Sharing experiences
WS-02

Summary of a radon experiences related to communication
Objective

- To summarize experiences of each country
- To highlight common themes
- To discuss some challenges & lessons learned
Brief summary – Russia -

- Renata Starinskaia – Federal Medical Biological Agency

- No Radon Communication Strategy yet but ongoing communication of radon risk

- Project: to assure radiation safety of the population from exposure from natural radiation sources
  - Questioning – measuring public awareness of radon protection
  - Information poster – for use by FBMA
Regional Workshop to Enhance the Competence of National Authorities in Implementing a Radon Communication Strategy through Practical Exercise, Belgrade, Serbia, 4-6 June, 2019

Public request

- 55% Assessment of land for construction (soil)
- 32% Water
- 8% New buildings, including low-rise building objects
- 5% Operated premises (air)

604 request

low interest of citizens
**Regional Workshop to Enhance the Competence of National Authorities in Implementing a Radon Communication Strategy through Practical Exercise, Belgrade, Serbia, 4-6 June, 2019**

**Ways to inform**

**Now**
- publications in the local press
- activities in kindergartens and schools
- private discussions during supervisory activities

**Proposal**
- publications on the website of the regional government
- holding open classes in schools
- coverage of the issue in health physics trainings
Information poster

**Topic:** Lung cancer

**Format:** Infographics

**Main sections:**
- Statistics
- Main carcinogens
- Prevention
Brief summary – Turkey

- Berna Ataksor. Turkish Atomic Energy Authority

- Comprehensive surveys of homes (1984-2013), workplaces, kindergartens

- Questionnaires and leaflets developed to inform homeowners
Active and Passive radon measurements are performed in two centres.

Regional Workshop to Enhance the Competence of National Authorities in Implementing a Radon Communication Strategy through Practical Exercise Belgrade, Serbia, 4 - 6 June 2019.

Radon Concentration: Bq/m³

Kilometres
• 47 subway stations were sampled, using CR-39 passive detectors. Results were evaluated, Radon activity concentration results are between 21-134 Bq / m³.

• Study has been started in 2018 (134 kindergartens and 1023 radon detectors) and it has not completed yet.

• Study started in 2014, now complete, approximately 62300 homes were determined and studies in the field was completed.

• Preparation of radon map of Turkey and technical report is expected to complete in this year.

• Questionnaire and information leaflet provided to homeowners
Radon Dedektörleri ile ilgili bilinmesi gerekenler:

- **Türkiye İstatistik Kurumu** tarafından bilimsel yöntemlerle seçilmiştir olan hanenizde radon dedektör kabi yerleştirilecek ve 2 ay boyunca burada kalacaktır.
- Bu çalışma kapsamında hazırlanmış bir anket formu ile yaşadığınız ev ile ilgili birtakım temel bilgiler ayrıca kaydedilecek olup, bu formun doldurulması yaklaşık 5 dakikandır alınacaktır.
- **Dedektör** kaplannın aile fertlerine herhangi bir zarara bulunmamaktadır.
- Ölçümlerin doğru yapılabilmesi için dedektör kaplarınının kapları açılması gerekmekle birlikte kaza ile afşas bile herhangi bir zarara bulunmamaktadır.
- **Dedektör** kaplarını ile ilgili merak ettikleriniz bu broşürden ulaşabilirsiniz.
- Dedektör kabi en çok vakit geçirdiğiniz yer olarak oturma odası veya yatak odasına yerleştirilecektir.
- Dedektör kaplarının elektrikli aletlerden etkilenmemesi için; televizyon üstüne, yere, dolap içine, pencere önüne cam içine, radyatör üstüne ve ısı ve reçete yerlerle yerleştirilmesi gerekmektedir.
- **Çocukların** kırmızı, düşürüme ihtimali göz önünde bulundurularak çocukların erişemeyeceği bir yere yerleştirilecektir.
- **Yerleştirdi** dedektör kaplarının yerleştirildiği yerde 2 ay boyunca muhafaza edilmesi sağlıklı bir ölçüm yapımının için önemli değildir.
- 2. ayını doldurulan dedektör kapları hanenizden alınacaktır.
- Çalışma 5 yıllık bir süreyi kapsayacak ve bu süreyi zorunlu edilecek bilgiler ara değerlendirme işlemlerine incelenecektir.
- Sıradan alınacak bilgilerin gizliliğine olan ve saygı gösterilecektir.
- Çalışma katkılarınız için sizi herhangi bir ücret talep edilmeyecektir.
- Çalışma katkılarınız için de size herhangi bir ücret ödemesi yapılmayacaktır.
- Çalışma sonuçlarının eğitim, bilimsel amaçlar ve veri bankalarında kullanımı sırasında adres ve kişisel bilgileriniz çok özel hassasiyetle korunacaktır.
- Çalışma sırasında herhangi bir konuda danışmak ve yardım almak için size ziyaret eden personelden bilgi alabilirsiniz.

