

Framing of health co-benefits: perspectives from the international policy arena

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Health co-benefits in the IPCC: Third Assessment Report (TAR; 2001)

- *Some sources of greenhouse gas emissions can be limited at no, or negative, net social cost to the extent that policies can exploit no-regrets opportunities such as correcting market imperfections, inclusion of ancillary benefits, and efficient tax revenue recycling*
- *Since no analysis incorporates all relevant factors affecting mitigation costs, estimated costs may not reflect the actual costs of implementing mitigation actions*
- *Climate mitigation and adaptation options can yield ancillary benefits that meet human needs, improve well-being, and bring other environmental benefits*

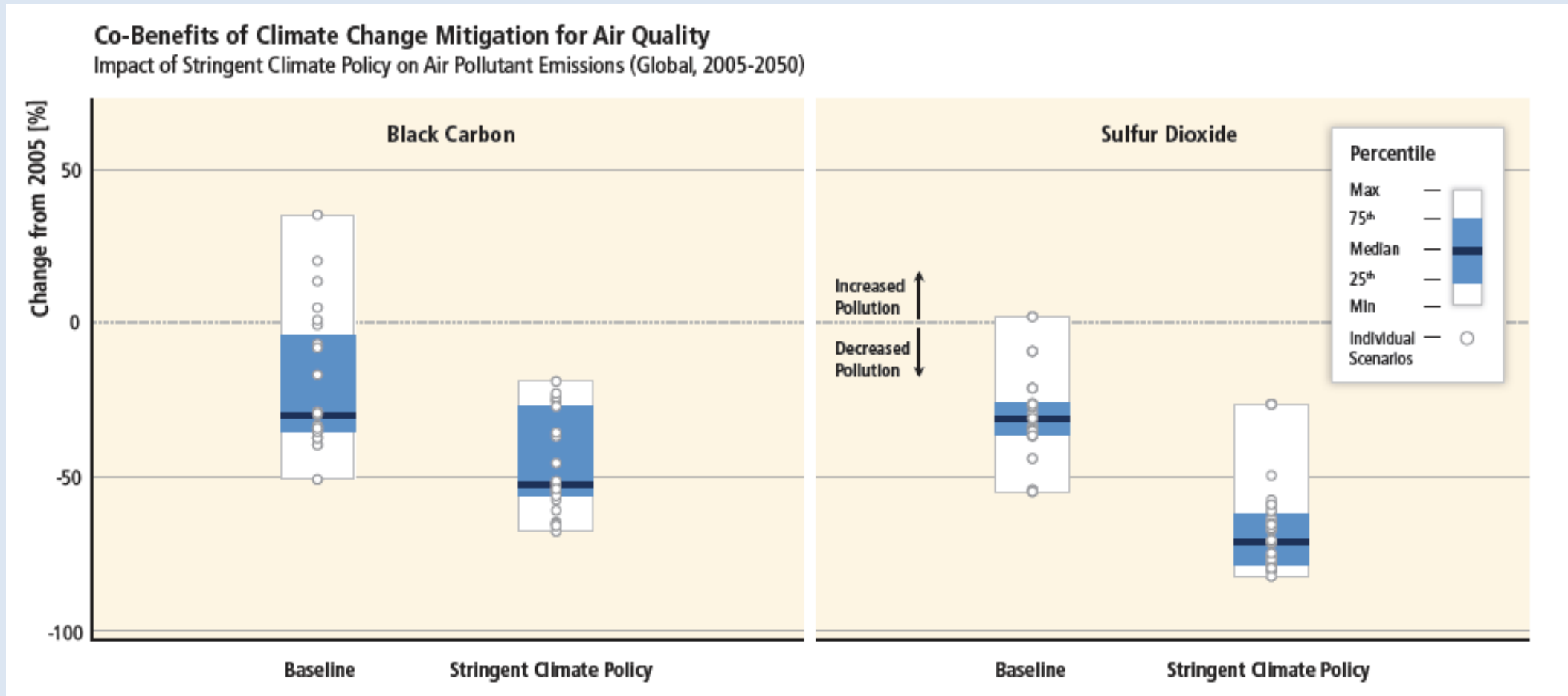
4th Assessment Report (AR4; 2007)

