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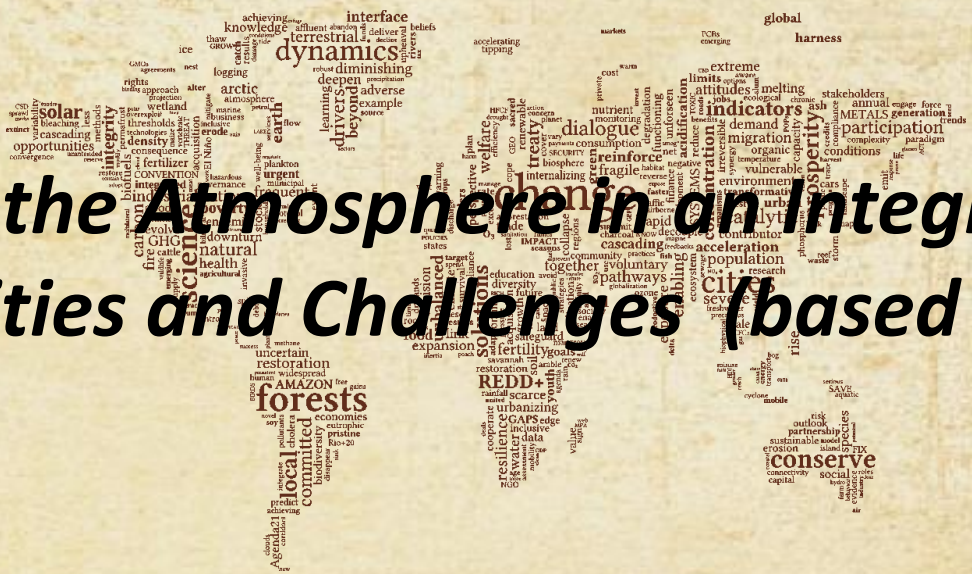
GEO 5
Global Environment Outlook

Fifth Global Environment Outlook: Environment for the future we want



Protecting the Atmosphere in an Integrated Way: Opportunities and Challenges (based on GEO-5)

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1972-2012: Serving People and the Planet

What is in GEO-5?

STATE AND TRENDS

- Drivers
- Atmosphere
- Land
- Water
- Biodiversity
- Chemicals and waste
- Earth system

REGIONAL POLICIES

- Africa
- Asia and the Pacific
- Europe
- Latin America and the Caribbean
- North America
- West Asia

GLOBAL RESPONSES

- Scenarios and Sustainability Transformation
- Global Responses

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CHAPTER 2

Atmosphere

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Atmosphere since the Rio Summit of 1992

