Arnika - Toxics and Waste Programme

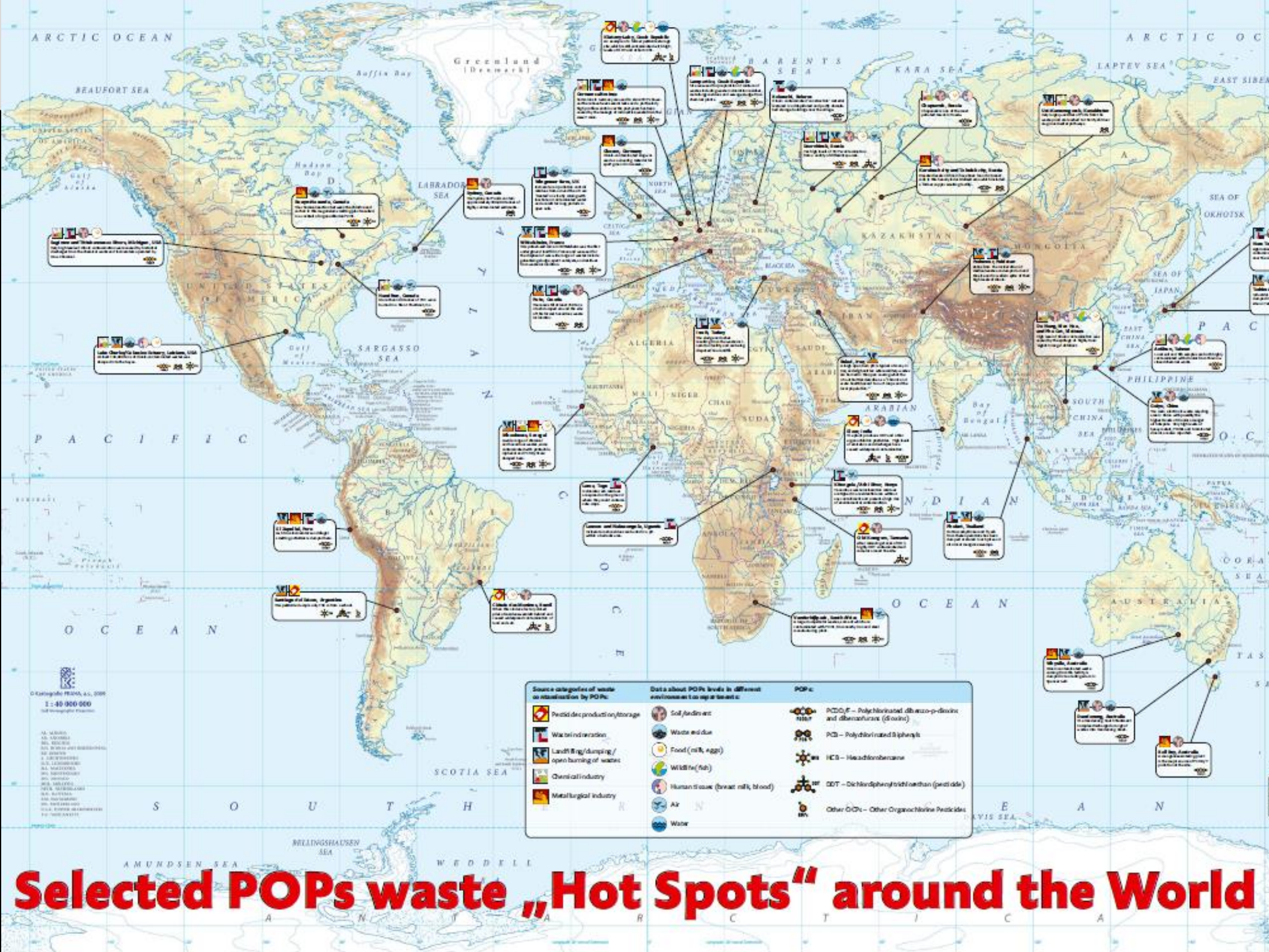
Top ten biggest polluters: Access to information as a tool in campaigns for clean air

Jindřich Petrlík

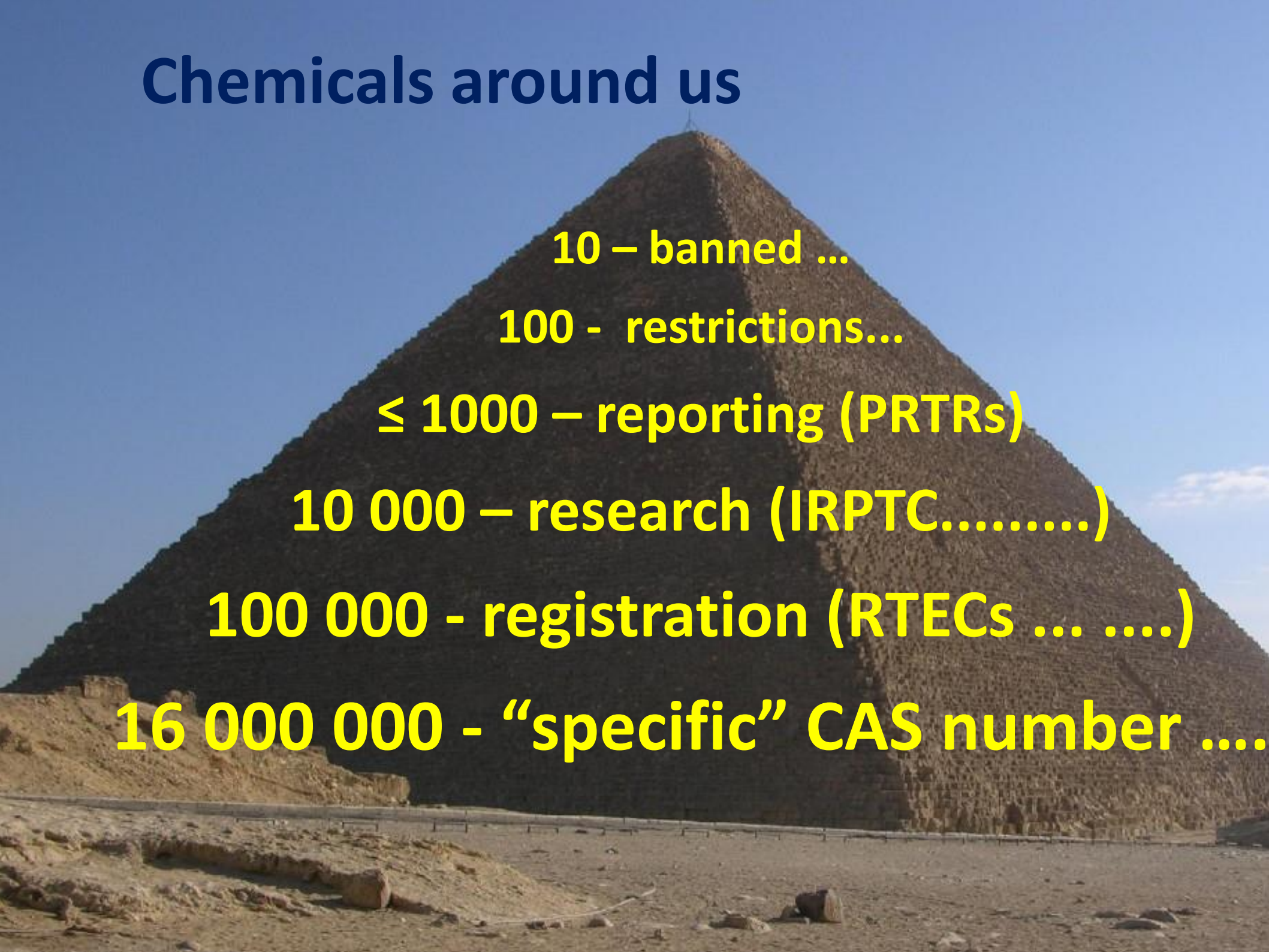
Executive Director of Arnika – Toxics and Wate Programme

