

# Implementing Accountability in a Multi-Pollutant Management Framework

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# Introduction

- NRC: Progress in air-quality management should be measured in terms of performance outcomes
- AQ managers in Canada and the US need to demonstrate effectiveness and continuous improvement in implementing AQ management actions
- Need to go beyond demonstrating compliance with NAAQS

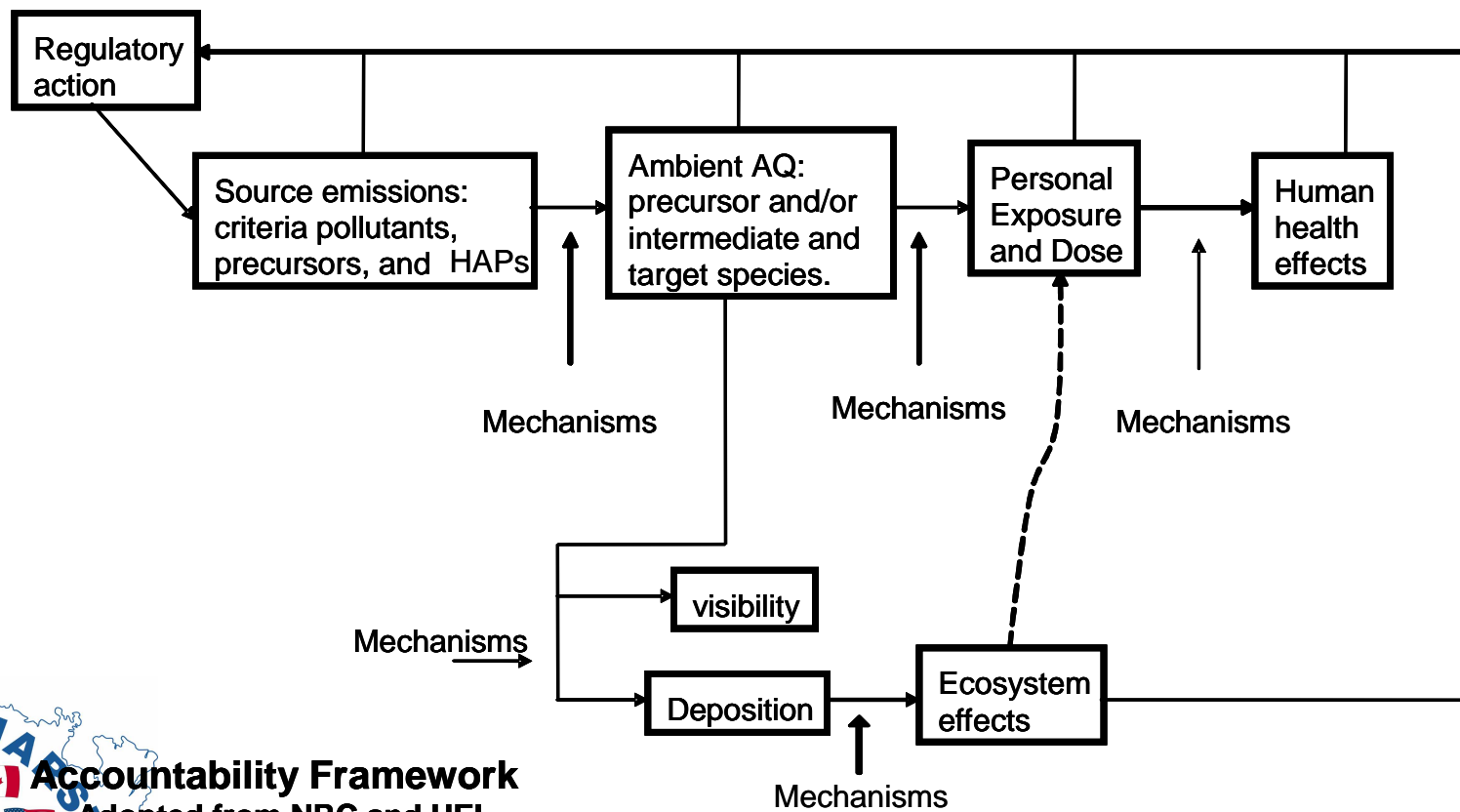
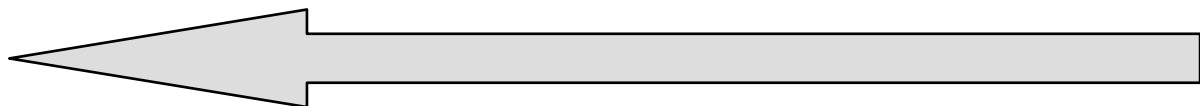


# Accountability Process

1. Was the AQ management action implemented?
2. Did the expected emission reductions occur?
3. Did these reductions result in expected reductions in concentrations or deposition?
4. Did these changes reduce exposure?
5. Did they result in improved public health or reduced ecosystem stress?



# Direction of Assessment Inquiry



**Accountability Framework**  
Adopted from NRC and HEI

# Preliminary Points: Human Health

- Exposure assessment/reconstruction feasible (measurements, models, biomarkers)
- Outcomes can be determined via epidemiology (but it can take time)
- More research needed on relative potency and synergistic effects of pollutants



# Preliminary Points: Ecosystems

- Models exist for assessing some multi-pollutant effects (e.g., acid deposition, ozone) on systems (forests, crops, surface waters)
- Better exposure estimates needed (more data)
- Sorting out effects of multiple stressors is obviously a complex problem



# Climate and Air Quality

- For most AQ accountability issues, meteorological variability more important than climate change
- Long-range transport will be an increasing (but probably not dominant) issue
- In the short run, co-benefits and dis-benefits of AQ and GHG reduction policies can largely be identified and the policies coordinated. In the longer term, it gets increasingly complicated due to uncertainties regarding climate system response, technological change, climate policies, and economic growth
- Estimating long-term impacts of climate change on regional and urban air quality will have significant uncertainties.



# Status of Assessment

- Health and ecosystems workshops held
- Chapter authors preparing drafts
- Assessment synthesis begins this fall
- Completion scheduled for December 2008

