World Meteorological Organization

UNEP

‘An Integrated Assessment of Black Carbon and Tropospheric Ozone’

http://www.unep.org/dewa/Portals/67/pdf/BlackCarbon_SDM.pdf

Near-term Climate and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers

http://www.unep.org/publications/ebooks/SLCF/

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UNEP/WMO Integrated Assessment of Black Carbon and Tropospheric Ozone

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50 Contributors, over 100 reviewers

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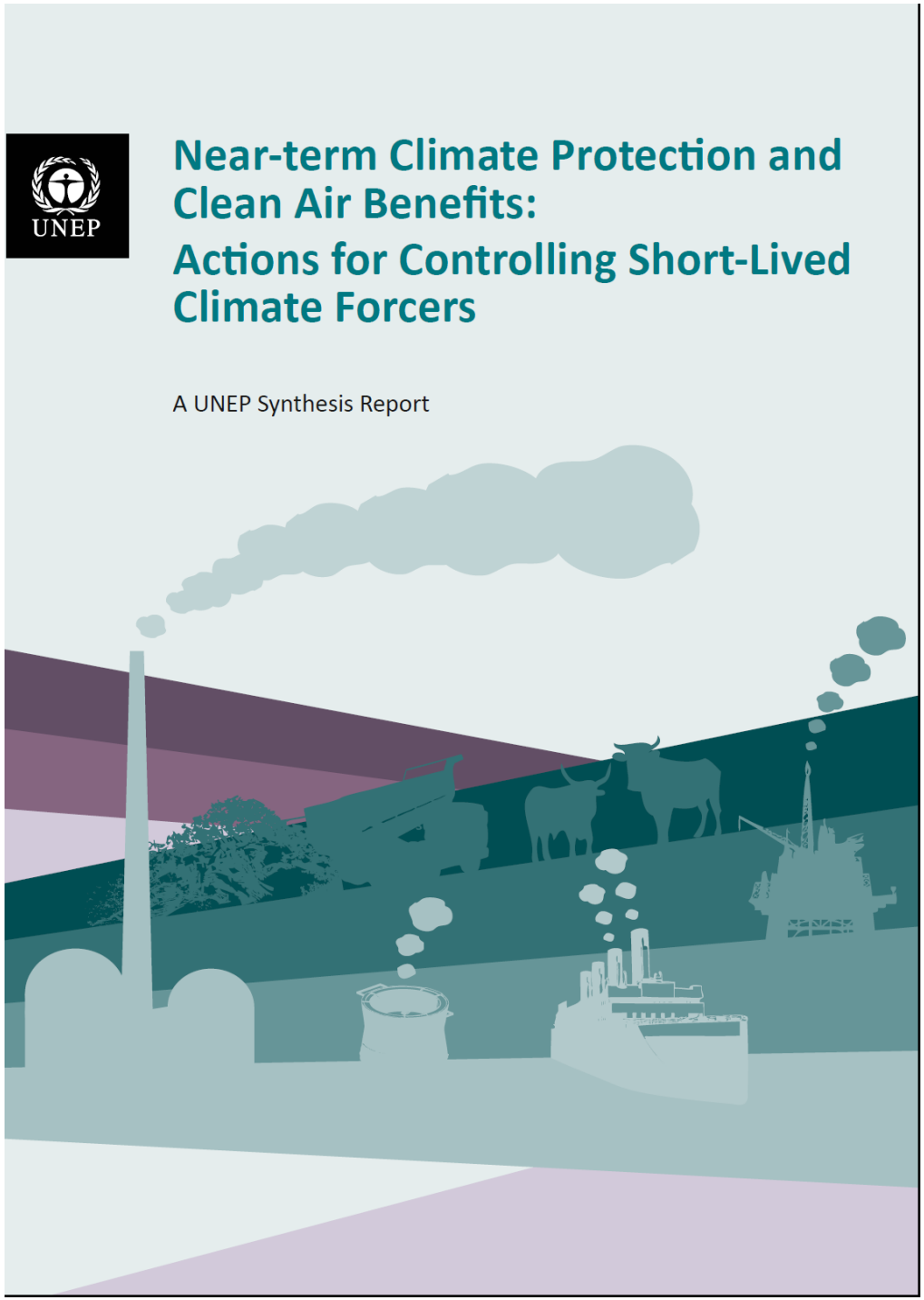

Near-term Climate and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers

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Climate and Clean Air Coalition to reduce Short-Lived Climate Pollutants

There is a lot of scientific and political interest – Why?

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What are short-lived climate pollutants?

Short-lived climate pollutants: Cause global warming & relatively short-lived in the atmosphere.

