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Seamless Prediction of Air Pollution for Africa: WMO GAW initiative and workshop outcomes

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The main objective of the new WMO Global Atmosphere Watch (GAW) initiative is to establish together with the MAP-AQ (Monitoring, Analysis and Prediction of Air Quality) core group and the Copernicus Atmosphere Monitoring Service (CAMS) a number of federated projects and a sustained network of partners with complementary expertise, which will develop and implement a forecast and assessment system for air quality (AQ) over Africa with downscaling capability over certain African countries and cities in support of different applications. This forecast and assessment system will help decision makers to improve air quality and public health, mitigate the occurrence of acute air pollution episodes, particularly in urban areas, and reduce the associated impacts on agriculture, ecosystems and climate.
The suggested approach combines an ensemble of state-of-the-art models, high-resolution emission inventories, space observations and surface measurements of most relevant chemical species (coarse and fine PM, ozone, reduced and oxidized N, etc.) to provide hindcasts, analyses and forecasts of regional air pollution in the Africa region and downscaling for selected countries and urban areas. To start realisation of this objective, the International Workshop on “Seamless Prediction of Air Pollution for Africa: from Regional to Urban” was organised in Pretoria, S. Africa in December 2017 with more than 60 representatives from various countries in Africa and international institutions and program representatives. The initiated project will bring together an interdisciplinary team of scientists from Africa and the international community.
Pilot projects should be established as partnership between several national and international partners. MAP-AQ provides a general framework to ensure global compatibility of the forecasting system as a part of the GAW Implementation Plan (task A-M-11). The following working groups are being established on Emissions, Observations, Pan-African forecasts and related products (modelling), “Priority areas” forecasts and related products (sub-regions), Dissemination of data and on web & mobile platforms. While the initial focus of the projects is on urban-scale air quality forecasting, the potential use of modelling and data products for related issues such as impacts on crops, ecosystems and climate are included as well.
Analysis of the current status (AQ observations and prediction), possibilities and suggestions to develop and implement an analysis and forecast system for air quality with downscaling capability for Africa, selected countries and cities, following the main outcomes of the Workshop, will be presented and discussed.

References:
GAW, 2017: WMO Global Atmosphere Watch (GAW) Implementation Plan: 2016-2023. WMO GAW Report No. 228, World Meteorological Organization, Geneva, 81 pp.