guilt can reinforce negative behaviours. Instead, making people feel proud (or giving them the potential to feel proud) makes them much more likely to act. This can be enhanced through giving a sense of collective pride in make choices and changing structures to better support our climate and biodiversity. Visual storytelling can work really well to instil these feelings. This might be by showing what other people are doing, and showing the impact of joining together.

“One strategy we really continue to try and deliver from our marketing communications is around showcasing climate action, like collective action that is happening on climate change [...] ‘Come join us,’ that rallying cry, that we're going in this direction and we want everyone to come along with us, and that's a critical part of communicating on a just transition.”

Policymaker

Making content relatable

Climate-related content that is relatable and relevant to those watching is likely to be most impactful. This both ensures people watch and engage with content (as explicit climate content does not always reach large audiences), but also increases confidence and knowledge about how to act.

This will involve using characters and storylines that people can see as reflections of themselves which can then act as positive role models for making choices about climate change.

What is relatable to one person won't be relatable to another and so having a good understanding of audiences and targeting content that is relatable to different groups will be crucial. This also means being deliberately inclusive and diverse, using characters, themes and storylines which appeal across a range of audiences.



Showing what people have to gain through co-benefits

One of the major barriers to action is the perceived cost of taking action. In many cases this is not just a perception: many of the most impactful changes that we can make in our lifestyles come at considerable cost, whether direct financial cost, in the time required to research, plan and execute changes, or in the cost to lifestyle and culture.

Whether we're looking at the individual or the structural level, what we perceive of the changes we need to make in terms of loss or sacrifice, this can contribute to a sense of reluctance to act and climate delay. It gives a sense that even if we should act, we don't necessarily want to act.

This may be tackled by highlighting the co-benefits of taking action such as to finances or health. These can be shown at both the individual level such as the benefits of active travel or eating less meat to health, but also at the structural level such as the benefits of self-sufficiency in investing in renewable energy sources or the benefits to the health system in reducing harmful emissions.

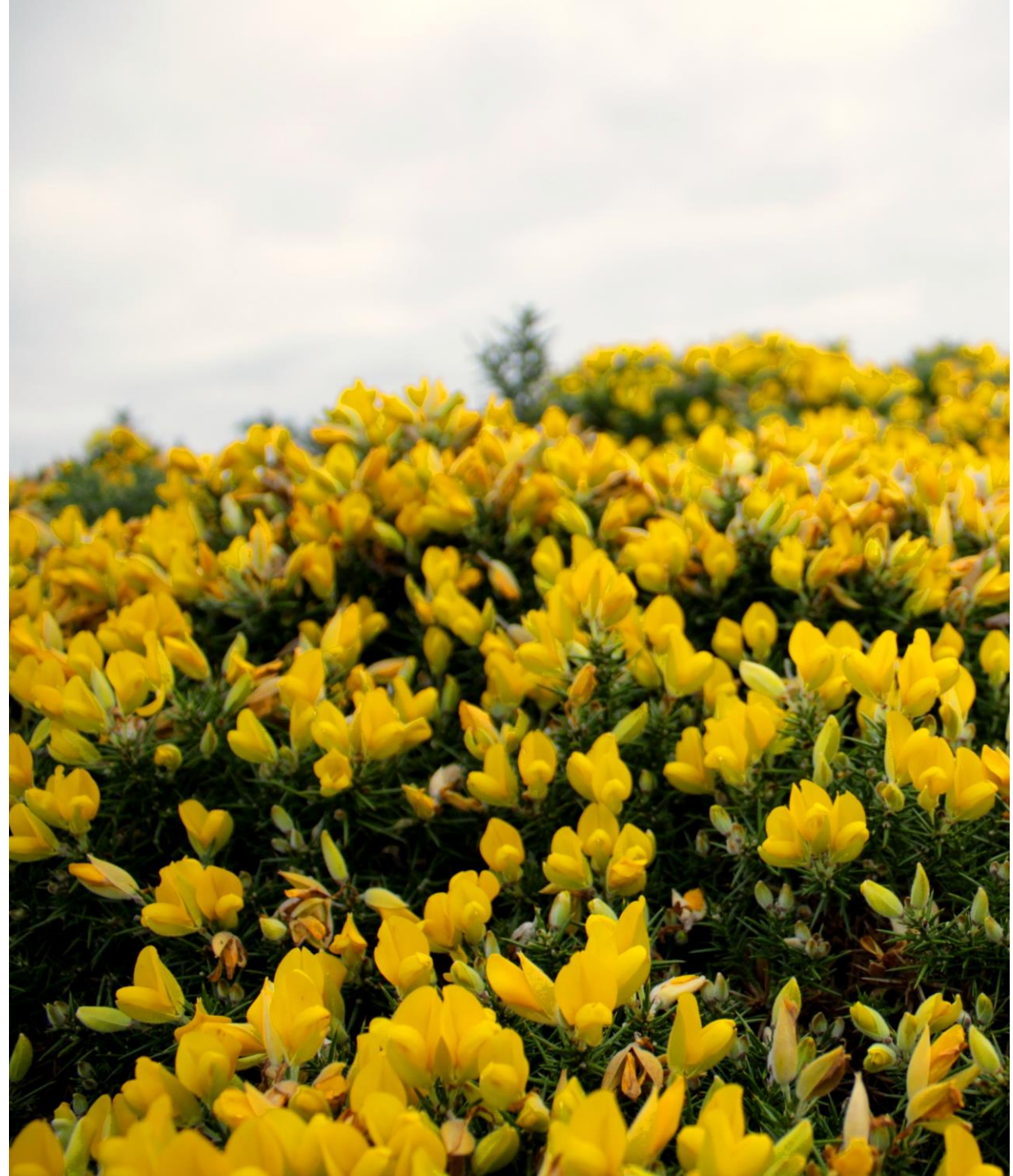
“Acting on climate creates a huge opportunity for us to address some of the injustice we have in society. The message needs to be less about the sacrifices we're all going to make by acting on the climate and nature emergencies and more about the opportunity for us to address some of those inequalities to create a fairer and more prosperous society for everyone.”
Policymaker, Welsh Government

