Appraisal project

Air Pollution Policies
foR Assessment
of Integrated Strategies
At regional and Local scales

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SEVENTH FRAMEWORK PROGRAMME

Health Impact Assessment

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Brussels November 2013

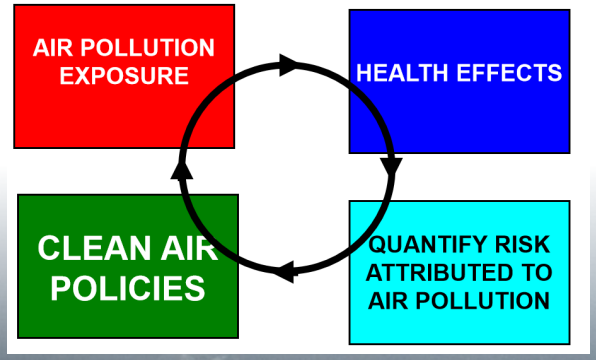
Air = determinant of health

- Wide range of health effects

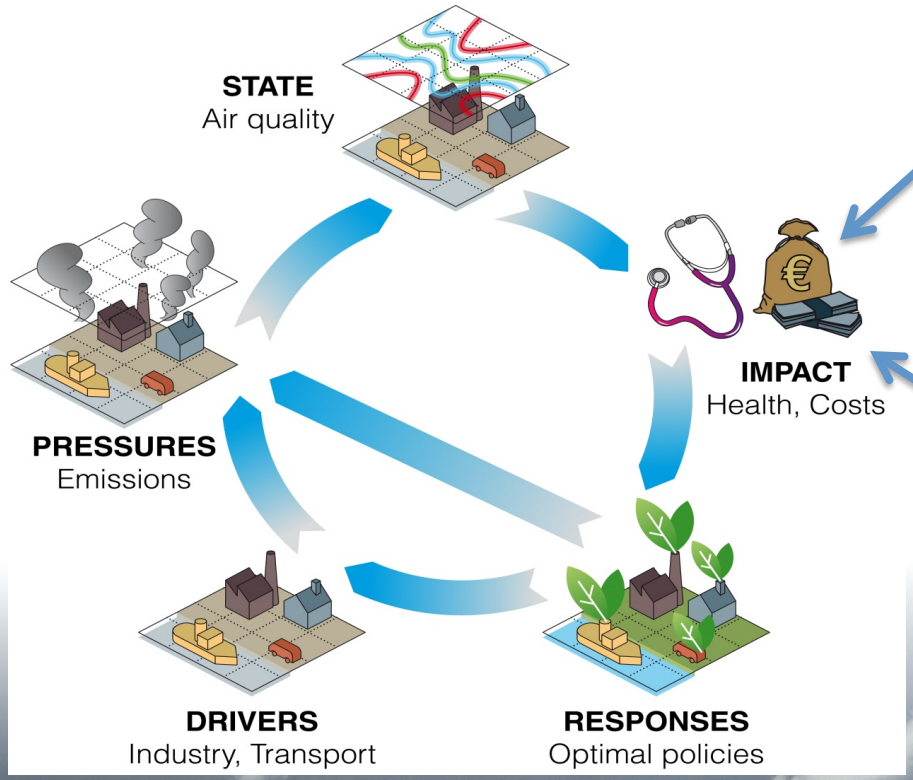
  respiratory (asthma), cardiovascular disease, brain development (children), lung cancer (group 1),…
- Synergies with societal, economic, metabolic or environmental parameters
- Large disease burden & inequalities in exposure & health risks
- Heterogeneity of factors influencing AQ management decisions → HIA!!!

