

Swiss TPH



Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse

Keeping science in UFP policy making – lessons learned from “fake news” spread by (a few) German mass media

Prof. Nino Künzli, MD, PhD

Deputy-Director Swiss Tropical and Public Health Institute Basel (SwissTPH)

Dean of the Swiss School of Public Health (SSPH+)

Chair of the Federal Commission on Air Hygiene (Advisory Board of the Government)

European Federation of Clean Air
and Environmental Protection
Associations (EFCA)
International Symposium

**Ultrafine Particles –
Air Quality and Climate**

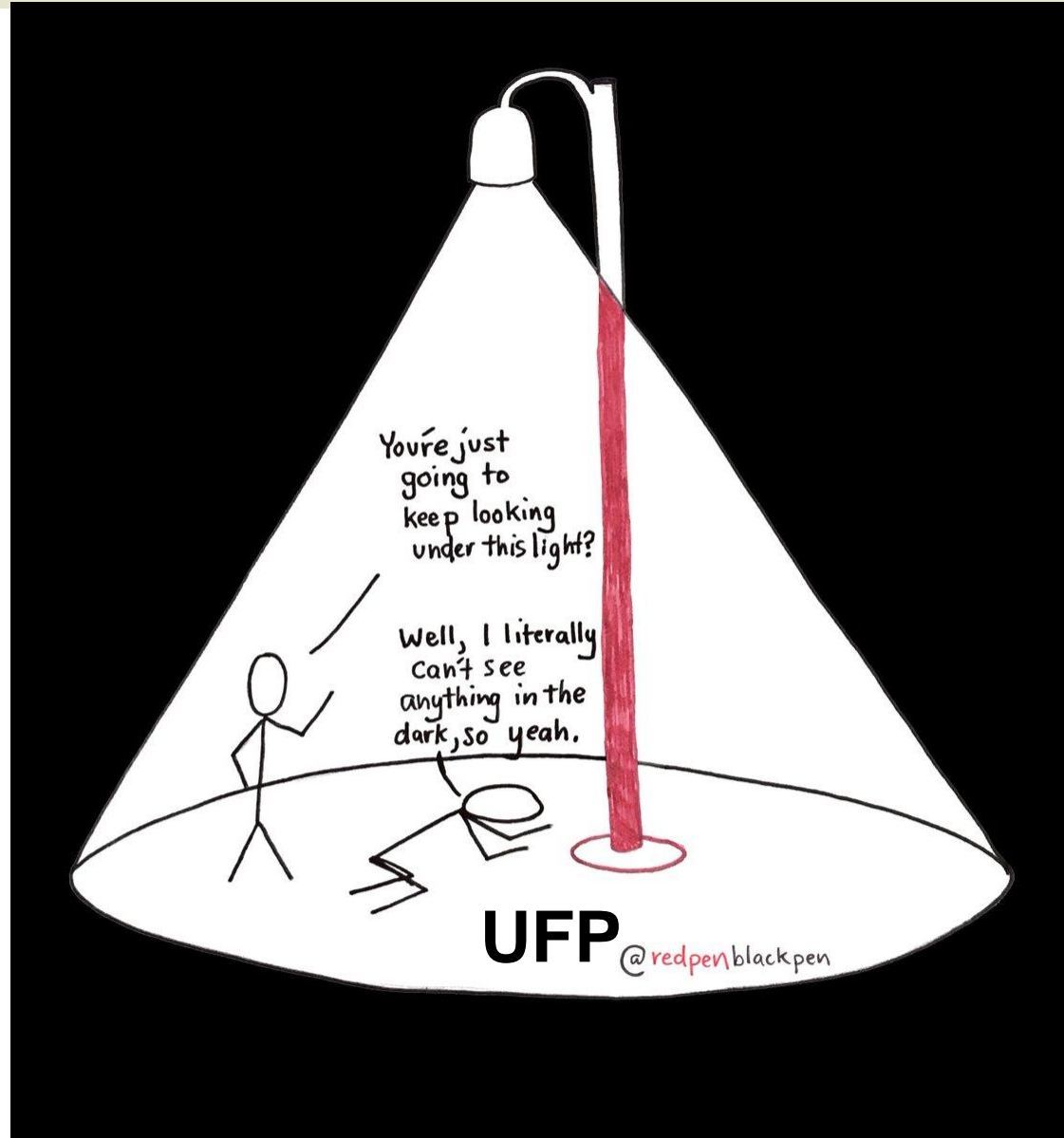
Brussels, Belgium
May 15 and 16, 2019

16.5.2019

Keynote – Session G

09:00 – 09:45 | Europasaal

Session Chair: Flemming Cassee





30 years of «semi-ambitious» E.U. clean air policy making...

1. Promotion of (dirty) diesel cars → 40-60% of fleet by 2000 !
2. Hinderance and delay in particle filter requirement
3. Refusal of science-based PM10 and PM2.5 LIMIT VALUES

20 years of E.U. resistance against science-based

«limit values» for PM₁₀ & PM_{2.5}

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

Science-based limit values to protect public health

politically set
«limit values» to
protect vested
interests

	WHO Air Quality Guideline values	Afghanistan, Cameroon, Canada, Iceland, Iran, Australia Switzerland U.K.	State of Cali- fornia	U.S.A. Fede-ral; Mexico	E.U.
PM₁₀ Annual Mean	20 µg/m ³	20	20	--	40
PM_{2.5} Annual Mean	10 µg/m ³	10 (AUST: 8)	12	12	25



30 years of «semi-ambitious» E.U. clean air policy making...

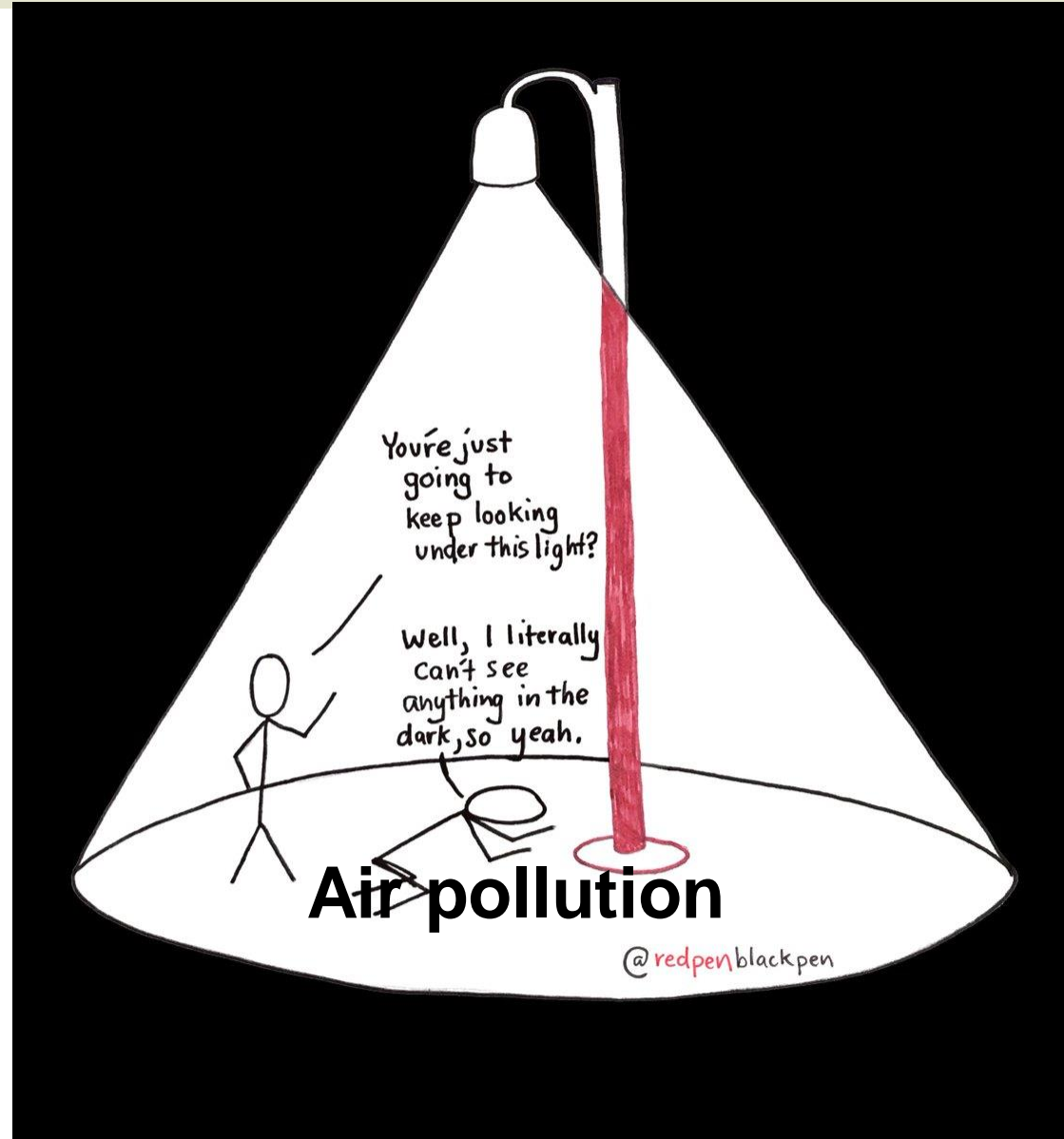
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Diesel bis
Euro 5/V

