Task Force on Health
Update for the 40th Session of TFIAM

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Task Force on Health –
Agenda of the 14th Meeting, Bonn, 12-13 May 2011

1. Review of the progress in research on health impacts of particulate matter and ozone
2. Assessment of effects on human health of black carbon as a component of PM2.5
3. Feasibility study of the assessment of health impacts of PM and health benefit analysis of PM reduction in EECCA countries
4. Review of methods of communication on the health significance of air quality and assessment of feasibility for harmonization of the information
5. Work plan of TFH

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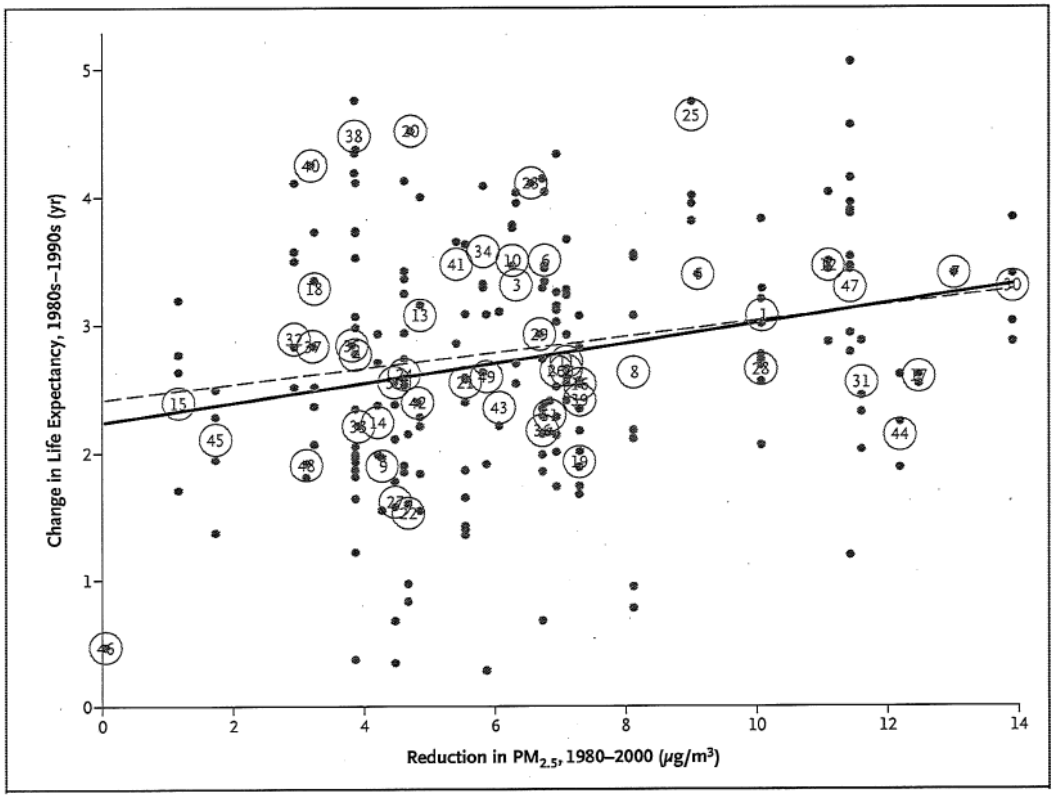
Reduction of PM exposure and increase of life expectancy in the US



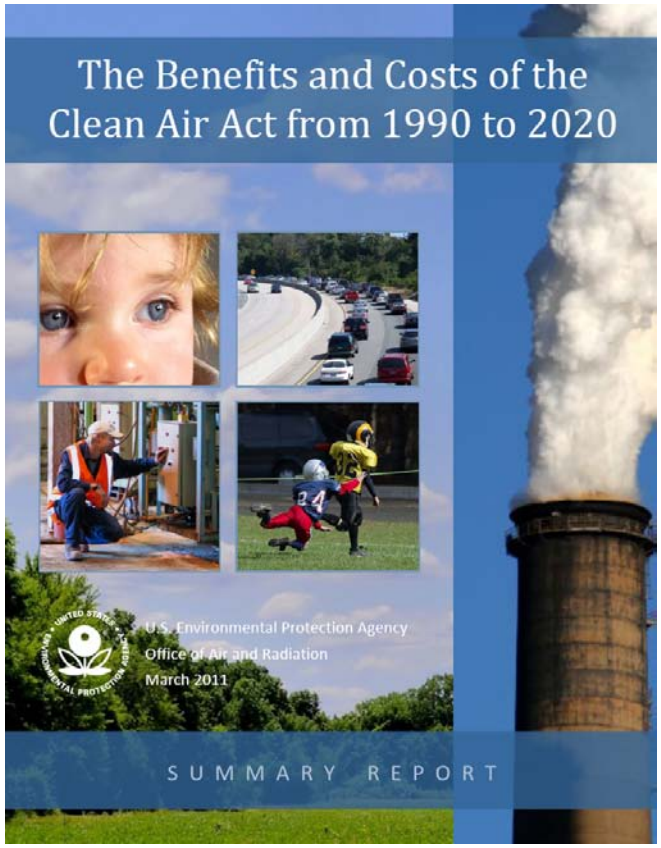
Pope AC et al, NEJM 2009

A decrease of 10 µg/m3 of PM2.5 associated with increase of life expectancy by 7.3 months between 1980 and 2000