Co-chair of Dioxin, PCBs and Waste WG of IPEN

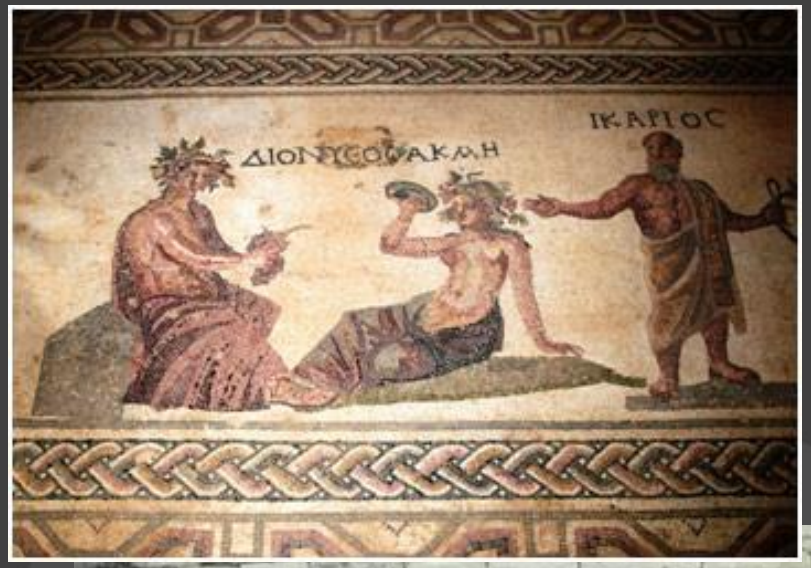
Ostrava, 19-11-2018

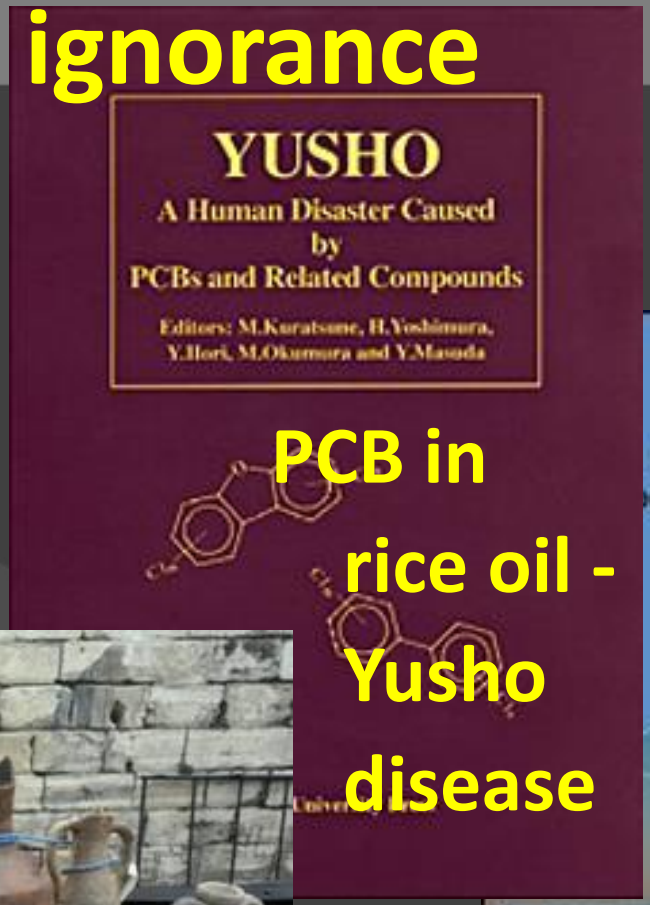

Selected POPs waste „Hot Spots“ around the World
Source categories of waste contamination by POPs:
Pesticides production/storage
Waste incineration
Landfilling/dumping/ open burning of wastes
Chemical industry
Metallurgical industry
Data about POPs levels in different environment compartments:
Soil/sediment
Waste and due
Food (milk, eggs)
Wildlife (fish)
Human tissues (breast milk, blood)
Air
Water
POPs:
PCDD/F – Polychlorinated dibenzo-p-dioxins and dibenzofurans (dioxins)
PCB – Polychlorinated Biphenyls
HCB – Hexachlorobenzene
DDT – Dichlordiphenyltrichlorethan (pesticide)
Other OCPs – Other Organochlorine Pesticides
1 : 40 000 000
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
INDIAN OCEAN
SOUTHERN OCEAN
ANTARCTICA
Greenland (Denmark)
BEAUFORT SEA
Baffin Bay
Hudson Bay
Gulf of Alaska
LABRADOR SEA
BARENTS SEA
KARA SEA
LAPTEV SEA
EAST SIBERIAN SEA
SEA OF OKHOTSK
KAZAKHSTAN
MONGOLIA
SEA OF JAPAN
EAST CHINA SEA
SOUTH CHINA SEA
PHILIPPINE SEA
Bay of Bengal
ARABIAN SEA
SARGASSO SEA
Gulf of Mexico
CELTIC SEA
NORTH SEA
BLACK SEA
SCOTIA SEA
BELLINGSHAUSEN SEA
AMUNDSEN SEA
WEDDELL SEA
DAVIS SEA
CORAL SEA
TASMAN SEA
UNITED STATES OF AMERICA
BRAZIL
ALGERIA
EGYPT
SAUDI ARABIA
IRAN
MALI
NIGER
CHAD
SUDAN
MAURITANIA
ANGOLA
AUSTRALIA
PAPUA NEW GUINEA
INDONESIA
PHILIPPINES

Chemicals around us



Chemicals and centuries of knowledge and ignorance





PCB in rice oil - Yusho disease

Lead in wine (Rome)