Incorporating climate content across different genres

The majority of evidence in the literature focuses on the role of factual content, especially documentaries and news. Yet these programmes have limited reach. Even those watched by millions will exclude people who do not watch or enjoy that programming. To reach truly mass audiences, and to achieve the relatable, entertaining approach required, climate content should be incorporated across all genres.

This content will likely be much less explicit than that of factual programming. But there does seem to be considerable potential in drama due to its inherent storytelling ability and the way it can provide both an immersive and transformative experience that can help shift behaviours and attitudes.

There is also a growing body of evidence about the role of comedy and humour in shifting attitudes as it enables people to 'let their guard down' and be more open to messaging. This can be particularly useful in tackling mis- (and dis-) information – as telling people that 'they're wrong' can provoke defensive and dismissive responses.



Programming multiple approaches over the long term

As well as incorporating climate content across genres, there is also a role for taking a consistent and long-term approach, rather than limiting to single point-in-time programmes. This is needed for social norming and increasing confidence. These have significant social and psychological barriers that will take more than one programme to overcome.

Again, the evidence based on consistent or long-term approaches is limited, likely partly due to cost of evaluating things over a longer term. But there is evidence from across the communications fields about the power of repetition and consistency to improve recall of key messages and inspiration to act.

“If David Attenborough can't solve the issue, then we need to accept that no one programme is going to do it in one go and we're going to need to work across drama and news, specialist factual and entertainment and use that drip, drip, drip of content to shift the dial.”
Jonah Weston, Commissioning Editor for Science and Factual, Channel 4

