Successful policies and measures in Europe

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Plenary Session III: Regional Challenges and Priorities
30.10.2018 – 16:30-18:30
FIRST WHO GLOBAL CONFERENCE ON AIR POLLUTION AND HEALTH
IMPROVING AIR QUALITY, COMBATTING CLIMATE CHANGE – SAVING LIVES
1. Achievements

2. Challenges
Clean air policies result in improved air quality:
Fine particulate matter concentrations (PM$_{2.5}$) 1990 - 2015
Ingredients of successful clean air policies

1. **Set ambitious ambient air quality targets** to protect health of humans and the ecosystem

2. **Identify & Control sources**
   - Fuel quality
   - Emission standards: e.g. EURO 1 to 6 to reduce soot from diesel engines

3. **Define local & national plans** based on best available techniques

4. **Governance:** Clarify competencies & institutional settings (role of ministries and agencies → cooperation with actors on supra-national, national, regional, local level)

5. **Monitor and control**
   - Air quality
   - Emissions (under real use conditions)
   - Implementation of policies
The Swiss Study on Air Pollution and Lung & Heart Diseases in Adults

SAPALDIA

Initiated in 1991 (~10'000 subjects) – and still running

Lead by Swiss TPH (Prof. Nicole Probst-Hensch)
1. Achievements

2. Challenges
EU Directive for PM$_{2.5}$ ignores science-based WHO guideline values!

Int J Pub Health 2017: Kutlar Joss et al (open access)

<table>
<thead>
<tr>
<th>WHO Air Quality Guideline Value (annual mean)</th>
<th>Afghanistan</th>
<th>Australia</th>
<th>Cameroon</th>
<th>Canada</th>
<th>Iran</th>
<th>Malawi</th>
<th>Switzerland</th>
<th>U.S.A.</th>
<th>Mexico</th>
<th>E.U.</th>
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<tbody>
<tr>
<td>10 µg/m$^3$</td>
<td>≤10</td>
<td>12</td>
<td>25</td>
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→ In EU-28: 82-85% of the population live in places with PM$_{2.5}$ concentrations above WHO AQG value!
Transboundary health impacts of transported global air pollution and international trade

Qiang Zhang¹*, Xujia Jiang¹,²*, Dan Tong¹*, Steven J. Davis¹,³, Hongyan Zhao¹, Guannan Geng¹, Tong Feng¹, Bo Zheng², Zifeng Lu⁴, David G. Streets⁴, Ruijing Ni⁵, Michael Brauer⁶, Aaron van Donkelaar⁷, Randall V. Martin⁷,⁸, Hong Huo⁹, Zhu Liu¹⁰, Da Pan¹¹, Haidong Kan¹², Yingying Yan⁵, Jintai Lin⁵, Kebin He¹,²,¹³ & Dabo Guan¹,¹⁴

• **Western Europe & U.S.A cause (substantially) higher air pollution in OTHER COUNTRIES (rather than at home) to accommodate their own lifestyle**

• **China, India & Asia, in general, take the highest share of air pollution (= death & diseases) for the production of goods CONSUMED IN OTHER COUNTRIES**
Swiss mining company causes disastrous sulfur dioxid spills in Zambia (Mopani Copper Mine)

A European car maker negotiates for the permission to export to Iran diesel trucks... without particle filters!
Swiss traders blend the «poorest possible diesel quality» for African countries with lax sulfur regulations (called «African Quality»)

samples at gas stations contained up to 630 times more sulphur than diesel sold in Switzerland…!
Poor clean air policies
Highly polluted countries get worse!

Annual fine particulate matter concentrations (PM$_{2.5}$)

- China
- Bangladesh
- India
- Pakistan
- Nepal
- Bhutan
- Palestine
- Jordan
- Afghanistan

NOTE: same trends almost everywhere in Asia, Latin America, and Africa!

WHO Guideline Value: 10 µg/m$^3$!
Science-based fuel, emission, and air quality standards need to be GLOBALIZED to protect health not only in Europe, but globally!

We are not yet there! Only 7 countries comply with WHO AQG values.

Thank you - Nino.Kuenzli@SwissTPH.ch

**Ambient Air Quality Standards (PM$_{2.5}$)**

Ambient Air Quality Standards for yearly average concentration of PM$_{2.5}$ (µg/m$^3$)

- 8–10: Data not available
- 11–14
- 1
- 36

**Time to harmonize national ambient air quality standards**

Meltem Kutlar Joss$^{1,2}$ · Marloes Eeftens$^{1,2}$ · Emily Gintowt$^{1,2}$ · Ron Kappeler$^{1,2}$ · Nino Künzli$^{1,2}$