Late lessons from early warnings (2002) EEA report

Access to information - history

1989 – November 11 (six days before revolution started in Prague) – demonstration for clean air in Teplice (North Bohemia) – people didn‘t have access to information about levels of pollution

1990 – 1992 – basis of Czech environmental legal system established, but no specific law on free access to information, however information about levels of pollutants in air was made available to public (Czechoslovankian federal minister of the environment Josef Vavroušek)

Access to information - history

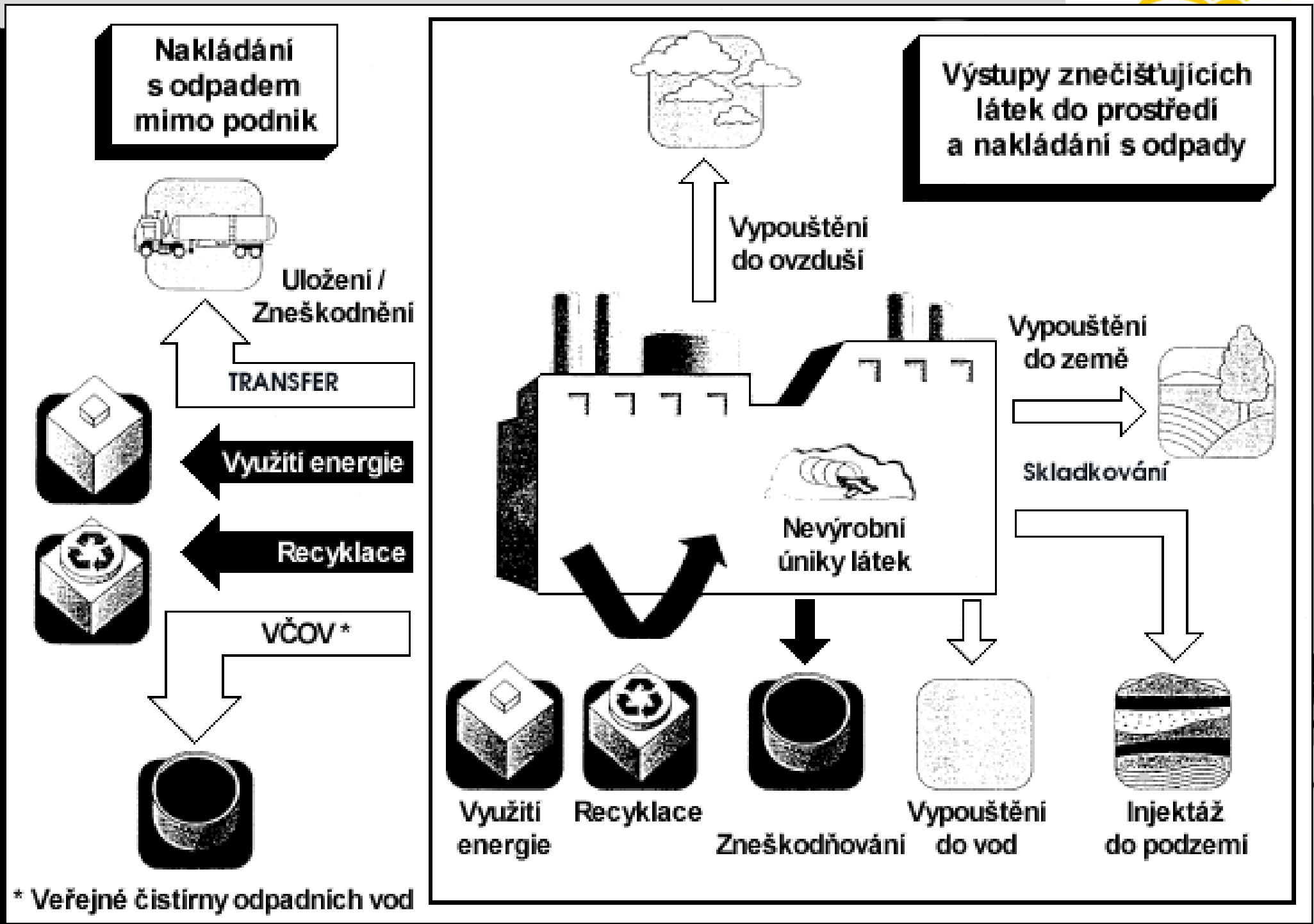
1998 – law on free access to information about environment (Aarhus convention implementation)

2002 – law on integrated pollution prevention and control which included also introduction of Integrated Pollution Register (IRZ) into Czech legislation (IRZ = Czech Pollutant Release and Transfer Register – PRTR)

2005 – first release of IRZ data on pollution from each specific facility

2006 – REACH regulation approved by the European Parliament (right to know about chemicals in products)