Health Impact Assessment

HIA: a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population (Wismar 2007)



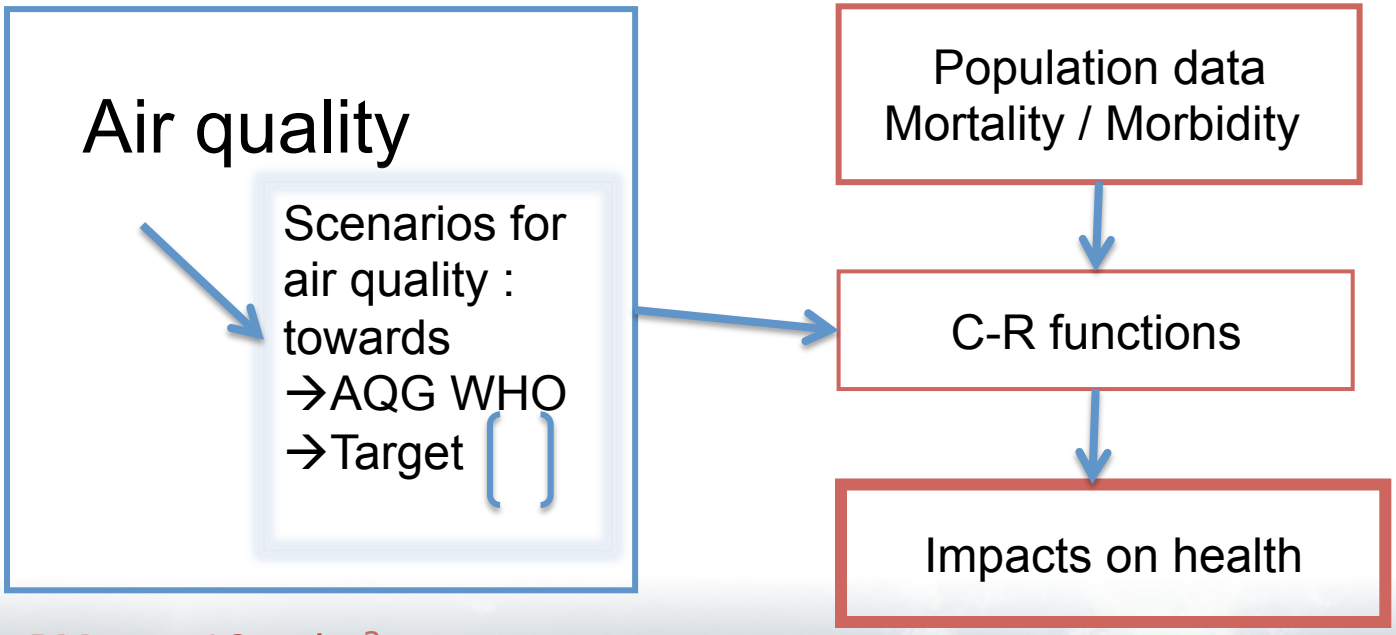
HIA in IAM



Exposure
- External exposure
- Absorbed dose
- Target-organ dose

Effects
- Well-being
- Morbidity
