Radon communication: State-of-the-art and good practices

Tanja Perko, Catrinel Turcanu, SCK

Workshop on EC REM 2018 Radon-in-Water Proficiency Test & Training course on measurement of radon and radioactivity in water

JRC-Geel, Belgium; 26-29 March 2019

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
Indoor radon concentration

Actions to reduce the radon should be considered at many EU Member States.

European Indoor Radon Map, March 2018

- Arithmetc mean over 10 km x 10 km cells of long-term radon concentration in ground-floor rooms. (The cell mean is neither an estimate of population exposure nor of the risk.)

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
“Strategy for communication to increase public awareness and inform local decision makers, employers and employees of the risks of radon, including in relation to smoking”.

„Member States shall provide as appropriate for the involvement of stakeholders in decisions regarding the development and implementation of strategies for managing exposure situations “
Main communication challenges for general public

It is a naturally occurring radioactive, colorless, odorless, tasteless noble gas.

- “Naturally” occurring is more acceptable than man-made.
- Perception of personal risks is usually lower than perception of general risks.
- It doesn’t have immediate consequences.
- It touches culture and way of life.
- It is unknown.
- It is not an immediate treat
- Radon spas ...
Radon spa as a tourists destination

Our Most Popular Radon Spas in Europe

- **Park Hotel Health & SPA ******
  - Poland - Jizera Mountains - Bad Flinsberg/Garondeon 2014
  - 4.4 / 5.0 - 60 Ratings from our customers
  - Intensive Radon Treatment
    - 7 nights, double room, half-board
    - from £331

- **Kaiser Trajan *****
  - Germany - Lower Bavaria - Bad Gögging
  - 4.4 / 5.0 - 17 Ratings from our customers
  - Tip: Sulfur & Moor
    - 7 nights, single room, half-board
    - from £557

- **Kurzentrum Weißenstadt am See ******
  - Germany - Franconia - Weissenstadt
  - 4.6 / 5.0 - 52 Ratings from our customers
  - Healing Source Week
    - 7 nights, double room, half-board
    - from £608

- **Johannesbad Hotel St. Georg ******
  - Austria - Salzburg Area - Bad Hofgastein
  - 5.0 / 5.0 - 3 Ratings from our customers
  - Healing Gallery Therapy - Nat.
    - 10 nights, double room, half-board
    - from £907

See all our Radon Spas

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
Belgian population 18+; N=1083, sample weighed for education, gender and age; 2018

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
High radon gas levels detected at several schools in the Highlands.

A test of radon gas levels at Glen Urquhart High School and primary, Helmsdale Primary and Kilchurnen Academy and primary have been put in place to reduce the risk of radon gas.

Radon is a naturally occurring radioactive gas, which comes from the breakdown of uranium in the Earth’s natural rocks and soil. It can cause health problems and is known to cause lung cancer.

Related Stories
- Are you at risk from radon gas?
- Residents offered radon testing

BIBIC NEWS SCOTLAND

Risk of high levels in more parts of Scotland

5 June 2013 last updated at 10:01 GMT

Education, culture and tourism have been identified as areas at risk of high levels of radon gas in more parts of Scotland.

Agency for radiation protection and emergency response (ARP) is set to work with local authorities to provide advice and guidance to tackle the problem of high levels of radon gas.

More information can be found at www.radon.scot.gov.uk.

Leuk vinden | Delen | ...
Different communication campaigns in EU MS were conducted in last decade with a goal to increase the radon awareness.

Radon is a health hazard with a simple solution.

Test. Fix. Save a Life.
Most of the campaigns were based on a one way information: brochures and document.
Findings from research and experiences from countries

Awareness about radon does not automatically lead to action!!!
Awareness of radon among the public after series of communication campaigns: 76% (2004), 77% (2010) and full awareness 86% (2013)

Despite increasing awareness, concern about radon in their home decreasing: 47% (2004), 43% (2010) & 33% (2013)

Even lower likelihood of having their home tested 36% (2010)

EPA have shown that of those that test and find elevated radon concentrations, in their home only 1 in 4 go on to reduce radon

Source: Stephanie Long RPII EPA, IAEA workshop, Estonia, 2014
Subsidies for home remediation are not fully used by stakeholders. Authorities decided to employ communication experts to develop communication strategy.

The Swedish National Board of Housing and Planning noted in 2004 that per year only half of the radon subsidy budget to apply measures for reducing radon concentration in houses (e.g. ventilation systems) had been taken up by concerned homeowners.

People living in high radon areas find the risks of radon gas acceptable, despite the higher perceived risks.

Although they know that radon is bad for their health, they are not concerned about living in a house with high radon concentrations.