---

**Regional Workshop to Enhance the Competence of National Authorities in Implementing a Radon Communication Strategy through Practical Exercise**
**Belgrade, Serbia, 4 - 6 June 2019.**
Regional Workshop to Enhance the Competence of National Authorities in Implementing a Radon Communication Strategy through Practical Exercise
Belgrade, Serbia, 4 - 6 June 2019.

Radon nedir?
Radon gazı renksiz, kokusuz, gözle görülmeyen, topraktan gelen doğal radıasyon türlerinden biridir.

- Ev, işyeri, okul gibi insanların yaşadığı kapalı ortamlarda mevcuttur. Radon gazı bulunduğu bölgelerin toprak yapısına göre farklılık gösterir. Bu miktar evin kaçınıcı katta olduğuna, ne sıklıkta havalanıldığına, kullanılan yapı malzemelerine göre farklılık gösterir.

Radon gazının sağlığa etkileri
Toprakta bulunan radon gazı birçok yoldan kolayca evlerimize girmektedir. Radon solunum yoluyla akciğerimize ulaşır ve biyolojik hasara neden olabilir.

PROJE HAKKINDA

Insanların doğal kaynaklardan maruz kaldıkları radıasyon dozu önemli bir katkı oluştururan Radon Gazının insan sağlığı üzerindeki olması etkilerinin belirlenmesine temel teşkil etmek üzere, kapalı ortamlardaki Radon Gazı miktarının belirlenmesi ve değerlendirilmesine yönelik, 81 ilde yapılacak öncülüğe “Türkiye Radon Haritası” oluşturulması ve sonrasında “Ulusal Radon Kontrol Programı” geliştirilmesi için Sağlık Bakanlığı ve Türkiye Atom Enerjisi Kurumu arasında bir protokol imzalanmıştır. Türkiye Radon Haritasının oluşturulması çalışmasında; Türkiye İstatistik Kurumu tarafından bilimsel yöntemlerle seçilmiş ve ülkenin genelini temsil eden, 81 ilimize mevcut 62.320 hanedeki ev içerisinde radon gazı miktarı 2 ay boyunca radon dedektörleri ile ölçülecektir.
Matanat Gahramanova - SANRAR

"Program of measures for investigation and reduction of radon risk in the Republic of Azerbaijan for 2014-2018" was approved by the Decree of the Cabinet of Ministers No. 236s dated 31.07.2014.

Communication Strategy to:
- Study other countries experience
- Prepare a public information programme
- Deliver information to the public on radon risk
# Communication Strategy

## 4. Informing of public on radon risk

### 4.1. Study of experience of other countries and recommendations of international organizations on informing of public on radon risk

A review of international experience on informing of public on radon risk should be prepared. The review should present a comparative analysis of experiences of different countries.

| National Academy of Sciences | Ministry of Emergency Situations | Ministry of Ecology and Natural Resources | Ministry of Health |

## 4.2. Preparation of a program for informing of public on radon risk and development of information materials

- Awareness programs should take into account wide range audience and different age groups;
- Various types of information materials on radon risk - articles, brochures, presentations, visual aids (videos, booklets, posters, etc.) should be developed;
- Materials about radon risk should include information about radon, its formation, the effects on human health, pathways for entering to enclosed spaces, methods of struggle its entrance and accumulation, the present Program of Measures, investigations conducted under this Program, conducted and planned activities under this Program etc.