- Mortality

HIA in IAM complexity level 1

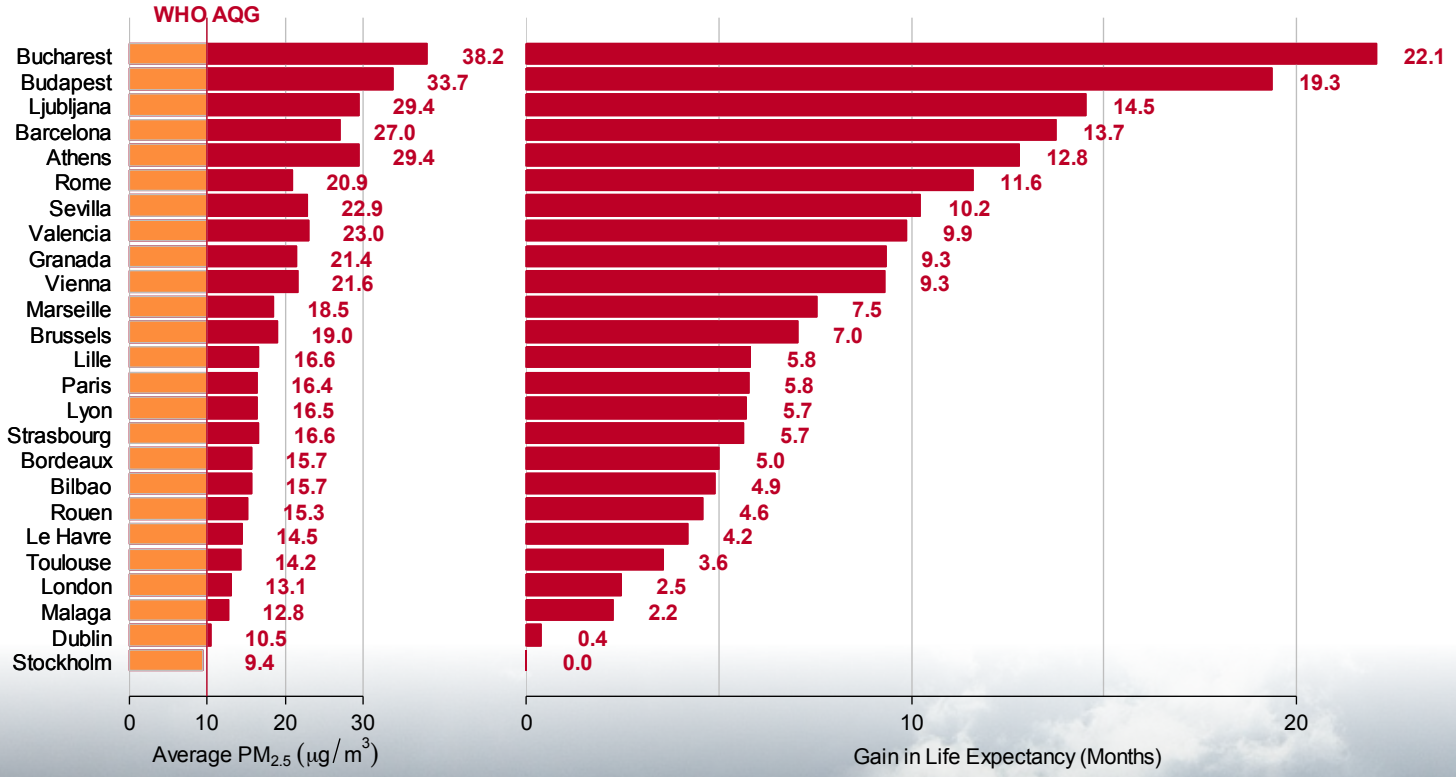


$PM_{2,5}$ →10$\mu g/m^3$:

APHEKOM: 19.000 premature deaths/year (15.000 cardiovascular)

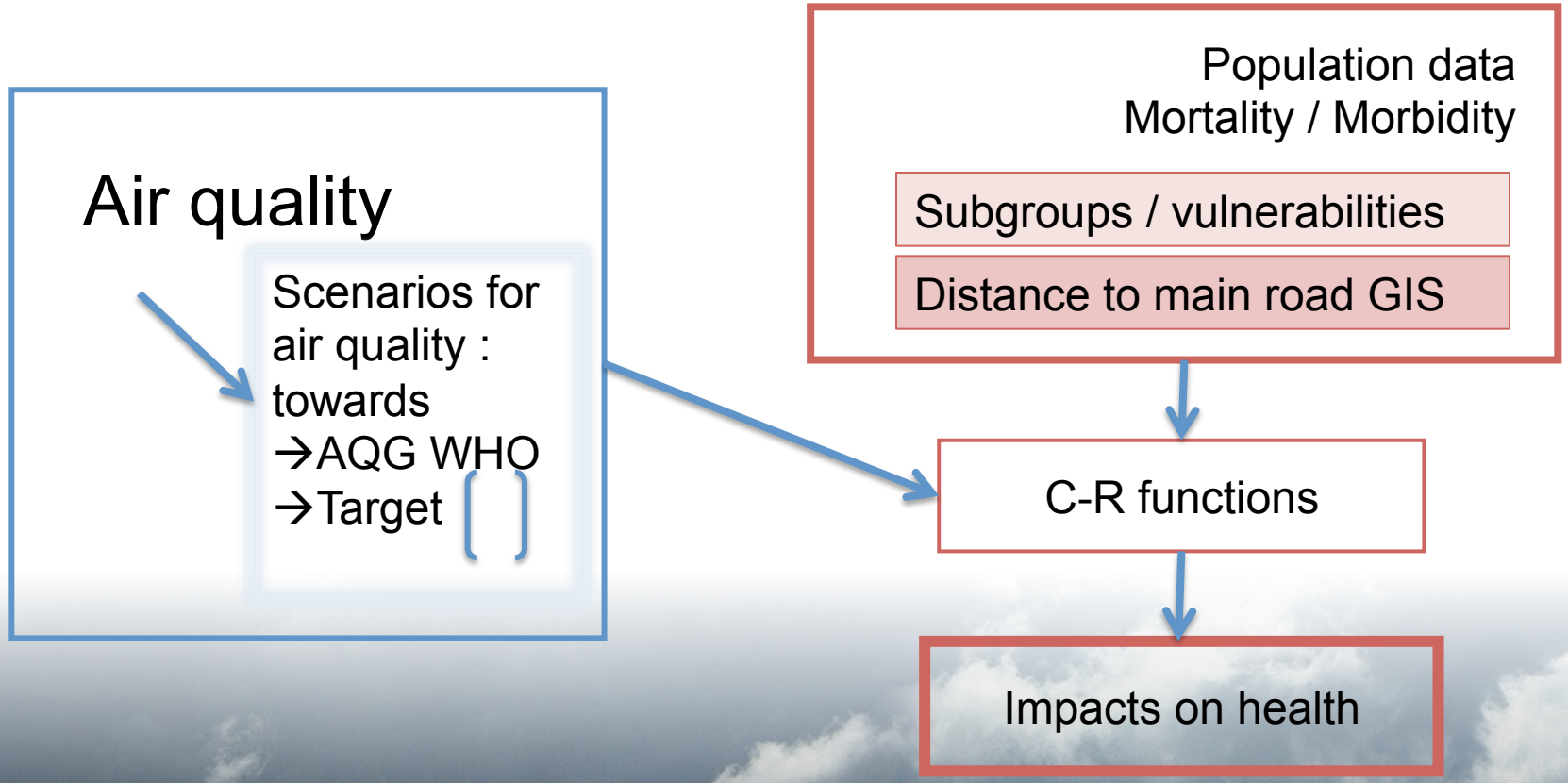
BXL: 436 premature death/year (283 cardiovascular)

