Targeting Short Lived Climate Pollutants

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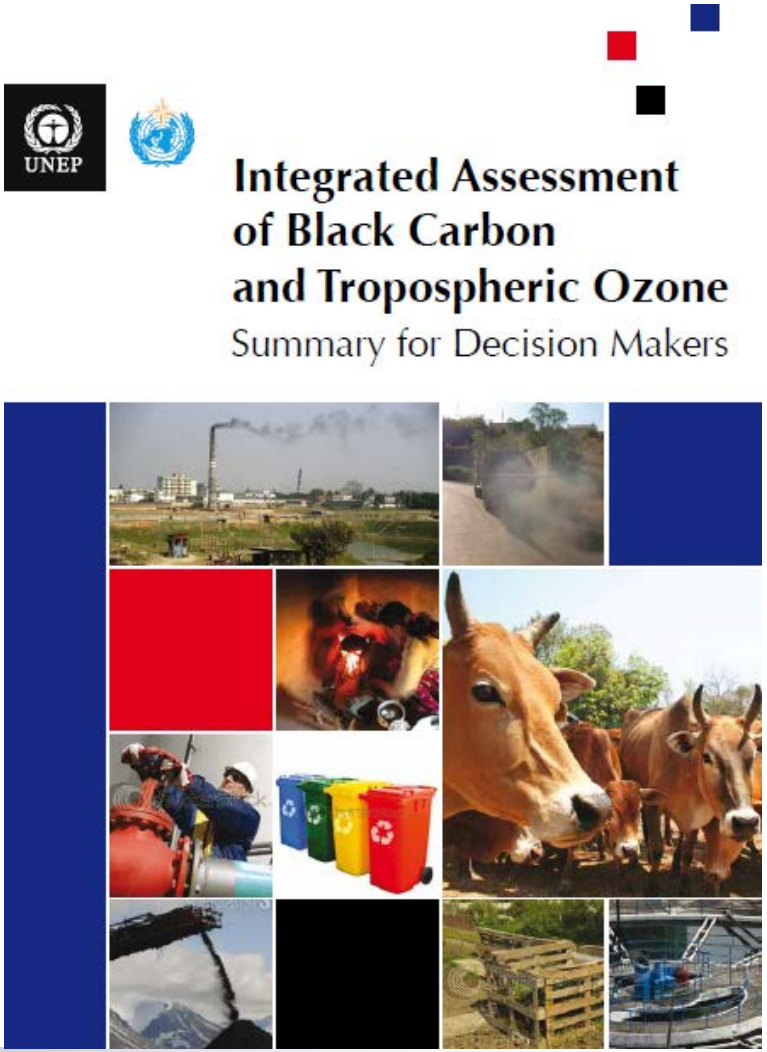
SLCPs

- ***Black Carbon***
- ***Methane***
- ***Ground level ozone***
- ***(in some cases) HFCs***

Possibilities (UNEP-study 2011)

- Avoid ~2.4 miljoner premature deaths annually;
- increase primary poduction, increase basic crop production with ~52 miljon tonnes annually;
- reduce global warming by 0.4-0.5°C by 2050 and Arctic warming by 0.7°C by 2040;
- no technical breakthroughs required and half the reductions at low cost or cost-neutral.



