CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

SCALING UP ACTION ON SLCPs TO ADDRESS CLIMATE CHANGE & AIR POLLUTION

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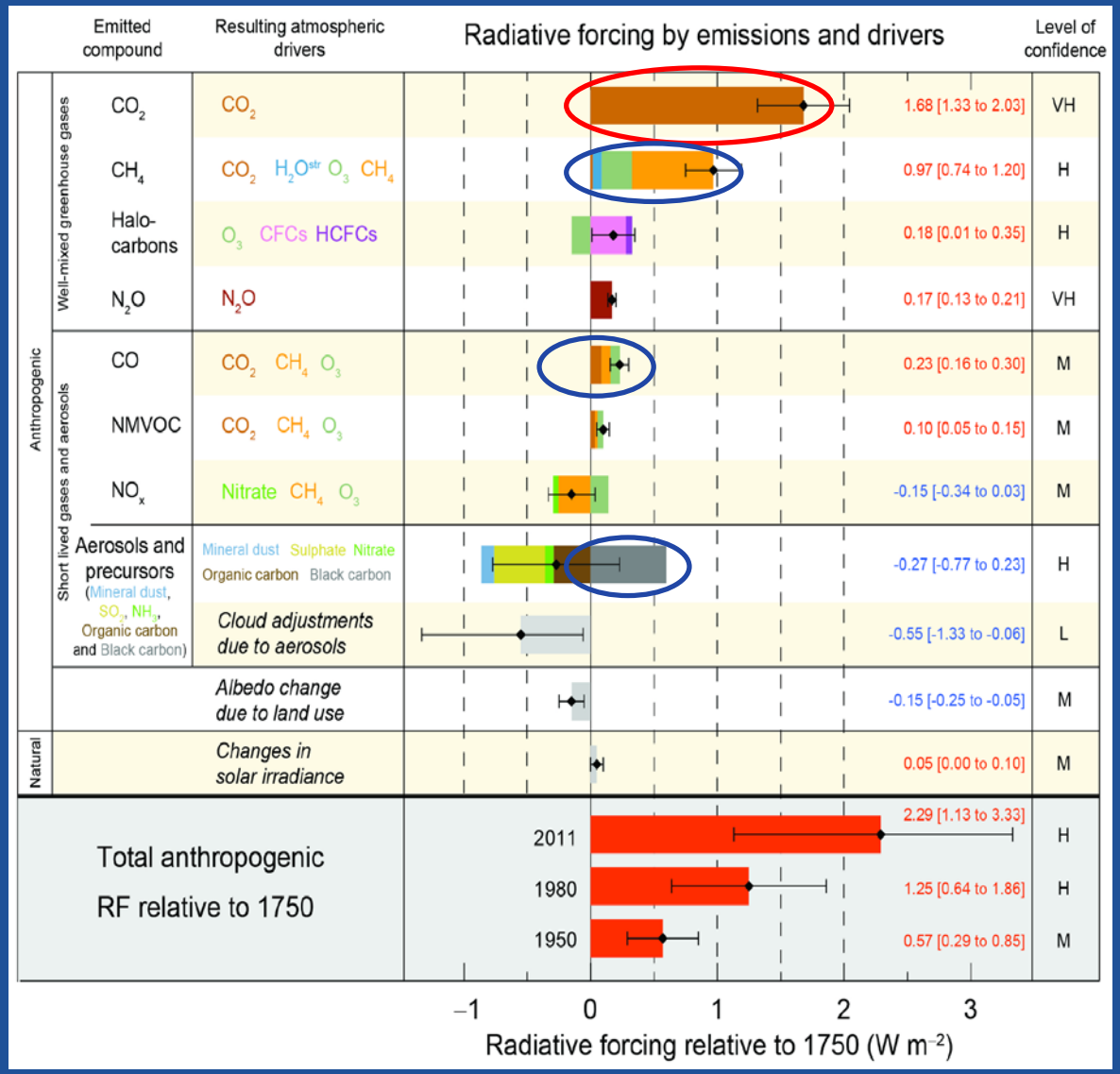


Historical methane + CO + BC (soot) approximately equal to CO_2

Contribute to PM2.5 and tropospheric ozone air pollution

Relatively short-lived in atmosphere (15 years or less)

