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Complexities of communicating atmospheric composition and its impacts during the COVID-19 public health crisis in 2020

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The Global Atmosphere Watch (GAW) Programme of the World Meteorological Organization (WMO) is driven by the need to understand the variability and trends in atmospheric composition and the related physical parameters, and to assess the consequences thereof. GAW provides reliable scientific information for a broad spectrum of users, including policymakers, on topics related to atmospheric chemical composition. The programme supports international environmental and climate agreements and improves our understanding of climate change and long-range transboundary air pollution through its work on greenhouse gases, aerosols, reactive gases, atmospheric deposition, stratospheric ozone, and ultraviolet radiation. GAW provides information based on combinations of observations, data analysis and modelling activities, and supports a number of applications at the global, regional and urban scale. This implies a variety of target groups and communication vectors. Due to the complexity and interrelations of the different constituents in atmospheric chemistry and the diversity of the target audience, communication of the related issues represents a substantial challenge. Some examples are questions like “If greenhouse gas emissions are falling, why do concentrations not decrease?”, “if satellite data show pollution reductions, why can’t we say that it is due to emission reductions?” etc.

To sustain the credibility and increase the visibility of GAW within the WMO community and other national/international bodies, the broader scientific and policy communities, as well as the general public, increasing efforts towards “communicating GAW” are taken. The global pandemic related to COVID-19 was the dominating topic around the globe in 2020. This required adjustments to communication efforts. Due to in-person meetings being impossible, all communication efforts required delivery and engagement through virtual formats.

While emissions of carbon dioxide (among others) have decreased temporarily in 2020 due to COVID-19 restrictions, concentrations have continued to increase. This has led to confusion among many non-scientists who were surprised that the restrictions they were experiencing did not even have the effect of decreasing atmospheric concentrations of carbon dioxide. Thereby, the crisis has provided an opportunity to explain the difference between emissions and concentrations, emphasizing that carbon dioxide (and other greenhouse gases) are long-lived and remain in the atmosphere for a long time, and highlighting the importance to reach net-zero emissions. Similar confusion was related to the interpretation of the pollution levels and also required additional

communication efforts.

Reflections on communication of atmospheric composition in the framework of WMO/GAW, including challenges and opportunities during the public health crisis will be presented.