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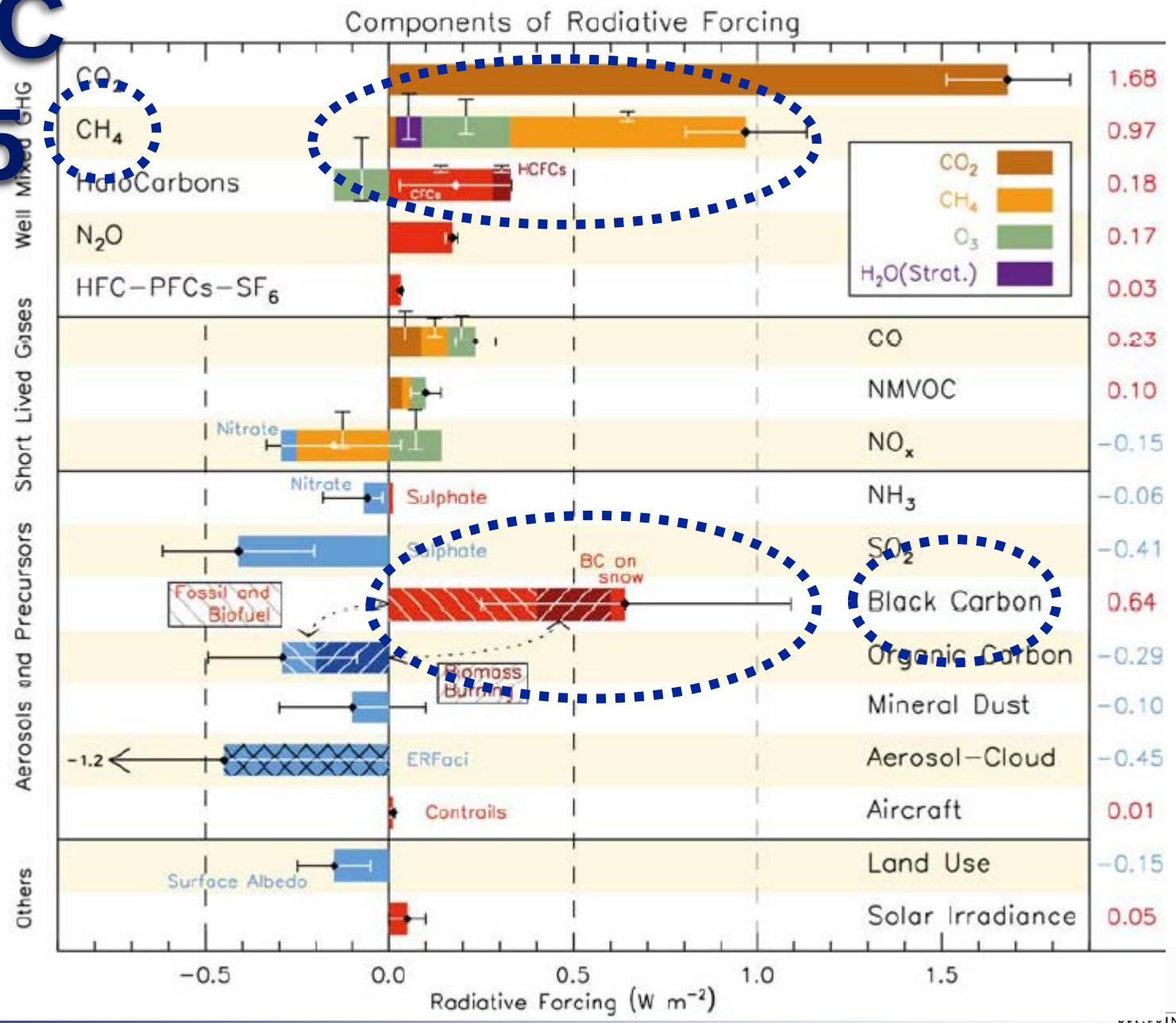

Components of Radiative Forcing
Well Mixed GHG
Short Lived Gases
Aerosols and Precursors
Others
CO2
CH4
HaloCarbons
N2O
HFC-PFCs-SF6
HCFCs
CFCs
CO2
CH4
O3
H2O(Strat.)
1.68
0.97
0.18
0.17
0.03
CO
NMVOC
NOx
0.23
0.10
−0.15
Nitrate
Nitrate
Sulphate
Sulphate
Fossil and Biofuel
BC on snow
Biomass Burning
NH3
SO2
Black Carbon
Organic Carbon
Mineral Dust
−0.06
−0.41
0.64
−0.29
−0.10
−1.2
ERFaci
Aerosol−Cloud
−0.45
Contrails
Aircraft
0.01
Surface Albedo
Land Use
Solar Irradiance
−0.15
0.05
−0.5
0.0
0.5
1.0
1.5
Radiative Forcing (W m−2)

Swedish SLCP goals

- Reduce global and regional warming and impacts on vulnerable regions, particularly the Arctic;
- improve global health by improving air quality;
- contribute to the improvement of individual living conditions, especially for women and children;
- reduce ozone negative impacts on ecosystem productivity and thus improve food sequrity and economic productivity.