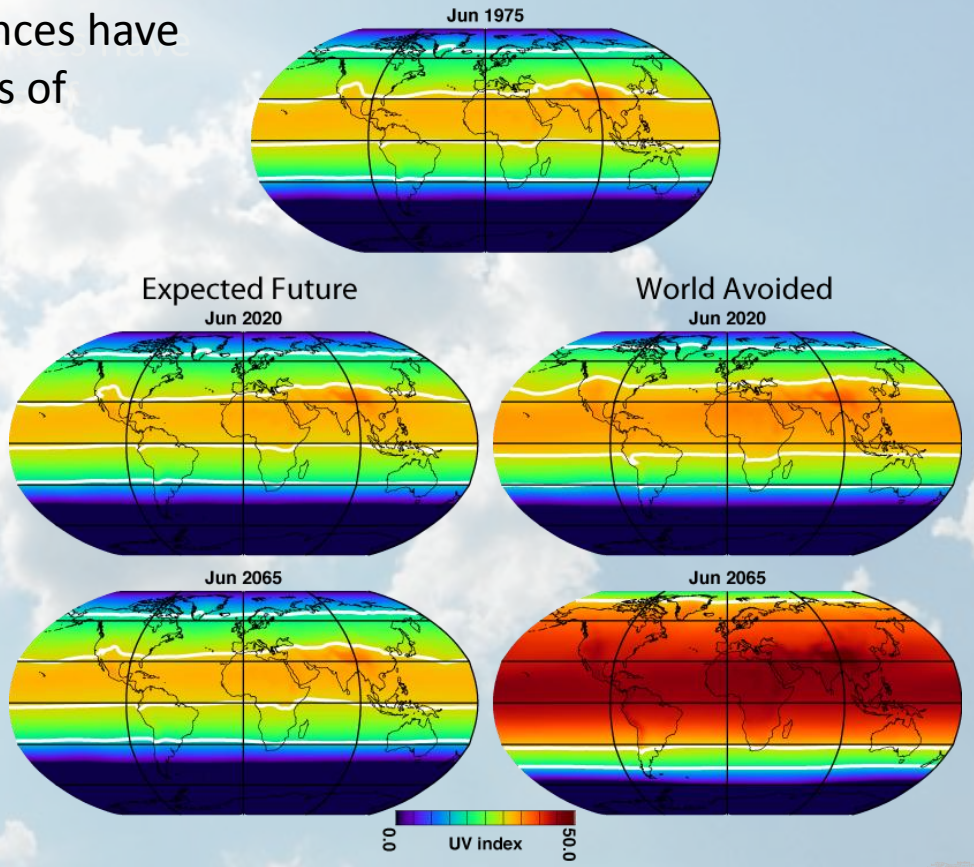
'The Good': Excellent progress in attaining internationally agreed goals

'The Bad': Mixed progress in attaining goals and targets

'The Ugly': Where global goals are far from being reached

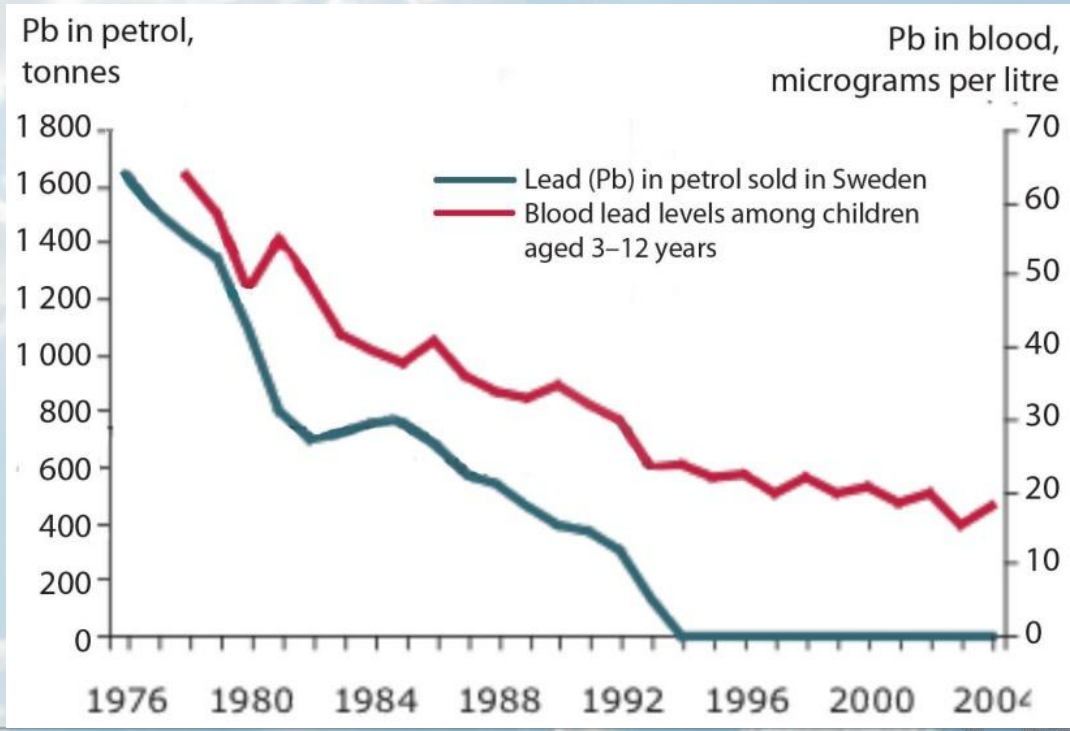
Success stories

Stratospheric ozone depleting substances have been phased out helping to avoid tens of millions of cataract cases and millions of skin cancer deaths in this century