Example: Gain in life expectancy at 30 - APHEKOM



Ref: Pascal et al 2013 Assessing the public health impacts of urban air pollution in 25 European cities: Results of the Aphekom project Science of the Total Environment 449: 390-400

HIA in IAM complexity level 3



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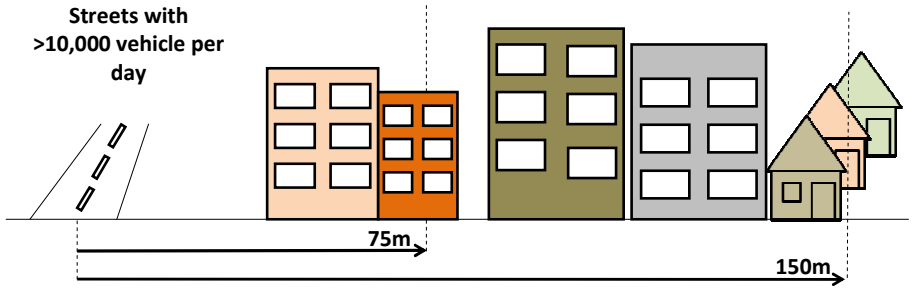
Example: Proximity to main-road and under-estimation of health burden



City	Population (Million. Hab)	PM_{10} annual average (ug/m^3)	% population within 75m (average 29%)	% population within 150m (average 52%)
Granada	0.24	34	14%	28%
Ljubljana	0.27	32	23%	47%
Bilbao	0.31	27	29%	59%
Sevilla	0.7	41	20%	38%
Valencia	0.74	46	44%	71%
Brussels	1.03	29	37%	64%
Stockholm	1.3	17	14%	30%
Barcelona	1.53	33	56%	77%
Vienna	1.66	25	36%	62%
Rome	2.81	37	22%	43%

Ref: Perez et al Chronic burden of near-roadway traffic pollution in 10 European cities (Aphekom network). ERJ Express. Published on March 21, 2013