Sida

CCAC
CLIMATE AND CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

GLOBAL ALLIANCE FOR CLEAN COOKSTOVES

How?

norden
Nordisk ministerråd

ARCTIC COUNCIL

Coalition's Objectives

- Raise awareness of SLCP impacts and mitigation;
- Enhance and develop new national and regional actions, identify and overcome barriers, enhance capacity and mobilize support;
- Promote best practices and showcase successful efforts; and
- Improve scientific understanding of SLCPs.

Initiatives

Sectoral initiatives

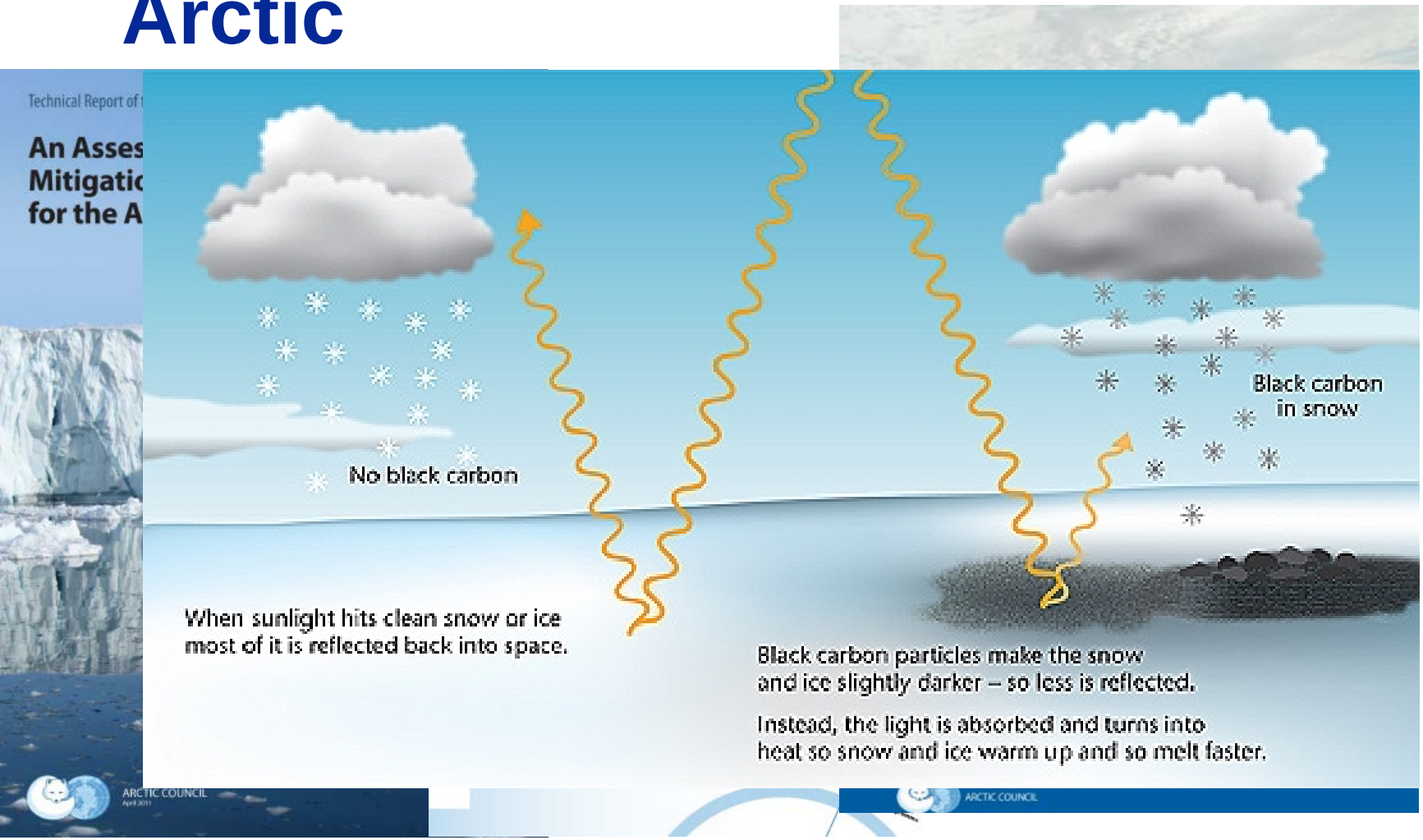
- Heavy Duty Diesel Vehicles and Engines
- Brick Production
- Landfills and Municipal Solid Waste
- HFC Alternative Technology and Standards
- Oil and Natural Gas Production

