



**Task Force on Hemispheric
Transport of Air Pollution**

EDGAR-HTAPv3 Emissions Mosaic

Overview of development plan

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TF-HTAP Overview

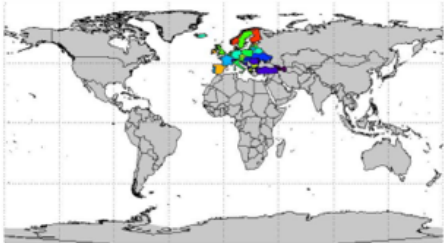
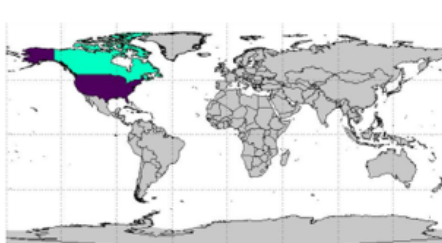
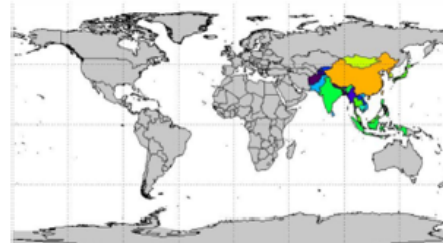
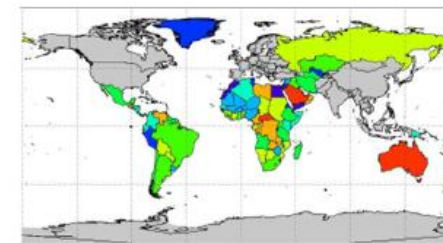
- How do emissions in one part of the world affect air quality in other parts of the world?
- Coordination of global multi-model assessments

EDGAR-HTAPv2

- Published 2015
 - Janssens-Maenhout, G., et al.: HTAP_v2.2: a mosaic of regional and global emission grid maps for 2008 and 2010 to study hemispheric transport of air pollution, *Atmos. Chem. Phys.*, 15, 11411–11432, <https://doi.org/10.5194/acp-15-11411-2015>, 2015.
- Basis for HTAP phase 2 global assessments
- Widespread use beyond the LRTAP Convention
 - ~250 citations

EDGAR-HTAPv2

- Global, 0.1 x 0.1 degree resolution “Emissions Mosaic”

| EMEP-TNO (MACCII) | US EPA _Environ Can | MICS-Asia (+ REAS2.1) | EDGARv4.3 (prelim.) |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Country inventories + point sources | State inventories + point sources | County inventory for China + country inventories from CAPSS & REAS 2.1 | Country inventories from the preliminary version of EDGARv4.3 |
| All except international shipping and except international aviation | All except international shipping and except international aviation | All except international shipping, international aviation and agricultural waste burning | All inclusive international shipping and international aviation |
| Yearly grid maps (monthly profiles of EMEP model added) | Monthly profiles | Monthly grid maps | Monthly profiles (for three different latitude bands) |
| 0.125° × 0.0625° converted to 0.1° × 0.1° by raster resampling with factor 1/5x1/5 and aggregation of 4 × 8 | 0.1° × 0.1° and height profiles | 0.25° × 0.25° converted to 0.1° × 0.1° by raster resampling 1/5 × 1/5 and aggregation of 2 × 2 | 0.1° × 0.1° |
| CO, NMVOC, NO _x , SO ₂ , NH ₃ , PM coarse and fine and BC/OC fractions | CO, NMVOC with speciation, NO _x , SO ₂ , NH ₃ , PM ₁₀ , PMfine, BC and OC | CO, NMVOC, NO _x , SO ₂ , NH ₃ , PM ₁₀ , PM _{2.5} , BC and OC | CO, NMVOC, NO _x , SO ₂ , NH ₃ , PM ₁₀ , PM _{2.5} , BC and OC |
|  |  |  |  |

EDGAR-HTAPv2: limitations

- Only 2008 and 2010
 - No trend analysis possible
- Only 7 sectors
 - AIR; SHIPS; ENERGY; INDUSTRY; TRANSPORT; RESIDENTIAL; AGRICULTURE
 - Difficult to assess specific policy interventions
- Outdated
 - Newer information is available

EDGAR-HTAPv3: aspirations

- Longer time series
 - Trend analysis
- Improved sectoral resolution
 - More detailed source-receptor relationships
 - Better basis for emission scenarios
- Additional regional inventories

EDGAR-HTAPv3: timeline

- 2020 Q1: initial scoping
- 2020 Q2-3: data collection and harmonisation
 - Emission sectors
 - Spatial resolution
 - Time period
- 2020 Q3-4: mosaic development and assessment
 - Tool development
 - Consistency checks
- 2021 Q1: initial release
- 2021 Q4: publication
- From 2022: use for TF-HTAP workplan items

EDGAR-HTAPv3: partners

- Global inventory
 - EDGARv5
- Europe
 - CAMS-REG-AP
- North America
 - EPA and Environment Canada
- Asia
 - REASv3: (India, China, Japan, Koreas, South East Asia, Indonesia)
 - MIX: mosaic of regional Asian inventories, under development
- Other regions
 - Australia, Argentina, and Chile

EDGAR-HTAPv3: next steps

- Determine the largest possible set of sectors
 - Discussions ongoing
- Extrapolate beyond 2015
 - CEDS?
- Additional regional partners?
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