Using Health Impacts Assessment (HIA) to Inform Policy Decisions

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HIA informs policy decisions by quantifying health benefits from clean air

- HIA motivates action by revealing the current burden of disease from air pollution and the potential gains from policy interventions.

- Can HIA help to design more effective policies?
Systematic air quality management (AQM) approaches

- Emission generating activities
- Emission controls
- Emission inventory
- Ambient PM2.5 concentrations
- Emission control costs
- Population exposure
- Health impacts
- Cost-effectiveness analysis
- Cost-benefits analysis
- Monetized health benefits
HIA reveals the economic inefficiency of AQM approaches driven by uniform air quality standards

Pollution control costs and health benefits of alternative AQM approaches in South Asia:

- Ad-hoc selection of measures
- Achieving WHO Interim Target 1 for PM2.5 (35 µg/m³) throughout South Asia
- Reducing population exposure at least cost
- Maximum feasible measures

<table>
<thead>
<tr>
<th></th>
<th>Ad-hoc selection of measures</th>
<th>WHO Interim Target 1</th>
<th>Reducing population exposure</th>
<th>Maximum feasible measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of deaths avoided</td>
<td>276,000</td>
<td>739,000</td>
<td>752,000</td>
<td>1,270,000</td>
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<tr>
<td>Cost per life saved (USD)</td>
<td>$38,000</td>
<td>$26,000</td>
<td>$7,600</td>
<td>$68,000</td>
</tr>
</tbody>
</table>

Source: World Bank Flagship Study: Ambient Air Quality and Public Health in South Asia, forthcoming
The sensitivity of estimated health benefits from policy interventions towards the assumed shape of the E-R function

PM$_{2.5}$ from natural sources

PM$_{2.5}$ from human activities

Source: Amann et al., Phil.Trans.Royal.Soc. (378) 2183
The potential impacts of AQ policy interventions in Saudi Arabia: Population exposure and mortality

Population exposure vs. Premature deaths

- Pop-weighted mean concentration
- Premature deaths

Year: 2018 Saudi Arabia, 2030 Saudi Arabia, Mitigation potential 2030 Saudi Arabia

- Natural sources
- From other countries
- From the same country
- Total cases (GAINS)
- GBD 2013
- GBD 2019
Conclusions

• HIA is critical for revealing the health burden of poor air quality

• Uncertainties in current HIA methodologies suggest caution against deriving precise quantitative guidance for air quality management (AQM) strategies

• HIA clearly reveals the superior economic efficiency of AQM approaches focused on population exposure compared to conventional uniform ambient air quality standards