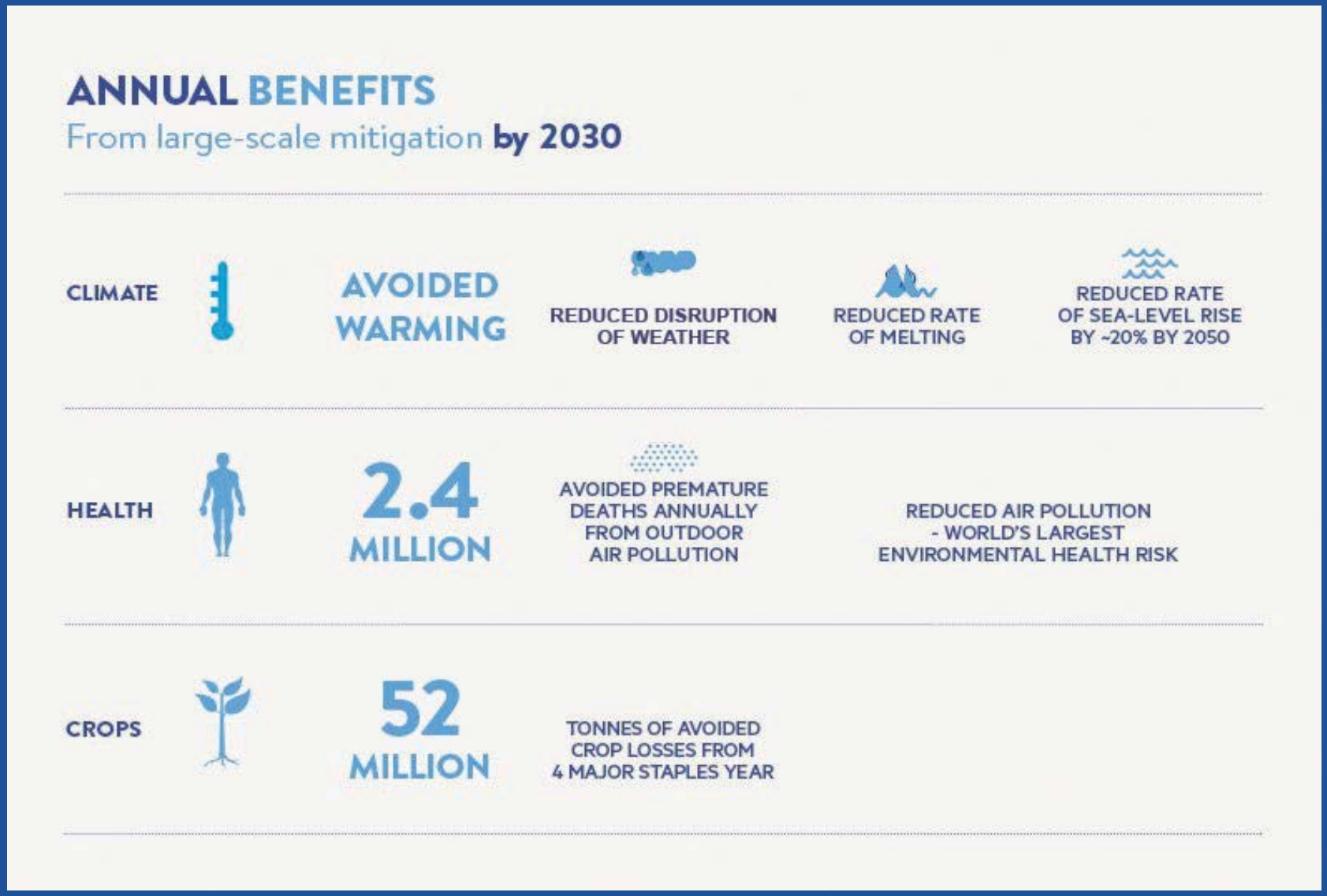
Air Pollutants Contribute to Climate Change