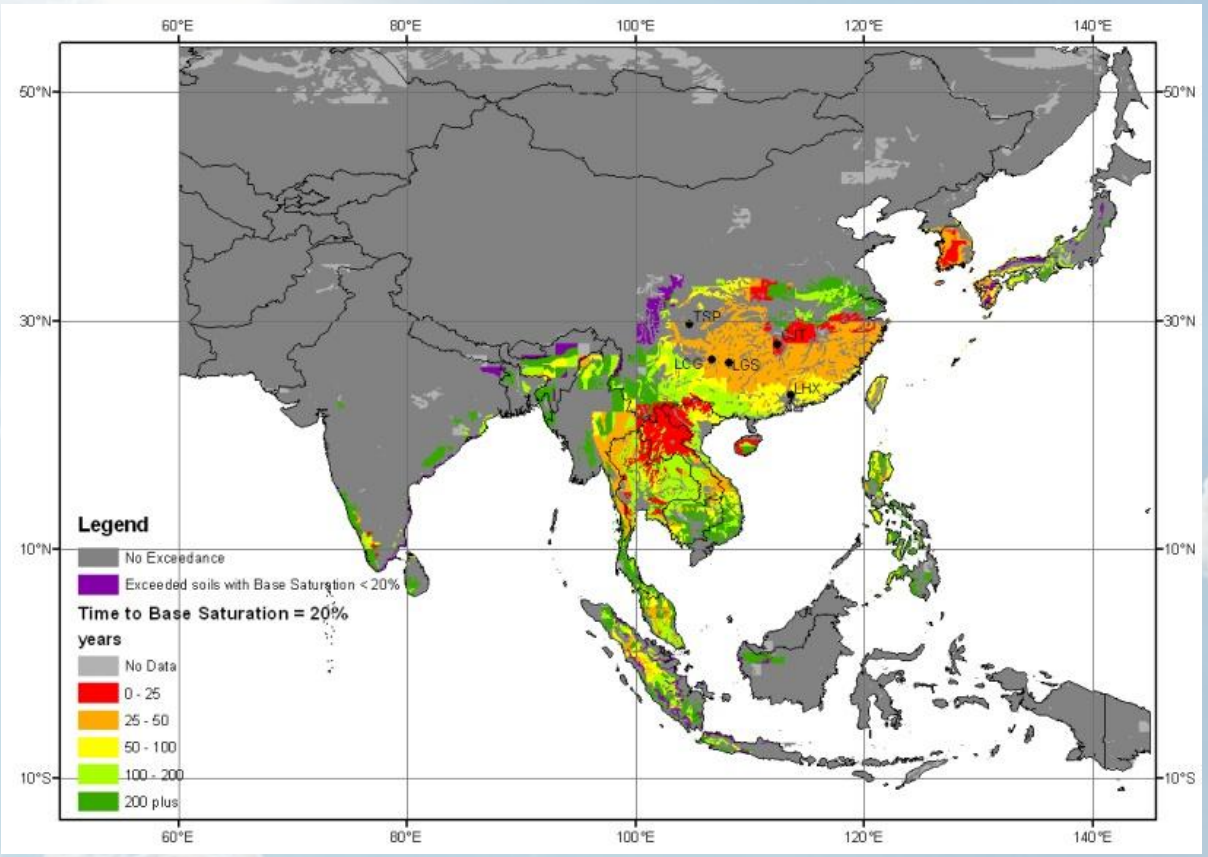
Success stories

The goals in the Johannesburg Plan of Implementation to reduce exposure to lead have largely been met resulting in hundreds of billions dollars of direct health benefits every year