| National Academy of Sciences | Ministry of Emergency Situations | Ministry of Ecology and Natural Resources | Ministry of Health |
4.3. Delivering of information on radon risk to public in accordance to approved program

<table>
<thead>
<tr>
<th></th>
<th>Information materials should be delivered to the public of all regions of the country, especially to the public in radon risk zones;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A variety of means for delivering materials to the public, including mass media, internet, visual aids, workshops, meetings and etc., should be used;</td>
</tr>
<tr>
<td></td>
<td>The reports on all conducted works for raising public awareness should be prepared</td>
</tr>
<tr>
<td></td>
<td>National Academy of Sciences Ministry of Emergency Situations Ministry of Ecology and Natural Resources Ministry of Health</td>
</tr>
</tbody>
</table>
Communicating with the public
• Stepanka Psenickova - State Office For Nuclear Safety

• Framework for Radon action plan is included in the law since 2017.

• Third plan is in preparation and will be in force from 2020 (First plan 2000 – 2009, Second plan 2010 – 2019)

• New plan will include new approach, implement European directive and Atomic law.
Information strategy is targeted at:

- Citizens
- Project Architects
- Builders
- State officers
- Owners of Schools
- Students
- Real estate market / since 2017
- Medical professionals / from 2020
- Owners of Radon workplaces / from 2020
Information Challenges I

- Explain the additional risks of radon
- Introduce the measuring process of radon
- Explain what is a reference level
- Why use a passive detector
- Information should be clear, easy to understand for all citizens
- Information should be interesting so citizens want to measure radon at home
Tools

- Website  [www.sujb.cz](http://www.sujb.cz)
- Publications
- Educational seminars
- Conferences
- Internet advertising campaign
- Articles about Radon
Challenges 2019
Real estate market

We want to include measuring of radon in the process of selling and buying real estate

How to do it?

- Information campaign about a court decision on radon as hidden defect on a popular website for real estate market
- Webinar about this topic, on line broadcast 18. 10. 2019 then it will be saved onto You Tube / a media professional company and Radon experts
- Special webpage on www.radonprogram.cz in the campaign time
- Share information about this campaign with stakeholders
Brief summary - Portugal

- Margarida Malta – Portugese Environment Agency

- Transposition council directive 2013/59/EURATOM of 5 December 2013. Entered into force on the 2nd April 2019

- Requires elaborating a national radon plan within 3 years to be regularly updated

- Must include:
  - Identification of areas most susceptible to radon exposure;
  - Strategy for conducting studies on indoor radon concentrations
  - **Communication strategy** to raise public awareness and inform local decision-makers, employers and employees of the risks of radon, including in combination with tobacco;
June-December 2019

- Collect and integrate (if possible) all the data available (indoor radon measurements)
- Integrate geological data with available radon data
- Identification of the areas that are not covered by measurements and need further assessment
- Start of a campaign to monitor (using passive detectors) the areas that need further assessment (during September)

Passive detectors: CR-39
Source: LRRN – Coimbra University
**NEXT STEPS**

**June-December 2019**

- Create a radon risk map of Portugal (end of December)
- Develop brochures and other communication instruments about radon and its risks for public information.
Brief summary - Bulgaria

• Desislava Dzhunakova – National Centre of Radiobiology and Radiation Protection

• Bulgarian action plan (2018-2022). One objective: to improve public awareness

• The purposes of the radon communication strategy is to inform the population about: radon risk; the ways of measurement; the way of reducing radon buildings; improvement of the air quality.

• The number of same activities for public information, which were carried out through different channels such as:

  - **RER 9153: Regional Workshop to Enhance the Competence of National Authorities in Implementing a Radon Communication Strategy through Practical Exercise**, Belgrade, Serbia, 4-6 June 2019
PERFORMED ACTIVITIES IN 2018

• The logo of Radon Program was adopted to Bulgarian National Plan - we use the same with small correction
• brochures, leaflets, posters were revised, printed out and spread in the moment.
PERFORMED ACTIVITIES IN 2019

• Information Days – new activity

Spring Festival of Science
April 13 - 14, in the National Palace of Culture Sofia.