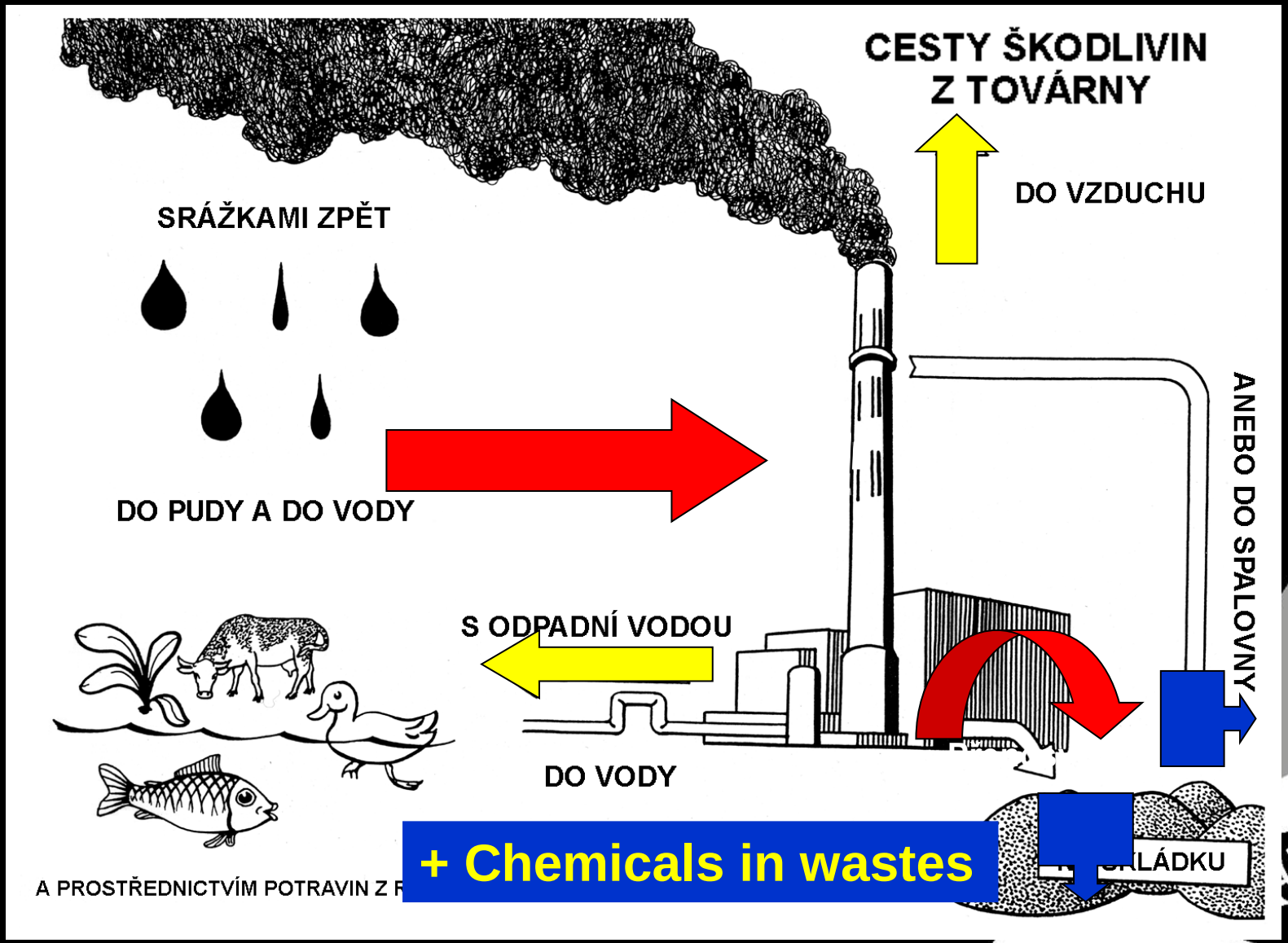
PRTR - diagram



Czech PRTR (IRZ)

ARNIKA
toxické látky a odpady

Flows in the Czech PRTR



NOT COVERED
Flow in;
Chemicals used for production

On site transfers

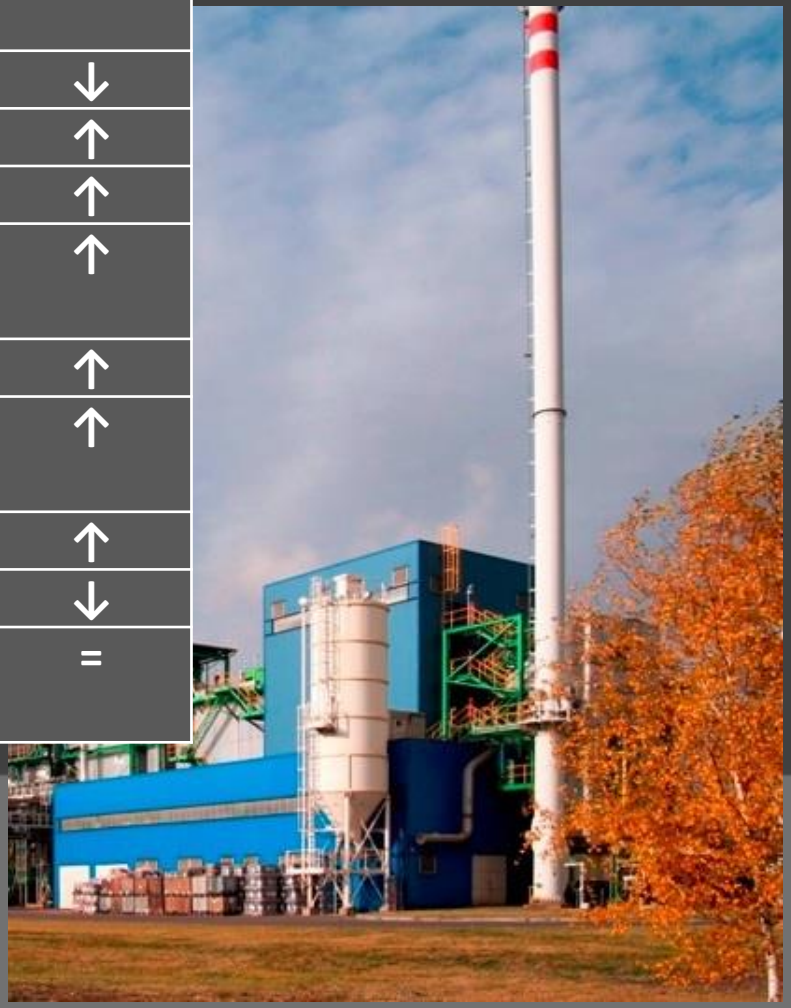
Czech PRTR – groups of chemicals

- Heavy metals
- Volatile Organic Compounds (VOC)
- Persistent Organic Pollutants (POPs)
- Greenhouse gases
- Acid rain gases
- Some specific pollutants – non chemically specific (e.g. PM_{10})
- Ozone Depleting Substances (ODS)
- Pesticides
- Chemicals with great impact on water ecosystems
- Carcinogens, Mutagens and Reprotoxics (CMRs)

