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TV meteorologists at MET Norway as climate communicators

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Abstract. Climate change ought to be a natural part of the weather conversation on TV, radio and social media. Inspired by similar projects in other countries, the Norwegian Meteorological institute established a project in 2019 to develop their TV meteorologists as climate change communicators. The main objective in the project was to integrate research-based, localized climate content in the weather presentation, as to inform and engage the Norwegian public about climate change. Over a period of almost two years, the project has produced several climate stories on the national TV-news. The majority of the stories have also been shared through social media and through press releases to reach a wide range of audiences. In this paper, experiences from the project at the Norwegian Meteorological institute are shared along with recommendations for climate communication. We claim that TV meteorologists can have an important role in climate change communication, with a potential that is often not yet fully realized, and give our thoughts on how to further develop their role.

1 Introduction

Like most National Meteorological and Hydrological Services (NMHSs), the Norwegian Meteorological Institute (MET Norway), is primarily known for forecasting the weather. User surveys indicate that MET Norway enjoys a very high level of trust in the Norwegian population, being the state agency with the best reputation domestically 15 years in a row. In our latest annual polling (Ipsos, 2020) close to 85 % say they also have a high degree of trust in our climate research, while 82 % have a high degree of trust in our TV meteorologists as climate change communicators. Our climate communication is apolitical, and should naturally continue to be science-based to maintain the high level of trust we enjoy today. The combined climate science and communication expertise within MET Norway can capitalize on these high levels of trust to advance climate communication for Norwegian society. This was the backdrop for the project *TV meteorologists as climate communicators*, a two-year project that started in the beginning of 2019.

The main objective of the project was to integrate research-based, localized climate content in televised weather presentations and in social media, to inform and engage the public about climate change. We argue that climate change ought to be a natural part of the weather conversation on TV, radio and social media. TV meteorologists are the key communicators of weather and climate information to the general public. By training TV meteorologists as climate communicators, we have reached a large part of the Norwegian population through well-established channels (Fig. 1), and connect knowledge of climate change with people's everyday lives and their experience of the weather.

Our project was inspired by the success stories of *Climate Matters* in the USA and *Climate Communicators* in Australia. In the USA, *Climate Matters* is a multi-organizational and multi-sectoral collaboration. It is run by the NGO Climate Central and George Mason University, with involvement of NASA and NOAA. *Climate Matters* produces weekly tailor-made climate content for both journalists and meteorologists. In Australia, *Climate Communicators* is a program by the Monash Climate Change Communication Research Hub (MCCCRH) at Monash University. Climate researchers partnered with TV weather presenters to explain climate change implications within cities, rather than as a global phenomenon. In the following sections, we provide

Figure 1. TV meteorologist Kristian Gislefoss and news anchor at the NRK Evening News, talking about climate change and extreme weather. Screenshot by author. Available at https://tv.nrk.no/serie/dagsrevyen/201909/NNFA19092519/avspiller (last access: 26 February 2021).

the theoretical basis of the project, its key activities and outcomes, a number of recommendations for the wider climate communication community and a reflection on potential ways for MET Norway to advance climate communication in Norway.

2 Theoretical background, the project and recommendations

2.1 The research literature

The climate-related decisions people face are typically complex, and it is not easy to provide the required information without knowing what is on their minds. According to Fischhoff (2007), scientifically sound communication requires coordinating different kinds of experts: "... climate scientists should attest communication to its accuracy, decision scientists to its relevance, social scientists to its clarity, and designers to its format. Failing any of these tests can undermine a message's accuracy, tone, or comprehensibility" (Fischhoff, 2007, p. 5). TV meteorologists can play an important bridging role here (Maibach et al., 2016). For example, they enjoy a high degree of trust as familiar faces on the screen, and the forecasts tend to be perceived as politically neutral information. Furthermore, they are experienced science communicators and speak a language that people understand. Finally, TV meteorologists often already have a well-established audience. These advantages have also been used successfully in the USA and Australia (Corner, 2019).

A recent study found that exposing the TV audience to climate reporting by the weather presenter enhanced their understanding of climate change as a local problem (Feygina et al., 2020). In another survey, almost two-thirds of the weather forecasters that had reported on climate change indicated that they either received little, or positive feedback from the audience (Timm et al., 2020). Similarly, Australian weather presenters were seen as impartial and trusted sources, in contrast to general climate information which was viewed as "too politicized" (Holmes et al., 2017).