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Annex: Bibliography

Bibliography

- Ainamani, et al. (2022). Gardening activity and its relationship to mental health: Understudied and untapped in low-and-middle income countries. *Preventive Medicine Reports*.
- Aitchison, J., Aitchison, R., & Devas, F. (2021). Assessing the environmental impacts of wildlife television programmes. *People and Nature*.
- Alae-Carew, C., Green, R., Stewart, C., Cook, B., Dangour, A. D., & Scheelbeek, P. F. (2022). The role of plant-based alternative foods in sustainable and healthy food systems: Consumption trends in the UK. *Science of The Total Environment*.
- Anderson, A. (2011). Sources, media, and modes of climate change communication: the role of celebrities. *Wire's Climate Change*.
- Andi, S. (2020). *How People Access News about Climate Change*. Reuters Institute for the Study of Journalism .
- Baden, D. (2019). Solution-Focused Stories Are More Effective Than Catastrophic Stories in Motivating Proenvironmental Intentions. *Ecopsychology*.
- Batty, P., Palacin, R., & Gonzalez-Gil, A. (2015). Challenges and opportunities in developing urban modal shift. *Travel Behaviour and Society*.
- Baumgartner, T., Langenbach, B. P., Gianotti, L. R., Müri, R. M., & Knoch, D. (2019). Frequency of everyday pro-environmental behaviour is explained by baseline activation in lateral prefrontal cortex. *Scientific Reports*.
- Bedford, E. (2020). *Share of dogs and cats fed plant-based diets worldwide as of 2019*. Statista.
- Behavioural Insights Team. (2017). *An Evaluation of Low Cost Workplace-Based Interventions to Encourage Use of Sustainable Transport*. Department for Transport.
- BEIS. (2021, August 16). *Government to tighten rules to stop 'greenwashing' of electricity tariffs*. Retrieved from BEIS: <https://www.gov.uk/government/news/government-to-tighten-rules-to-stop-greenwashing-of-electricity-tariffs>
- BEIS. (2022). *Smart Meter Statistics in Great Britain: Quarterly Report to end December 2021*. BEIS.
- BEIS Committee. (2022). *Decarbonising heat in homes*. BEIS Committee.
- Bernard, R., Tzamourani, P., & Weber, M. (2022). Climate change and individual behavior. Deutsche Bundesbank.
- Bieniek-Tobasco, A., McCormick, S., Rimal, R. N., Harrington, C. B., Shafer, M., & Shaikh, H. (2019). Communicating climate change through documentary film: imagery, emotion, and efficacy. *Climate Change*.
- Blankenberg, A.-K., & Alhusenb, H. (2018). On the determinants of pro-environmental behavior: A literature review and guide for the empirical economist. University of Göttingen.
- Boehnert, J. (2018). The visual representation of complexity: Sixteen key characteristics of complex systems. Proceedings of RSD7, Relating Systems Thinking. Turin.
- Bolderdijk, J. W., Lehman, P. K., & Geller, E. S. (2018). Encouraging Pro-Environmental Behaviour with Rewards and Penalties. In J. I. Linda Steg, *Environmental Psychology: An Introduction*. Wiley.