PRTR – top-ten largest sources of mercury releases/transfers

Czech Rep. 2012

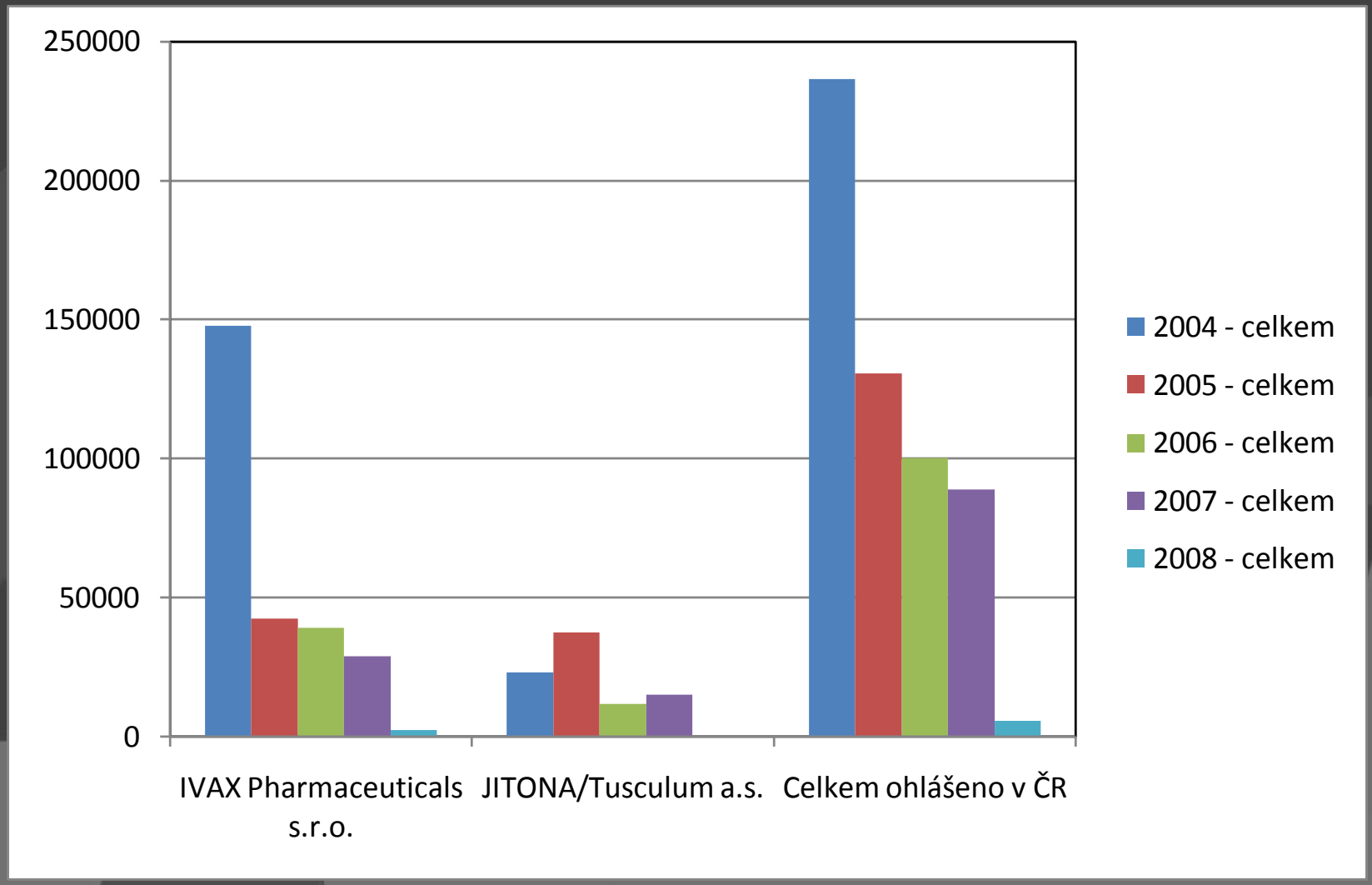
No	Facility	Locality	Region	Chemicals in kg	Trend
1.	Geosan, závod ve Spolaně Neratovice	Neratovice	Stk	4405	=
2.	Spalovna Ostrava	Ostrava	Msk	4057	↓
3.	Elektrárna Třebovice	Ostrava	Msk	3668	↑
4.	Spolana Neratovice	Neratovice	Stk	906	↑
5.	Recyklace Ekovuk, a.s.	Panenské Břežany	Stk	709	↑
6.	Safina, a.s.	Vestec	Stk	458	↑
7.	Spolek pro chemickou a hutní výrobu, a.s.	Ústí nad Labem	Ust	380	↑
8.	Elektrárna Chvaletice	Chvaletice	Pak	329	↑
9.	ArcelorMittal Ostrava a.s.	Ostrava	Msk	282	↓
10.	Elektrárna Počerady	Výškov	Ust	235	=



Hazardous waste incinerator in Ostrava – second largest source of mercury in wastes (Czech Rep.)

Example of decreased emissions - dichloromethane

– PRTR Czech Rep. – former top-ten polluters winners



Acces to information about chemicals in wastes

NO information available for public apart PRTR data

let see some case studies ….

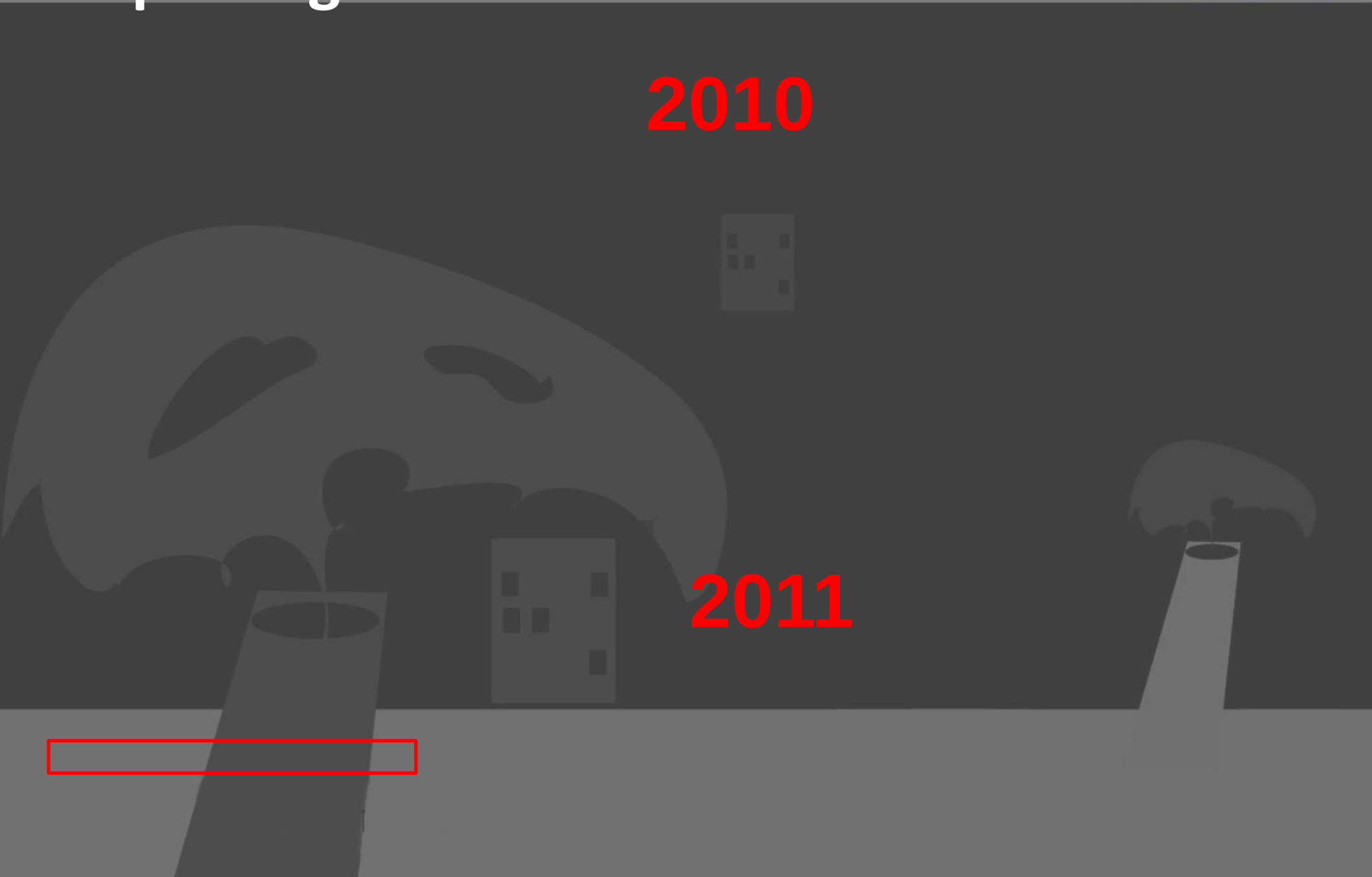
Waste incinerator Liberec – fly ash and bottom ash