When radon measurements are recommended by authorities only small fractions of the population in the affected areas effectively carry out these measurements.

Findings from research and experiences from countries

Awareness about radon does not automatically lead to action!!!

ENGAGEMENT does

e.g. homeowners living in local communities actively engaged in a radon program had higher levels of awareness and are more likely to have their home tested for radon than homeowners living in communities that are not actively engaged in a radon program.

Similar results were found for homeowners living in areas of particular concern regarding radon risk (radon concentrations above 200Bq/m³ in more than 5% of houses), as compared to those living in less radon-affected areas.

Now, different participatory tools are used to engage with stakeholders, e.g. best radon video competition, visits of schools, best radon poster competition...

Radon is a health hazard with a simple solution. Test. Fix. Save a Life.


Get your home tested for radon, or you will fade on.

There were 3 little pigs!

But 1 lived in a house with radon!

Hurry! Test your home! Don’t let radon hang around!


2018 Illinois Winners Poster

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
National campaigns proved less effective than campaigns at local level. Local initiatives for radon risk reduction are currently being developed, with support from national authorities.

The Federal Agency for Nuclear Control (FANC) annually organizes the Radon Action campaign for which it seeks support from the five Walloon provinces and the Brussels Region and it “negotiates with local governments” to include radon preventive measures in the building code,

- provides detailed scale radon maps for new builders,
- trains local governments to provide radon info for new builders,
- distributes brochures for new builders and
- trains architects and building professionals from the municipalities.
- Organises stakeholder workshops (e.g. June, 2019 in Spa, Belgium)

National authorities made official requests for **collaboration with local authorities in the radon action project**, in particular, “by informing [..the] local population using internet pages and other communication channels, usually used [by their] local community.”


This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
From informing and educating to engagement with stakeholders

e.g. In Ireland briefing national politician’s that represent the target county; Public meetings (2 to 3 in main towns), chaired by local (sometimes national) politicians

In Croatia ministry engaged with schools (e.g. meetings at schools, special www for schools, measurements in schools...)

In Hungary national authorities engaged with residents, local doctors for radon mapping.
High indoor radon concentrations are a problem in many EU MS.

Awareness does not automatically lead to action - stakeholder engagement might.


This can be supported by the use of websites of local and national authorities as these are the most common interaction points between citizens and public services in many EU countries.

RQ: Do radon websites of national and local authorities EU wide support engagement of radon stakeholders?
Method: Automated and Manual evaluation methods

- 173 internet pages of national, regional and local authorities from a radon prone areas in 8 EU MS: Belgium, Croatia, France, Germany, Ireland, Italy, Slovenia and Spain
- Sampling: communities with exceeded levels of radon concertation
- The word “radon” was included as a browser criteria if the search engine existed on the evaluated page. Lastly, the search has been upgraded manually by looking at all pages, sub-pages related to health, environment, policies, news trying to identify topics related to radon on the evaluated internet page.
- Evaluation metrics by Coleman et al. (2008), Domarkas et al. and (2012), Siar (2005)
- Evaluation done by native speakers (English, Dutch, German, Italian, French and Slovene) or proficient in a language (Spanish, Croatian)
Analysis

- Availability of radon information;
- Accessibility;
- Stakeholder interaction;
- Dialogue
  - responsiveness,
  - content / design for stakeholders
  - stakeholders addressed,
- Transparency/openness
Results: Availability of radon information

- Radon information is not very present on internet pages.
- Radon information is in many cases unavailable or difficult to find;

Availability of radon information (n=173)

- 54%: 4 (dispersed radon information - on different sub-pages)
- 29%: 3 (only brochure or other PDF related to radon available)
- 10%: 2 (nothing related to radon)
- 2%: 1 (no internet page)
Good practice: Availability of radon information

- Webpages of national and local authorities include radon related topics.
- A special, dedicated radon internet page is developed at national level.
- The internet page of the local community has a special radon sub-page.
- Radon information is clearly identified and all information is collected on one sub-page.
- The internet page includes outreach documents, such as brochures.
- National and local radon webpages are cross-linked.
Accessibility of radon information capability of making websites accessible to a wide array of possible stakeholders, have equal access to information and functionality, regardless of their technical skills or possible disabilities

- **Accessibility by mobile devices**
- **Personalized/customizable features**
- **Broken links**
Results:
Customized and personalised content

### Availability of customized applications for radon maps (n=53)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS coordinates linked to radon prone areas</td>
<td>49</td>
<td>4</td>
</tr>
<tr>
<td>Interactive radon map</td>
<td>49</td>
<td>4</td>
</tr>
<tr>
<td>Radiation measurements at place</td>
<td>36</td>
<td>17</td>
</tr>
</tbody>
</table>

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.
Results:

Stakeholder interaction

An opportunity for stakeholder interaction by using new comm. tools is rather a missed opportunity (n=163 www)

Radon related posts deficiency. Example BE: only 3 Facebooks from the analyzed BE www publish posts related to radon (in one case there were 14 posts related to radon, 8 shares and 5 likes).
While it is important to have e-mail addresses available on websites, they serve no purpose unless someone actually reads and responds to the messages received.