- *There is high agreement and much evidence that mitigation actions can result in near-term co-benefits (e.g. improved health due to reduced air pollution) that may offset a substantial fraction of mitigation costs*
- *Examples of actions with co-benefits include (i) improved energy efficiency and cleaner energy sources, leading to reduced emissions of health-damaging, climate-altering air pollutants; (ii) reduced energy and water consumption in urban areas through greening cities and recycling water; (iii) sustainable agriculture and forestry; and (iv) protection of ecosystems for carbon storage and other ecosystem services*

5th Assessment Report (AR5; 2014)

- *Mitigation scenarios reaching about 450 to 550 ppm CO₂-eq by 2100 show reduced costs for achieving air quality and energy security objectives, with significant co-benefits for human health, ecosystem impacts, and sufficiency of resources and resilience of the energy system*
- *The benefits of reduced impacts to health and ecosystems associated with major cuts in air pollutant emissions are particularly high where currently legislated and planned air pollution controls are weak*

AR5 SPM Figure 6: Air pollutant emission levels for black carbon (BC) and sulfur dioxide (SO₂) in 2050



IPCC SR1.5 SPM

- Policy tools can help mobilise incremental resources, including through shifting global investments and savings and through market and non-market based instruments as well as accompanying measures to secure the equity of the transition, acknowledging the challenges related with implementation including those of energy costs, depreciation of assets and impacts on international competition, and utilizing the opportunities to maximize co-benefits

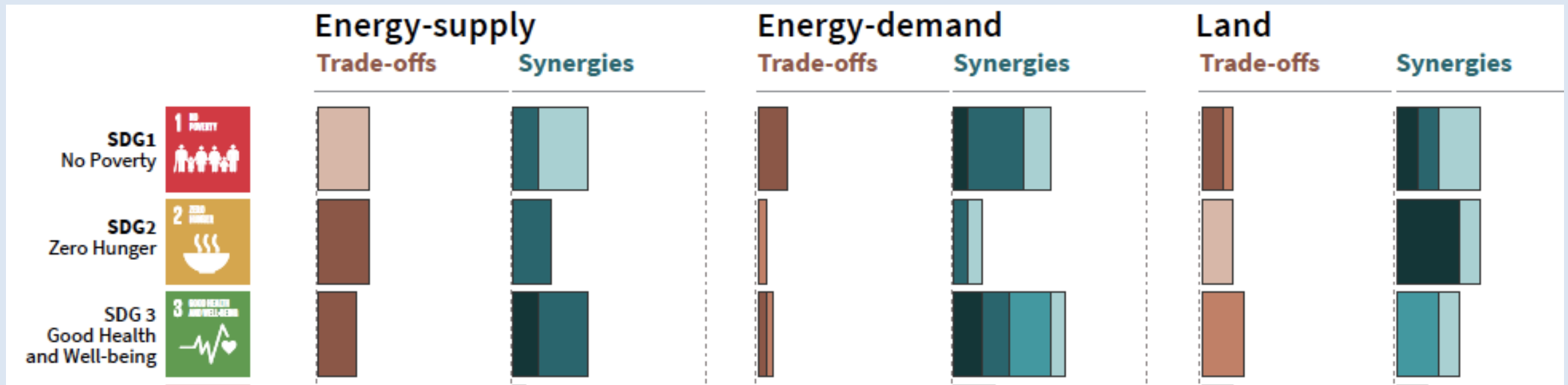
IPCC SR1.5

- The reduction of short-lived climate forces such as methane aerosols black carbon and co-emissions from vehicles provides health co-benefits by reducing air pollution and avoiding premature death. This in turn enhances the institutional and sociocultural feasibility of such actions. Interventions to reduce black carbon, for example, offer tangible local air quality benefits increasing the likelihood of local public support. Most foreseeable climate policies, however, only slightly limit some sources of SLCFs like traditional biomass indicating health benefits could be limited. {2.5.3; 4.3.6}