Anlieger
frei







Reportage & Dokumentation

Mo 7.1.2019 21:45

Exklusiv im Ersten: Das Diesel-Desaster



Sendetermin

Mo, 07.01.19 | 21:45 Uhr
Das Erste

ANDERE SENDUNGEN

< VORHERIGE

NÄCHSTE

ALLE SENDUNGEN

MEHR ZUM THEMA





Prof. emeritus Dieter Köhler

**ARD-Reportage weist nach:
Das Diesel-Desaster basiert
auf reiner Hysterie!**



Ein Gaga-Grenzwert zerstört unsere
Mobilität und unser
Vermögen.

Mit Video

Prof. Dr. Jörg Meuthen
AfD-Bundessprecher
Mitglied des
Europäischen Parlaments

terstützen Der Postillon 1845-2019 Das Postillon-Archiv Postillon24 Shopillon Postillon durchsuchen...



Der Postillon

Ehrliche Nachrichten - unabhängig, schnell, seit 1845

**107 Doktorfische legen Gutachten vor:
Mikroplastik im Meer doch nicht so
schädlich**

BB | DasEnte.de - Reportage „Das Diesel-Desaster“ 07.01.2019



”

**FEINSTAUBALARM
IST EINE EINZIGE
VOLKSVERDUMMUNG.**

Prof. Dr. med. Martin Hetzel
Chefarzt Krankenhaus vom Roten Kreuz, Stuttgart // Facharzt für Pneumologie





An die Mitglieder der A Wissenschaft, Verkehr des Deutschen Bunde Berlin



Urban air quality and health: two forward, one step back

Offener Brief bzw. Stellungnahme

Frank J. Kelly



Die Rolle der Luftschadstoffe für die Gesundheit

Eine Expertise im Namen der Internationalen Gesellschaft für Umweltepidemiologie (ISEE) und der European Respiratory Society (ERS)

AIR QUALITY Prof. Dr. Annette Peters, MSc, Helmholtz Zentrum für Umweltforschung, Ludwig-Maximilians Universität München, ISEE Präsidentin 2012-2013, Mitglied des ISEE Politischen Ausschusses

Prof. Dr. med. Barbara Hoffmann MPH, Universität zu Köln, Vorsitzende des Environment and Health Committee der European Respiratory Society, Vorsitzende ISEE Europa

Prof. Dr. Bert Brunekreef, Universität Utrecht, Niederlande, ISEE Präsident 2000-2001

Prof. Dr. med. PhD Nino Künzli, Schweizerisches Institut für Umwelt- und Public Health (Swiss TPH), Basel, Schweiz

Meltem Kutlar Joss, MSc ETH, MPH, Schweizerisches Institut für Umwelt- und Public Health (Swiss TPH), Basel, Schweiz

Prof. Dr. phil. PhD Nicole Probst-Hensch, Schweizerisches Institut für Umwelt- und Public Health (Swiss TPH), Basel, Schweiz

Prof. Dr. med. PhD Beate Ritz, University of California, Los Angeles, USA, Präsidentin der ISEE

Prof. Dr. med. Holger Schulz, Helmholtz Zentrum für Umweltforschung

Priv. Doz. Dr. med. Kurt Straif, MPH, PhD, Lyon, Frankreich

Prof. Dr. med. Dr. H. Erich Wichmann, ehemals Helmholtz Zentrum München und Ludwig-Maximilians Universität München



Leopoldina
Nationale Akademie
der Wissenschaften

April 2019

Ad hoc-Stellungnahme

Stickstoffoxide und Feinstaub in der Atemluft: Grundlagen und Empfehlungen



SMITHJ DOSE RESPONSE



Report

Report no. 15/18



Air Pollution and Lung Cancer: A Review of Issues Affecting the Interpretation of the Epidemiological Literature

multi-national oil and gas Companies that operate in exploration and production, refining, and chemicals and European regional and National Companies operating one or more refineries in the EU

J. A. Tomenson (Causation Ltd)

D. Morgott (Pennsport Consulting)

G. B. Copley (ExxonMobil Biomedical Sciences, Inc.)



**U.S. Environmental Protection Agency (EPA) Acting Administrator Andrew Wheeler.
Ex-coal pro-fossil-fuel lobbyist**

→ **New Chair of Clean Air Scientific Advisory Committee (CASAC):
Tony Cox, former *American Petroleum Institute* consultant**

Don't abandon evidence and process on air pollution policy

Science 10.1126/science.aaw9460 (2019)

Gretchen T. Goldman¹ and Francesca Dominici²

POLICY

Pollution rules under siege at US environment agency

Adviser attacks EPA decision-making ahead of major review of air-pollution standards.