A response should be:

- meaningful
- provide at least a requested information.
- address risk characteristics, for instance dread, controllability and familiarity.

Our e-mail:

"Dear Sir, Dear Madam, I recently watched a documentary related to radon on internet and I am worried! I would like to know where I can obtain a Radon Test, how much it would cost, where I would bring the kit and where the results will be published (and when!). Thank you in advance for the attention you will grant to this email."

The e-mail has been sent to all available e-mail addresses published on the analyzed webpages with radon information (n=39).
Results: Responsiveness

Received responses: www

- Italy, 1:11
- Ireland, 3:12
- Slovenia, 4:14
- Croatia, 1:4
- France: 1:10
- Spain 2:10
- Belgium 53:88
- Germany 10:14

Most of the responses offered partial, basic information or only redirected the stakeholder to some other institution.

Examples:

“For the radon information contact Ministry of Health.”.

“Everything is written on Facebook…”

“You can order a radon test (detector) via the website www.actionradon.be. The test (20EUR) takes place over 3 months in the room you spend the most time in on the ground floor. The results will be communicated to you via post a few weeks after you have sent the detector back to the lab.”

“I am well aware of the fact that you are unsettled by the topic of radon, because the information in the public domain is still very scarce on this topic…”

“... you can always contact me by phone or e-mail. Some things can be better explained in direct conversation.”
Content and design for different stakeholders groups

If stakeholders cannot figure out where can they find the information, and what kind of information is available on www, they become frustrated and quickly leave

- engaging website should be user-friendly
- and have a content that has an informational value and
- design that has a presentational dimension with a special attention to different stakeholder groups’ needs, capacities, interests.

A customized message should engage with the www visitors and turn them into an active stakeholder.
3 www have content with a nice and clear story, user-friendly design and clear/attractive messages

5 www have a clear radon story on a sub-page or even more sub-pages dedicated to radon.

3 www have personalized content

Most of the www address only limited stakeholders “general population”

The following examples of jingles/messages:

“Radon in your home? Take the test to protect yourself”,
“Radon, an enemy in your home?”,
“Natural, radioactive gas without smell and taste”.
"Action radon 2015: an enemy in your house”;
"Action Radon: order your detector from the province of Liège!";
“Action Radon: order your kit”;
“Order your kit with the Province of Liège and save 10 EUR!”;
“Radon in your home? Take the test to protect yourself”;
“Improve your home thanks to the Ecopack”;
“Advance nuclear safety”;
“The radon risk”;
“Radon”
Results:

**Transparency and openness**

www improve transparency and openness related to radon issues to a limited extent.

- Tenders for labs for the radon analysis = 3 www (Fr, ES, Si)
- National (draft) action radon plan = 6 (France, Ireland, Italy, Spain).
- Financial documents related to radon action plan = 5 www (France, Ireland, Slovenia and Spain) + incentives (Belgium)
- The new BBS Directive = 9 www (none of the webpages from Germany and Italy)
- Other national legislative documents = 13 www (e.g. Spanish webpage were brochures about what the state has put in place as measures under the form of legislative documents is published.
- A radon mapping plan = 22 www
- Announcement where the radon mitigation activities are taking place: 18 www
What we can learn from this study for better radon communication?

- Internet has a great potential to increase stakeholder engagement in radon measurement and remediation actions.

- This research showed that currently it is not being used to empower stakeholders to be involved in decision-making related to radon risks in radon prone areas or to empower citizens to make informed decisions related to radon risk reduction.

- However, there are some good practices that authorities could follow.
Outlook on future radon risk communication

Activities to accelerate better radon communication:

- Project Engage
- PhD research about value-action gap (SCK•CEN, UA, FANC, UT)
- RICOMET conference (Barcelona, 1-3 July)
- IAEA radon com. and stakeholder engagement workshop (3-6, June, Serbia)
- Workshop on radon communication (theory meets practice) (BfS, WHO and SSH experts: 8-10. Oct, Germany)
- New BSS
Are you challenged by radon communication?  
Do you have a radon comm. success story to share?  
Do you wish to improve actions by stakeholders?  
Do you have students studying communication aspects of radon? ...

CONTACT US

Dr. Tanja Perko at tperko@sckcen.be