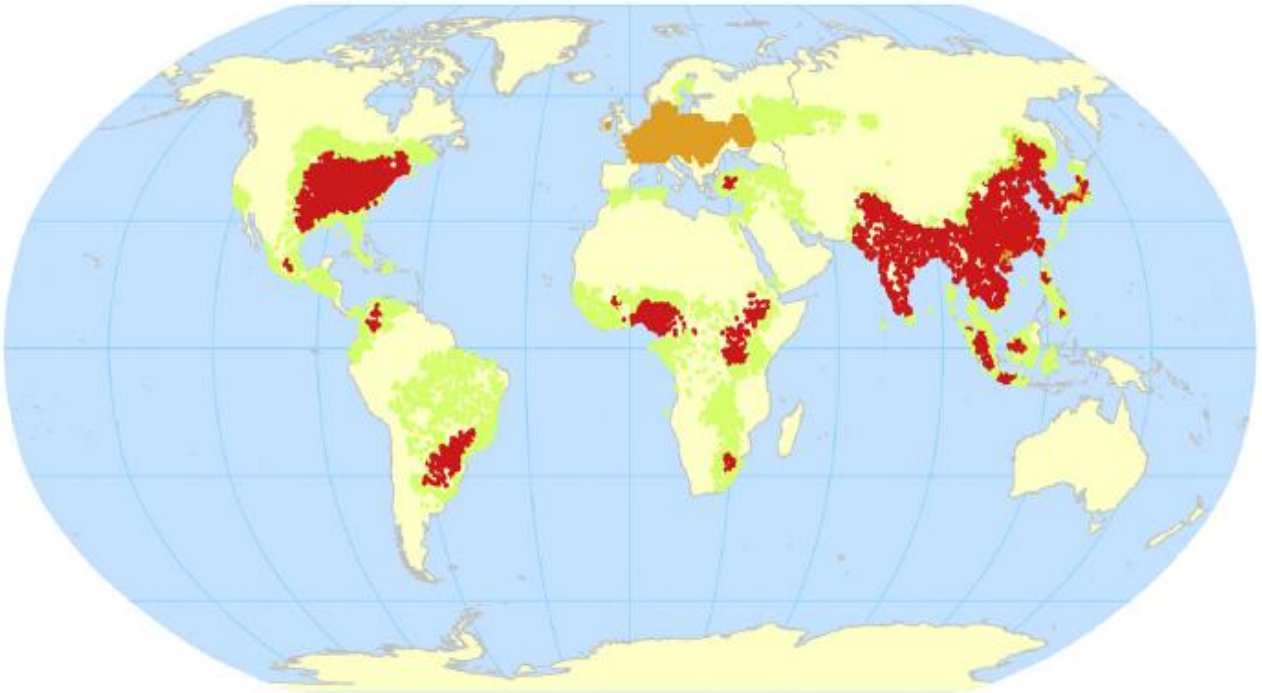
Mixed progress

Sulphur emissions



Mixed progress

Nitrogen emissions



Mixed progress

Small particulate matter (typically described as PM_{10} and $PM_{2.5}$)