Climate communication has over the years become a research field in its own right. Some general challenges of communicating climate change are well known and relate to the fact that climate change tends to be distant both in time and place (e.g., Poortvliet et al., 2020). Some of the conclusions from MET Norway's project as well as Climate Matters and Climate Communicators, resonate well with three particularly relevant reports: "Connecting on climate: A guide to effective communication on climate change" (Markowitz et al., 2014), "Climate Visuals: Seven principles for visual climate change communication" (Corner et al., 2015), and "Effektiv klimakommunikasjon – Trender og fakta 2018" (Arnslett et al., 2018). The reports build on a combination of climate science, decision science and social science, as recommended by Fischhoff (2007). Several of the guidelines in the reports concur and key recommendations are presented below (Sect. 2.3).

2.2 MET Norway's project: TV meteorologists as climate communicators

MET Norway provides meteorologists to forecast the weather during broadcasts of the Norwegian Broadcasting Corporation (NRK). Introducing TV meteorologists as climate communicators establishes a unique platform for climate (change) communication, as educative and tailored climate content is presented in well-established channels by credible and familiar faces. A key engagement factor is to provide a local angle to the more abstract and global phenomenon of climate change. All the content is based on climate research, mainly MET Norway's own.

The project contained two key activities. The first activity aimed at training the TV meteorologists in climate communication, enabling them to gain knowledge and confidence in their new role. The TV meteorologists have received extended training (presentations, discussions, and workshops with Q & As, filming and evaluation) in climate issues from climate researchers, in communication and in presenting news on the NRK Evening news.

The second activity was aimed at implementation and outreach. Since spring 2019 we have produced 40 climate stories on the national TV-news, in the regular weather forecast format as well as through the TV meteorologists being interviewed by the news hosts live in the studio. These activities were met with positive feedback from both the broadcaster and the press. The stories have been shared on social media (42 posts throughout the project, see Fig. 2 for examples) and through press releases to reach beyond TV and radio audiences. The criteria for the stories are specific: they should include a local angle, be topical and ideally be linked to people's everyday lives. A key to success has been to constantly adapt the content and its presentation to the audience and to different communication channels.

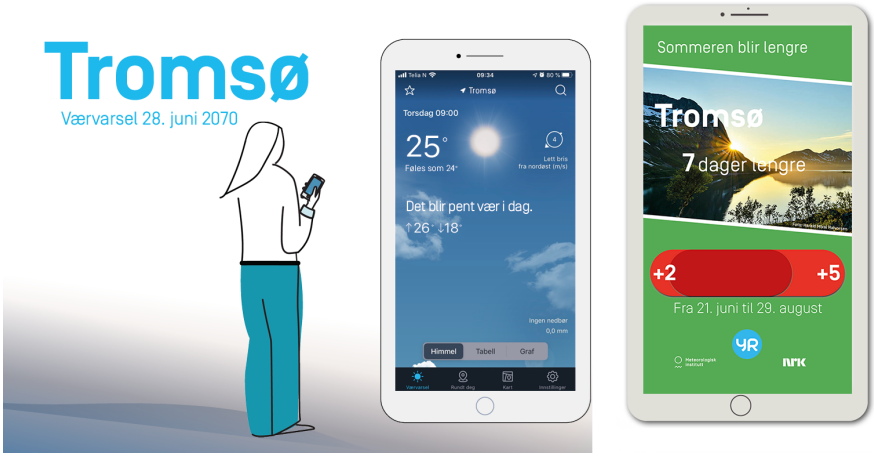

Figure 2. Examples of Twitter (@meteorologene) and Instagram (@yrbilder) stories, visualizing climate change with a weather forecast for 2070 (left) and how summer is expanding (right). The tweet is available at https://twitter.com/Meteorologene/status/1280792760015036417 (last access: 26 February 2021) and the story at the Instagram feed.

The estimated impact of these communication efforts is substantial. Norway's population is 5.4 million and 600 000–1 000 000 follow the evening news and the weather forecast at NRK. In addition comes over 125 k followers on Facebook, more than 55 k on Twitter and over 26 k on Instagram. Most of the climate change stories have been shared (e.g. retweeted) by multiple users, and they are also picked up and used by journalists. Based on these numbers we estimate that we potentially reach about 20 % of Norway's population. In 2020, 835 news articles mentioned MET Norway and climate compared to 359 news articles in 2019. It is interesting to see that in our annual polling for 2020, 85 % of the respondents have a high degree of trust in our climate research, a 6 % increase from 2019 (Ipsos, 2019, 2020). Similarly, there was a 5 % increase (from 77 % to 82 %) in trust in our TV meteorologists as climate change communicators from 2019 to 2020. We can only hope that the increase in trust at least partly is due to the increased focus on climate communication by our TV meteorologists.