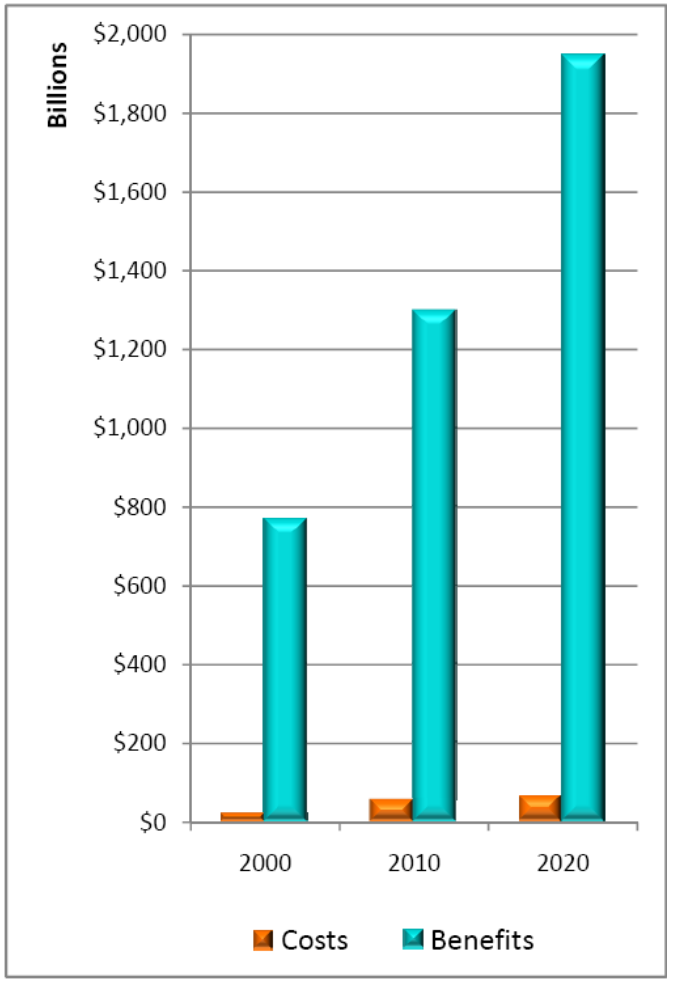
Reduction in PM accounts for 15% of overall increase in life expectancy

World Health Organization
REGIONAL OFFICE FOR Europe

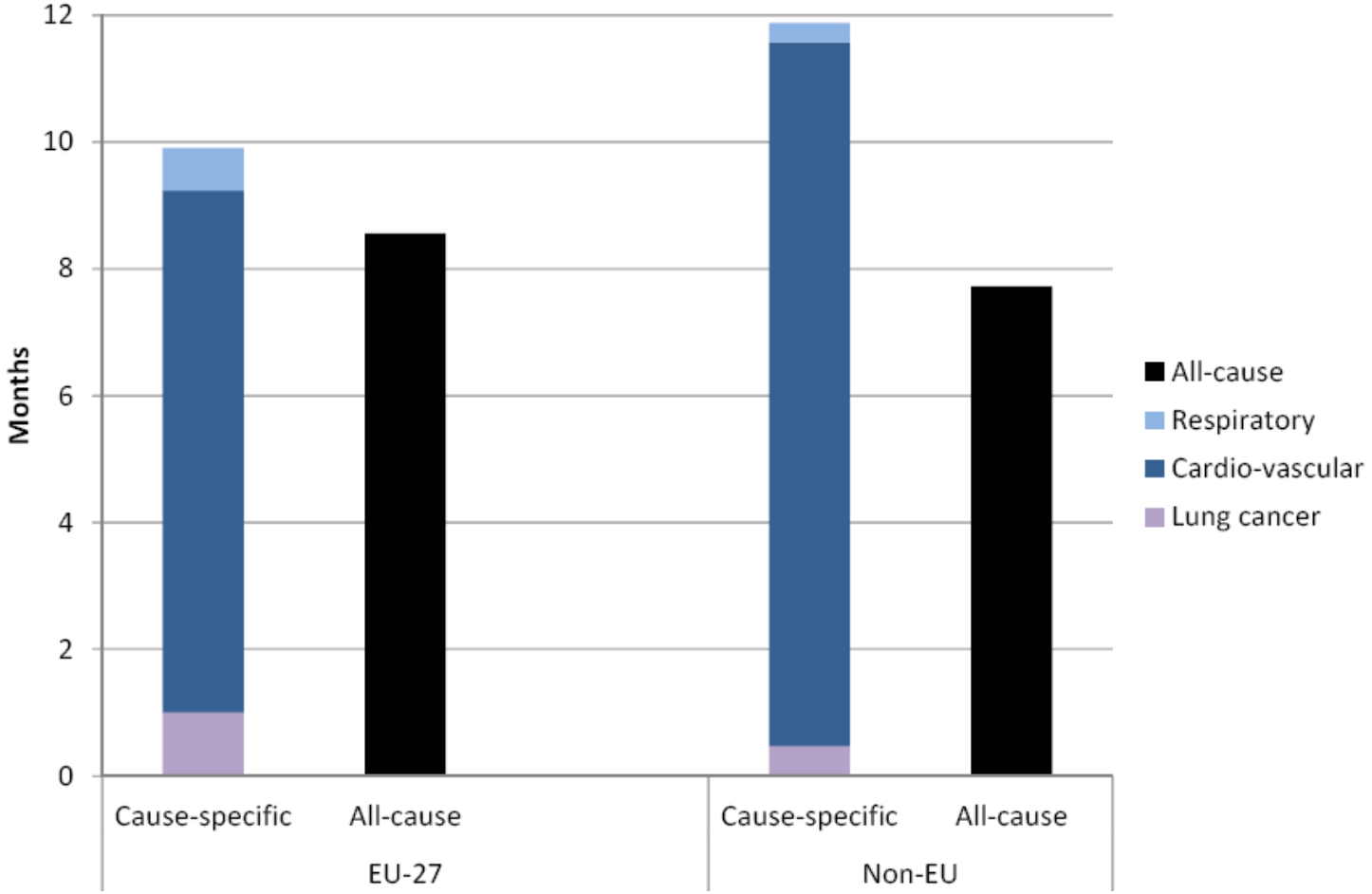
Benefits and costs of the Clean Air Act of the USA



