



How and why to communicate atmospheric composition – 30 years of WMO's Global Atmosphere Watch Programme

Claudia Volosciuk, Oksana Tarasova, Geir Braathen, Alexander Baklanov, and Lorenzo Labrador
WMO, Research Department, Geneva, Switzerland (cvolosciuk@wmo.int)

Since 30 years, the Global Atmosphere Watch (GAW) Programme of the World Meteorological Organization (WMO) is driven by the need to understand the variability and trends in the composition of the global atmosphere and the related physical parameters, and to assess the consequences thereof. The GAW Programme is a partnership involving the National Meteorological and Hydrological Services, contributing networks and collaborating organizations and bodies. Advancing the scientific understanding of greenhouse gases, aerosols, reactive gases, atmospheric deposition, stratospheric ozone, and ultraviolet radiation remains critical, especially due to the related socio-economic impacts of weather, climate, human and ecosystem health, water supply and quality, and agricultural production.

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. Best practices related to observations and modelling tools are published and disseminated. More than 100 countries have registered more than 800 stations with the GAW Station Information System (GAWSIS) where the stations' metadata is publicly available. Quality controlled data from these stations is made available through World Data Centres and used to develop multiple science-based products and services to support the user communities. For instance, identifying major sources of greenhouse gases, including previously unknown, helps to reduce emissions in an efficient way. Improving air quality forecasts, and warning and advisory services aims to reduce the risk of air pollution's impact on human health, particularly in but not restricted to cities.

Outreach and communication efforts are crucial to share and explain the latest scientific findings on atmospheric chemical composition with a wide range of audiences including policy makers and the general public. For instance, the latest annual WMO Greenhouse Gas Bulletin revealed another record high of greenhouse gas concentrations in the atmosphere, and has been issued before the meeting of the parties of the United Nations Framework Convention on Climate Change. The latest Scientific Assessment of Ozone Depletion reveals a healing ozone layer, global warming reduction potential, and options for more ambitious climate action. The Scientific Assessment Panel of the Montreal Protocol publishes a quadrennial review. The most comprehensive updates on recent activities of the GAW Programme can be received via our Newsletter e-zine.

A particular challenge to communicate topics related to the atmosphere's composition to non-experts is the fact that constituents of the atmosphere are not visible to the human eye. There are some exceptions, such as strong aerosol pollution events, or smoke being visible close to its source. The complex processes and interactions that determine atmospheric composition are another challenge. Communication approaches for different target groups, including selected highlights in the light of GAW's 30th anniversary, will be presented.