~0.7°C of warming since pre-industrial times

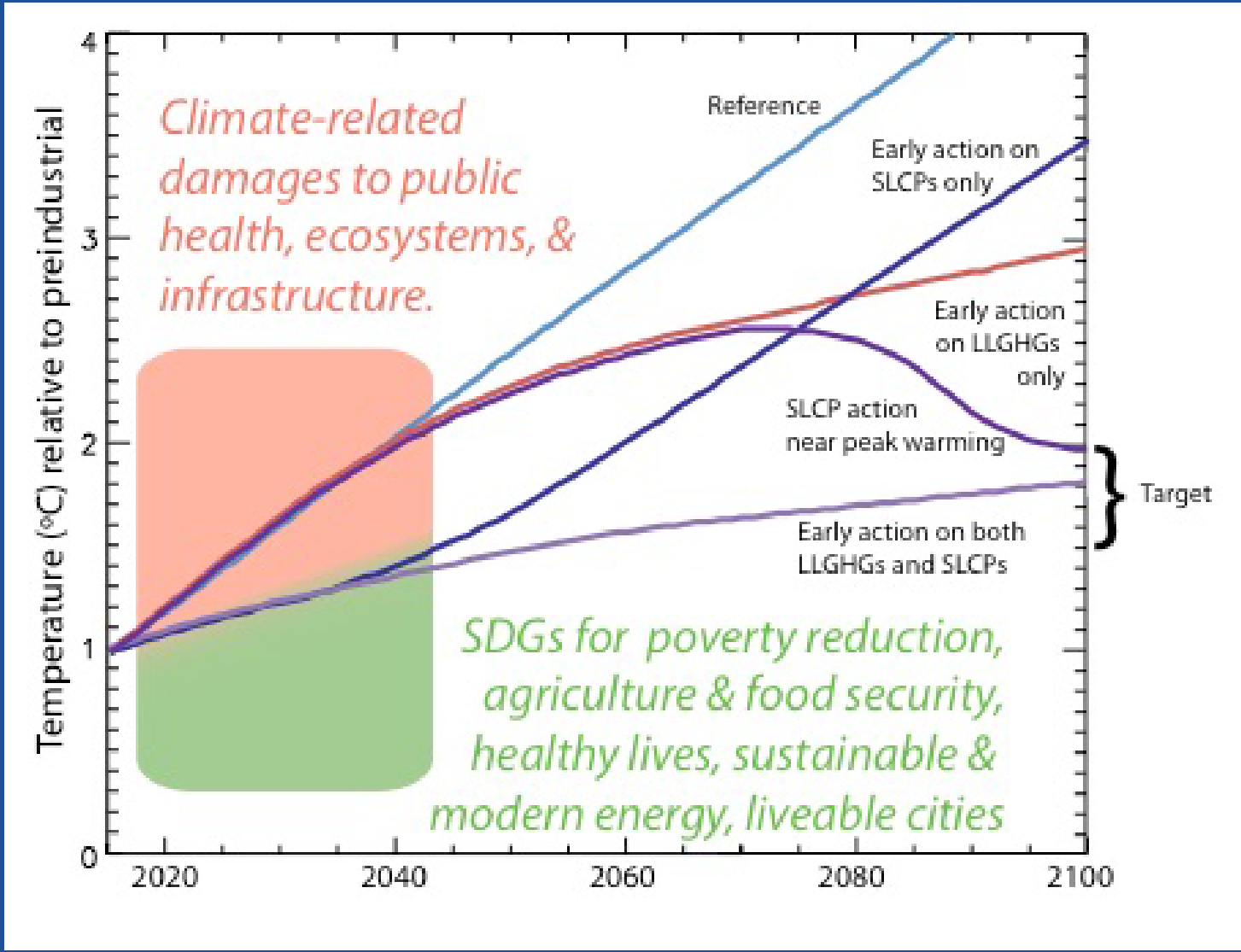
6.5 million premature deaths/yr from air pollution

110 million tonnes/yr lost crops due to tropospheric ozone (+more due to climate)