Dioxins in wastes – PRTR reports

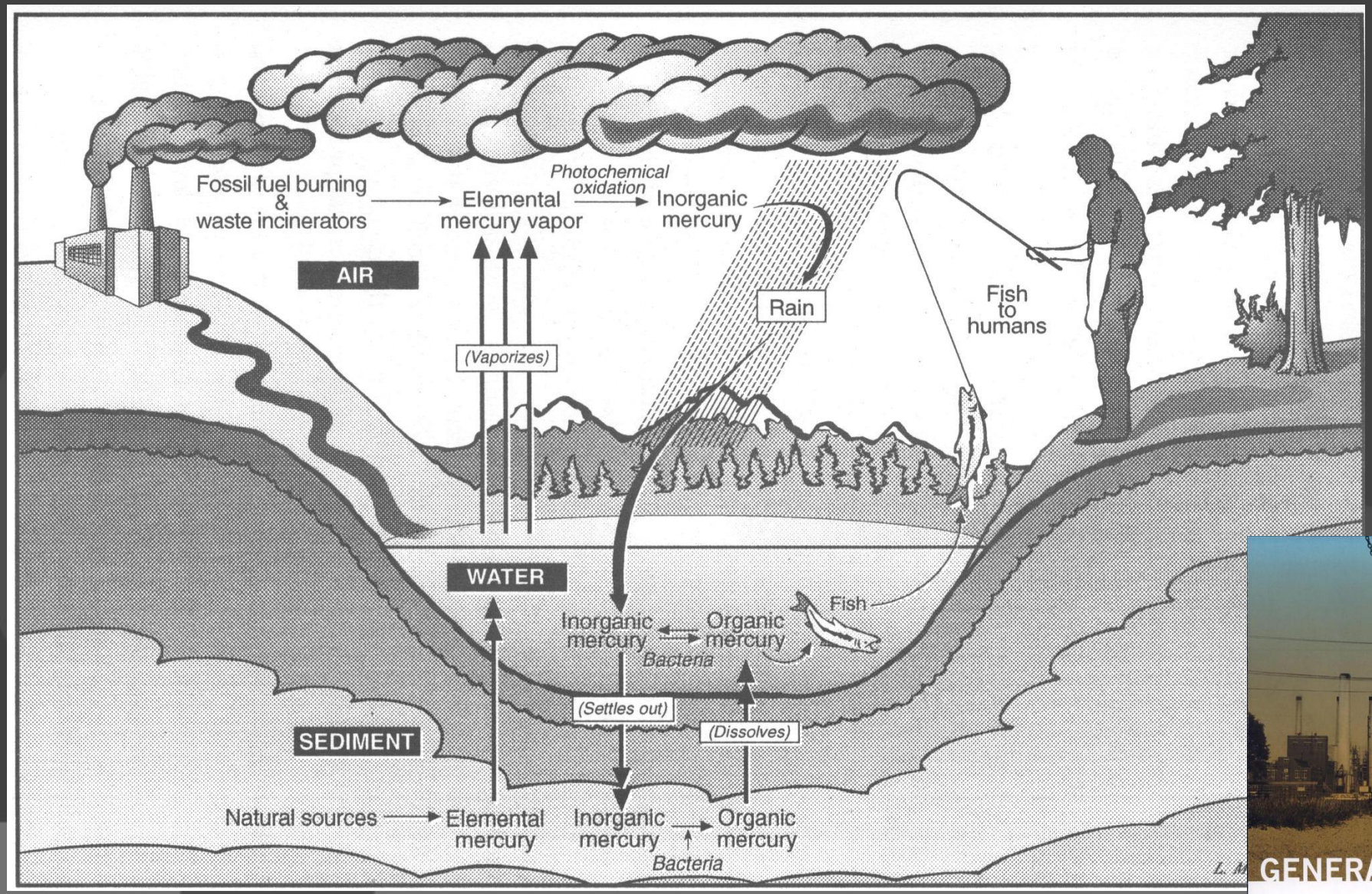
Waste incinerator Liberec – Dioxins (PCDD/Fs) balance

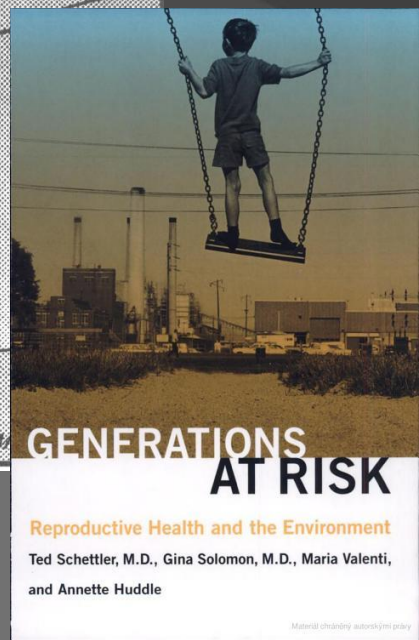
- Rather model of PRTR for one facility:
- Air emissions: 3% PCDD/Fs
- Waste transfer – slag: 3% PCDD/Fs
- Waste transfer – fly ash: 94% PCDD/Fs
- Waste residues from waste incinerators are often declared as products