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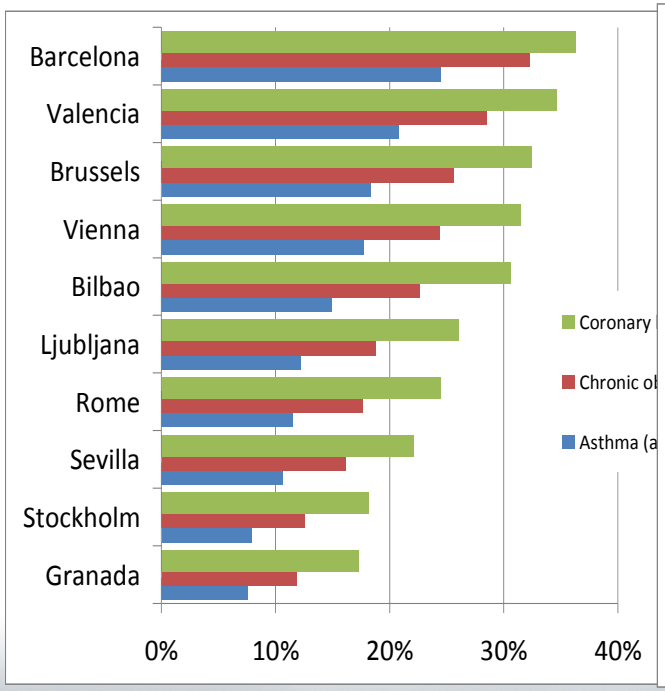

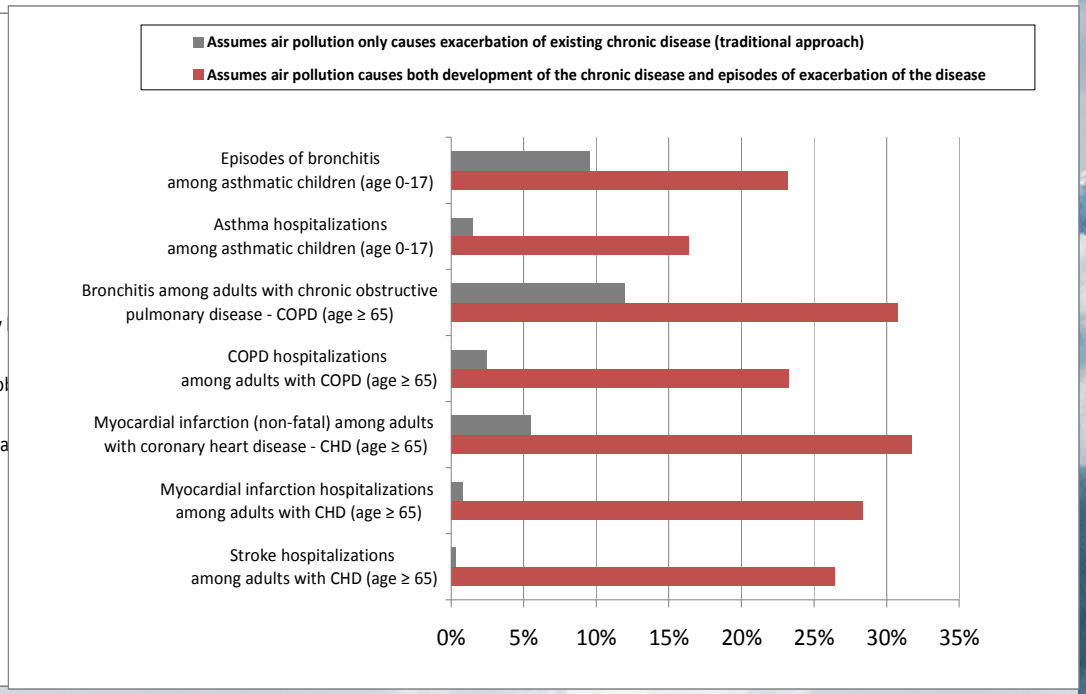

Ref: Perez et al Chronic burden of near-roadway traffic pollution in 10 European cities (Aphekom network). ERJ Express. Published on March 21, 2013

Conclusions

- Evaluate AQ burden
- Demonstrate benefits of better AQ
- Tool for information, participation to design decisions
- Human health as a value for decisions
- No threshold effects
- Mixtures
- Cumulative pressures on human health & wellbeing
- Vulnerable and susceptible groups
- Revision of C-R functions (HRAPIE)