IPCC SR1.5

- Mitigation efforts that focus on transforming the food and agriculture system can have positive health co-benefits by promoting healthier and more sustainable diets limiting the demand for GHG-intensive foods, including healthy diets with low animal-calorie shares and low food waste is a key factor in reducing emissions from agriculture and could be achieved through shifts to healthier and more sustainable diets. For example land spared by adopting healthier diets in Western Europe could be afforested increasing the yearly carbon storage potential from 90 to 700 MtCO₂ in 2050 {2.4.4}

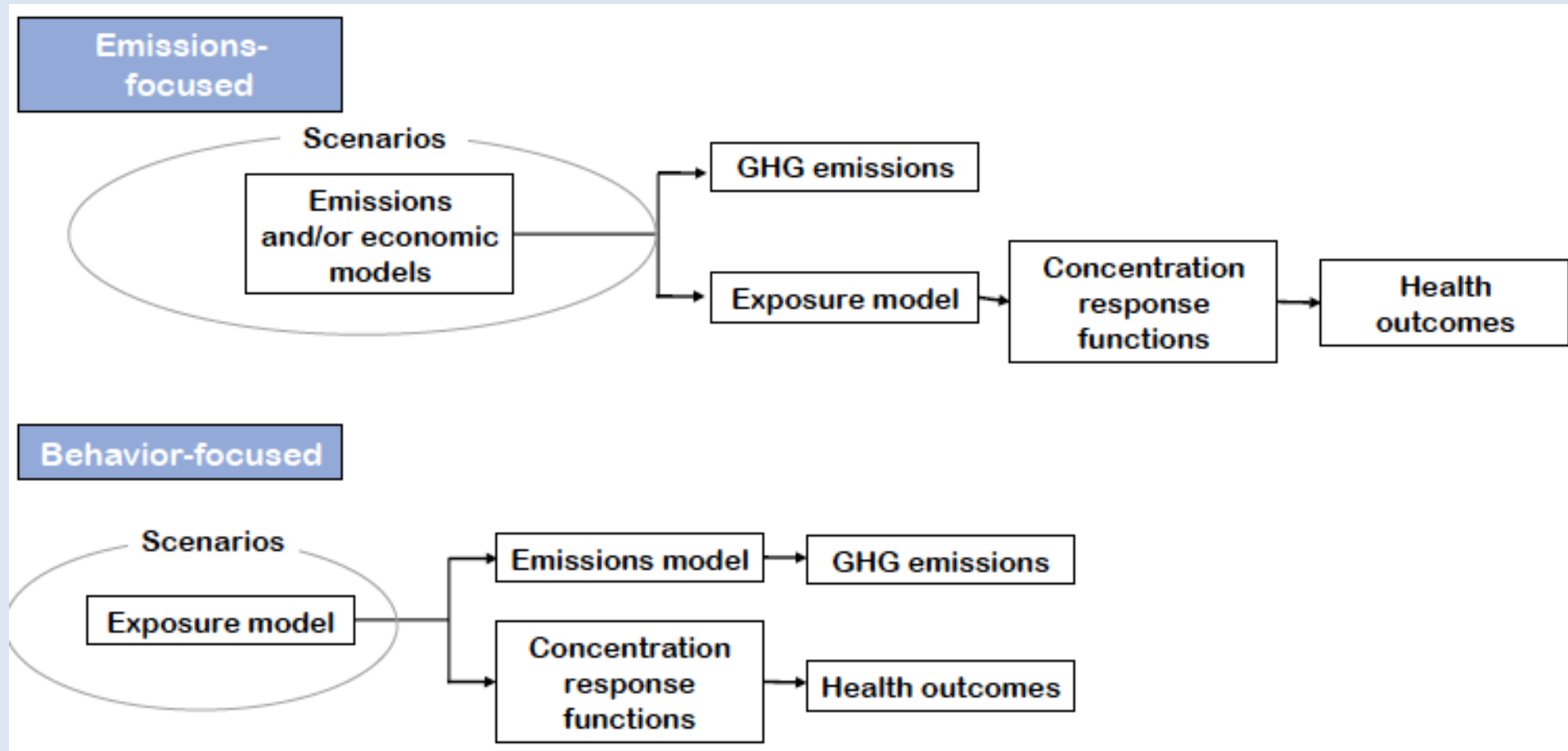
Indicative linkages between mitigation options and sustainable development using SDGs



