



Pilot project for radon measurement in Romanian schools. An innovative and proactive educational initiative based on collaboration between schools and Babeş-Bolyai University

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Scientific research in schools as a support for the formal or non formal educational process stimulates the interest of the students for science and increase the scholar performance. The combined efforts of schools, research and education institutes as providers of the scientific research, as specialized human resources on one hand and advanced infrastructure on the other hand represents a perfect framework for this initiative. Thus, involving students, teachers of the school mentored by professors from the university has many advantages, such as to increase the awareness of scientific research topics for students and teachers and to disseminate to the public, the opportunity to obtain scientific results in schools based on measurements of the environmental factors, the developing of a study network by stimulating the interest of the students for research.

Radon is a radioactive gas, continuously generated by the geologic substrate, which accumulates indoors and could pose a health hazard for the inhabitants or for the workers when it exceeds certain specific limits. Radon is considered the second factor in triggering lung cancer, after smoking. However, radon is a risk factor that can be controlled and reduced with reasonable costs that lead to saving many lives.

Advanced research infrastructure, scientific experts and valuable research results are held by Babeş-Bolyai University, Faculty of Environmental Science and Engineering (BBU). The recent research of national and international interest obtained by BBU led to the completion of Indoor Radon Map for half of Romania's territory and the development of remediation methods. This expertise allows BBU to take part in the implementation of Basic Safety Standards of the European Union (EU-BSS 2013/59/EURATOM) in Romania. Thus, Romania adopted the law to control of indoor radon exposure for public buildings and working places and implementing risk reduction measures where needed. Preliminary results obtained in our projects for the measured indoor radon concentrations in Romanian schools reveal values exceeding the reference level of 300 Bq m⁻³ required by the Council Directive 2013/59/Euratom. Implementing the corrective measures, as well as further investigation on the factors influencing the accumulation of radon in indoor air (such as the geology, ventilation, or constructive and architectural features) are needed.

Based on the above presented reasons, the paper reveals the innovative strategy of collaboration between BBU and George Coşbuc” Bilingual National College, proposed for educational reasons and to raise awareness on radon risk exposure that generally is not so well known. The pilot project aims to develop a specific education protocol for monitoring and control of radon in schools that can be extended and implemented also in another schools from Cluj-Napoca and Romania. The innovative aspect derives from the fact that the scientific research on a domain of interest can be developed in schools and the results can be used in the formal or non formal educational process. The proactive characteristic is given by the opportunity to anticipate certain future legislative requirements (radon measurements in schools), possible identified problems (high radon concentrations) or needs (corrective actions) at schools level.