- Brevini, B., & Lewis, J. (2018). *Climate Change & the Media*. Peter Lang.
- Bryant, C. J., Prosser, A. M., & Barnett, J. (2022). Going veggie: Identifying and overcoming the social and psychological barriers to veganism. *Appetite*.
- Caiger-Smith, D., & Anaam, A. (2020). Public awareness of and attitudes to low carbon heating technologies: an evidence review. *ClimateXchange*.
- Capstick, A. (2022, September 20). Energy mythbusting: spend less on gas and electricity. Retrieved from Money Saving Expert: <https://www.moneysavingexpert.com/utilities/energy-saving-myths/#:~:text=According%20to%20experts%20at%20the,save%20energy%2C%20and%20therefore%20money.>
- Chapman, O., Kapetaniou, C., & Gabriel, M. (2021). "Decarbonising homes: Consumer attitudes towards energy efficiency and green heating in the UK. Nesta.
- Chater, N., & Loewenstein, G. (2022). The i-Frame and the s-Frame: How Focusing on Individual-Level Solutions Has Led Behavioral Public Policy Astray. *Behavioral and Brain Sciences*.
- Chiou, W.-B., Yang, C.-C., & Wan, C.-S. (2011). Ironic Effects of Dietary Supplementation: Illusory Invulnerability Created by Taking Dietary Supplements Licenses Health-Risk Behaviors. *Psychological Science*.
- CNN. (2021, June 23). Shoppers say they would buy more secondhand clothes if they could skip the sales tax, survey says. Retrieved from CNN: <https://www.cnn.com/2021/06/23/44percent-of-consumers-want-government-to-push-sustainable-fashion-survey-says.html>
- Cole, L. (2020, November 17). How to cut carbon out of your heating. Retrieved from BBC: <https://www.bbc.com/future/article/20201116-climate-change-how-to-cut-the-carbon-emissions-from-heating#:~:text=The%20energy%20used%20to%20heat,energy%2Drelated%20carbon%20dioxide%20emissions.>
- Correia, R. A., Ladle, R., Jarić, I., Malhado, A. C., Mittermeier, J. C., Roll, U., . . . Minin, E. D. (2021). Digital data sources and methods for conservation culturomics. *Conservation Biology*.
- Deloitte. (2022). How consumers are embracing sustainability. Retrieved from Deloitte: <https://www2.deloitte.com/uk/en/pages/consumer-business/articles/sustainable-consumer.html>
- Department for Business, Energy & Industrial Strategy;. (2020). *Transforming heat: public attitudes research*. Department for Business, Energy & Industrial Strategy.
- DeVille, et al. (2021). Time Spent in Nature is Associated with Increased Pro-Environmental Attitudes and Behaviors. *Int J Environ Res Public Health*.
- DFID. (2019). *Investing in a Better World: Understanding the UK public's demand for opportunities to invest in the Sustainable Development Goals*. DFID.
- DJS Research. (2021, February 10). A third of UK households are on a green-energy tariff, according to poll. Retrieved from DJS Research: <https://www.djsresearch.co.uk/UtilitiesMarketResearchInsightsAndFindings/article/A-third-of-UK-households-are-on-a-green-energy-tariff-according-to-poll-04795>