Source: US EPA 2011
http://www.epa.gov/oar/sect812/prospective2.html



Loss of life expectancy - cause-specific vs. all cause estimates



European Study of Cohorts for Air Pollution Effects - ESCAPE

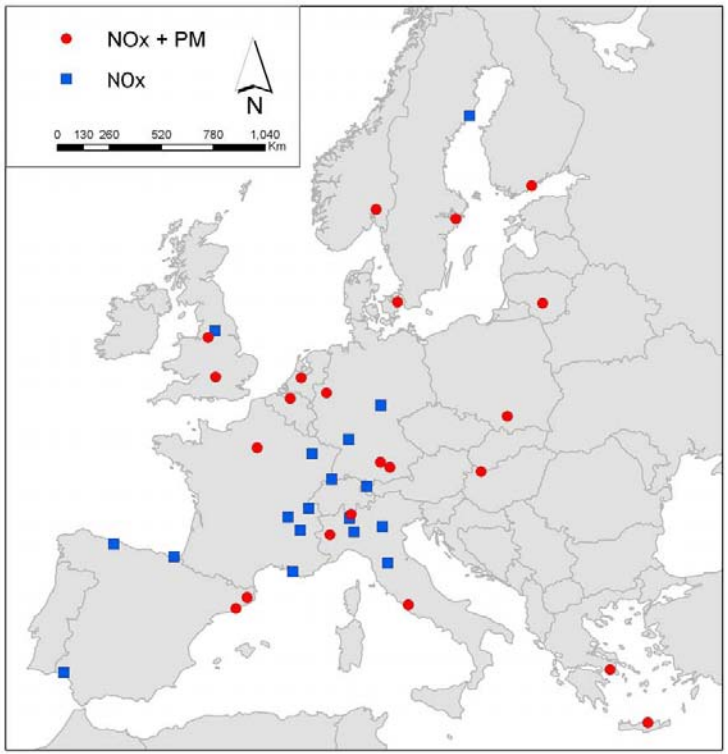
- EU FP7 project, 25 patners, coordinated by Univ Utrecht

- 30 cohorts, total 645,800 subjects followed over several years, ca. 37,000 deaths

- ESCAPE monitors PM2.5, PM10, NO2, NOx, BC, elemental composition of PM (TRANSPHORM)

- Exposure assessment based on land use regression models

- First results expected mid-2012



Assessment of effects on human health of black carbon as a component of PM2.5

- Black carbon (BC) is an operationally defined term which describes carbon as measured by light absorption. As such, it is not the same as elemental carbon. **Current measurement methods of BC and EC need standardization.**
- **Sufficient evidence** of an association of BC variability with short-term changes of all cause and cardiovascular mortality.
- **Sufficient evidence** of associations for all cause and cardiopulmonary mortality with long term average BC exposure.

Assessment of effects on human health of black carbon as a component of PM2.5, cont.

- ***Suggestive evidence*** *that the effects of BC are (stronger) than those of PM10 or PM2.5* .
- **Insufficient evidence** on a potential difference in the mechanisms of effects of BC in comparison to those of other potentially toxic component of PM2.5.
- **Insufficient evidence** to suggest any specific mechanism of effects of BC.
- *BC can not replace PM2.5 as a health-relevant indicator of particulate air pollution.*

HIA and C-B assessment in EECCA countries

- Progress in data availability in a few countries only
- Expertise and modern methodology is insufficient
- Expertise needs to be developed by local investment in human and institutional resources
- Involvement of EECCA experts / institutions in internationally coordinated projects essential for knowledge transfer.