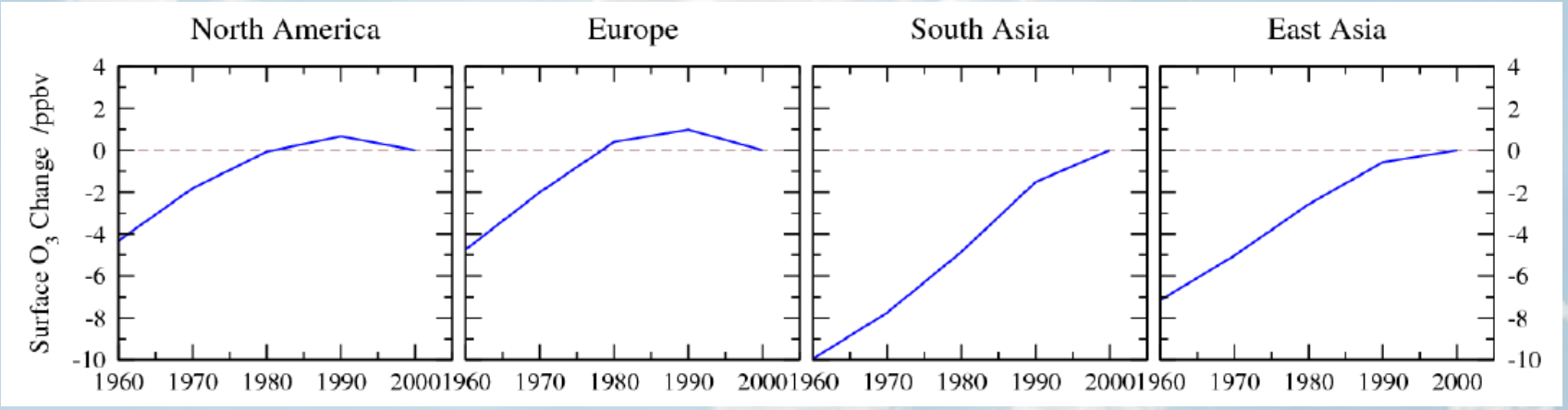
Air pollution kills people - **more than from all other environmental risks combined**

Air pollution type	Premature deaths	Morbidity (DALYs)
Urban outdoor	1.2 million = 2.0% of deaths worldwide 0.6 million males and 0.543 million females 8% of lung cancer deaths 5% of cardiopulmonary deaths 3% of respiratory infection deaths	8.7 million DALYs
Indoor air	2.0 million = 3.3% of deaths worldwide 0.9 million males and 1.1 million females 21% of lower respiratory infection deaths 35% of chronic obstructive pulmonary deaths 3% of lung cancer deaths 0.9 million deaths due to pneumonia among children younger than five years	41 million DALYs
Total air pollution	3.1 million = 5.3% of deaths worldwide	49.7 million DALYs

Note: DALYs = Disability adjusted life years is the sum of potential healthy life years lost due to illness.

