

Some observations and thoughts for discussion

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Ranjeet S Sokhi

Centre for Atmospheric and Instrumentation Research (CAIR) University of Hertfordshire, UK





Research

Science driven Advancing knowledge Process based Composition Meteorological Weather Climate Change Parameterization Exposure and health

> Linking observations Modelling

> > ...



Essential Interconnections

Needs

Impact driven Quality of life, wellbeing Exposure, health impact Infrastructure integrity Hazard forecast and response Climate impacts

> Applications Assessment Mitigation Adaptation

> > University of Hertfordshire



WMO/GURME activities

University of Hertfordshire

- Science and support to meet needs of meteorological services/members
- Mobilising expertise globally
- Data sharing, databases, datasets for modelling
- Observations meteorological
- Training, dissemination
- Encouraging cooperation driven by operational and science needs
- Forecasting Weather and air quality
- Integrated modelling systems e.g. linking scales, processes, coupling, consistency ...
- Incubation and coordination through pilot/demonstration projects
- Best/good practice and recommendations for science/service communities
- Much more....
- Increasing links of activities to societal needs



Typical societal needs Examples

Typical questions that are important for cities:

- Which emissions reductions gives the maximum benefit?
- How much of the air pollution comes from local and regional sources?
- How should cities respond to changes in future air quality including influence of climate?
- Which specific air pollution controls are needed to meet compliance requirements (by year x)?
- Which mitigation options will deliver the maximum socio-economic gain?
- What changes in air pollution emissions/sources are required to reduce the health impact of air pollution on the population by x%?
- What confidence can policy makers have on model predictions? (e.g. for different spatial and temporal scales and pollutants)
- Where and how can WMO/GURME help?





Emphasising societal needs Urban relevance

- How can WMO/GURME help to meet **societal challenges**?
- Integrated urban science air pollution, emissions, meteorology
- Developments in **modelling/observational capability** for quantifying societal impacts of air pollution and weather
- Translating observational/forecasting uncertainties for user/policy responses (e.g. compliance, mitigation, adaptation)
- Feeding into exposure and health impacts assessment process
- Role of climate change on urban air quality
- Maximising engagement between the Met. Services, research and user communities to address societal challenges
- Others....

