

# Environmental Engineering

## introduction

- ✓ What the subject is about
- ✓ The goal and conditions
- ✓ Issues

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**Form:**

**Lectures – better seminars....**

**.....discussion is welcome**

**Presence is not obligatory**

**The end..... written test from **presented** topics**

**Evaluation: **assessment** (passed/failed) – **not exam** – who needs, individually**

# Environment, Environmental Engineering, Ecology

**?????**



*everything & nothing ..... application in  
common life, in each profession*

*... Environmental Eng. – study branch ...*

# Environment

***Place we live in***

***All living and non living things including culture, social interactions, constructions etc.***

***Influence in everyday life, work, in all scientific fields***

***Whatever we do impacts the environment***

Difficulties even with basic terms....

*„Pollution“ ... ?????? – basically, it is very clear..., but...*

Solid waste.... **Yes**

Waste water..... **Yes**

but warm water from cooling processes ???

Smoke..... **Yes** .....

but vapoured water from cooling processes ???

Light.... **Not**.....

But reflected illumination of towns ???

Noise from truck..... **Yes**

but loud music ???

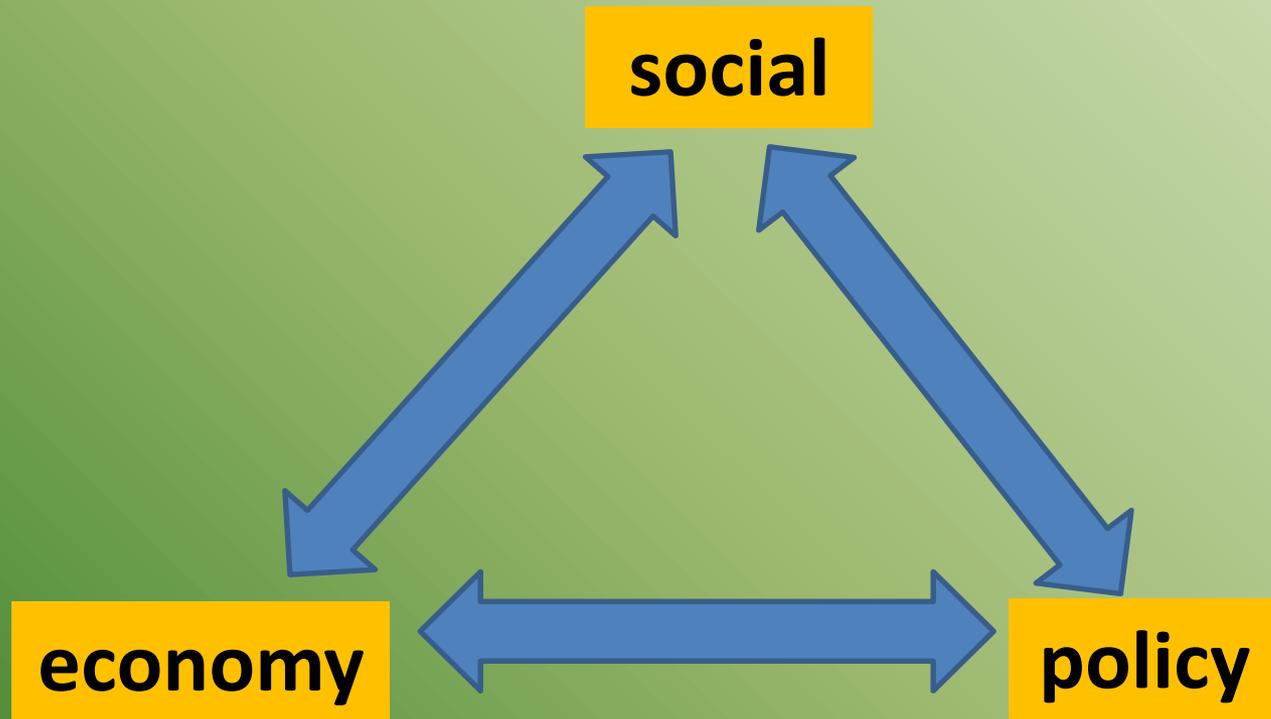
**Even simple definition of term „pollution“ can be relatively complicated and individual**

**Recent world – very complex, very complicated, very connected  
and linked**

**Environmental engineering** – to talk just about problems of **environment** – it is  
not enough....

***One has to think in relations – feasibility..... If not  
related to reality, just fairy tales***

Basic relations:



**Environment**

has to fit into this structure....

„western type“ of society – built on:

- **democracy**
- **market economy**

The society prefers „success“  
(massive support of media)

What is „success“ in public meaning ???

- **high income**
- **high activities**
- **high consumption**

*Environment is not „on the table“*

## Information explosion....

But information are not served objectively... there is mostly „interest“ – information are selected, sorted... and by population just accepted and consumed...