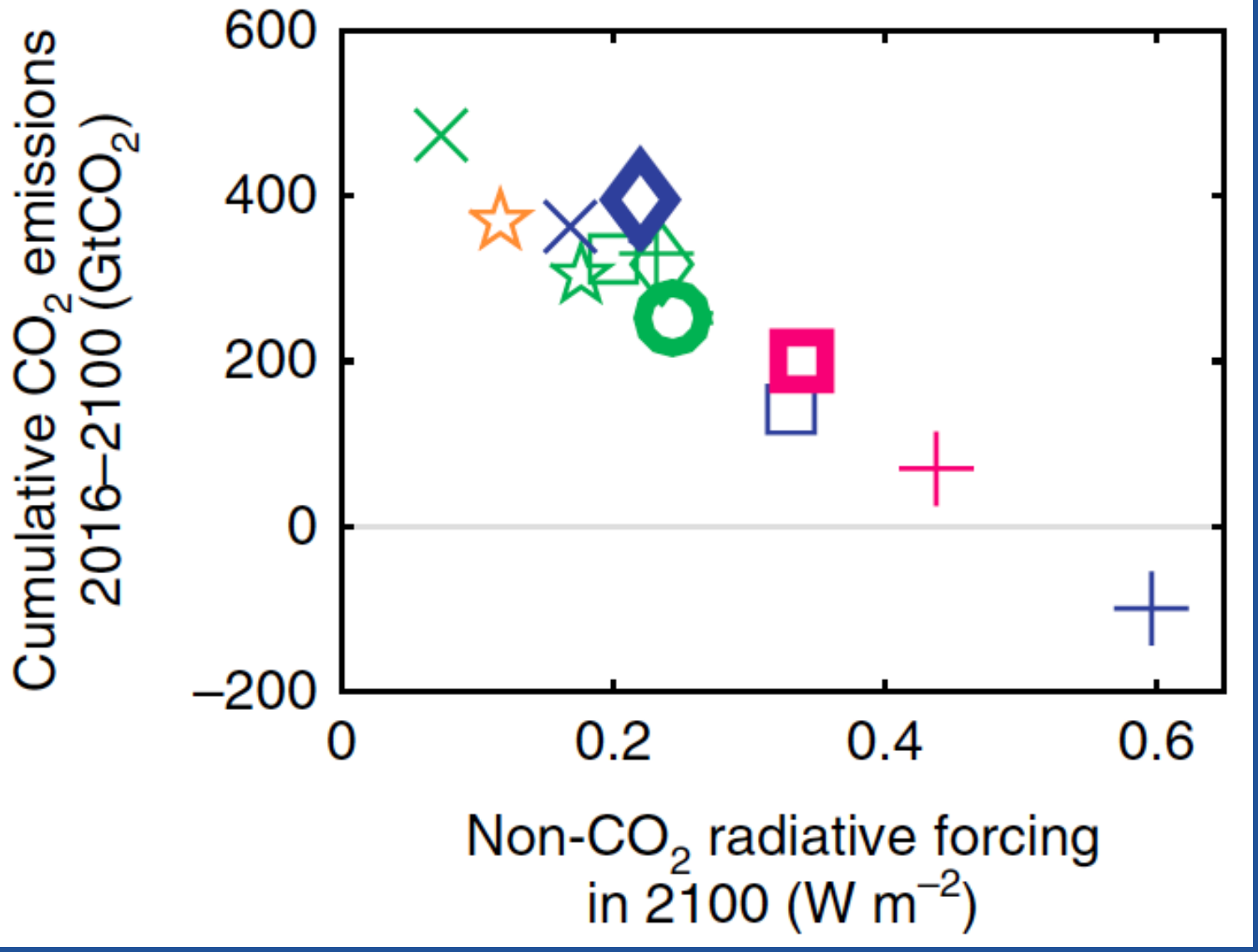
The SLCP Challenge: Climate and Air Pollution Impacts