Nature, April 2019

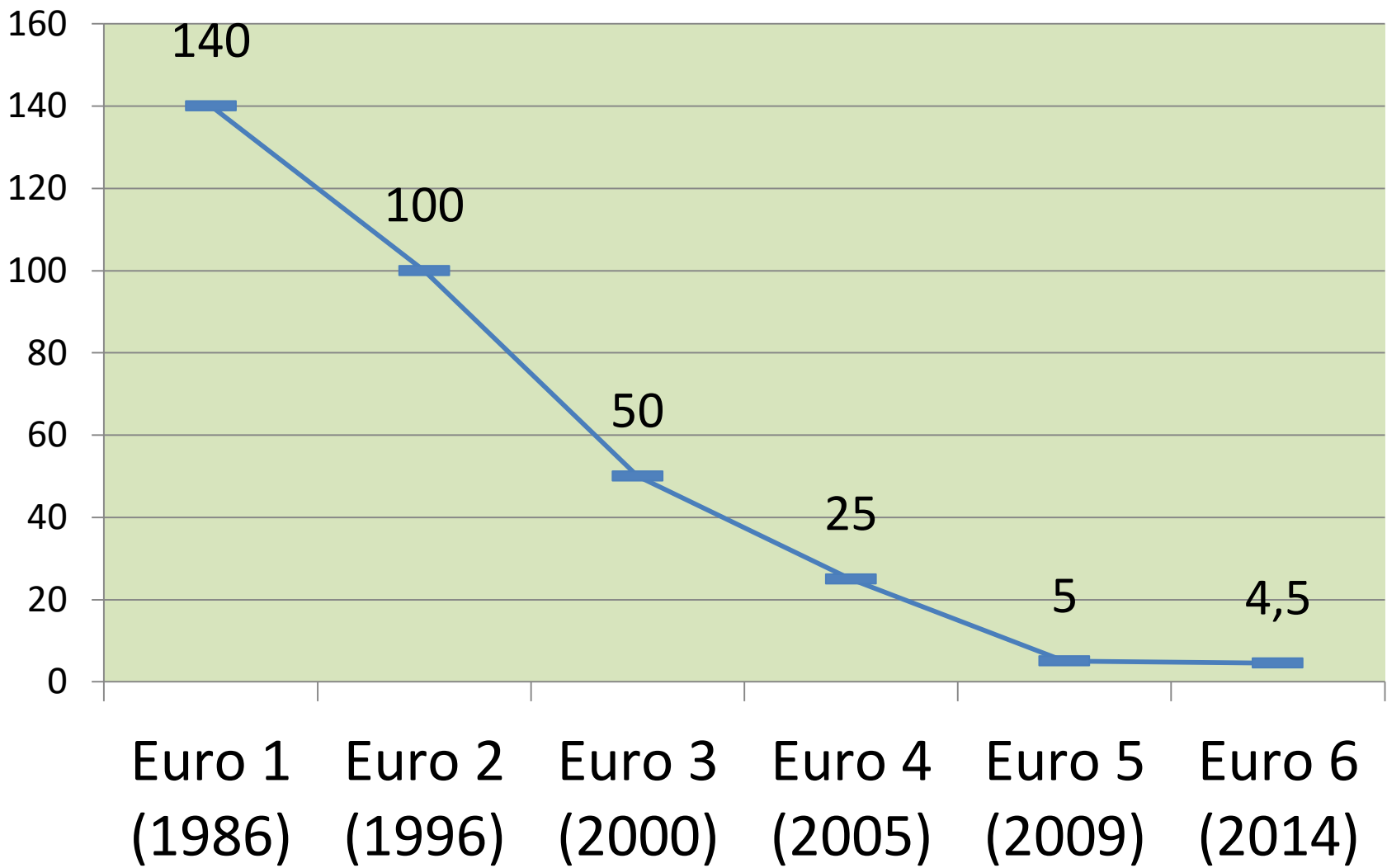


5 perspectives need clear communication

1. No UFP Limit Values – but UFP are NOT HARMLESS
2. Prior to adopt an UFP LIMIT VALUE internationally standardized ambient measurements are needed
3. LIMIT VALUES are not necessarily the FIRST CHOICE policy → control EMISSIONS!

Strong reduction in PM, soot, UFP... emissions due to «Euro 6» standards

Euro 1 to Euro 6 emissions in mg per kilometer)





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4. Air pollution - an orchestra of hundreds of pollutants



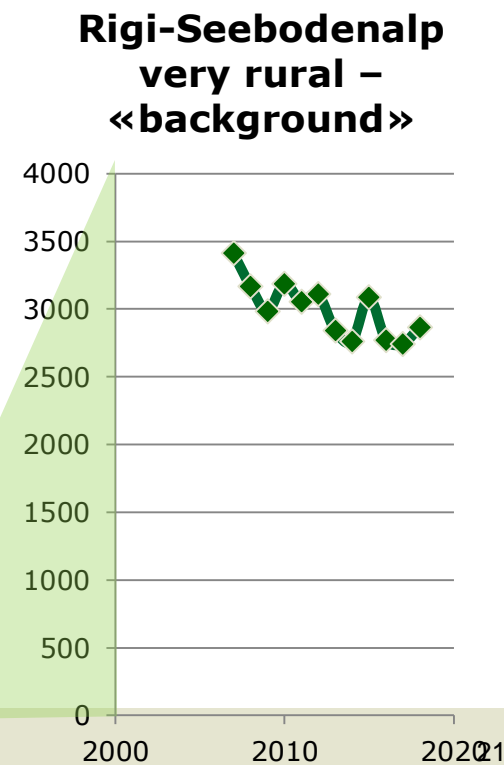
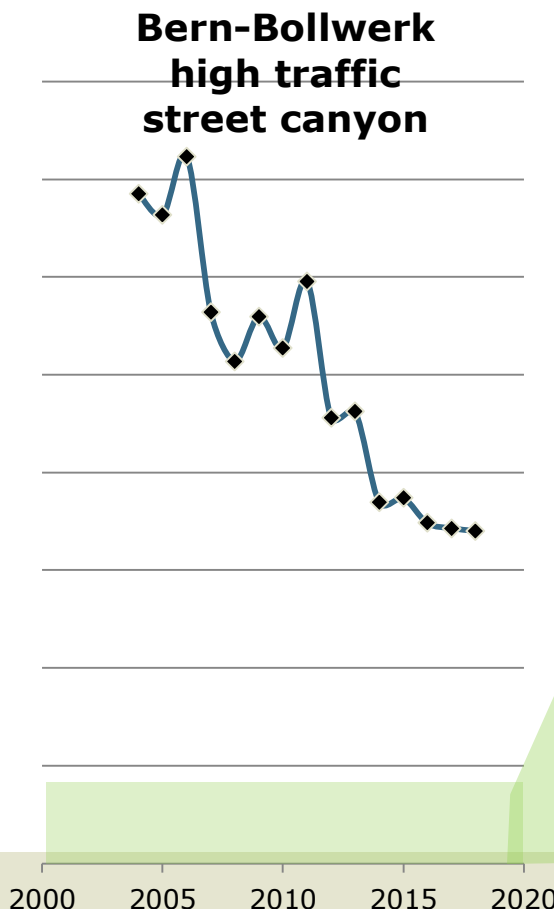
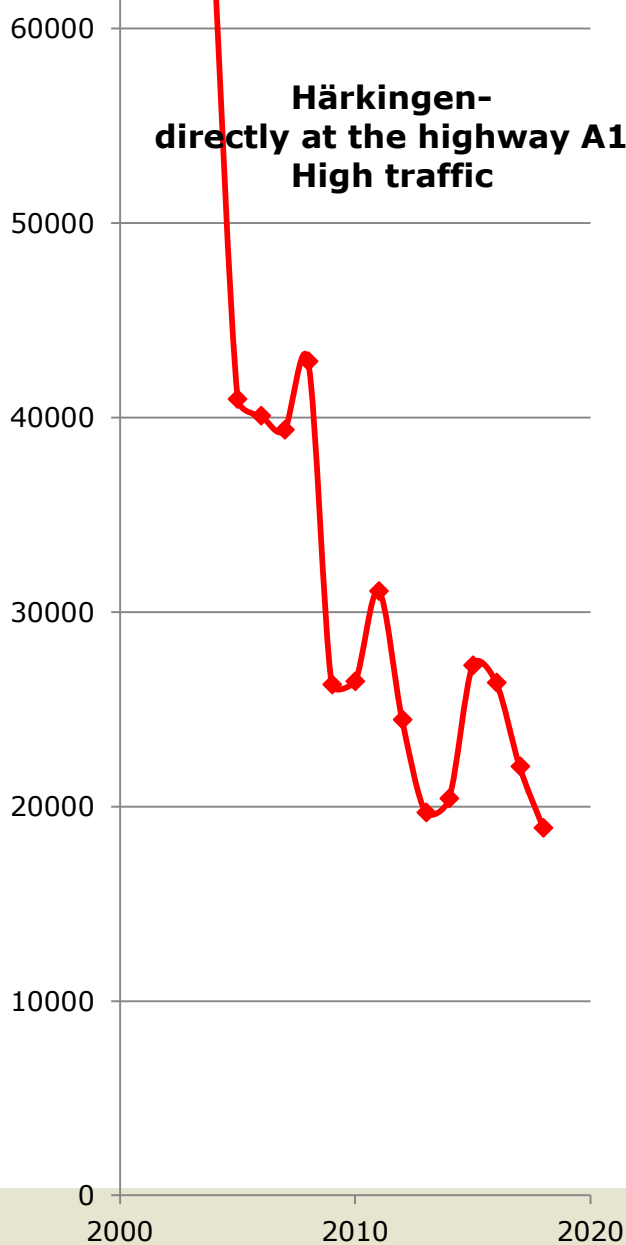
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5. Monitor UFP also in the absence of LIMIT VALUES!