Cross cutting initiatives

- National Action Planning (NAP)
- Financing Mitigation of SLCPs



Reducing black carbon in the Arctic



An Arctic Black Carbon and Methane reduction arrangement

Provisions on inventories

Best mitigation practices and technologies

Provisions on national action plans

Private sector and IO's engagement

A common vision, benchmarks or targets

Science

- Ministerial Svalbard declaration on SLCP (2012)
- Nordic workshop on actions to reduce emissions (2012)
- 3-yr project on improved emission inventories
- NEFCO activities
- …

WELCOME TO JOIN!

Table 1. Measures that improve climate change mitigation and air quality and have a large emission reduction potential[1].

Measure	Sector
CH_4 measures	
Extended pre-mine degasification and recovery and oxidation of CH_4 from ventilation air from coal mines	Extraction and transport of fossil fuel
Extended recovery and utilization, rather than venting, of associated gas and improved control of unintended fugitive emissions from the production of oil and natural gas	
Reduced gas leakage from long-distance transmission pipelines	
Separation and treatment of biodegradable municipal waste through recycling, composting and anaerobic digestion as well as landfill gas collection with combustion/utilization	Waste management
Upgrading primary wastewater treatment to secondary/tertiary treatment with gas recovery and overflow control	
Control of CH4 emissions from livestock, mainly through farm-scale anaerobic digestion of manure from cattle and pigs	Agriculture
Intermittent aeration of continuously flooded rice paddies	
BC measures (affecting BC and other co-emitted compounds)	
Diesel particle filters for road and off-road vehicles	Transport
Elimination of high-emitting vehicles in road and off-road transport	
Replacing coal by coal briquettes in cooking and heating stoves	Residential
Pellet stoves and boilers, using fuel made from recycled wood waste or sawdust, to replace current wood-burning technologies in the residential sector in industrialized countries	
Introduction of clean-burning biomass stoves for cooking and heating in developing countries[2, 3]	
Substitution of clean-burning cookstoves using modern fuels for traditional biomass cookstoves in developing countries[2, 3]	
Replacing traditional brick kilns with vertical shaft kilns and Hoffman kilns	Industry
Replacing traditional coke ovens with modern recovery ovens, including the improvement of end-of-pipe abatement measures in developing countries	
Ban of open burning of agricultural waste[2]	Agriculture

[1] There are measures than those identified in the table that could be implemented. For example, electric cars would have a similar impact to diesel particulate filters but these have not yet been widely introduced; forest fire controls could also be important but are not included due to the difficulty in establishing the proportion of fires that are anthropogenic.
[2] Motivated in part by its effect on health and regional climate, including areas of ice and snow.
[3] For cookstoves, given their importance for BC emissions, two alternative measures are included.

A complement to CO2-measures