*Academic people should not just consum, but to search for information, before they form their opinion....*

*Concerning of environmental problems – climate changes, globalization, consumption, ...*

### **Very strong „model of ideal“**

- *pretty, healthy, young woman/man, extremely active, with extremely high consumption....;*
- *pure wild environment as desired ideal... never can be reached (background for consumption....)*

## Improvements in environment – usually **restrictions**

- in consumption (restricted products, special taxes,...)
- in behavior (restrictions in use of devices, materials, entrance, ...)
- in income (higher taxes, special rates, production becomes more expensive)

**In public – not very popular**

**In democratic society – very unpopular and  
„risky“ measures**

Globally...

World has traditionally been separated to:

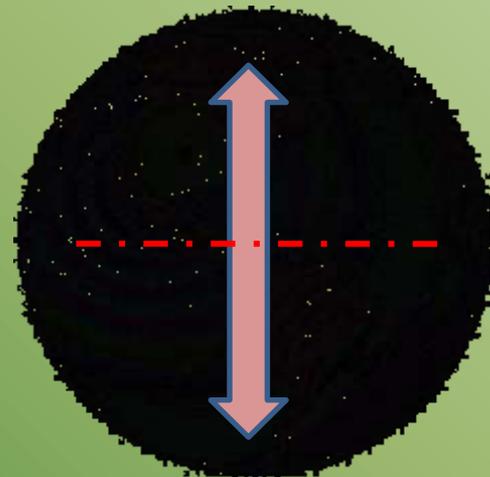
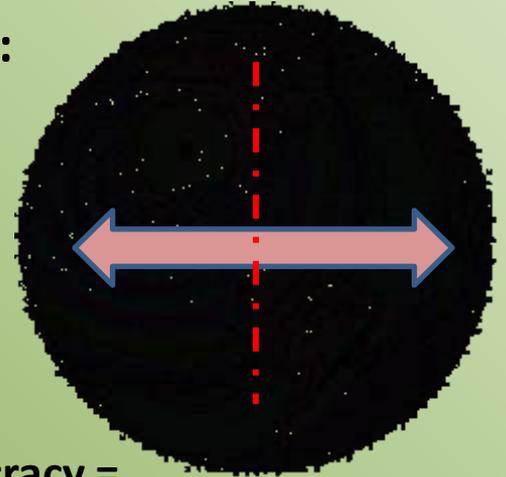
**East x West**

Communist dictatorship x Market economy, Democracy =  
**Political separation**

But real separation is:

**South x North**

Poor x Rich = **Economical separation**



## North

## South

25 %	population	75 %
80 %	owning of GDP (gross domestic product)	20 %
80 %	sources consumption	20 %
10 – 20	mean salary per hour (USD)	0,16 – 0,8

- 500 global companies produce 25 % of GDP, but employ only 0,05 % global population
- Average income (N : S) in 1950: 5 : 1 in 2005: 7 : 1
- 15 % of global population lives with less than 1 USD/day
- Next 20 % of global population lives with less than 2 USD/day

**Rich north lives partly based on south....**

**North** is helping to the **south** – but based on the **same mechanisms** as on the north →  
problems given by different history, social conditions, culture, religion, ...

**Growth of GDP – basic criteria of success.... But in different conditions it does not work**

**Public opinion: „we have to be rich enough to protect environment then“ ...  
crazy idea...**

***Global financial crisis – much more popular in media than ecological topics (climate changes, ...)***

**People are controlled by media (communications) – they do not think often  
(advertising, ....)**

**Fully rely to services.... Transfer of responsibility.....**

**People do not feel responsible – responsible are politicians, authorities,  
companies, ...**

**People rely to their knowledge, to security, to technologies....**

**Less respect laws of nature....**

**Principle of preliminary carefullness..... (freon, introduced organisms,  
cancerogenic matters, .... Now GMO, ...)**

**People very much rely to technology.... (education !!!)**

**But most of serious disasters were caused not by collapse of structures or technology, but collapse of human factor – hard to forecast...**

- **Chernobyl and all other nuclear accidents**
- **Prague subway in 2002**
- **Katrina and New Orleans (collapse of dams)**
- **.....**

**People should more respect nature laws - humility**

**Therefore – basic assumption of environmental friendly approach and environmental engineering in practice are:**

- **education**
- **processing of information, understanding of relations and consequences**
- **feeling of responsibility**
- **respecting of „limits of technology“ – humility**
- **our knowledge are always just „current state of the art“ – not absolute...**
- **own opinion – less under guidance of communication (media)**
- **„environmental“ – means acceptable from point of view of economy, social and political relations – otherwise will not be introduced into practice**

The end.....