Trends in annual mean Particle Number concentrations (per cm³) in the absence of a «limit value» for ultrafines

Switzerland, 2004-2018





Clean air policy priorities under a global health perspective

- 1. Stand up against FAKES, HYPES, and fabricated «DOUBTS» about the health effects of ambient air pollution**
2. Control of policies to abate manipulation and fraud
3. Call for adoption of all WHO AIR QUALITY GUIDELINE VALUES into national directives & regulations as the only science-based health-oriented point of reference
4. Endorse a global perspective to stop the outsourcing of air pollution and its health effects from rich to poorer regions!
5. Call for the enforcement of stringent, sustained and socially just clean air policies and management plans (no «emergency activism» but long-term solutions!)



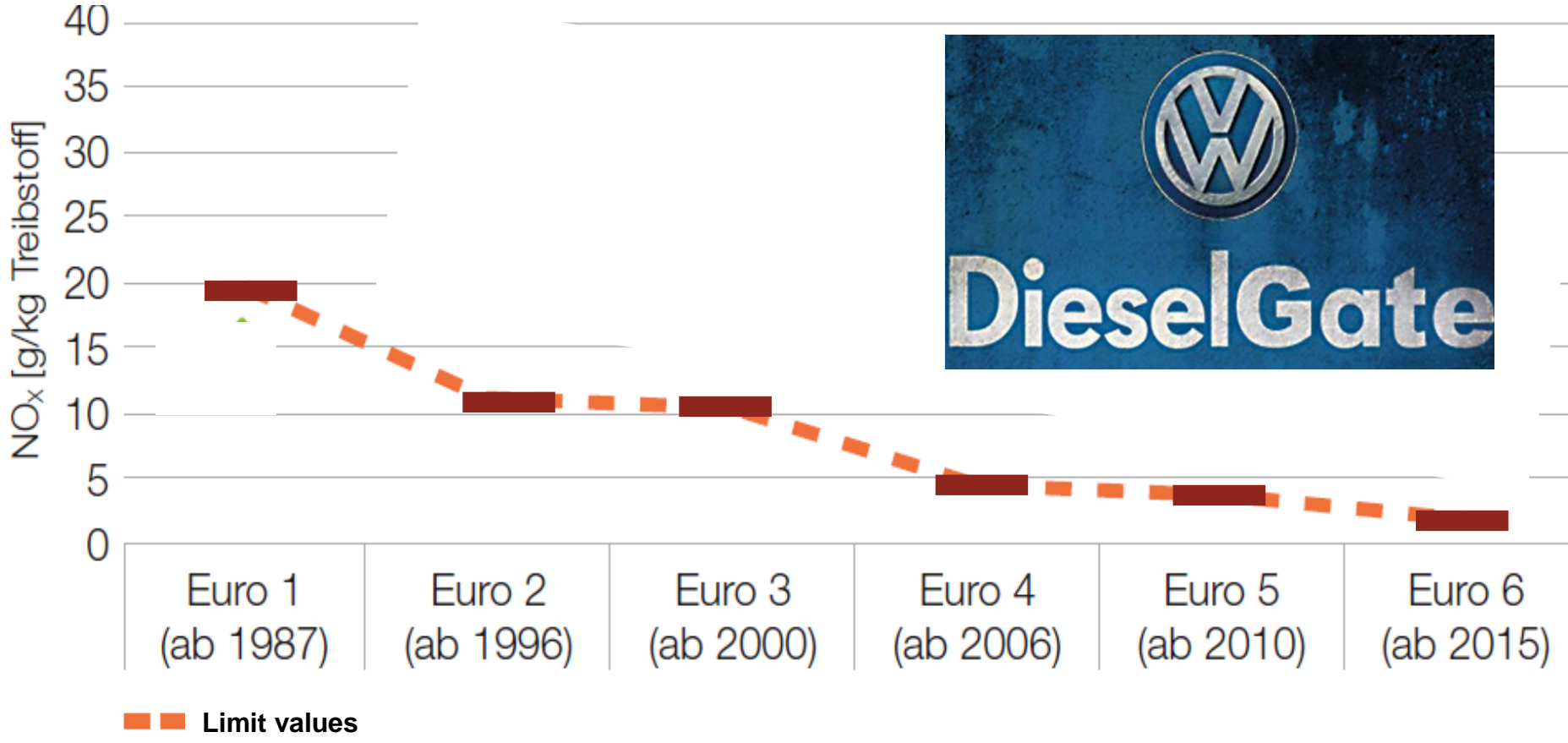
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NO_x-Emissions of diesel vehicles did not decline despite more restrictive policies...