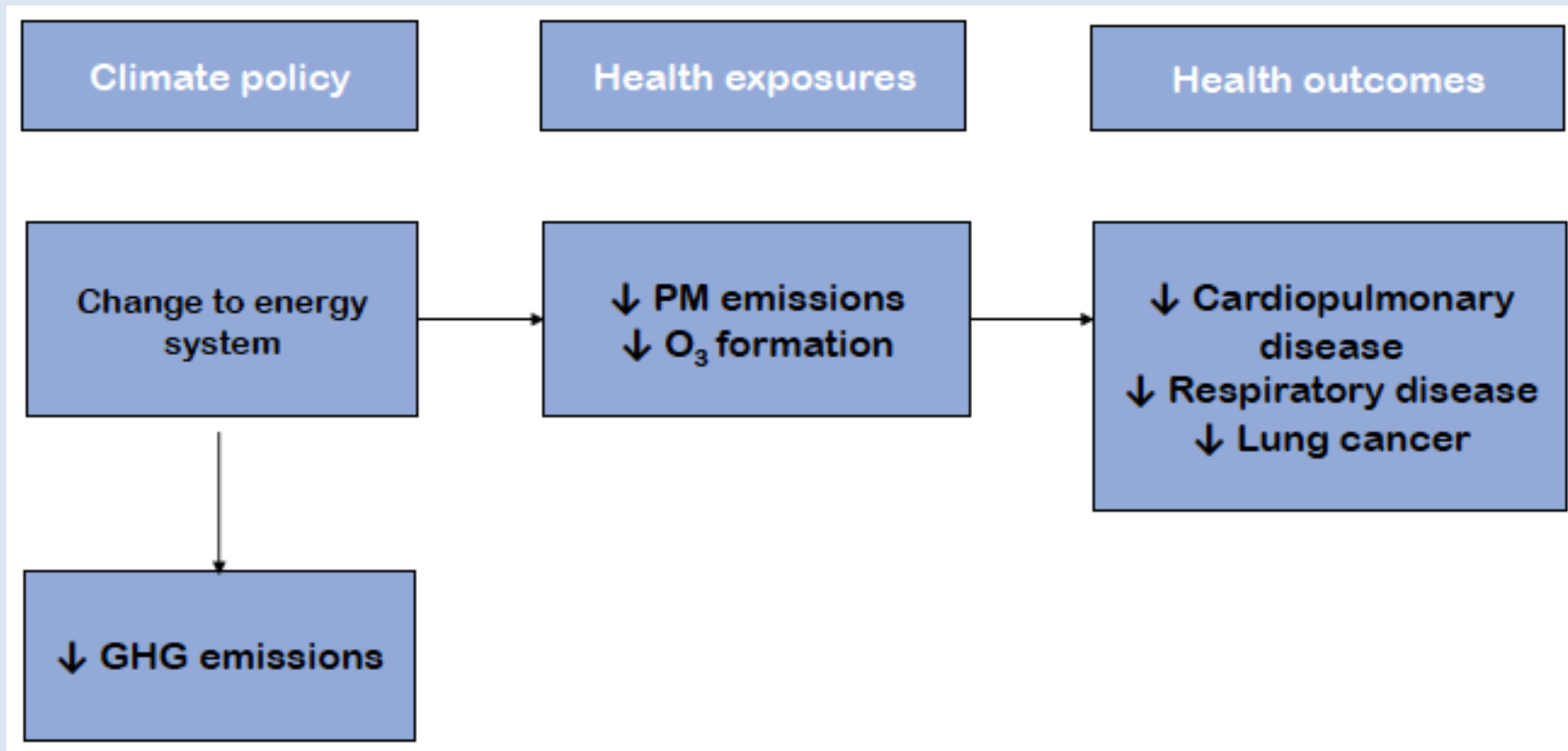
Requirements for co-benefits studies to support a climate policy

- Meaningful scenarios
- Translation of policy into behavior
- Influence of behavior on emissions
- Relationship of emissions to health-determinant exposures
- Quantification of health outcomes as a result of exposure
- E.g. link credible models of economic behavior, environmental processes, & health