Raising public awareness by take part information days.
EXPERIENCE AND LESSONS LEARN

• At the festival we were given the opportunity to present the National Action Plan to reduce the risk of radiation from radon to a diverse range of people.

• Have a possibility to creating contacts with innovative people.

• We were able to prove our efficiency to direct communication with different groups of people.

• Make a survey among visitors for more suitable channel for receiving the information.
CONCLUSIONS & LESSONS LEARNED

• Despite is difficult and take a whole time it is useful and efficient in direct communication.

• Face to face approach is benefit (most of the people on the festival were attracted).

• The experience gained during the event contributed to include the information day in our next activities.

• We plan to include similar information days for the target groups.
Brief summary - Estonia

• Maria Leier – Republic of Estonia Environmental Board

• National Radon Action Plan (NRAP) describes actions to reduce radon in existing & future buildings, also research, information to the public and training of inspectors

• Is expected to be publicised next month
Communication strategy

• The aim of the communication strategy is to raise awareness of the public but also to raise awareness on more local levels e.g. among decision makers, employers and employees.

• Main tools to achieve the goal is to spread information
  – Annual radon info day, homepages, informative materials, training courses, spreading the information through media
Communication strategy (cont.)

Training:

• In 208 training was provided for environmental specialists working in local governments;
• Training program for inspectors is under development with Labour Inspectorate;
Interested parties

Reference levels for indoor radon concentration in workrooms, the procedure for radon measurements and obligations of employers at workplaces with an increased radon risk.

Passed 30.07.2018 No. 28
The Regulation enters into force on the basis of subsection 97 (3) of the Radiation Act.

- Estonian Association of SME-s was in the position that the new regulation will unnecessarily burden the employer and the owner of the facility should be responsible for the monitoring;
- MoE was in the position that the employer’s responsibility is to ensure the safe work environment for its employees.

Notification and willingness to communicate and explain can not be underestimated.
Brief summary - Romania

Ioan Encian – National Commission for Nuclear Activities Control
National Radon Action Plan adopted by Government in July 2018

Seven strategic directions of action:
No. 5: Information, Education and Communication for the people, local decision makers, employers and employees on risks of radon

Actions:
- Assessing the existing situation in informing the public about risk - underway

- Elaboration of the national information strategy on risk - underway

- Development of informative materials - planned

- Assessing the effectiveness of messages and adjusting them, as appropriate - planned

- Informing local decision makers, employers and employees about the risks from exposure to radon - planned
In the absence of a national information strategy on radon risk, various actions have been carried out:

So they took place:
- various conferences and seminars on the
  - occasion of the Radon Day (7 November)
Radon Communication Strategy

- upon the approval and publication in the Official Gazette of the NRAP

- when launching or finalizing research projects or campaigns to measure radon concentration.
Radon Communication Strategy

International Symposium on Natural Radiation Sources – Challenges, Approaches and Opportunities

Bucharest, 21 - 24 May 2019

Romania
Radon Communication Strategy

- Printing brochures and flyers.
Radon Communication Strategy

- The occurrence of topics of radon exposure in news TV programs.
- The occurrence of radon related articles in national or regional newspapers
Radon Communication Strategy

- There have been created sites dedicated to radon or to projects on the measurement of radon concentration. (www.smartradon.ro; www.radon-air.ro)
Boguslavska Oleksandra & Operchuk Anatolii - State Nuclear Regulatory Inspectorate of Ukraine

- Legislation on Radiation Safety, protection of humans from ionizing radiation, State Hygienic Standards, Sanitary Rules for Radiation Safety, State construction standards
- 35% of the territory of Ukraine is located on the Ukrainian Crystalline Shield which has a broad production of building materials
- Concentration of 226-Ra in the soils reaches values from 59.2 to 48.4 Bq/kg
- For building materials radon, 226-Ra and 232-Th concentrations can be high
- Estimates of radiation doses radon in Ukraine showed that Radon contribution to the total population dose during the average statistical life (70 years) is about 60% (even taking into account the Chernobyl component).
Basics of National strategy

- The National Strategy for the Protection of the Population of Ukraine from Radon is based on the recommendations of the ICRP (2007)