Measurement data of Environmental Agency Zurich AWEL
2018

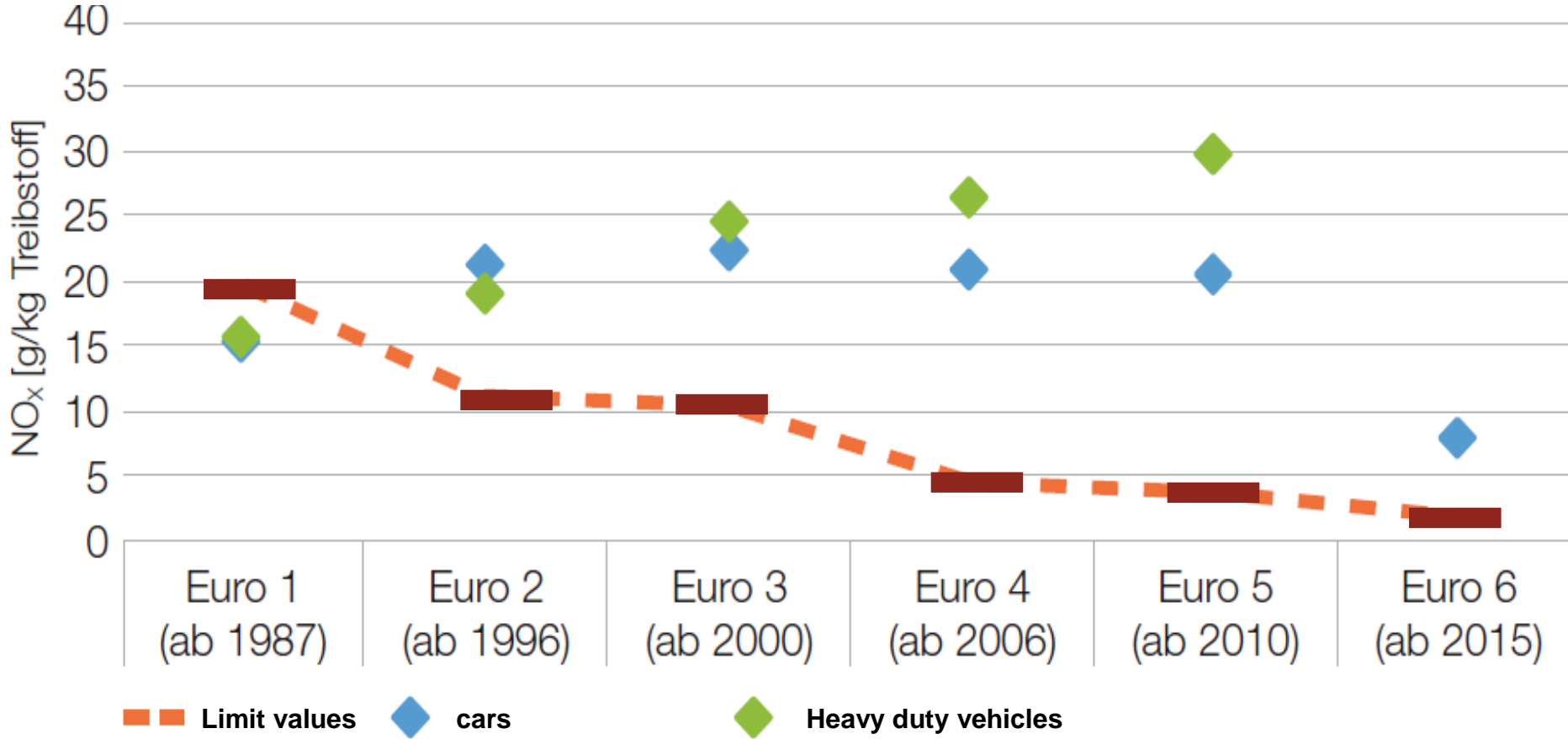
Diesel cars: NO_x-Emissions, Euro 1 to Euro 6



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Measurement data of Environmental Agency Zurich AWEL
2018

Diesel cars: NO_x-Emissions, Euro 1 to Euro 6





Impacts and mitigation of excess diesel-related NO_x emissions in 11 major vehicle markets

Susan C. Anenberg^{1*}, Joshua Miller^{2*}, Ray Minjares², Li Du², Daven K. Henze³, Forrest Lacey^{3†}, Christopher S. Malley⁴, Lisa Emberson⁴, Vicente Franco^{2†}, Zbigniew Klimont⁵ & Chris Heyes⁵

Global consequences of VW Directors' decision to manipulate software

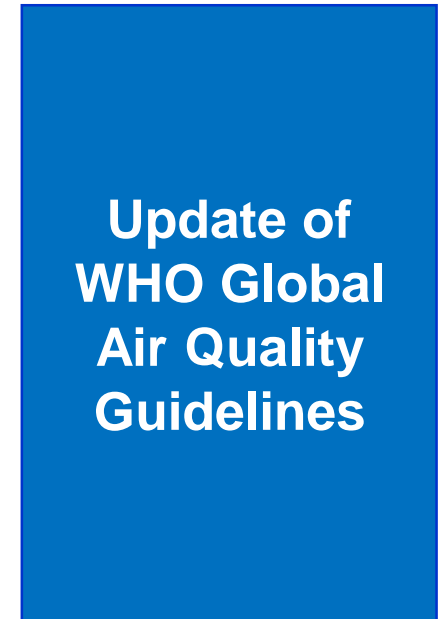
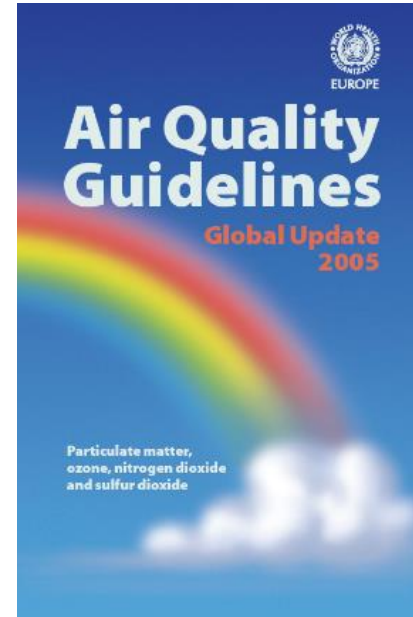
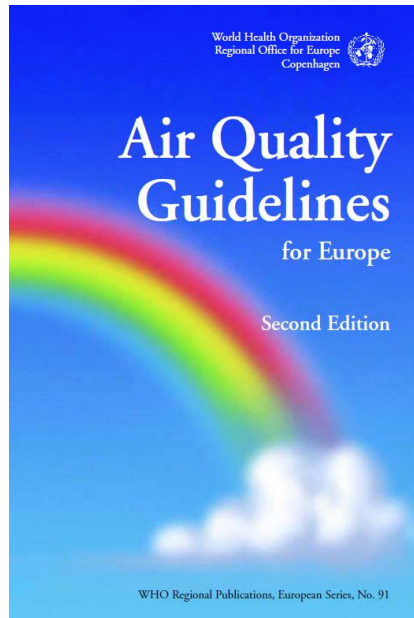
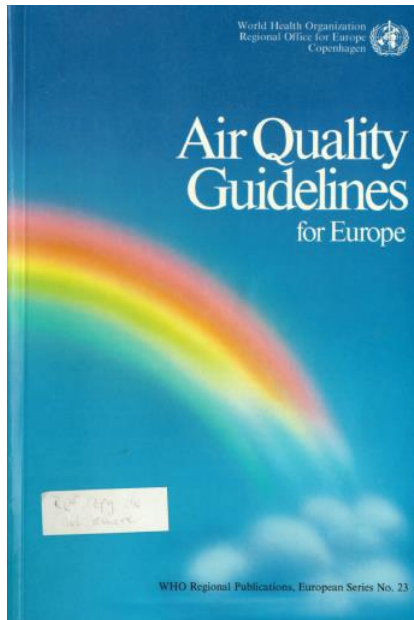
~38'000 premature death /yr globally caused by excess NO₂



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WHO guidelines for ambient air quality (WHO AQGs)



The first edition !

Ongoing update

1987

2000

2006

~2020 ?





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}

Int J Public Health
DOI 10.1007/s00038-015-0729-0



EDITORIAL



Global standards for global health in a globalized economy!