The SLCP Opportunity: Near-term Multiple Benefits



Defining a Sustainable Path to the Future



Nearly linear – ~1200 $GtCO_2$ per ° C

Rogelj et al, Nature Climate Change, 201

Climate change depends upon cumulative CO_2 emissions

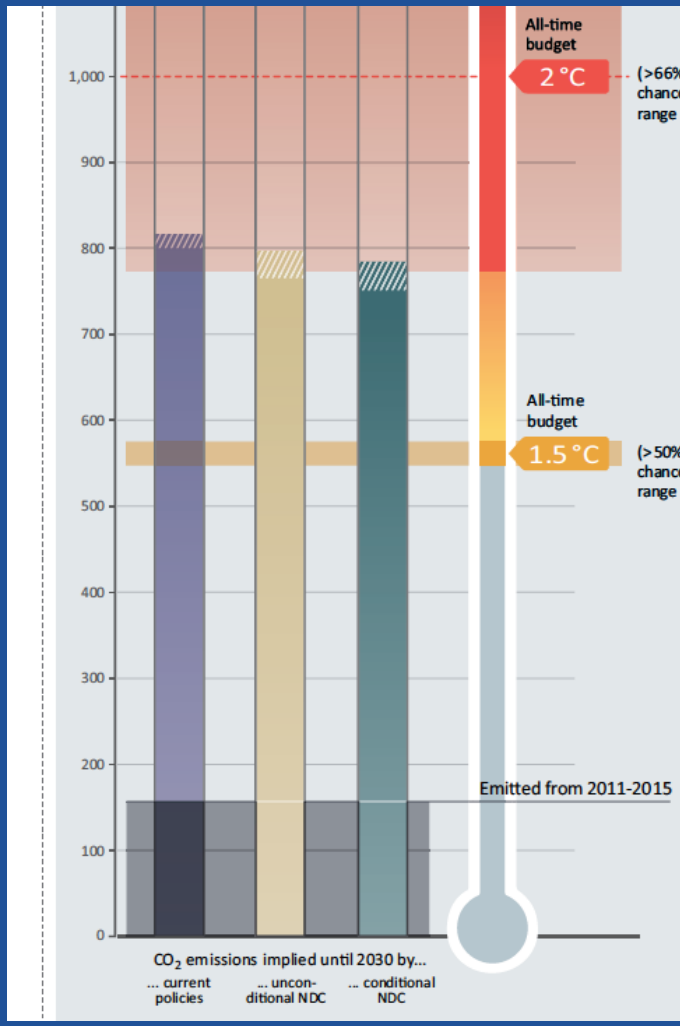
For context:

AR5 2011 carbon budget for 1.5˚ C (50% likelihood) ~550 $GtCO_2$

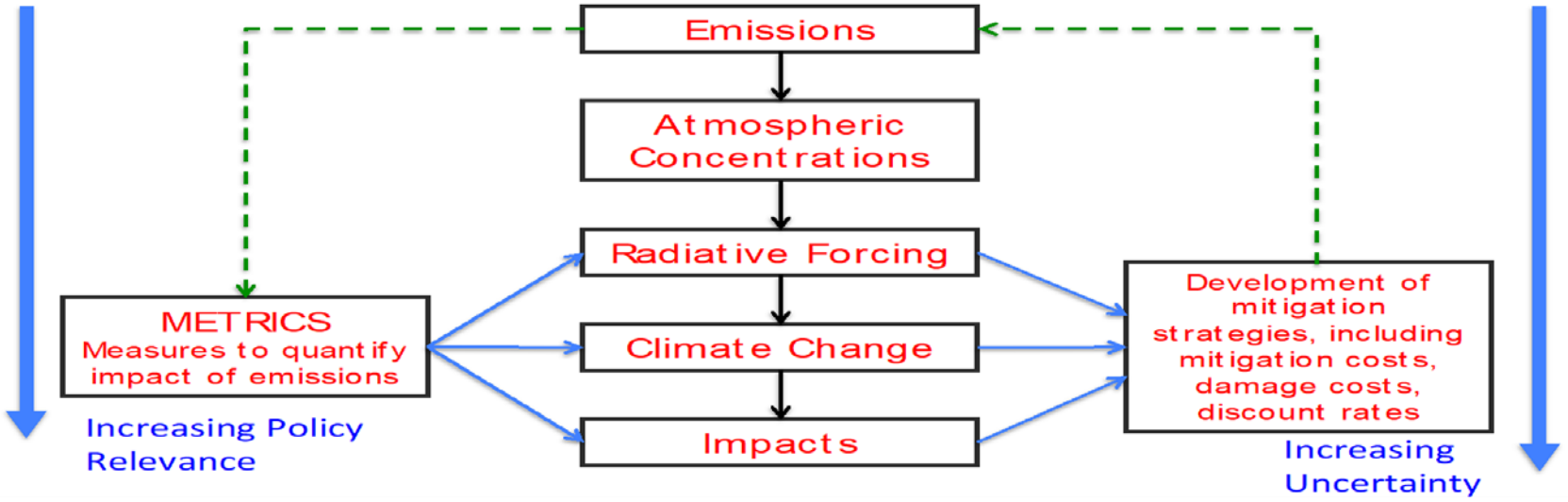
From 2018 that leaves ~300 $GtCO_2$

Achieving ~0.25˚ C via SLCPs would add ~300 $GtCO_2$

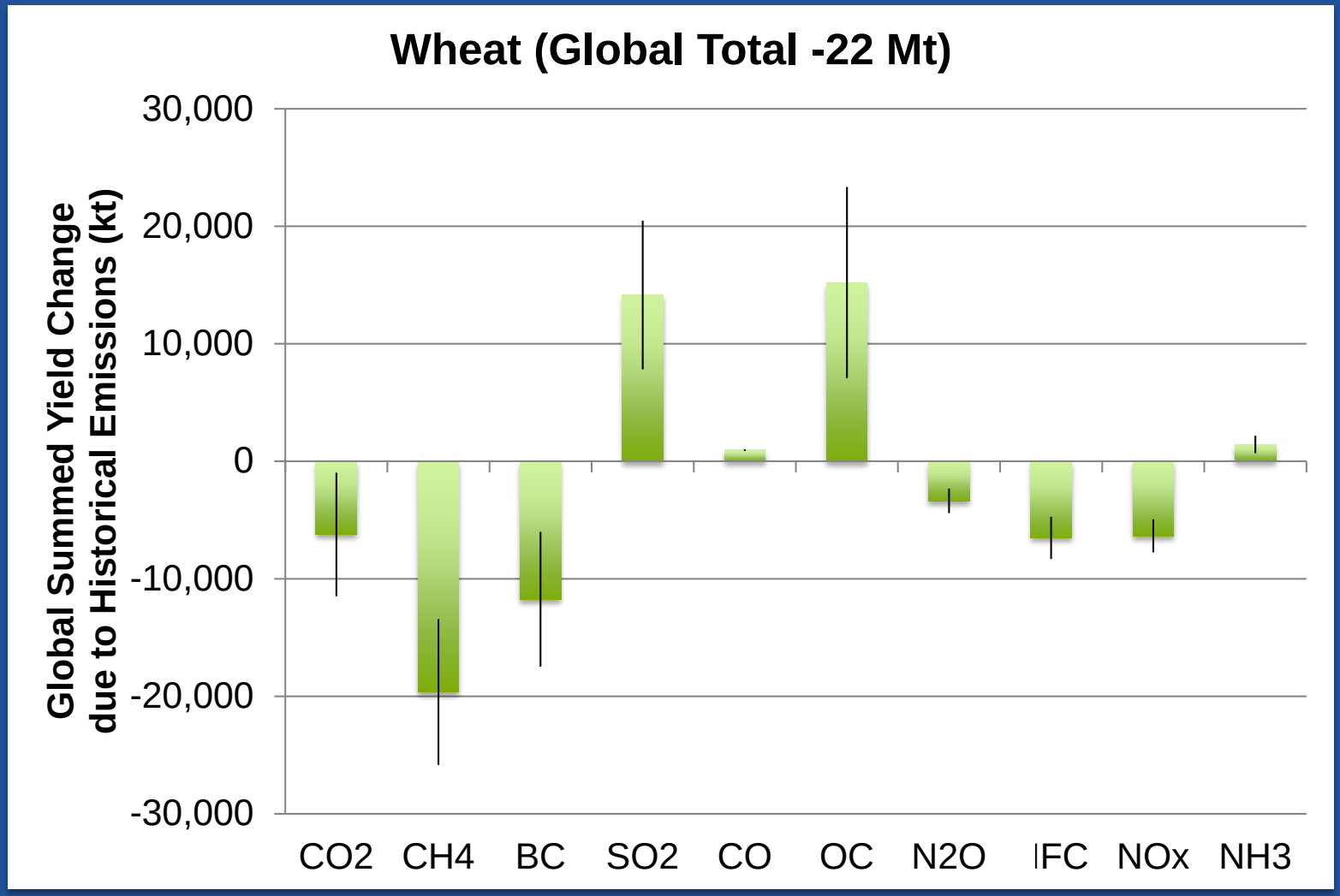
…hence increasing chances of reaching low targets and decreasing costs of doing so (as CO_2 reductions don't have to be quite as deep)



