International Conference on Integrated Problem-Solving Approaches to Ensure Schoolchildren's Health
Budapest, Hungary, 23-24 May 2019

Outcomes of the vulnerability and SWOT analyses

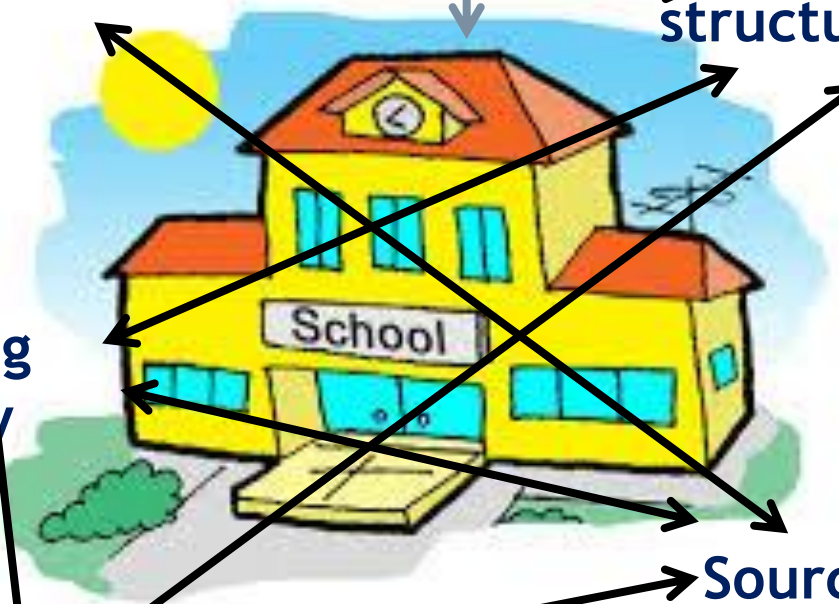
InAirQ | National Public Health Center | Anna Páldy, Anna Kozayda, Peter Rudnai, Tamas Szigeti

WHY TO CARRY OUT VULNERABILITY ASSESSMENT? - PROVIDE A SOUND BASIS FOR THE NATIONAL ACTION PLANS

Types of buildings

General hygienic conditions

Problems concerning the structure of the buildings



Porblems affecting indoor air quality

Sources of hazards

Problems of the maintenance

Outdoor exposure sources

VULNERABILITY ASSESSMENT: NUMBER OF PUPILS IN THE PARTNER OUNTRIES/REGIONS

13,563 school buildings;

By law: max. 25 pupils/class (in 7% of classes >30 pupils)

4,658 primary schools;

827,000 pupils;

mean# : 19.5

2,300 primary schools;

748,000 pupils;

mean #20.2

It-Piedmot Region:
16,995 rimary schools;

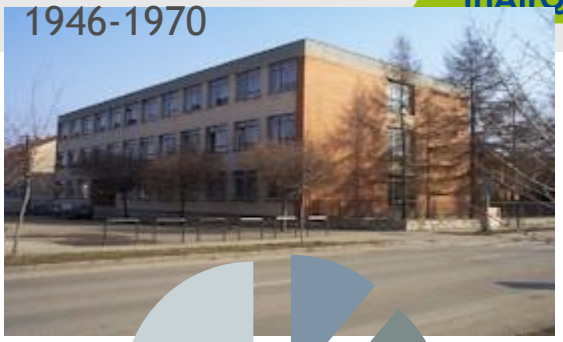
2,799,553 pupils;

447 primary schools;

CONSTRUCTION YEARS OF THE SCHOOL BUILDINGS RATES BY PARTNER COUNTRIES

<1900

1946-1970



1901-1945

1971-1990

>1990

STATE OF THE SCHOOL BUILDINGS

Major problems

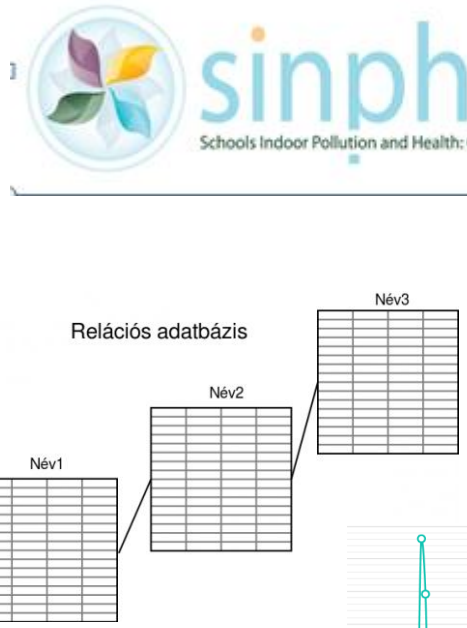
Renovation work – after 2000

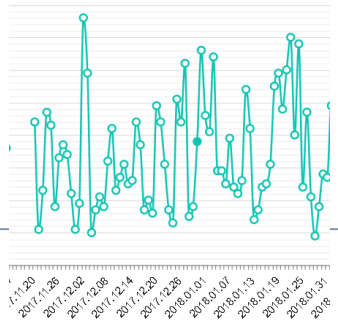
Lack of insulation, mechanical ventilation, AC

asbestos

Pb pipes

GUIDELINES FOR VULNERABILITY ASSESSMENT





- legal measures related to the management of schools and monitoring of indoor environment
- results of indoor air quality field campaign(s) carried out in school buildings (e.g., national campaign, SEARCH, Sinphonie project);
- Preparation of a database (including all indoor air quality data, from previous surveys);
- Provision of ambient air quality data.