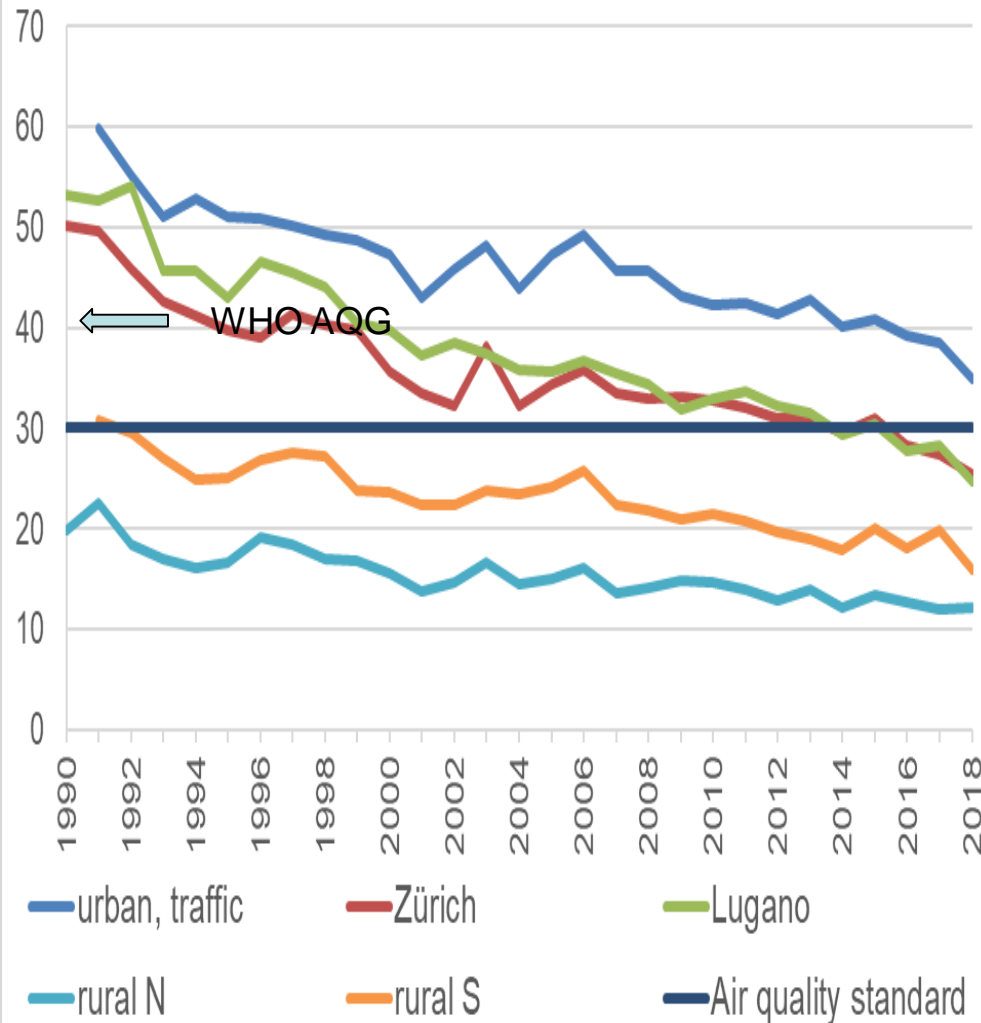
Nino Künzli · Meltem Kutlar Joss · Emily Gintowt

% of countries with ambient limit values for at least ONE ambient air pollutant	
European Region	94%
South-East Asia	64%
Region of Americas	57%
Eastern Mediterranean Region	52%
Western Pacific	44%
African Region	36%
Total	60%

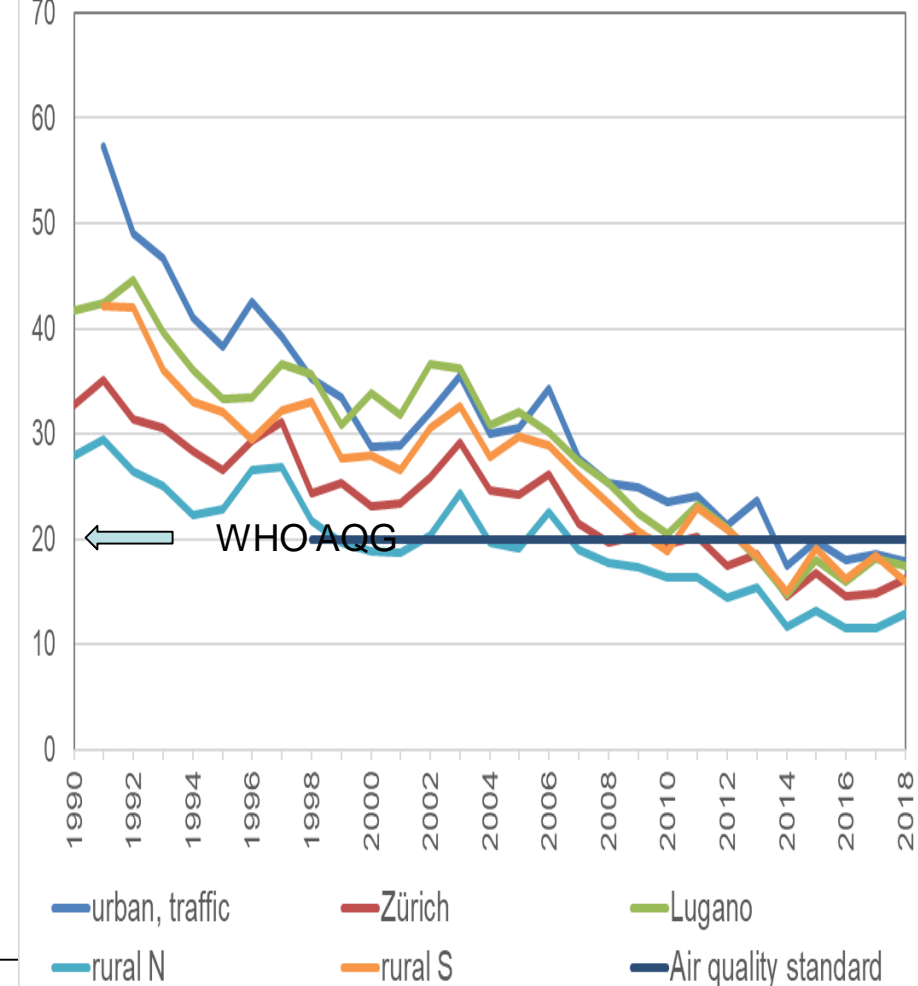


Even monitoring stations near traffic are coming close to the Swiss air quality standards (30 microg NO₂/m³ and 20 PM10)

NO₂ (µg/m³), annual mean



PM10 (µg/m³), annual mean





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Nature, April 2017

Transboundary health impacts of transported global air pollution and international trade