Waste incinerator Liberec – PRTR reporting about dioxins in residues



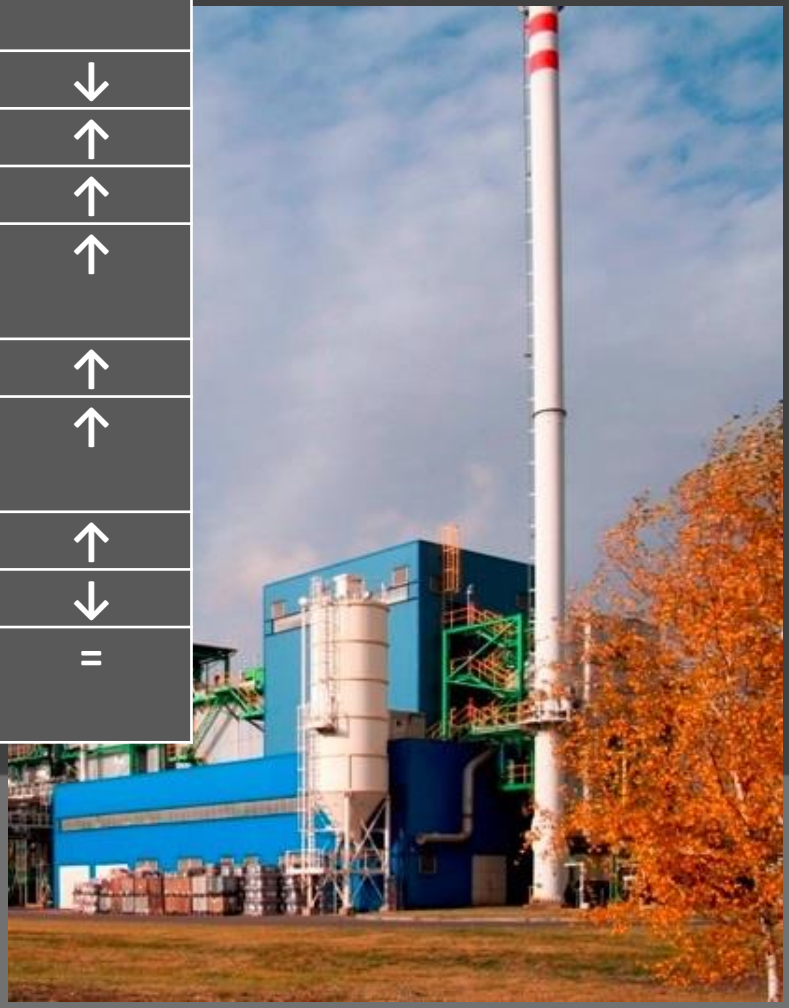
Mercury


Fossil fuel burning
&
waste incinerators
Elemental
mercury vapor
Photochemical
oxidation
Inorganic
mercury
AIR
Rain
Fish
to
humans
(Vaporizes)
WATER
Inorganic
mercury
Organic
mercury
Bacteria
Fish
(Settles out)
(Dissolves)
SEDIMENT
Natural sources
Elemental
mercury
Inorganic
mercury
Organic
mercury
Bacteria


GENERATIONS
AT RISK
Reproductive Health and the Environment
Ted Schettler, M.D., Gina Solomon, M.D., Maria Valenti,
and Annette Huddle

Mercury

No	Facility	Locality	Region	Chemicals in kg	Trend
1.	Geosan, závod ve Spolaně Neratovice	Neratovice	Stk	4405	=
2.	Spalovna Ostrava	Ostrava	Msk	4057	↓
3.	Elektrárna Třebovice	Ostrava	Msk	3668	↑
4.	Spolana Neratovice	Neratovice	Stk	906	↑
5.	Recyklace Ekovuk, a.s.	Panenské Břežany	Stk	709	↑
6.	Safina, a.s.	Vestec	Stk	458	↑
7.	Spolek pro chemickou a hutní výrobu, a.s.	Ústí nad Labem	Ust	380	↑
8.	Elektrárna Chvaletice	Chvaletice	Pak	329	↑
9.	ArcelorMittal Ostrava a.s.	Ostrava	Msk	282	↓
10.	Elektrárna Počerady	Výškov	Ust	235	=



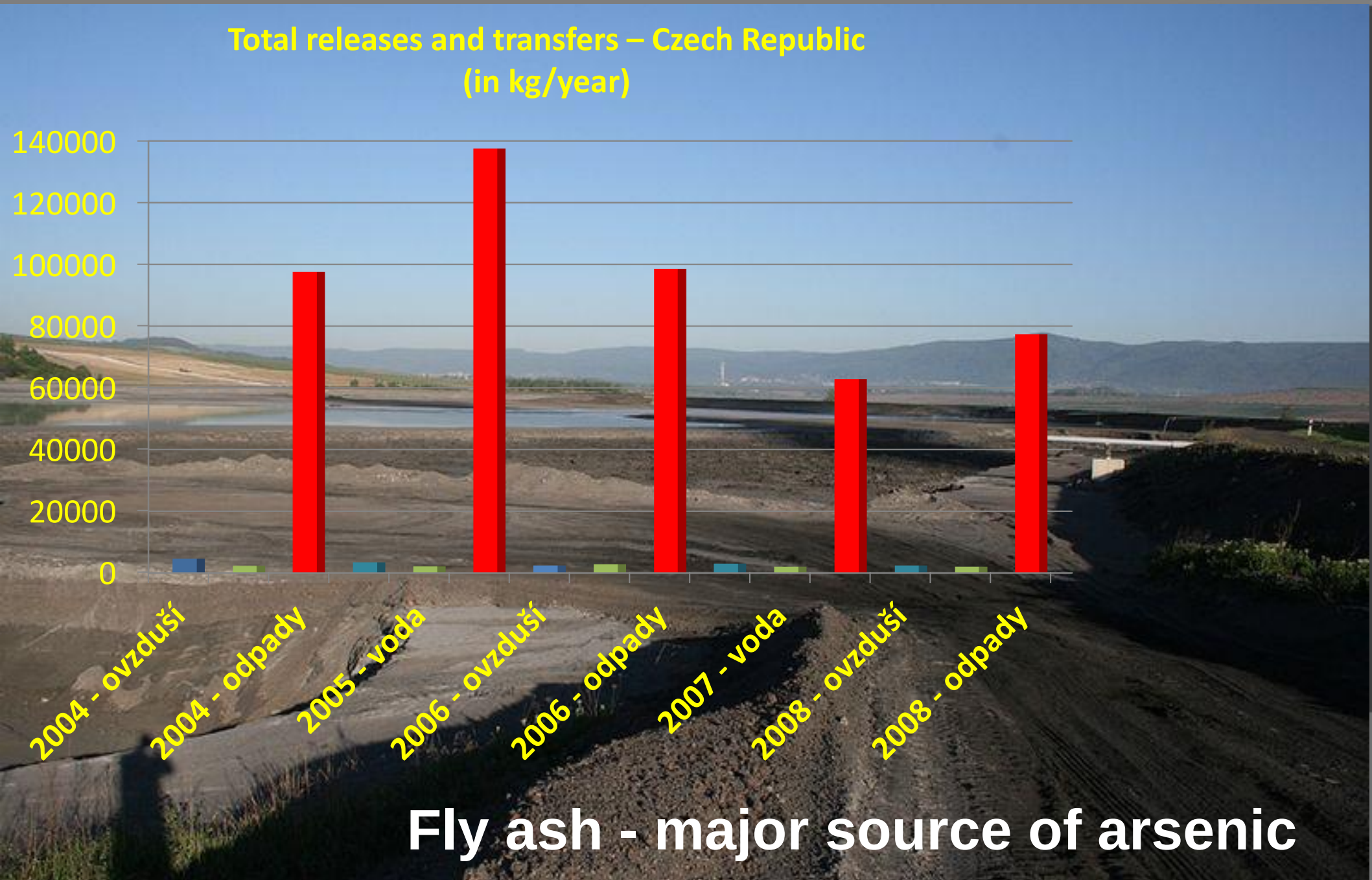
Hazardous waste incinerator n Ostrava – second largest source of mercury in wastes (Czech Rep.)