Black carbon, *methane, tropospheric ozone*

Multiple benefits of reducing short-lived climate pollutants:

- Reduce air pollution - Protect health and crops
- Slow down near-term global warming, reduce regional impacts of climate change

Also some HFCs

SEI

Lifetimes in the atmosphere

Substance	Lifetime
Carbon dioxide	Decades to centuries and about 20 per cent will persist for many millennia
Ozone	4 – 18 days
Methane	12 years
Black carbon	3-8 days

SEI

Air pollution: unfinished business on the sustainable development agenda

Outdoor air pollution

"Some progress" *: Despite some progress, outdoor air pollution continues to have serious impacts on the environment & human health.*

About 1.2 (3.7?) million premature deaths each year due to outside air pollution.

Indoor air pollution

"little or no progress"
"Indoor air pollution from particulate matter continues to have major health impacts, particularly on women and children."

- about3 billion people cook and heat using open fires and leaky stoves burning biomass and coal
- Around 2 million people die each year prematurely from illness attributable to indoor air pollution

Source: WHO statistics

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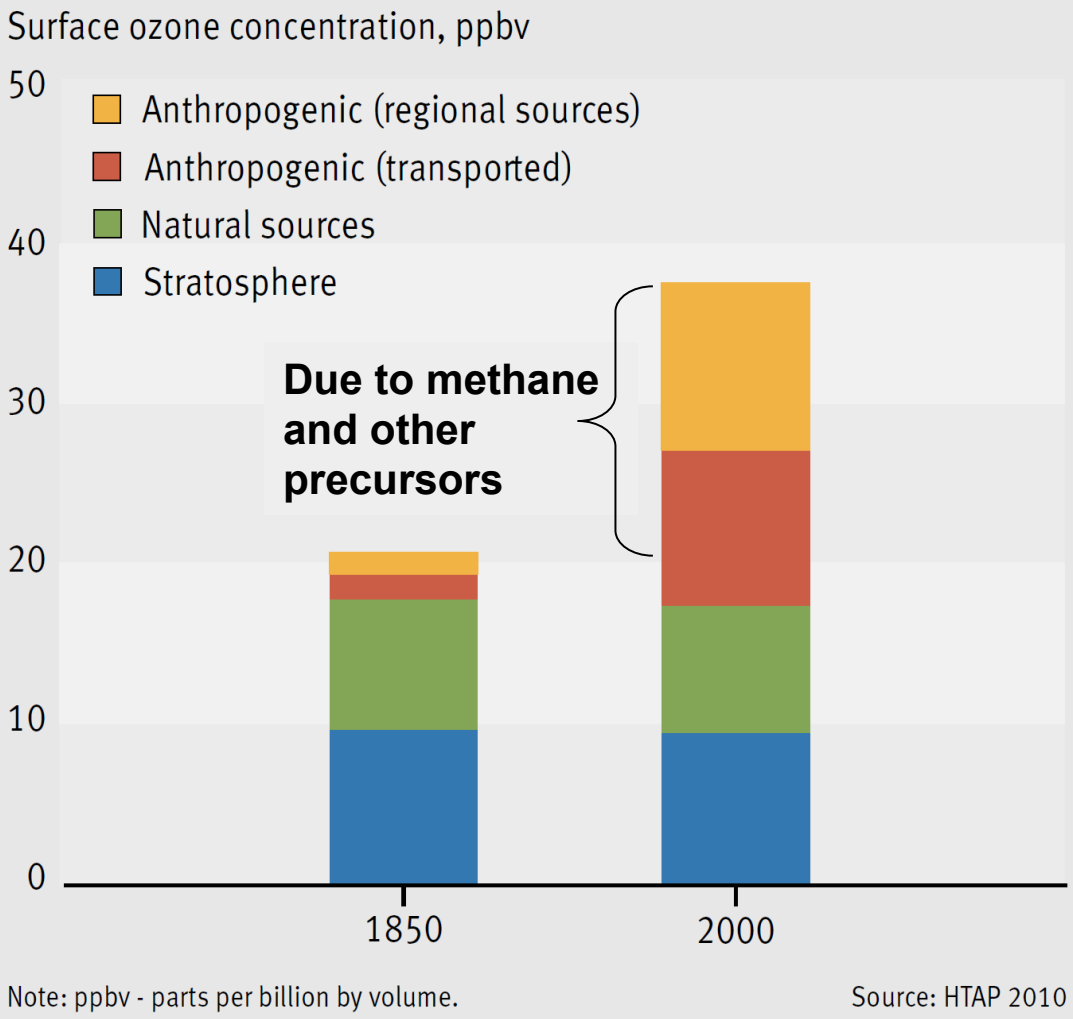
Ground level ozone increasing over wide areas

Reducing ground level ozone:

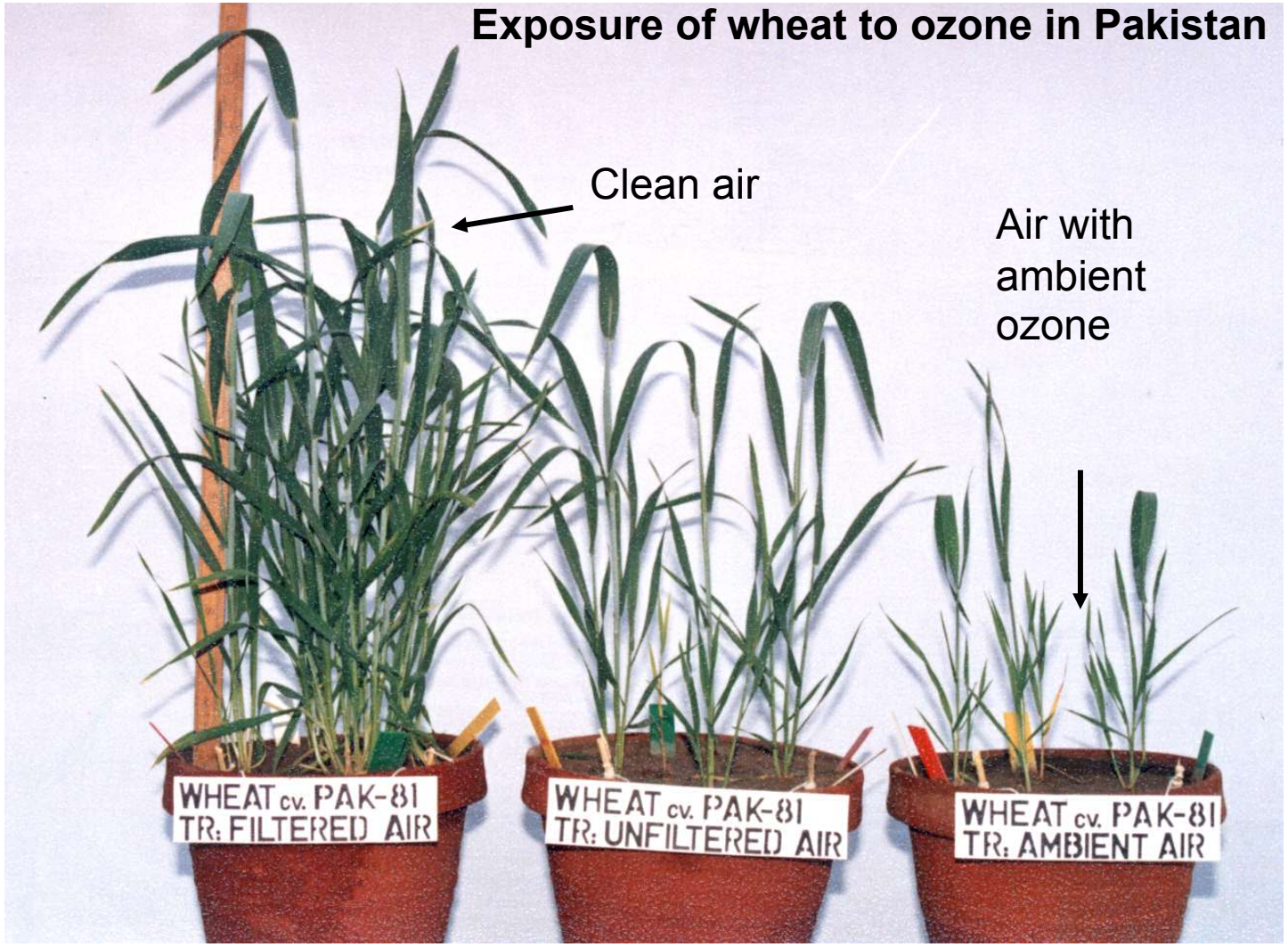
- protects public health
- reduces ozone damage to crops

Figure 2.14 Sources of ozone over polluted regions of the northern hemisphere, 1850 and 2000



Source: UNEP GEO-5, HTAP

Impact of the Tropospheric Ozone on Crop yields



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A package of 16 measures can substantially reduce emissions and achieve multiple benefits

IIASA ranked mitigation measures by the net climate impact (using GWP) of their emission changes (considering CO, CH_4, BC, OC, SO_2, NO_X, NMVOCs, and CO_2), picked the top measures – about 90% of warming benefit

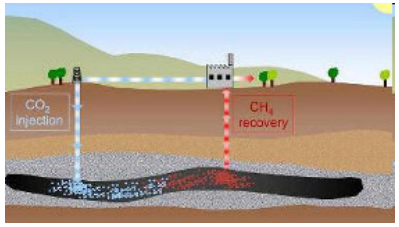
Black carbon measures

• addressing emissions from incomplete combustion

- BC, OC, methane, CO, NMVOCs

Methane measures

• reducing methane emissions



No technical breakthroughs

These measures already implemented in many countries

Cost-effective