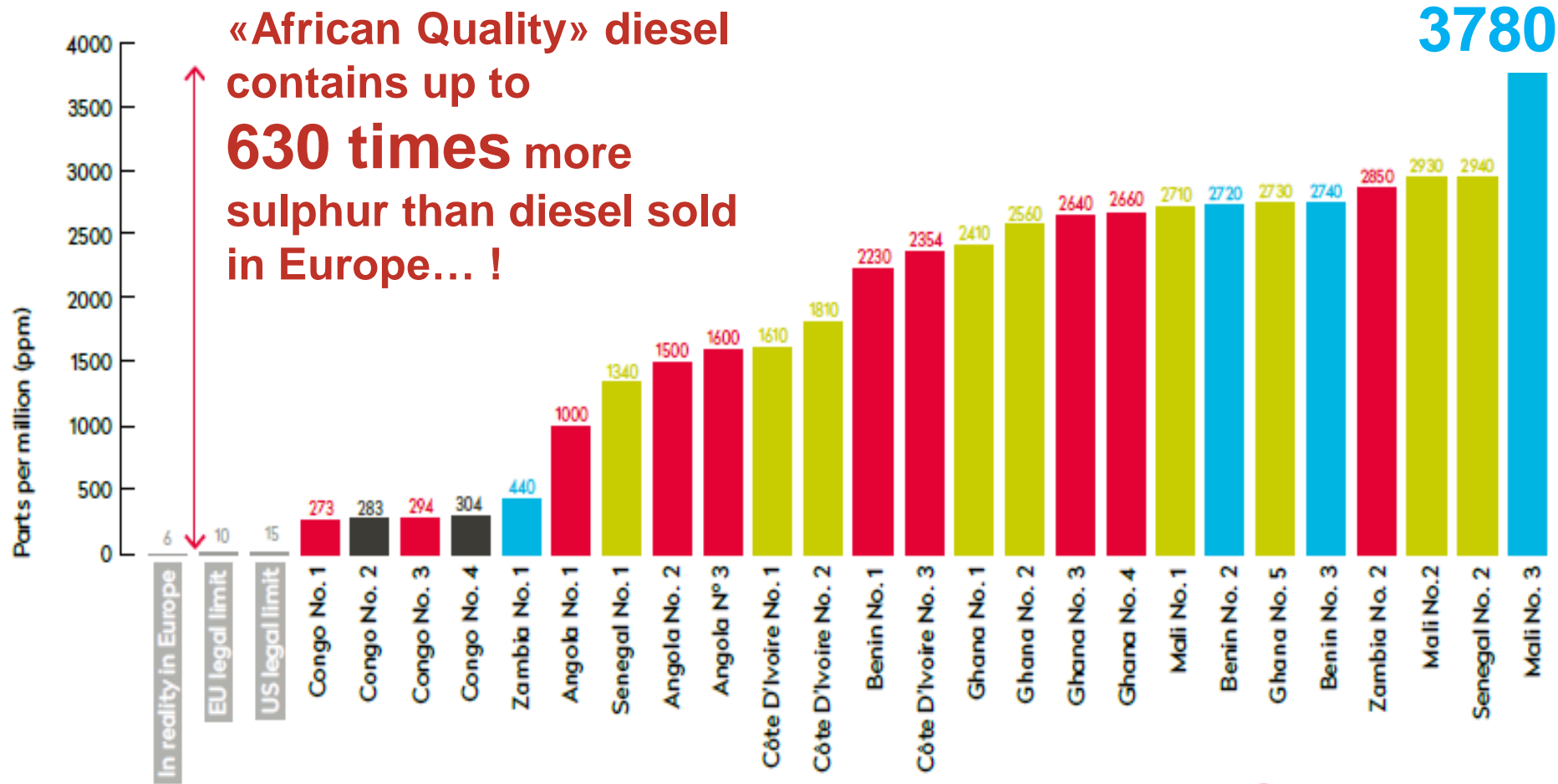
Qiang Zhang^{1*}, Xujia Jiang^{1,2*}, Dan Tong^{1*}, Steven J. Davis^{1,3}, Hongyan Zhao¹, Guannan Geng¹, Tong Feng¹, Bo Zheng², Zifeng Lu⁴, David G. Streets⁴, Ruijing Ni⁵, Michael Brauer⁶, Aaron van Donkelaar⁷, Randall V. Martin^{7,8}, Hong Huo⁹, Zhu Liu¹⁰, Da Pan¹¹, Haidong Kan¹², Yingying Yan⁵, Jintai Lin⁵, Kebin He^{1,2,13} & Dabo Guan^{1,14}

- **Western Europe & USA: cause (substantially) higher air pollution in OTHER COUNTRIES** (than at home) **to accomodate their own CONSUMPTION**
- **China, India, Asia take the highest share of air pollution** (= death & diseases) **for the production of goods CONSUMED IN OTHER COUNTRIES**

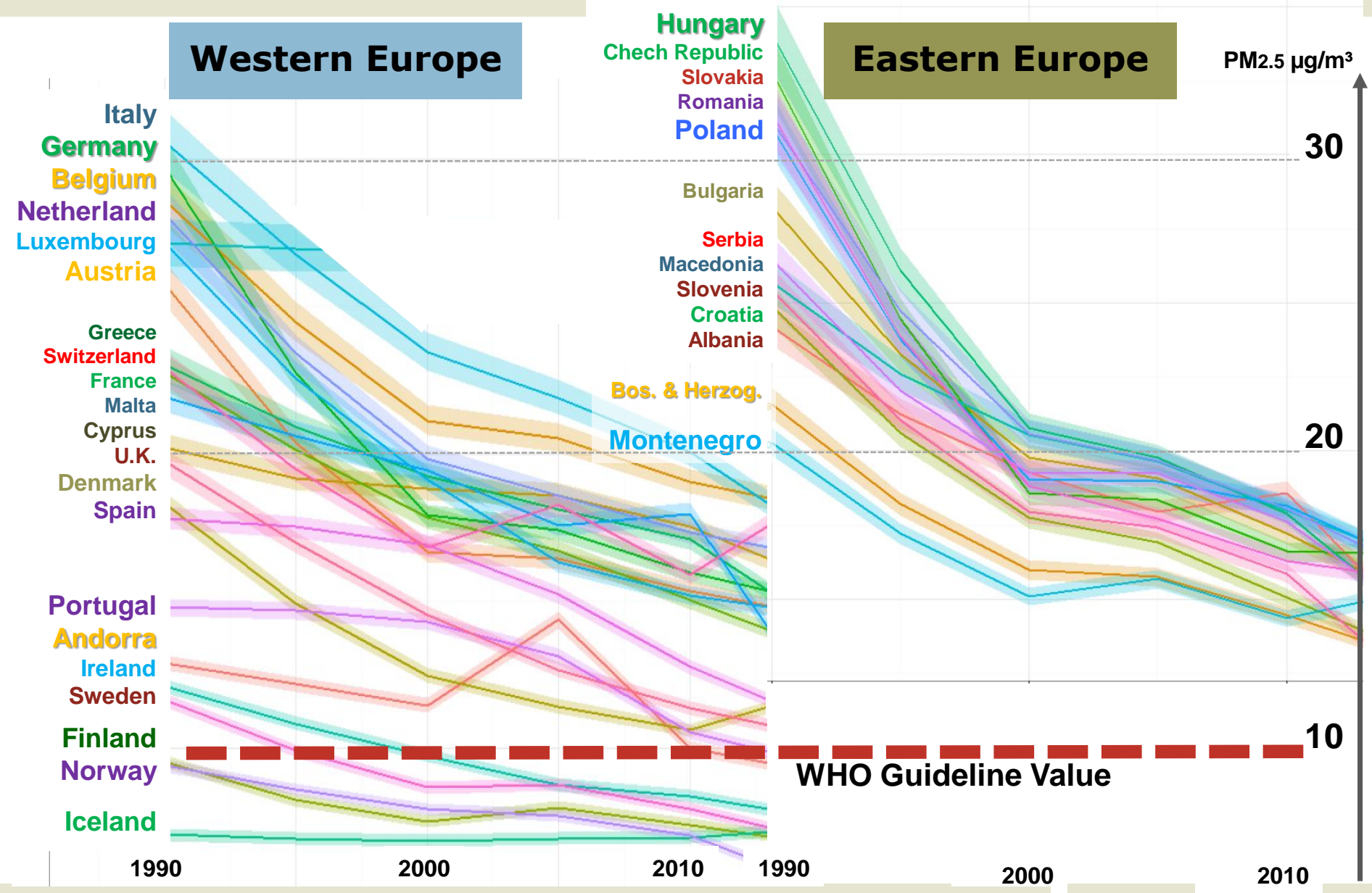
Sulphur levels in «African Quality» diesel (ppm)



- Blending objective of Swiss traders: sell the «poorest (legally) possible quality»



Clean air policies result in improved air quality: Fine particulate matter concentrations (PM_{2.5}) 1990 - 2015