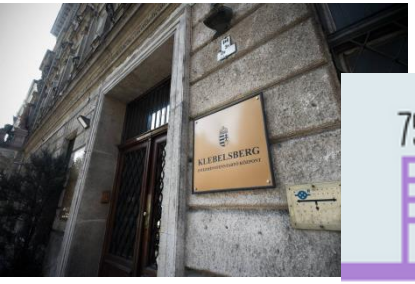
LEGAL MEASURES RELATED TO THE MANAGEMENT

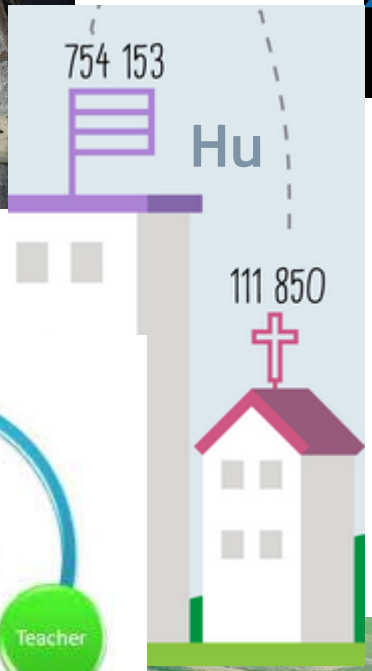
- Czech Republic: several Acts and decrees exist
- Hungary: no regulation on IAQ
- Italy: No regulation on chemicals at country level, except formaldehyde
- Poland: No legal regulations on the indoor air quality (except temperature and relative humidity, and reference values for harmful biological agents).
- Slovenia: No regulation on designing school buildings.
- Guidelines for building a primary school were issued in 2007.

- THERE ARE NO REULAR MONITORING OF IAQ in schools.

SWOT - INTERNAL ANALYSIS - STRENGHTS

The manager-owner

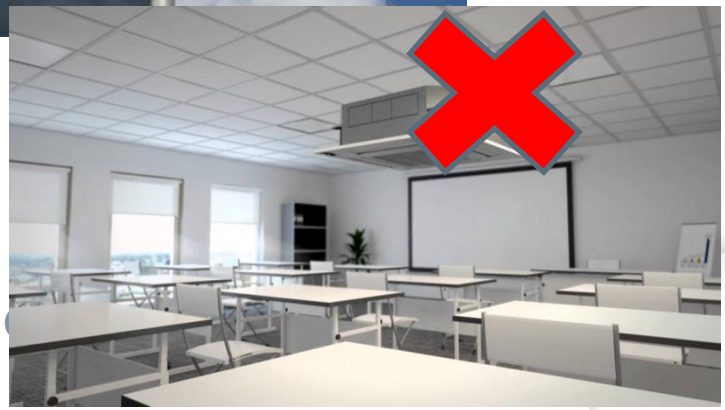




MUNICIPALITY

TAKING CO

SWOT -INTERNAL ANALYSIS - WEAKNESSES



SWOT -INTERNAL ANALYSIS - THREATS

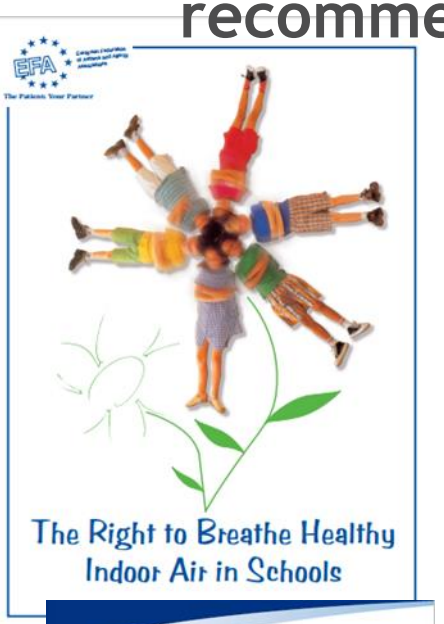
1. **Emission sources in the surroundings of schools** (industry, PM emission, agricultural field –spraying of pesticides, fertilizers, market places, car parking areas, railways).