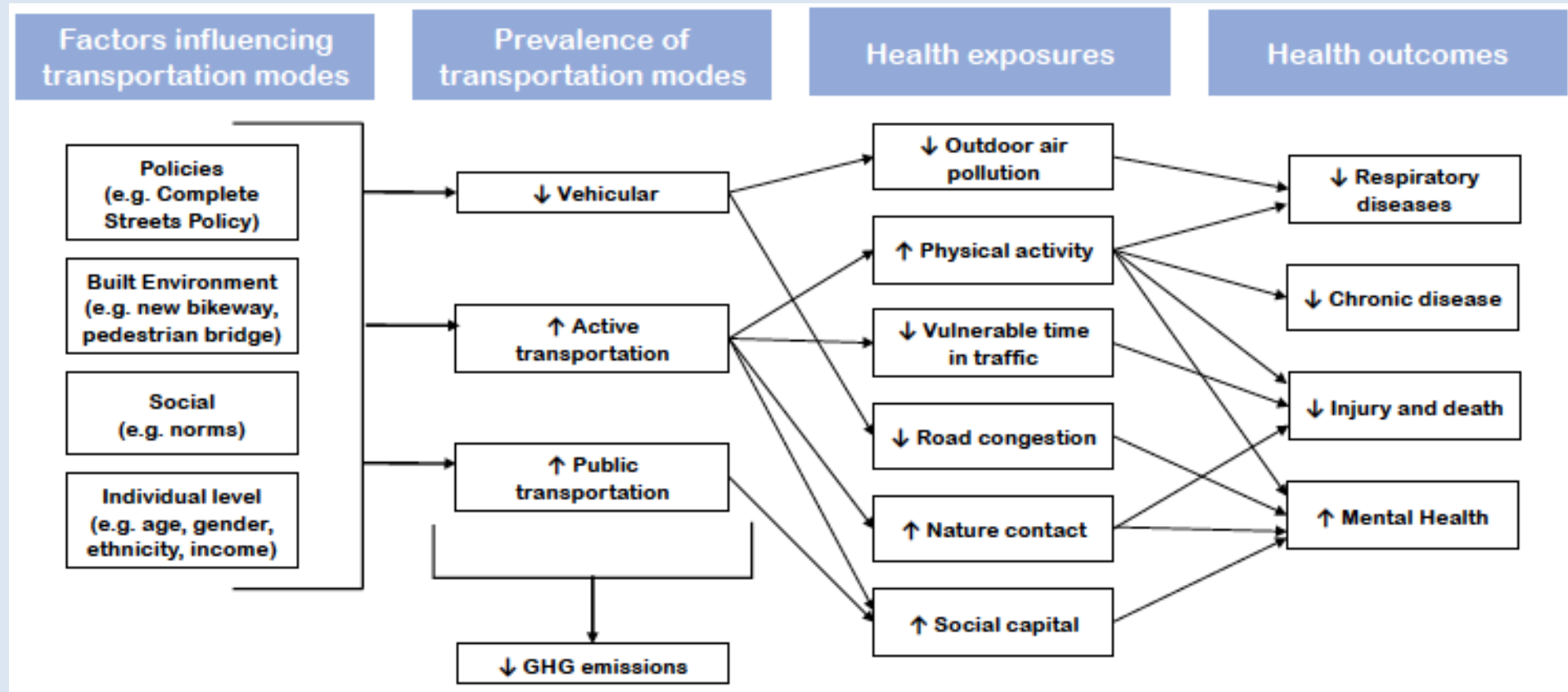
Two basic approaches to define scenario



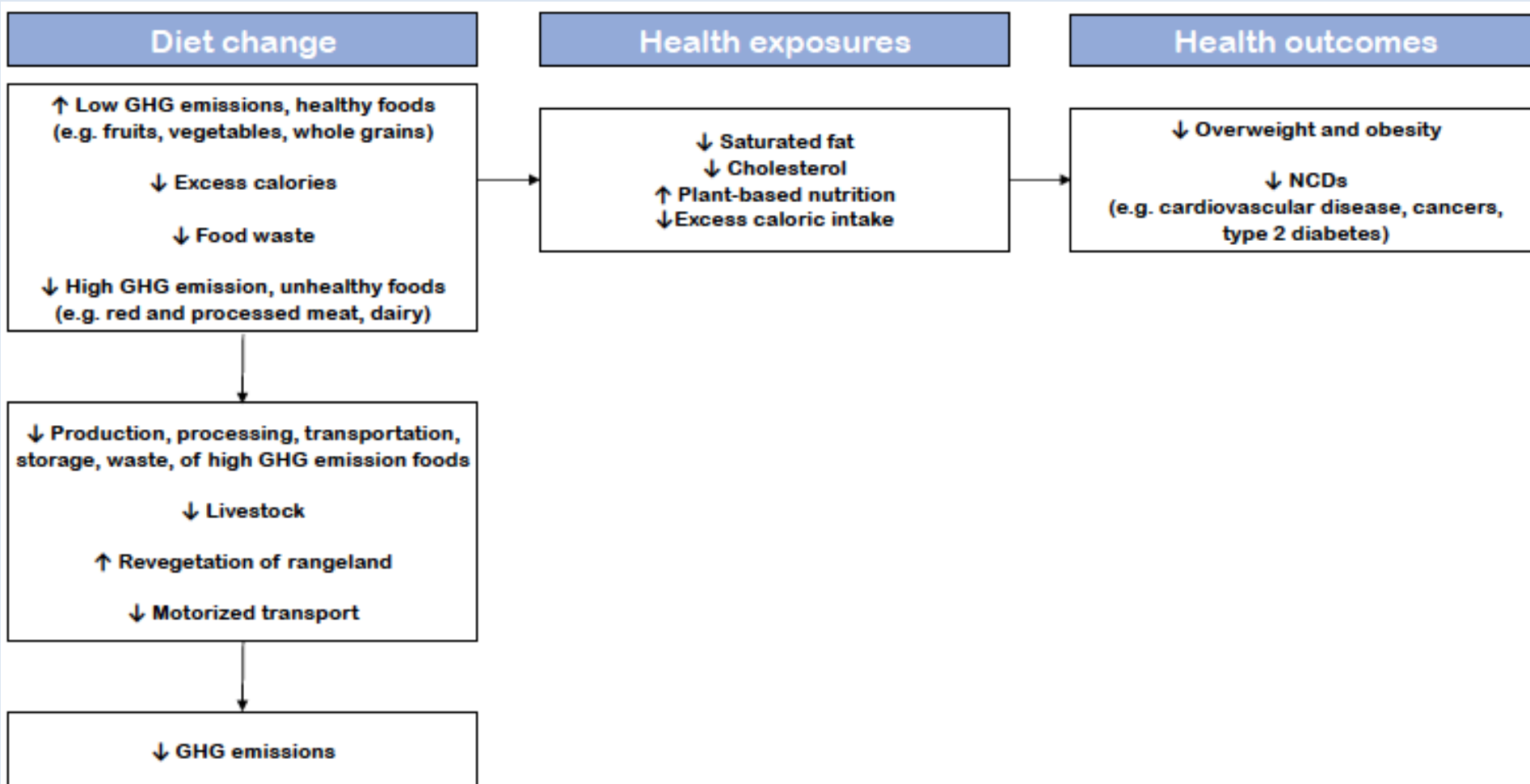
- Emissions-focused typical of studies of air quality
- Behavior-focused typical of studies of transport and diet



- **Combatting climate change can reduce air pollution by reducing the climate penalty on air quality and by reducing co-emitted air pollutants**
 - Power plants, certain industrial processes, mobile sources, & agricultural activities are sources of GHG emissions
- **24 studies**



- The proportion of emissions accounted for by transportation increases as more renewable energy is used in other sectors
 - Road transport responsible for about 36% of GHG emissions in California and 40% in New Zealand
- 12 studies



- “Western” diet associated with higher NCDs
- This diet, particularly high consumption of red meat, also associated with higher GHG emissions
- 6 studies

Conclusions

- Most studies indicated significant, nearer term, local ancillary health benefits providing impetus for policy uptake & net cost savings
- However, studies were more suited to describing the interaction of climate policy & health & the magnitude of potential outcomes than to providing specific accurate estimates of health co-benefits
- Greater consistency in selected modeling choices across the health co-benefits of climate mitigation research would facilitate evaluation of mitigation options particularly as they apply to the NDCs & promote policy uptake