Bibliography

- Dong, M., Palomo-Vélez, G., & Wu, S. (2020). Reducing the gap between pro-environmental disposition and behavior: The role of feeling power. *Journal of Applied Social Psychology*.
- Dray, S. (2021, March 12). Food waste in the UK. Retrieved from House of Lords Library: <https://lordslibrary.parliament.uk/food-waste-in-the-uk/>
- Elhoushy, S. (2022). To taste not to waste: Can exposure to TV cooking shows cultivate food waste reduction? *Journal of Consumer Behaviour*.
- Energy Saving Trust. (2021, January 21). New research finds 96% of UK homeowners are concerned about their home energy efficiency. Retrieved from Energy Saving Trust: <https://energysavingtrust.org.uk/new-research-finds-96-of-uk-homeowners-are-concerned-about-their-home-energy-efficiency-yet-one-in-five-arent-taking-simple-steps-to-improve-it/>
- Energy Saving Trust. (2022, January 5). Breaking down the barriers to installing heat pumps. Retrieved from Energy Saving Trust: <https://energysavingtrust.org.uk/breaking-down-the-barriers-to-installing-heat-pumps/>
- Energy Saving Trust. (2022, May 20). Buying energy efficient products. Retrieved from Energy Saving Trust: <https://energysavingtrust.org.uk/energy-at-home/buying-energy-efficient-products/>
- Energy Saving Trust. (2022, January 14). Top five energy consuming home appliances. Retrieved from Energy Saving Trust: <https://energysavingtrust.org.uk/top-five-energy-consuming-home-appliances/>
- Faber, I., Castellanos-Feijoó, N. A., Sompel, L. V., Davydova, A., & Perez-Cueto, F. J. (2020). Attitudes and knowledge towards plant-based diets of young adults across four European countries. *Exploratory survey*. *Appetite*.
- Feldman, H. R. (2021). Motivators of Participation and Non-Participation in Youth Environmental Protests. *Front. Polit. Sci.*
- Feldman, L. (2016). Effects of TV and Cable News Viewing on Climate Change Opinion, Knowledge, and Behavior. *Oxford Research Encyclopedia of Climate Science*.
- Feldmann, J. (2020, December 15). How can policymakers promote pro-environmental behaviours? A social norms perspective. Retrieved from London School of Economics: <https://blogs.lse.ac.uk/psychologylse/2020/12/15/how-can-policymakers-promote-pro-environmental-behaviours-a-social-norms-perspective/>
- Fiona Gillison, G. L. (2021). A rapid review of the evidence on the factors underpinning the consumption of meat and dairy among the general public. University of Bath.
- Forrester. (2022, April 20). UK Investors Begin To Put Their Money Behind Sustainability. Retrieved from Forrester: <https://www.forrester.com/blogs/uk-investors-begin-to-put-their-money-behind-sustainability/>
- Francoeur, V., Paillé, P., Yuriev, A., & Boiral, O. (2019). The Measurement of Green Workplace Behaviors: A Systematic Review. *Organization & Environment*.
- Frischmann, C., & Chissell, C. (2021, October 27). The powerful role of household actions in solving climate change. Retrieved from Project Drawdown: <https://drawdown.org/news/insights/the-powerful-role-of-household-actions-in-solving-climate-change>
- Gamble, T., & Walker, I. (2016). Wearing a bicycle helmet can increase risk taking and sensation seeking in adults. *Psychological Science*.
- Gilchrist, K., & Craig, T. (2014). Home energy efficiency - review of evidence on attitudes and behaviours. *Climateexchange*.
- Gosnell, G., & McCoy, D. (19, January 9). Are smart meters good for UK households? Retrieved from LSE: <https://www.lse.ac.uk/granthaminstitute/news/are-smart-meters-good-for-uk-households/>
- Gosnell, G., & McCoy, D. (2020). Market failures and willingness-to-accept the smart energy transition: Experimental evidence from the UK. *Grantham Research Institute on Climate Change and the Environment*.
- Gov.uk. (2021). New water saving measures to safeguard supplies. *Gov.uk*.
- Gov.uk. (2022). Public urged to join collective action to protect plant health. *Gov.uk*.
- Gov.uk. (2022, August 26). Regulations: heat networks (metering and billing). Retrieved from Gov.uk: <https://www.gov.uk/guidance/heat-networks>
- Green, D., & Paluck, E. L. (2009). Using Media to Change Norms and Behaviors in Post-Genocide Rwanda. *American Political Science Review*.
- Green, M. C. (2021). Chapter 6: Transportation into Narrative Worlds. In L. B. Frank, & P. Falzone, *Entertainment-Education Behind the Scenes* (pp. 87-101). Palgrave macmillian.
- Grilli, G., & Curtis, J. A. (2019). Encouraging pro-environmental behaviours: a review of methods and approaches. *The Economic and Social Research Institute*.
- Hansmann, R., & Bindera, C. R. (2021). Reducing personal air-travel: Restrictions, options and the role of justifications. *Transportation Research Part D: Transport and Environment*.
- Harvard. (2022). The Nutrition Source. Retrieved from Harvard: <https://www.hsph.harvard.edu/nutritionsource/sustainability/food-waste/#:~:text=Cost%20savings%20when%20purchasing%20only,transporting%2C%20and%20selling%20of%20food>.
- Hinkel, J., Mangalagiu, D., Bisaro, A., & Tàbara, J. D. (2020). Transformative narratives for climate action. *Climatic Change*.
- HM Government. (2018). *Our Water, Our resources: A strategy for England*. HM Government. Retrieved from HM Government.
- HM Government. (2021). *Greening Finance: A Roadmap to Sustainable Investing*. HM Government.
- Hmielowski, J. D., Kirkpatrick, A. W., & Boyd, A. D. (2005). Understanding public support for smart meters: media attention, misperceptions, and knowledge. *Journal of Risk Research*.
- Hodobod, A., Hommes, C., Huber, S. J., & Salle, I. (2021). The COVID-19 consumption game-changer: evidence from a large-scale multi-country survey. *European Central Bank*.
- House of Commons Environmental Audit Committee. (2021). *Green Jobs*. House of Commons Environmental Audit Committee.