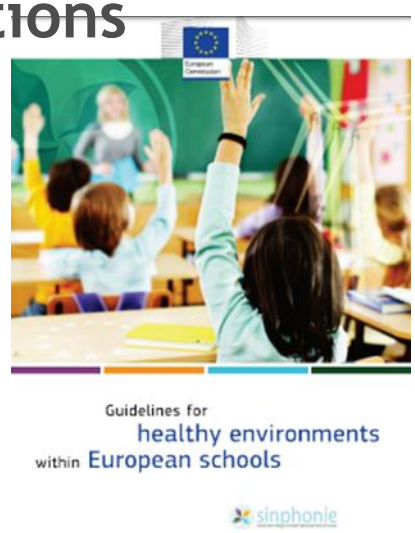
2. **Urban planning regardless of the proximity of schools** (transport, industry, etc.) that cause negative impact of changes.

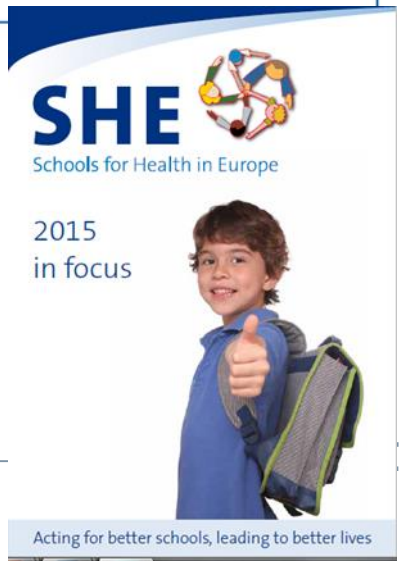
EXTERNAL ANALYSIS -OPPORTUNITIES

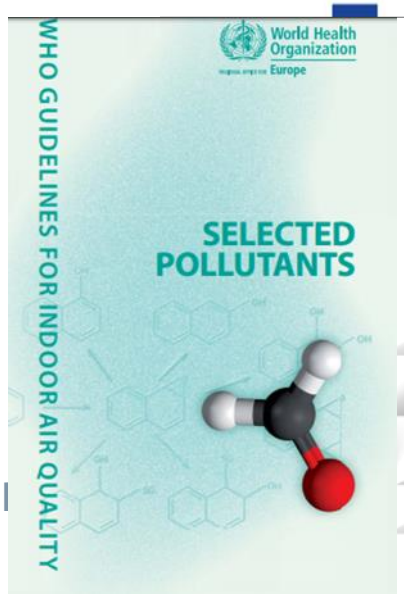
1. Inspection of schools by national supervisor institutions.
2. Post-inspection recommendations for IAQ improvement.
3. Ongoing process of thermo-modernization of schools in line with the EU directive.

4. Guidance and recommendations









EXTERNAL ANALYSIS- OPPORTUNITIES – STRENGHT STRATEGIES

1. Support thermo-modernization.

2. Repair / clean the ventilation ducts during the thermo-modernization process.

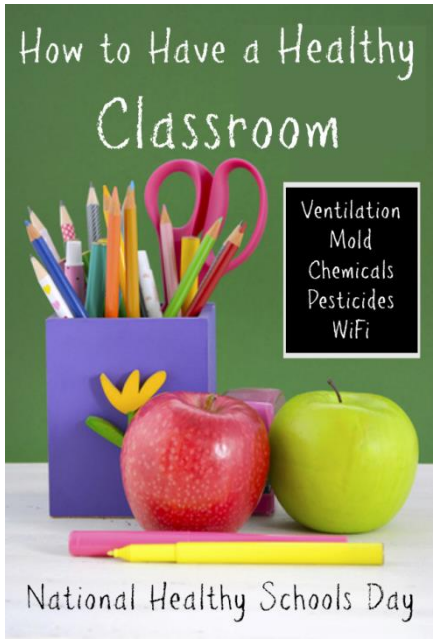
5. Introduction of proper cleaning technology

4. Regulating the outdoor activity of children

5. Modern technologies (such as sensors)

OPPORTUNITY-WEAKNESS (OW) STRATEGIES- EDUCATION

Education



IAQ Knowledge-to-Action

- **School leaders:** benefits and disadvantages of new technologies.
- **Pupils, school staff and leadership in schools about IAQ** and its **health risks.**
- **Cleaning personnel** about the **proper technology of cleaning**

ARRANGEMENT AND MAINTANANCE OF SCHOOL AND CLASSROOMS

Painting the classrooms (during summer) with water soluble paints.

Consideration of investments for mechanic ventilation (HVAC, sensors.

Influence **on the choice of furniture** eco-labelled / or

buy during summer

THREATS AND WEAKNESSES - STRATEGIES

1. **Initiate national legislations** on indoor air quality, to update national building regulations.
2. Promote new form of funding for ongoing status **monitoring/air quality monitoring in schools**.
3. Apply the **precautionary principle** when introducing new technologies and products.
4. **Call on policies on the significance of non-compliant IAQs in schools and** on the need to secure funding for ongoing status monitoring / air quality monitoring in schools.
5. In projects, **optimize the exchange of air** for individual parts of the building.
6. Construction parameters: **implement solutions** aim to optimize the exchange of air for individual parts of the building.

Thank you for your kind attention!