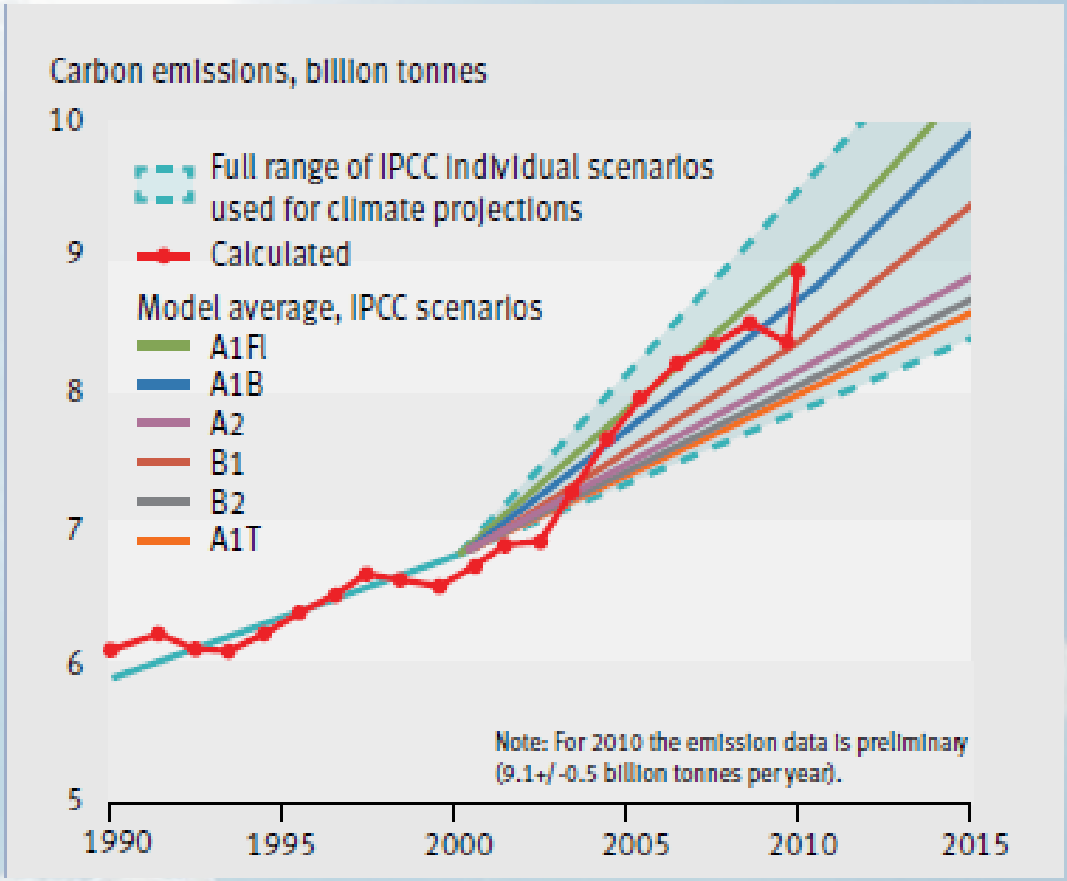
Mixed progress

Tropospheric ozone



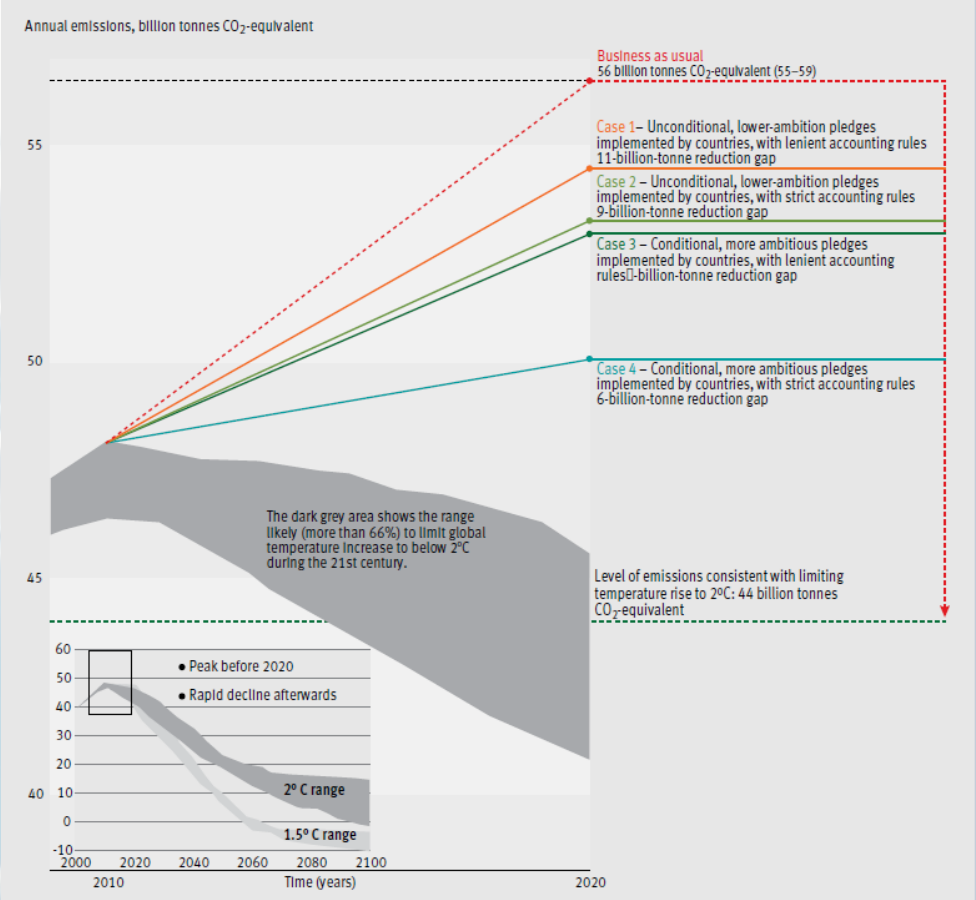
Goals far from being met

Carbon emissions



Goals far from being met

The 'emissions gap' from 6 to 11 Gt CO_2eq depending on scenario



Challenges

PM and tropospheric ozone emissions still cause millions of premature deaths and millions tonnes of crops lost every year, and their mitigation is a complex problem

Carbon emissions have followed the more pessimistic of the IPCC projections

The gap between expected emissions and those required for meeting the 2°C limit is between 6 billion and 11 billion tonnes of CO_2-equivalent

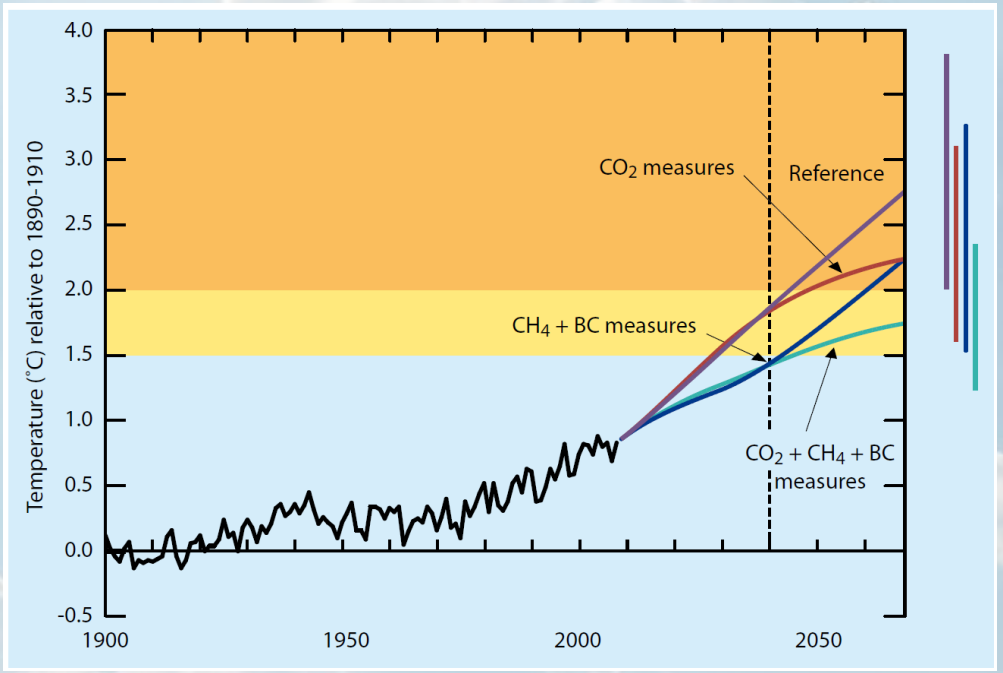
Ways forward

An **integrated approach** to atmospheric protection will help policy makers accomplish multiple goals. Addressing sources of pollution can affect the different gases and particles they emit and deliver **multiple climate and air quality benefits**.

Need to develop decision-making frameworks and enabling environments that explicitly recognize the integrated nature of the atmosphere.

Integrated approach: Mitigating near-term climate change

Projected effects of measures to reduce CO_2, methane and black carbon emissions in relation to a reference scenario



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Environment for the future we want

Thank you

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