2.3 Recommendations

Based on the experiences in our project and on those from projects like Climate Matters, the three most relevant research-based principles of climate change communication for MET Norway are as follows: (i) make climate change relevant: Local rather than global picture, (ii) current changes are more engaging than the future, and (iii) focus on impact rather than solutions.

First, we need to give climate change a local perspective, by showing how our climate has been changing in different parts of the country (see also Fig. 2). Second, making the audience aware of climate change in Norway which is actually taking place now enhances the personal experience, will decrease the "psychological distance" of the topic and make it more personally relevant (Perkins et al., 2020). Thus, we link information about climatological changes to current weather situations, and use our climate science expertise to, for example, explain if extreme weather events are induced by global warming. Practically, this also means avoiding statistical terminology that is difficult to relate to (e.g. 100 year return periods) and communicating about events in meaningful spatiotemporal terms. Third, our climate communication needs primarily to show how these changes (may) impact people's everyday lives and activities. Given the formal societal responsibility of MET Norway to inform about weather and climate, our mandate has clear boundaries. At the same time we recognize the need to inform about adaptation and mitigation. Multi-organizational climate communication strategies should cover the need to build bridges between science-based impact information, and societal solutions.

3 Further developing the role of TV meteorologists

According to NRK's annual report for 2019, media consumption has changed faster and more extensively in the last couple of years than ever before. Still, broadcast content such as TV, is important and constitutes a considerable amount of media use in Norway. However, the use of traditional (linear or real-time) TV is decreasing whereas the use of online streaming and mobile phone applications to watch content is growing, especially for young adults (30–39 years old) (NRK, 2019). The competition is strong from large corporations such as Facebook, Snapchat and YouTube. There is no reason why this development should not affect how the weather is presented on TV in the years to come. TV weather

presentations also meet competition from online forecasts which are continually updated. Taking Norway as an example, the evening news presents tomorrow's weather, but the forecast is typically based on numerical data that are already several hours old. Online, however, forecasts are updated every hour based on new numerical data, and every five minutes for the nowcast. If the weather is dominated by local phenomena like thunderstorms, their predictability normally improves considerably within a few hours, and in these situations the online forecast would be superior. As a consequence, traditional TV forecasts tend to be surpassed by other information sources, which is especially relevant in short-fuse and potentially hazardous weather events.

Weather on TV and TV meteorologists need to adjust to the changing media landscape. This could mean that the traditional role of TV meteorologist turns into a media meteorologist capable of creating good content for traditional TV and online streaming, as well as for social media. Additionally, the weather presentations on TV should exploit more updated data, hence becoming a supplement to online forecasts by building on the strengths of broadcast TV, rather than attempting to compete with the digital platforms. For instance, weather on TV can provide an overview, by giving a national or regional forecast whereas online forecasts often are more local. Presenting live updates of severe weather events with live reports and pictures is one way to do this. The TV meteorologist can exploit his or her expertise and trust by commenting on a weather and climate related news story, putting the weather into a climatological context. A stronger emphasis on the contextualizing role also opens up the potential to further include climate (change) related information in the TV weather broadcasts.

4 Conclusion

TV meteorologists can play a key role in climate education and strengthening climate literacy. Systematic evaluations of pioneering climate education initiatives such as Climate Matters underline the positive societal impact (Myers et al., 2020). To secure the future success of TV meteorologists on climate communication it is important to acknowledge that both the audience and the communication channels are constantly changing. Who is the audience, and where is it to be found in the years to come? In addition to resolving these challenges, there is a need to keep telling new stories, not just repeat the messages that have already been told many times. Our annual polling showed that 82 % have a high degree of trust in our TV meteorologists as climate change communicators (Ipsos, 2020). In one year that number increased by 5 %. At MET Norway the use of TV meteorologists as climate communicators continues as an operational service, building on the strategies and plans made throughout the project discussed in this article.

We believe that future initiatives on transforming TV weather broadcasts should focus on interdisciplinary collaborations. It is also recommendable to exploit the combined potential of near-real time data and benefits of live broadcasts. The traditional role of TV meteorologists will gradually have to develop into that of a media meteorologist to keep up with a dynamic media landscape and a changing climate.

Data availability. Data sets are available upon request.

Author contributions. ADS and AKH were project managers. MLFS developed the graphics. HOH and JJ contributed with climate communication knowledge. ADS prepared the manuscript with contributions from all co-authors.

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