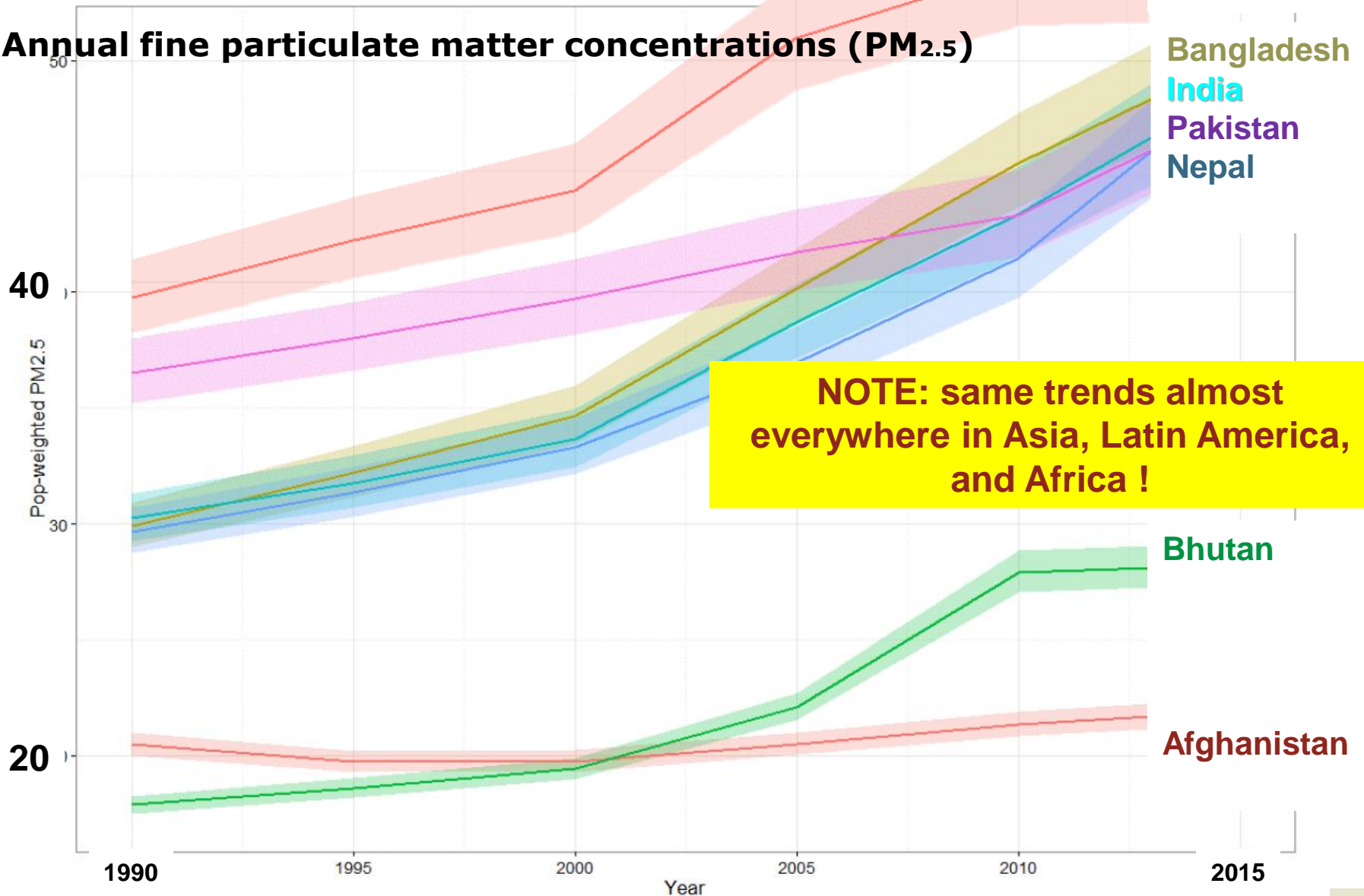


Figures: from Brauer et al. ES&T 2016

Poor clean air policies

Highly polluted countries get worse!

Annual fine particulate matter concentrations (PM_{2.5})



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

WHO Guideline Value: 10 $\mu\text{g}/\text{m}^3$! Figures: adapted from Brauer et al. ES&T 2016

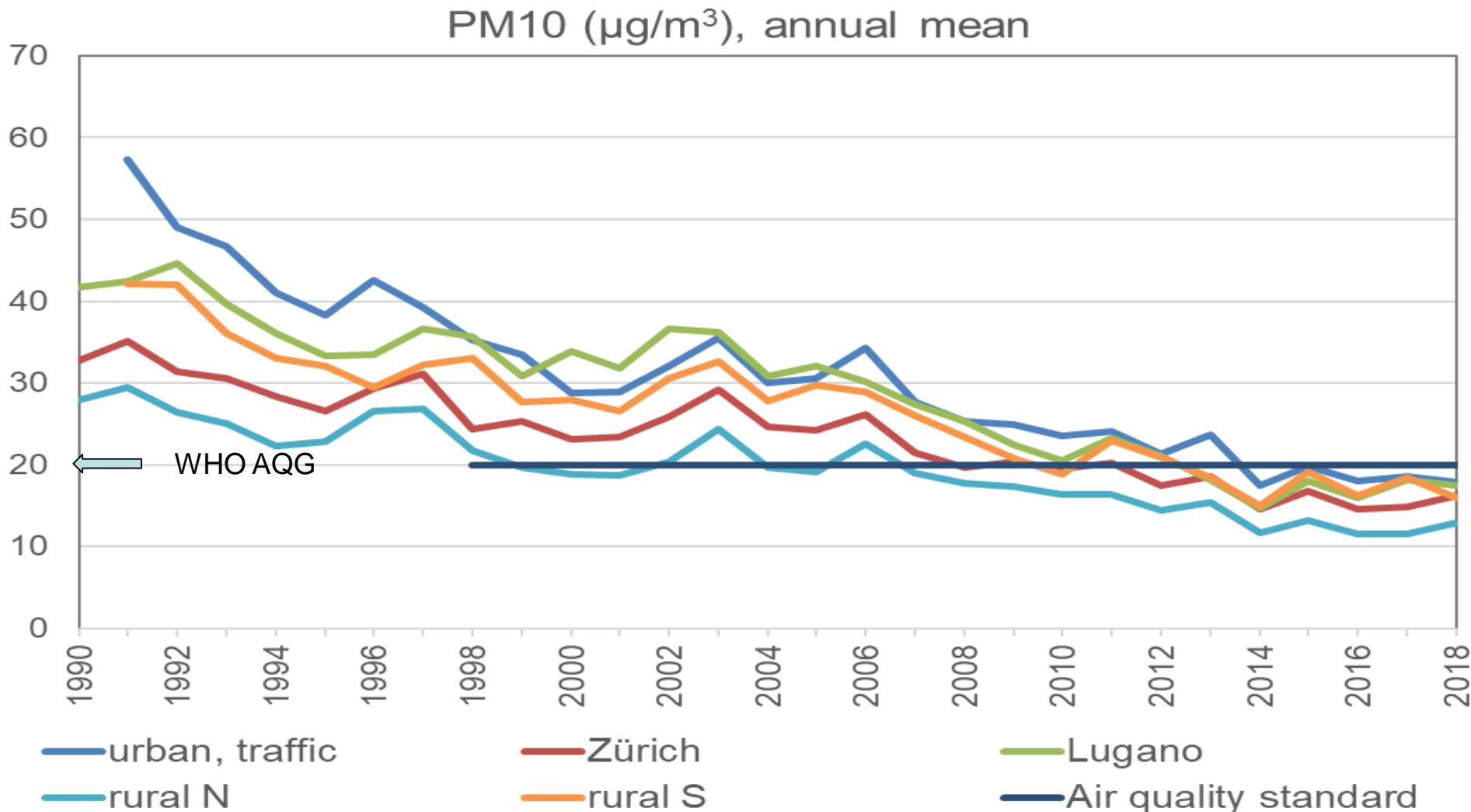


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PM10 Trends Switzerland 1990-2018





Thank you for your attention
Nino.Kuenzli@SwissTPH.ch

