

# Environment

## for foreign students

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## Film with English subtitles

# Ropáci Oil Gobblers

(Mockumentary, student's Oscar from American Film Academy,  
1988)

## A few notes 1

- Environment of the Northern Bohemia was really so horrible this time
- These are not tricks of film studios
- The filmmakers only had to be careful to not show better landscape
- But indeed there was a place of toxic gas concentration (SO<sub>2</sub>, CO etc.)
- In these localities were filmed for the next movies footage of the devastated environment

## A few notes 2

- Medical school graduates receive higher salaries if there boarded
- The same workers and other professions
- These extra money called (in people) "funeral expenses"

## A few notes 3

- In reality, raw mortality, because there was many young people immigrating for working there
- Age standardized mortality was higher than mean of republic
- But there was also bad lifestyle: smoking, alcohol, lack of sporting etc.
- Smokers from this region was more aggressive and unscrupulous than in other regions (smoking in the presence of a partner non-smoker or children)
- Environment caused depression and maybe sick behavior

# Introduction

## Public Health

A set of activities and actions that contribute to the prevention of major health disorders, the spread of infectious diseases and the creation and protection of healthy living and working conditions.

## Legislation and state institutions

In Czech Republic: Hygiene stations (control activities, surveillance, repression), State Health Institutes (higher level of previous activities, also research and development of standards).

The Law on Protection of Public Health, health aspects of other laws

# Particulate Matters

We took the PM as an example of environmental pollution

- PM – xx, xx =  $\mu\text{g}$  on particle
- Why is more important PM<sub>2.5</sub> than PM<sub>10</sub>?
- Why are not important eg. PM<sub>100</sub> or PM<sub>1</sub>?

## Definition

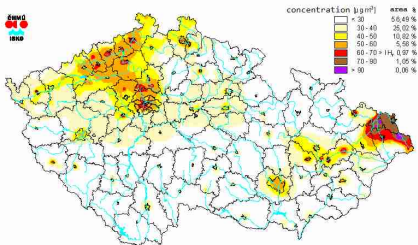
The mixture of particles of solid and liquid phase of organic and inorganic origin which exist due to low weight in air.

## Monitoring

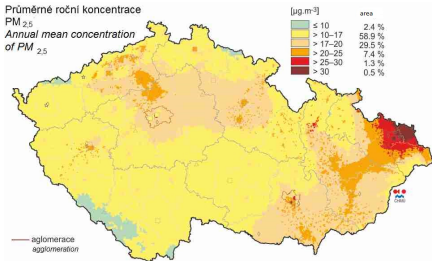
- mean (one number per workstation per year)
- histogram (frequency categories of air purity, six categories / classes)

measuring points  $\times$  estimate of the area between them

# Where they moved oil gobblers?



Pole ročních aritmetických průměrů koncentrací, *průlný aerosol*, Česká republika 1996  
The fields of annual mean concentration, *particulate matters*, Czech republic, 1996



Possible region of their prosperity is near Ostrava, Karvinná, Třinec on NE lappet of ČR and in Poland



# Descriptive studies

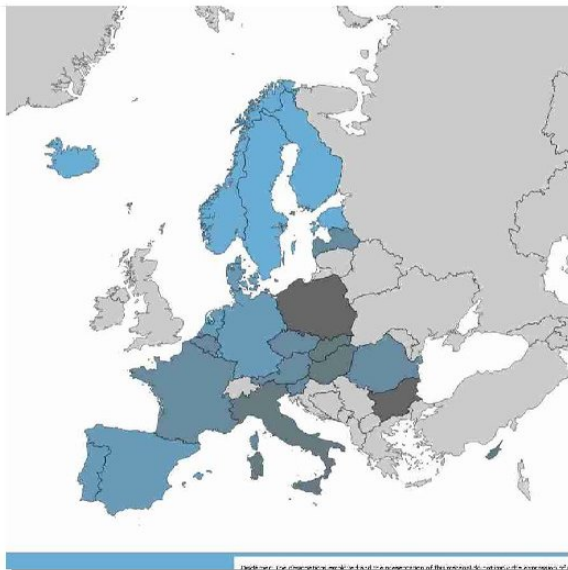
## Target

- Description of the distribution of risk factor or phenomenon
- Causation are not target
- Data sources and work with them
  - Environmental measurements carried out by state institutions
  - Central data of the mortality
  - Correlations
- Representativeness
  - Density measurements  $\times$  Price
  - Mathematical modeling

# Individual risk

- We can say:
  - "This environment is for your disease risk factor"
  - But not "This environment will cause your disease"
- If we have two environments and one of them with double incidence of disease, we can't detect individual people with disease caused by worse environment and resolve them from the background (people having this disease also in better environment)

# Status in Europe



# Risk communication

- It builds on risk assessment and management
  - Risk Assessment: What is the status?
  - Risk management: how can we influence the condition?
- Why communication?
  - The need for public support and active participation of the public
- How?
  - rational vs. emotional component (rational is characteristic for specialists, emotional for the general public)
  - general public lead to factual arguments
  - specialists lead to intelligibility
  - Observe the information recipient as an equal partner !!!

# Example – Chernobyl 1

## General public

Huge disaster causing terrible number of casualties

## Specialists

- Died several tens of plant workers and firefighters
- The exposed population was dominated thyroid tumors with a good prognosis
- Many victims were completely unnecessary, caused by the totalitarian nature of the Soviet regime
- You can calculate the number of victims, but not actually detect

## Example – Chernobyl 2

### And very special

Radioactive iodine from Chernobyl caused by moving production of powdered milk for newborns and infants in Czech. A secondary consequence was the disappearance of aflatoxin poisoning of young children in these products. The first after the Chernobyl poisonings of this kind emerged in the mid nineties.

# Conclusions

- The relationship living and working environment on health has been demonstrated in many cases, other interdependencies are under study
- Quantify the size of the influence of the environment is possible with the use of descriptive data on the state of the environment (eg. The National Health Institute in the Czech Republic)
- The focus is on environmental pollution exceeding generally acceptable level