- The National Radon Protection Strategy has been implemented in the draft National Radon Action Plan and is based on the application of the principle of optimization
Communication scheme

- Ministry of Health of Ukraine
- State Nuclear Regulatory Inspectorate of Ukraine
- Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine
- Ministry of Ecology and Natural Resources of Ukraine
- Association of Ukrainian Towns
- Local executive authorities
- Enterprises - projecting construction objects
- Companies performing the construction order
- Administration of buildings and structures
- **Media** TV and Radio stations, Newspapers (press conferences, press releases)
  - Web and other electronic media –
  - City government offices
  - Schools, colleges, training centers
  - Community non-profit offices
- Website on nuclear and radiation safety and non-proliferation
Whom is trusted Ukrainians

- Public organizations: 50 (50% Adults), 45 (90% Children)
- Scientists: 38 (76% Adults), 37 (74% Adults)
- Physicians: 29 (76% Adults), 25 (100% Adults)
- Foreign experts: 18 (76% Adults), 16 (100% Adults)
- Neighbors: 6 (25% Adults), 2 (100% Adults)
- Teachers: 3 (33% Adults), 1 (100% Adults)
- Journalists: 2 (100% Adults), 4 (40% Adults)
- Local authority: 1 (100% Adults), 1 (100% Adults)
"Radon" health lesson was held for all schools in the region. The schoolchildren were told as much as possible about radon, its effect for health and simplest methods of remediation. As a practice, schoolchildren measured radon in school rooms some self.

International online conference on radon was held for schoolchildren. Schoolchildren from the Netherlands, Sweden and Ukraine took part in the conference.

In the framework of the program the specialists took part in tele-programs and answered questions on live-TV, gave interviews for radio and newspapers.
BRIEF SUMMARY - ALBANIA

Kozeta Tushe (Institute of Applied Nuclear Physics) & Mirela Shijaku Radiation Protection Office

Goals for each audience
Message for each audience

- **Students**
  - to increase awareness

- **Ordinary People**
  - to inform and advise

- **Media**
  - to share information

- **Architect; Builder**
  - to information and guidance

Each year    Every day    Infrequently
THE GOALS OF COMMUNICATION

- To provide information, advice, guidance and to share information with aim to protect the health of individuals, families and communities

What we want to tell?

- What is Radon?
- Why is it harmful?
- How is it measured?
- Which is the solution?

- Radon is a radioactive gas, it has no colour, taste or smell
- Radon is the 2nd Leading Cause of Lung Cancer
- Radon Testing is Simple and Inexpensive
- Homes With Radon Problems Can Be Fixed

Test Your Home to Protect Your Family
COMMUNICATING .......

- Accessible
- Actionable
- Credible and trusted
- Simple and understandable

(showing simple examples)

Influence social norm

Involve in process

Increase Awareness

The final goal
Planning questions ensure communications are timely

Communicating in a timely way means engaging the audiences at the time when the health guidance is needed, and when they are receptive to hear and act on it.

- communicating rapidly:
  - what is known and unknown,
- providing frequent and reliable updates

BUILD THE CONVERSATION

Almost all messages need to be repeated frequently for people to remember them.

If a campaign’s goal is to change behavior, communicators must plan timing and sequencing of messages along a continuum from awareness to action.
• This is a long process that **Needs Time**;

• In this process should be integrated the **Medical staff and Health authority** mostly; (are trusted);

• The information about radon is low, for this reason the communication should be **Regularly and Repeatedly**;

• In this process should be involved as much as we can **Relevant people and Relevant Partners**;
Brief summary – Lithuania

Rima Ladygienė - Radiation Protection Centre

Law on Radiation Protection (1999 & 2018)
Law on Construction (1996)
Hygiene Standards (2018)
Building Requirements (1999)
Indoor radon measurements – Lithuania radon map

2 months duration measurements in winter time
1995-2018
5000 indoor radon measurements, including in public access and workplaces

Average indoor radon concentration 63 Bq/m³

Northern part of Lithuania (karst region) average indoor radon concentration 94 Bq/m³

Average dose 1.0 mSv/year
Communication on radon issues: general public, municipalities (books, leaflets, brochures, meetings, TV)