Mercury (PRTR data)

Mercury and its compounds reported in Czech PRTR in different releases/transfers

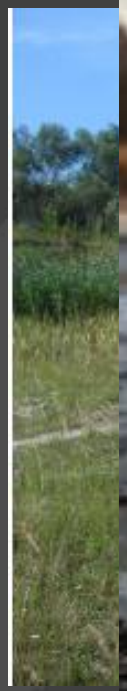
Releases and Transfers		2004	2005	2006	2007	2010	2012
Releases to (kg/year)	Air	3 140,9	2 970,9	2 843,0	3 396,4	3 015,2	2 624,4
	Water	73,2	86,7	189,2	144,6	130,3	83,0
	Soil	8,7	2,6	0,0	48,3	3,1	0,0
Transfers in (kg/year)	Wastes	5 463,6	2 558,0	5 707,5	4 303,9	10 329,1	15 747,4
	Waste waters	88,3	67,7	44,8	57,5	3,1	23,7
Total		8 774,7	5 685,9	8 784,5	7 923,6	13 480,8	18 478,5

Arsenic – reporting in PRTR



Fly ash - major source of arsenic

Arsenic in fly ash – case Vážany



Ash pond Bělov – potential future for wetlands in Vážany ???

ndoned clay pit

PRTRs – sources of information

Toxic Release Inventory (TRI) – USA

http://www.epa.gov/cgi-bin/broker?view=USCH&trilib=TRIQ0&sort=_VIEW_&sort_fmt=1&state=All+states&county=All+counties&chemical=All+chemicals&industry=ALL&year=2009&tab_rpt=1&fld=RELLBY&fld=TSFDSP&_service=oiaa&_program=xp_tri.sasmacr.tristart.macro

European PRTR

E-PRTR

OECD – PRTR Task Force

http://www.oecd.org/env_prtr_rc/

Canada – Pollution Watch (NGO site)

http://www.pollutionwatch.org/

2015 - znecistovatele.cz launched

ARNIKA
toxické látky a odpady

Znečišťovatelé pod lupou

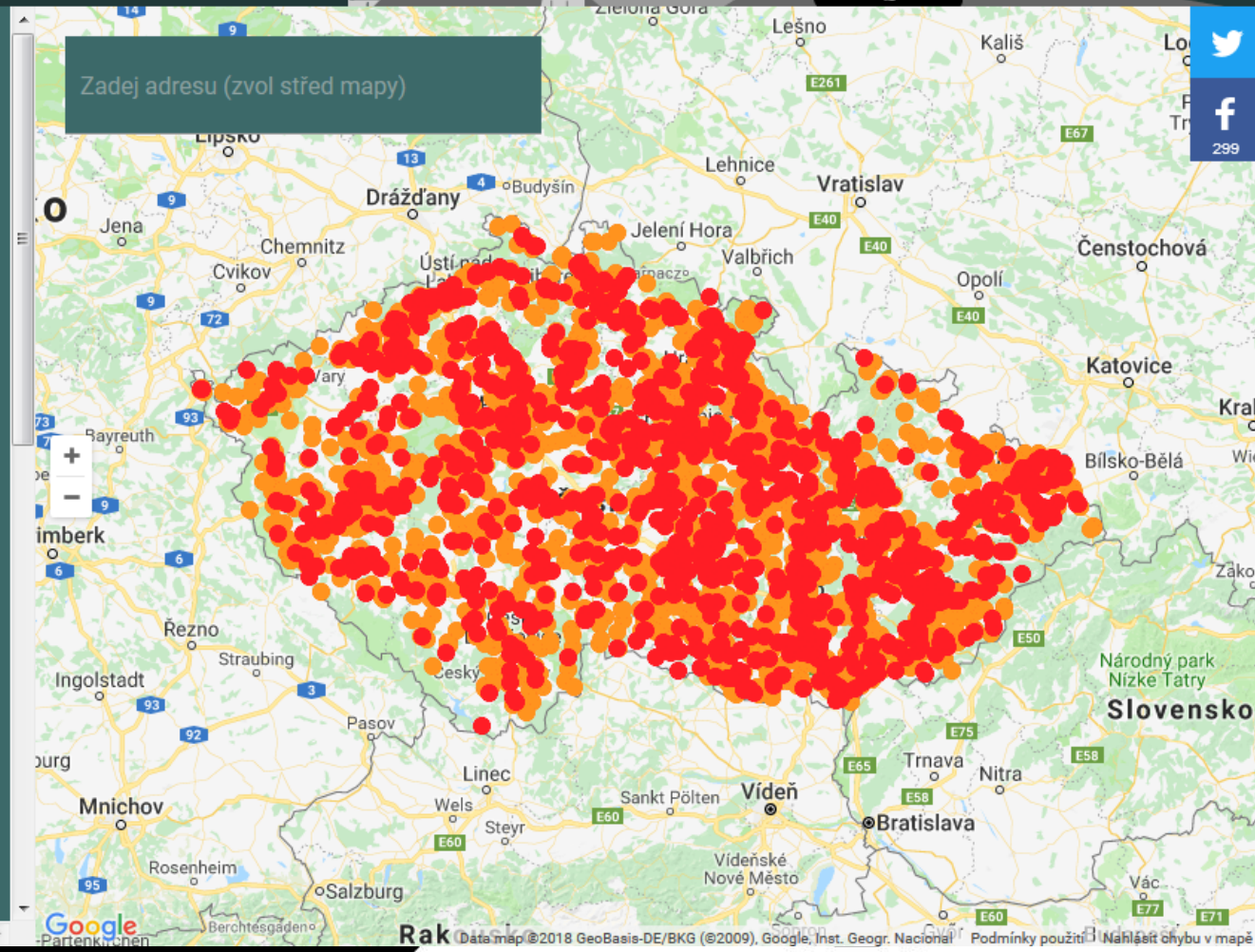
Úvod | Žebříčky IRZ | Chemické látky | Darujte | IRZ E-Learning | Arnika

O aplikaci

Webová aplikace www.znecistovatele.cz vám pomáhá získat informace o znečištění jednotlivých lokalit ČR toxickými látkami. Najdete zde především informace o tom, kdo a jaké toxické látky produkuje ve vašem okolí. Můžete tu také nalézt základní fakta o tom, jak tyto látky mohou ohrožovat vaše zdraví. Aplikace pracuje s daty shromažďovanými v **Integrovaném registru znečišťování (IRZ)**, který spravuje Ministerstvo životního prostředí. **Posledním ohlašovacím rokem je rok 2016**, data za rok 2017 budou k dispozici začátkem října 2018.

Aplikace umožňuje přehledné zobrazení původců znečištění jednak pomocí mapy a jednak v tabulkách prostřednictvím žebříčků.

- Jak vyhledávat znečišťovatele?
- Proč vznikly tyto stránky?



Tak – Takk - Díky – Thanks – Danke – Спасибо – Arigato

http://english.arnika.org
http://znecistovatele.cz

Jindrich Petrlik / Arnika
jindrich.petrlik@arnika.org