



# TFIAM-CIAM

## Work for the Gothenburg Protocol Revision

# TFIAM

Overview of the  
Policy brief on potential targets to reduce risks for health and ecosystems

Simone Schucht, Stefan Åström, Rob Maas

# TFIAM/CIAM Policy brief on potential targets to reduce risks for health and ecosystems

- An informal document to be updated throughout the GP revision process & reflecting CIAM modelling work
- Background to the Policy Brief
  - Saltsjöbaden VII suggestion to "Set a 50% reduction target for the air pollution related health risks"
  - TFIAM-CIAM presentation at WGSR-61
  - WGSR-61 request for a policy brief on "feasibility of an overarching risk-based goal for the Convention" covering all air pollutants
  - EB-43 request to "Cover also the risks of biodiversity loss" and "Further explore the potential of staged/phased strategies"
  - Included in adopted WP 2024-2025 item 2.1.12
- Timeline
  - First version presented to EB-43
  - First update submitted to WGSR-62 with replies to comments from Parties
  - Second update for the Informal Meeting in Leuven in October 2024 with replies to comments from Parties
  - To be submitted to EB-44 (with Russian translation)

A compilation of the comments received is available on the [TFIAM website](#)

# Contents of the Policy Brief

- Overview of policy scenarios
  - Baseline climate, energy, and air pollution scenario
  - Maximum Technically Feasible (MTFR) air pollution control scenario
  - Combined advanced climate/energy/dietary scenario + MTFR = LOW
- Scenario impacts for health and ecosystems
- Options for policy targets
  - Health PM<sub>2.5</sub>
  - Ozone – concentrations and health
  - Reduction of biodiversity risks - WGE centres provided an empirical critical load dataset for N deposition for the whole UNECE region (excl. NA) for minimum, mean, and maximum CL levels
  - Inclusion of sectoral and staged/phased approaches
- Conclusions

The April 2024 version of the Policy Brief is available here:

<https://unece.org/environment/documents/2024/05/informal-documents/agenda-item-2-draft-policy-brief-potential-targets>

# Conclusions of the Policy Brief (April 2024 version)

- Health PM<sub>2.5</sub> targets
  - 50% target appears feasible at the UNECE level, but not for each country (gap closure approach proposed)
  - Target for the whole region more cost-effective than country level gap closure
- Pursuing climate and dietary change policies appears essential
  - Ambitious LOW scenario could get us 'half-way' and reduce ten-fold the additional air pollution costs
- A 50% health target for O<sub>3</sub> is more challenging
  - Current air pollution policies (BL) are largely offset by the global increase in methane emissions
  - Feasibility of the target is more dependent on global cooperation to reduce ozone precursors (NO<sub>x</sub>, NMVOCs, CH<sub>4</sub>)
- Biodiversity
  - Initial assessment shows that the attainability of 50% reduction in Average Accumulated Exceedance (AAE) for all ecosystems differs among countries and between the critical load levels
- Further analyses needed
  - Staged/phased approaches – guidance needed from EECCA/WB/Türkiye
  - Optimization for ecosystem type specific targets

# Necessity for prioritising modelling work

- High number of modelling tasks in the WP 2024/2025
- Additional suggestions during meetings and in comments to the Policy Brief
- An attempt at defining priorities for the ongoing CIAM modelling
  - Scenario prioritisation as result from TFIAM and scenario expert meeting
  - Request to parties and experts on parameter choices

# TFIAM & expert recommendations on scenario priorities

## Modelling priorities

Optimization for a gap closure between BL and MTR; with a sensitivity for gap closure between LOW BL and MTR

Prioritize least-cost optimization for a given (50%) reduction target

Optimize for reduction targets “region wide” and “in each country”

For biodiversity optimize for an equal protection over all ecosystem types (using Average Accumulated Exceedance, based on minimum or mean empirical critical loads)

Calculate scenarios illustrating staged/phased approaches for EECCA, WB & Türkiye



## Complementary modelling tasks that are recommended but with lower priority

Complement least-cost optimization for a given reduction target with possible further equity (egalitarian) constraints and compare the results

Show what protecting all ecosystems versus protecting specific ecosystems (e.g., forests) would entail

Calculate scenarios showing where a given sum of money (e.g. 0.2% of GDP) would be best spent on

# Conclusions from exchange with Parties and experts on parameter choices for the ongoing CIAM modelling

- Present new BL scenario
- Optimize for 2040 relative to 2015  
(2005 would be without ambition for some countries, and EECCA region lacks data for 2005; 2050 too far away; results will be presented in 5-year steps between 2015 and 2050)
- Optimize reaching targets cost-effectively across the UNECE & through equal relative improvement in each country  
(Meeting a target is easier for a larger region; considering equal relative improvement by country brings in an egalitarian element)
- Optimisation based on risk-based indicator “deaths per 100,000 inhabitants” and dynamic population
- Focus on anthropogenic (the avoidable)  $PM_{2.5}$
- Present results for different health metrics (premature deaths, YOLL and morbidity indicators)
- Use the indicator Average Accumulated Exceedance (AAE) for nature protection, with optimisation for minimum and mean empirical critical loads



# Issues to be investigated in 2025

- Indicative results for possible implications of staged/phased approaches included in the Policy Brief
  - Guidance is still needed from EECCA/WB/Türkiye to focus further assessments
  - Workshop planned in 2025
- O<sub>3</sub> health to be included in 2025
- The possibility for a combined PM<sub>2.5</sub> & O<sub>3</sub> target for health will be explored in 2025
- Further sensitivity scenarios are planned for 2025
  - E.g., impact of targets for marine ecosystems, impact of N management policies, inclusion of further equity criteria
  - Investigation of alternative mortality indicator (PAF)
- Ex-post analyses with WGE will be added in 2025
  - E.g., implications of scenario results for black carbon
- Exploration of reduction targets higher than 50%

# Thank you!

## **TFIAM co-chairs**

Stefan Åström (Sweden) [Stefan.Astrom@anthesisgroup.com](mailto:Stefan.Astrom@anthesisgroup.com)

Simone Schucht (France) [simone.schucht@ineris.fr](mailto:simone.schucht@ineris.fr)

## **CIAM head & deputy head**

Zbigniew Klimont [klimont@iiasa.ac.at](mailto:klimont@iiasa.ac.at)

Gregor Kieseewetter [kiesewet@iiasa.ac.at](mailto:kiesewet@iiasa.ac.at)

## **Special consultant**

Rob Maas [rob.maas@rivm.nl](mailto:rob.maas@rivm.nl)

Presentations and conclusions from TFIAM and EPCAC meetings found at:

<https://iiasa.ac.at/TFIAM>