Bibliography

- Howarth, C., Parsons, L., & Thew, H. (2020). Effectively Communicating Climate Science beyond Academia: Harnessing the Heterogeneity of Climate Knowledge. *One Earth*.
- IEA. (2021, October 20). A call to action on energy efficient and smart appliances. Retrieved from IEA: <https://www.iea.org/articles/a-call-to-action-on-efficient-and-smart-appliances>
- Ipsos. (2020). Solving the environment is everyone's problem. Ipsos.
- Ipsos. (2021, March 29). Almost half of working Britons would get more satisfaction from a 'green job' than they do their current job. Retrieved from Ipsos: <https://www.ipsos.com/en-uk/almost-half-working-britons-would-get-more-satisfaction-green-job-they-do-their-current-job>
- Lange, F., & Dewitte, S. (2019). Measuring pro-environmental behavior: Review and recommendations. *Journal of Environmental Psychology*.
- Langenbach, B. P., S. B., Baumgartner, T., & Knoch, D. (2020). Cognitive Resources Moderate the Relationship Between Pro-Environmental Attitudes and Green Behavior. *Environment and Behavior*.
- Larbey, R., & Weitkamp, E. (2020). Water Scarcity Communication in the UK: Learning From Water Company Communications Following the 2018 Heatwave. *Frontiers*.
- Latter, B. (2022). Climate Change Communication and Engagement With Older People in England. *Frontiers in Communication*.
- Londakova, K., Reynolds, J., Farrell, A., WhitwellMak, J., Brickwedde, E. M., Mottershaw, A., . . . Park, T. (2021). The Power of TV: Nudging Viewers to Decarbonise their Lifestyles. Behavioural Insights Team.
- Lotus, E. F. (1992). When a Lie Becomes Memory's Truth: Memory Distortion After Exposure to Misinformation. *Current Directions in Psychological Science*.
- LSE. (2018, June 5). Why are household energy efficiency measures important for tackling climate change? Retrieved from LSE: <https://www.lse.ac.uk/granthaminstitute/explainers/why-are-household-energy-efficiency-measures-important-for-tackling-climate-change/>
- Marin, A., & Berkes, F. (2012). Local people's accounts of climate change: to what extent are they influenced by the media? *Wire's Climate Change*.
- Mason, E. (2020, February 19). 'Flight shame': Is it taking off? Retrieved from Commons Library: <https://commonslibrary.parliament.uk/flight-shame-is-it-taking-off/>
- McCormack, C. M., Martin, J. K., & Williams, K. J. (2021). The full story: Understanding how films affect environmental change through the lens of narrative persuasion. *People and Nature*.
- McGuir, L., & Beattie, G. (2019). Talking green and acting green are two different things: An experimental investigation of the relationship between implicit and explicit attitudes and low carbon consumer choice. *Semiotica*.
- McKenzie-Mohr, D. (2002). New Ways to Promote Proenvironmental Behavior: Promoting Sustainable Behavior: An Introduction to Community-Based Social Marketing. *Journal of Social Issues*.
- McLoughlin, N., Corner, A., Capstick, S., Richardson, H., Bell, A., Muller, A., & Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? *Climate Outreach*.
- Meyer, K. D., Coren, E., McCaffrey, M., & Slean, C. (2020). Transforming the stories we tell. *Environmental Research Letters*.
- Money Helper. (2021, September 1). What is the average cost of owning a pet? Retrieved from Money Helper: <https://www.moneyhelper.org.uk/en/blog/everyday-money/what-is-the-average-cost-of-owning-a-pet#>
- Moore, B., Verfuert, C., Minas, A. M., Tipping, C., Mander, S., Lorenzoni, I., . . . Whitmarsh, L. (2021). Transformations for climate change mitigation: A systematic review of terminology, concepts, and characteristics. *Wire's Climate Change*.
- Morgan, C. (2021, September 2). Recycle, recycle, recycle. But how successful is it and do we do it properly? Retrieved from The Vegan Review: <https://theveganreview.com/recycle-uk-recycling-problems-successful-plastic-waste-management/>
- Moser, S., & Kleinhüchelkotten, S. (2017). Good Intentions, but Low Impacts. *Environment and Behavior*.
- Motherway, B., Klimovich, K., Mooney, E., & Gelis, C. (2022, July 13). Empowering people to act: How awareness and behaviour campaigns can enable citizens to save energy during and beyond today's energy crisis. Retrieved from IEA: <https://www.iea.org/commentaries/empowering-people-to-act-how-awareness-and-behaviour-campaigns-can-enable-citizens-to-save-energy-during-and-beyond-today-s-energy-crisis>
- Motherway, B., Klimovich, K., Rozite, V., & Bayer, E. (2022, March 17). Accelerating energy efficiency: what governments can do now to deliver energy savings. Retrieved from IEA: <https://www.iea.org/commentaries/accelerating-energy-efficiency-what-governments-can-do-now-to-deliver-energy-savings>
- Mulholland, C., Pollok, M., Townend, R., Black, C., & Gray, E. (2020). Understanding and engaging the public on climate change. *ClimateXChange*.
- National Grid. (2020, January 10). The future of home heating in a net zero UK. Retrieved from National Grid: <https://www.nationalgrid.com/uk/stories/journey-to-net-zero/future-home-heating-net-zero-uk>
- Nest Insight. (2021). Responsible investment as a motivator of pension engagement. *Nest Insight*.
- Netuveli, G. (2020). "Pro-environmental behaviours and attitudes are associated with health, wellbeing and life satisfaction in multiple occupancy households in the UK Household Longitudinal Study. *Population and Environment*.
- Nkaizirwa, J. P., Nsanganwimana, F., & Aurah, C. M. (2021). Reexamining the Measurement of Pro-Environmental Attitudes and Behaviors. *EURASIA Journal of Mathematics, Science and Technology Education*.
- OECD. (2013, April 7). How can governments help people reduce their environmental footprint? Retrieved from OECD: <https://www.oecd.org/newsroom/how-can-governments-help-people-reduce-their-environmental-footprint.htm#:~:text=Governments%20can%20lead%20the%20way,the%20transition%20to%20sustainable%20consumption.>