SLCP reductions are integral to achieving very low targets

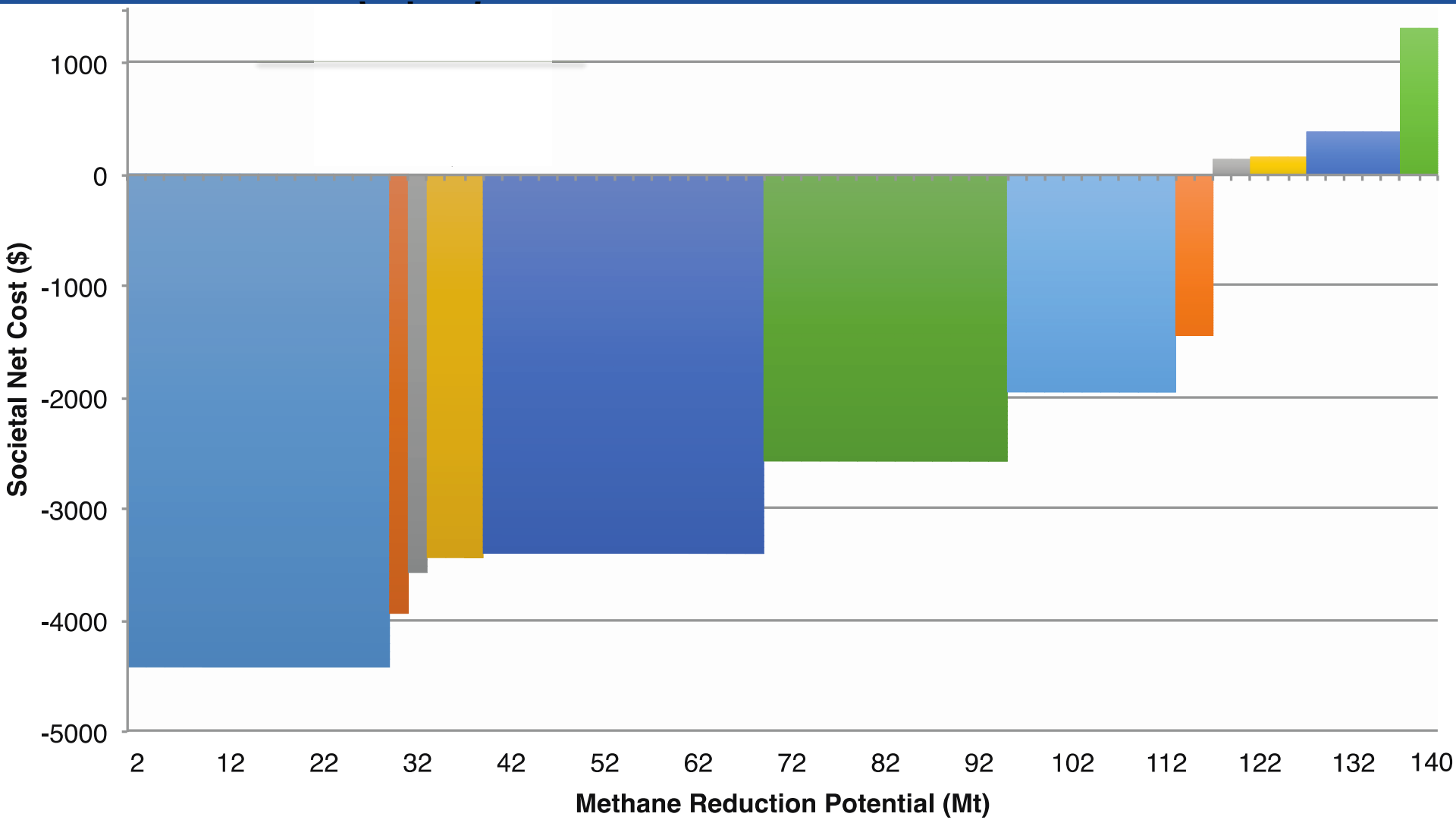


Consistency of Impacts



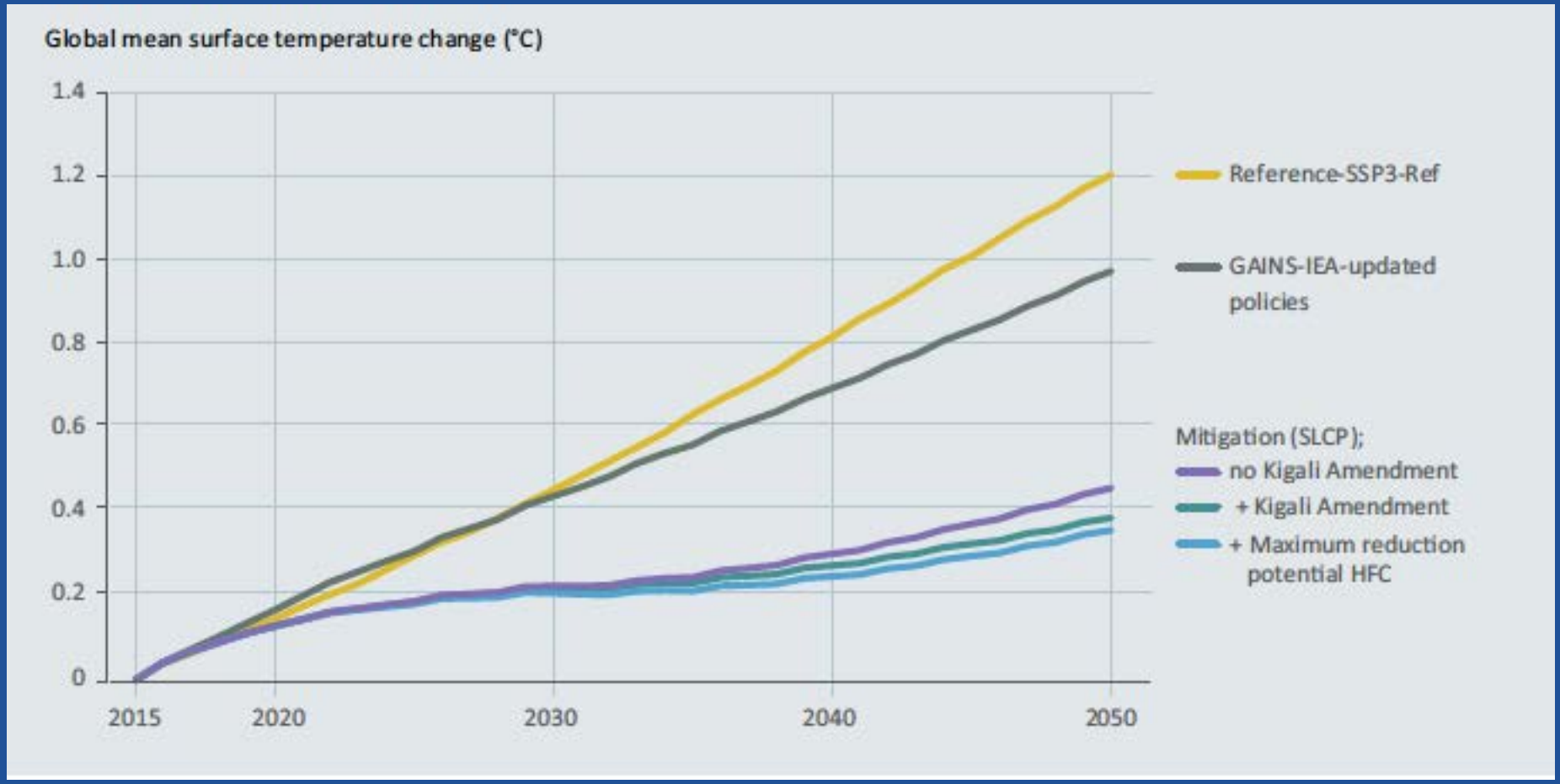
Agricultural Impacts of Emissions to Date

Shindell et al, Faraday Disc, 2017



Cost curves for UNEP/WMO methane measures

Methane measures provide largest/surest warming mitigation among remaining SLCPs



UNEP Emissions Gap Report, 2017

Methane measures provide largest/surest warming mitigation among remaining SLCPs

Table 6.1: Warming mitigation resulting from SLCP emission reductions

Additional SLCP mitigation	Change in temperature (°C)	
	2030	2050
All SLCPs (HFCs following the Kigali Amendment)	0.22 ± 0.11	0.59 ± 0.27
Methane	0.09 ± 0.03	0.30 ± 0.12
HFCs following Kigali Amendment	0.005 ± 0.002	0.07 ± 0.02
HFCs Maximum Feasible Reduction	0.02 ± 0.01	0.10 ± 0.03
Black carbon-rich sources	0.1 ± 0.1	0.2 ± 0.2

UNEP Emissions Gap Report, 2017

SLCPs can be reduced with known measures, many at little or negative net social cost

Key component of achieving Paris Climate Agreement targets, but early action key to also achieving SD benefits

Greatly lower costs relative to reliance on CO_2 reductions alone for same warming

Accounting for air quality benefits provides clearer indication of value of SLCP mitigation

Conclusions

Thank you!

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