Indoor radon measurements in 2 municipalities per year: meetings with local government, specialist of ecology, public health (presentation on requirement) delivering of books, leaflets, brochures publication in local newspaper on indoor radon problem (example, 2014-2016 m. 16 press release, 2017 – 5 publications, www.rse.lt, TV, radio)
Communication on radon issues: general public

- Free of charge measurements
- Information on website
- Advising by phone
- Map on website
- Annual reports on website
- Information in newspapers
- Information on radio, TV
- Registration for measurements in electronic form (before 2019)

http://www.rsc.lt/index.php/pageid/1021
Communication on radon issues: construction specialists, civil engineering NGO

2017-2018
Lithuanian Association of Civil Engineers Vilnius Club

2017, Vilnius Gediminas Technical University, National Passive House Association
Communication on radon issues: public health specialists

- Open days on radiation protection
- Presentations on radon problem in conferences
- Meetings with local public health specialists, their help for indoor radon measurements
- In cooperation with Vilnius City Public Health Office, 2014 indoor radon measured in selected 15 educational institutions of Vilnius city
- In cooperation with Rokiškis Municipality Public Health Office, 2017 indoor radon measurements in Visaginas schools and kindergartens, 11 institutions
Communication on radon issues: students, school young people

- In cooperation with Utena College, in 2014 indoor radon measurements in 2 municipalities (private houses), bachelor thesis degree
- Cooperation with Vilnius College, bachelor thesis degree
- Vilnius Gediminas Technical University, Vilnius Pedagogical University – magistracy thesis degree
- Cooperation with Vilnius Skorinos secondary school (research at school)
- Visits to Radiation Protection Centre
Indoor radon at workplaces measurement campaign in 2019 - communication

- **Radiation Protection Centre** is performing approx. 100 measurements at workplaces in underground and basement
- **Random selected workplaces, on voluntary basis, free of charge**
- Prepared leaflet
- Information on website [www.rsc.lt](http://www.rsc.lt)
Common themes (1)

• Much work has been carried out to map radon risk – critical first step to identify where risk communication should be targeted.

• Questionnaires & information leaflets distributed to the public when mapping have an important role in raising awareness about risk.

• All countries are providing information to the public on radon risk, with or without a radon communication strategy.

• Those that don’t have a communications strategy plan to develop a one.
Common themes (2)

Communication channels:

• Information leaflets and posters
• Web page development
• Media interviews (TV, radio, newspapers)
• Information days
• Training courses (Engineers, Home builders, Medical specialists)
• Local seminars (Schools, Health Physicists, Local communities)
• Videos
• Conferences
• Articles
• Radon Day 7th November (should we try to coordinate communication on this day, with European Radon Association and IAEA?)
Communication is directed at a wide variety of stakeholders:

- Homeowners
- Employers
- Employees
- Teachers
- Students
- Building professionals
- Estate agents
- Medical professionals
- State officials
- The media
Some lessons learned

• Meeting members of the public is an opportunity to ask for feedback on how they would like to receive information (Bulgaria)

• It can be difficult and time consuming to arrange to meet members of the public but it can be very effective (Bulgaria)

• For some countries transposition council directive 2013/59/EURATOM of 5 December 2013 means workplace measurements are now obligatory – this can be a new opportunity to communicate radon risk

• Feedback on communication from stakeholders is very important to ensure communication is effective (Bulgaria, Albania)
Some lessons learned

Who should the message come from? Important to find out who is most trusted (eg public organisations and scientists are most trusted in Ukraine & local authorities are least trusted; eg in Albania medical staff & health authorities are highly trusted)

Important to repeat the message many, many times (Albania)

If a campaign’s goal is to change behavior, communicators must plan timing and sequencing of messages along a continuum from awareness to action (Albania)

Important to define who has responsibility for risk communications (Azerbaijan)

Any more lessons learned that you would like to add?
Some challenges

• It is a slow process to work with stakeholders and raise awareness

• The public can be quite uninterested in radon – how to persuade citizens to test for radon?

• There can be different opinions as to who should be responsible for workplace measurements

• Real Estate Market is an important group of stakeholders – how to engage with them? (UK experience)

• Is cost of testing and remediating a problem?

• Other challenges you have experienced?