Bibliography

- Ofwat. (2022). Help for you to save water. Retrieved from Ofwat: <https://www.ofwat.gov.uk/households/conservingwater/help/>
- Okin, G. S. (2017). Environmental impacts of food consumption by dogs and cats. PLOS ONE.
- Oluwadipe, et al. . (2021). A critical review of household recycling barriers in the United Kingdom. Sage Journals.
- O'Nolan, J. (2020, June 5). Investigating the Drivers of Pro-Environmental Actions. Retrieved from SustainOnline: <https://medium.com/@sustainabilityonline/investigating-the-drivers-of-pro-environmental-actions-a499e8e0c00f>
- ONS. (2020). BEIS Public Attitudes Tracker (March 2020, Wave 33, UK). Department for Business, Energy & Industrial Strategy.
- ONS. (2020). One in eight British households has no garden. ONS.
- ONS. (2021). A review of household behaviour in relation to food waste, recycling, energy use and air travel. ONS.
- ONS. (2021). Energy Performance of Buildings Certificates Statistical Release January to March 2021 England and Wales. ONS.
- ONS. (2021). How has lockdown changed our relationship with nature? ONS.
- ONS. (2021). Low carbon and renewable energy economy, UK: 2019. ONS.
- ONS. (2021). Opinions and Lifestyle Survey. ONS.
- ONS. (2021). Transport statistics Great Britain 2021. ONS.
- ONS. (2022). BEIS Public Attitudes Tracker: Energy Bills and Tariffs Summer 2022, UK . ONS.
- ONS. (2022). BEIS Public Attitudes Tracker: Heat and Energy in the Home Spring 2022, UK. BEIS Public Attitudes Tracker.
- ONS. (2022). Public opinions and social trends, Great Britain: 22 June to 3 July 2022. ONS.
- ONS. (2022). Research into “green jobs”: time spent doing green tasks, UK: 1997 to 2019. ONS.
- ONS. (2022). The People and Nature Survey for England: Data and publications from Adults survey year 1 (April 2020-March 2021) (Official Statistics) main findings. Gov.uk.
- Pankhania, T., & Jenkins, J. O. (2018). Attitudes, Behaviour, and Engagement Toward Water Consumption and Conservation in Higher Education Setting. Water Efficiency Conference. Hertfordshire: University of Hertfordshire. Retrieved from University of Hertfordshire.
- PDSA. (2020). PAW Report 2020. YouGov.
- Pearce, W., Niederer, S., Özkula, S. M., & Querubín, N. S. (2018). The social media life of climate change: Platforms, publics, and future imaginaries. Wire's Climate Change.
- PFMA. (2020, October 1). PFMA Confirms Dramatic Rise In Pet Acquisition Among Millennials. Retrieved from PFMA: <https://www.pfma.org.uk/news/pfma-confirms-dramatic-rise-in-pet-acquisition-among-millennials->
- Phillips, A., & Seaford, C. (2021). The Climate Consensus: The Public's views on how to cut emissions: Results from the Climate Calculator. Demos.
- PLAN. (2022, August 15). Young people unprepared for jobs in the “green economy” – global survey. Retrieved from PLAN: <https://plan-international.org/news/2022/08/15/young-people-unprepared-jobs-green-economy/#:~:text=Lack%20of%20capital%20and%20skills,skills%2C%20chosen%20by%2032%25.>
- Prosser, A., & Whitmarsh, L. (2022). Net Zero: A review of public attitudes & behaviours. BSI.
- Public Health England. (2016). Working Together to Promote Active Travel A briefing for local authorities. Public Health England.
- Public Health England. (2020). Improving access to greenspace: A new review for 2020. Public Health England.
- Ramos, T. B., Rogers, H., & Deutz, P. (2021). Repairing the circular economy: Public perception and participant profile of the repair economy in Hull, UK. Research Gate.
- RHS. (2022). Community gardening. Retrieved from RHS: <https://www.rhs.org.uk/get-involved/community-gardening/resources/community-garden>
- RHS. (2022). Gardening for the environment. Retrieved from RHS: <https://www.rhs.org.uk/gardening-for-the-environment>
- Rightmove. (2022, August 3). What will home-buyers of the future look for? Retrieved from Rightmove: <https://www.rightmove.co.uk/news/articles/property-news/future-buyers-look-for-energy-efficient-homes/>
- Sajeev, E., Martin, R., Waite, C., & Norman, M. (2020). Is the UK ready for plant-based diets? Global Food Security.
- Scarborough, C., & Cantarello, E. (2018). Barriers to pro-environmental behaviours at Bournemouth University. International Journal of Student Sustainability Research.
- Schmidt, S., & Eisend, M. (2015). Advertising Repetition: A Meta-Analysis on Effective Frequency in Advertising. Journal of Advertising.
- Smith, S., Meyer, K. d., & Bourne, M. (2022). Communications session: Oral evidence for House of Lords inquiry on behaviour change for net zero. House of Lords.
- Soga, M., Gaston, K. J., & Yamaura, Y. (2017). Gardening is beneficial for health: A meta-analysis. Preventive Medicine Reports.
- Somerwill, L., & Wehn, U. (2022). How to measure the impact of citizen science on environmental attitudes, behaviour and knowledge? A review of state-of-the-art approaches. Environmental Sciences Europe.
- Sonnichsen, N. (2021, January 22). How often, if at all, do you wash clothes at 30 degrees Celsius or lower? . Retrieved from Statista: <https://www.statista.com/statistics/423249/united-kingdom-uk-washing-clothers-at-30-orless/>

Bibliography

- Sonnichsen, N. (2022, May 20). What is the main way you heat your property during the winter? Retrieved from Statista: <https://www.statista.com/statistics/426988/united-kingdom-uk-heating-methods/>
- Stanford University. (n.d.). Frequently Asked Questions: Benefits of Recycling. Retrieved from Stanford University: <https://lbre.stanford.edu/pssistanford-recycling/frequently-asked-questions/frequently-asked-questions-benefits-recycling#:~:text=Q%3A%20What%20are%20the%20environmental,and%20reduced%20landfill%20by%2035%25.>
- Sujata, M., Khor, K.-S., Ramayah, T., & Teoh, A. P. (2021). The role of social media on recycling behaviour. *Science Direct*.
- Swaim, E. (2022, May 28). 8 Health Benefits of Getting Back to Nature and Spending Time Outside. Retrieved from Healthline: <https://www.healthline.com/health/health-benefits-of-being-outdoors>
- Swift, J. (2020). How Consumers View Energy Efficiency. Cornell Research.
- The Behavioural Insights Team. (2021, December 20). Pre-owned: Using environmental and cost-saving messages to encourage buying second-hand. Retrieved from Behavioural Insights Team: <https://www.bi.team/blogs/pre-owned-using-environmental-and-cost-saving-messages-to-encourage-buying-second-hand/>
- UK Parliament. (2020). Climate Change and Aviation. UK Parliament.
- UN Water. (2020, January 16). World Water Day 2020 -- Water and Climate Change. Retrieved from United Nations: <https://www.unwater.org/news/world-water-day-2020-water-and-climate-change>
- Unesco. (2020, March 22). World Water Day 2020 . Retrieved from Unesco: <https://en.unesco.org/commemorations/waterday/2020>
- United Nations. (2022, October 13). Goal 12: Ensure sustainable consumption and production patterns. Retrieved from United Nations: <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>
- Vesely, S., Klöckner, C. A., & Brick, C. (2020). Pro-environmental behavior as a signal of cooperativeness: Evidence from a social dilemma experiment. *Journal of Environmental Psychology*.
- Vogel, L. (2019). Fat shaming is making people sicker and heavier. *Canadian Medical Association Journal*.
- Wan, Q., & Du, W. (2022). Social Capital, Environmental Knowledge, and Pro-Environmental Behavior. *Environmental Research and Public Health*.
- Wang, Y., Hao, F., & Liu, Y. (2021). Pro-Environmental Behavior in an Aging World: Evidence from 31 Countries. *International Journal of Environmental Research and Public Health*.
- Water UK. (2020). Vast majority of Brits have no idea how much water they use each day. Retrieved from Water UK: <https://www.water.org.uk/news-item/vast-majority-of-brits-have-no-idea-how-much-water-they-use-each-day/>
- Welsh Government. (2020, August 5). Public attitudes to water efficiency in Wales. Retrieved from Welsh Government: <https://gov.wales/public-attitudes-water-efficiency-wales>
- Whitmarsh, L., Capstick, S., & Nash, N. (2017). Who is reducing their material consumption and why? A cross-cultural analysis of dematerialization behaviours. *Phil. Trans. R. Soc. .*
- Widayat Widayat, A. P. (2022). Responsible Consumer Behavior: Driving Factors of Pro-Environmental Behavior toward Post-Consumption Plastic Packaging. *Sustainability*.
- William F. Lamb, et al. (2020). Discourses of climate delay. *Global Sustainability*.
- Wonneberger, A., Meijers, M. H., & Schuck, A. R. (2019). Shifting public engagement: How media coverage of climate change conferences affects climate change audience segments. *Public Understanding of Science*.
- World Economic Forum. (2022, June 14). What is the circular economy and why does it matter? Retrieved from World Economic Forum: <https://www.weforum.org/agenda/2022/06/what-is-the-circular-economy/>
- World Health Organization. (2011). Health in the Green Economy. World Health Organization.
- WRAP. (2012, April 11). Food and Drink. Retrieved from WRAP: <https://wrap.org.uk/taking-action/food-drink>
- WRAP. (2019, July 16). Citizens attitudes & behaviours relating to food waste, packaging and plastic packaging. Retrieved from WRAP: <https://wrap.org.uk/resources/report/citizens-attitudes-behaviours-relating-food-waste-packaging-and-plastic-packaging>
- WRAP. (2020). Love Food Hate Waste. Retrieved from WRAP: <https://wrap.org.uk/taking-action/citizen-behaviour-change/love-food-hate-waste>
- WRAP. (2021, July 1). Recycling Tracker Report 2021: Behaviours, attitudes and awareness around recycling. Retrieved from WRAP: <https://wrap.org.uk/resources/report/recycling-tracker-report-2021-behaviours-attitudes-and-awareness-around-recycling>
- WRAP. (2022). Food Waste Action Week. Retrieved from WRAP: <https://wrap.org.uk/taking-action/citizen-behaviour-change/love-food-hate-waste/key-campaigns/food-waste-action-week>
- WWF. (2022). Living Planet Report . WWF.
- Zurich. (2021). We can fight climate change by simply reducing our food waste. Retrieved from Zurich: <https://www.zurich.com/en/media/magazine/2021/we-could-all-stop-wasting-food-and-save-the-planet>