

# Mission (im)possible: Communication about NORM topics and stakeholder engagement

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# Stakeholder engagement is the win-win process

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- Democratic, legal, legitimate ...
- Improves knowledge, higher attention, better memorising and recall.
- Converging values are identified and prioritized.
- Addresses risk perception: familiarity, controllability, voluntariness, fear ...
- Uncertainties get understood and accepted.
- Stimulates systematic information processing – long term solutions.
- Develops ownership of solutions.

# Phases of risk communication

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**Education**



**Marketing approach**



**Participatory practice =  
Stakeholder engagement**

# Stakeholder engagement is a challenge

- Democratic and legitimate ...
- Improve attention, better memorising and recall
- Communicate and understand different views and feelings about NORM,
- Address voluntariness
- Uncertainties get under control
- Stimulates systematic information solutions.
- Develops ownership of solutions.

It is a challenge due to:  
limited knowledge of the public,  
different risk perceptions,  
views and feelings about NORM,  
demands a lot of time, human and financial resources ...

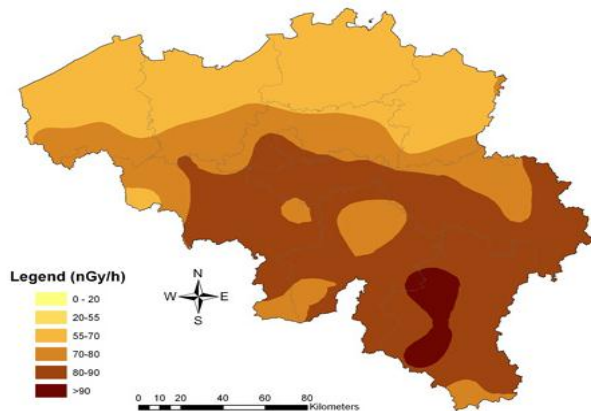
Risk communication about and stakeholder involvement in  
NORM issues  
are not only “mission possible”,  
but also “mission unavoidable”

### Content:

- Example
- Social Psychology behind
- Challenges
- Solutions/Reccomendations



## Example: Belgian case



Concentration of naturally occurring radioactive elements in Belgian ground, Bq/kg.

Aerial gamma spectrometry survey since 90s, + historical records (industrial activities).

### Pollution identified:

- Natural radiation, e.g. radon
- NORM-industry
- Former industrial activities where radiation or radioactive materials were used



# Soil remediation case in Flanders, Belgium



- The refinery Union Minière - Umicore/Olen:
- Radium 1920, Cobalt 1925, Copper 1928, Germanium 1953
- First environmental study in 1960
- Mixed contamination (heavy metals and radioactive materials)

# Historical background

## First demands by population

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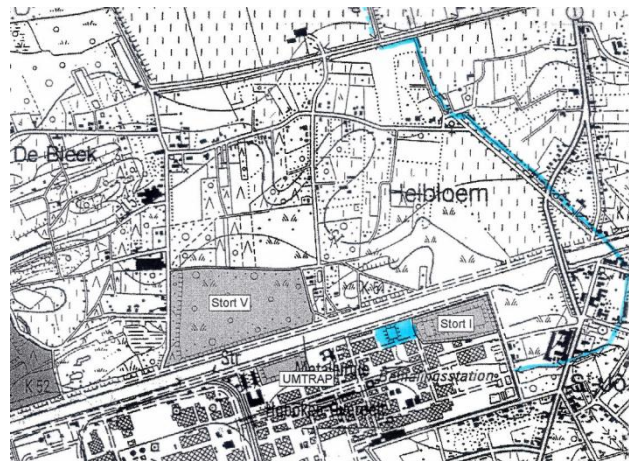
- In the 80's the local community and green activists pressured the authorities to redo the study
- In 1993 report available (measurements done in 600 houses, manufacture site, neighborhood, river ...)
- Pollution detected in river banks, peoples gardens, streets, waste disposal...





# Evolution of the project Towards a project **without public**

- In 1993 Press Conference organized by local community
- Established committee of 20 people (authorities and company)
- Company prepared different scenarios for soil remediation
- Authorities and company didn't proceed with any scenarios – decision was postponed
- In 2000 company and nuclear waste agency (ONDRAF/NIRAS) came up with the BRAEM project



## Selected titles:

- Environmental scandals
- Olenese street has been radioactive for 50 years
- "Olen was our Disneyland"
- Remediation radioactive site costs half a billion
- Your town in the newspaper everyday
- "Who will pay remediation?"
- "We did our best to protect ourselves"
- Remediation D1-dump costs a fortune
- Radioactive contamination Umicore worse than previously though
- 1.300 signatures for Olen referendum ...



22/03/1990 to 22/03/2016 = 164 articles  
(lost trust, stigma, uncertainty...)

## Evolution of the project Towards **public involvement**

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- 2002: the first public meeting organized by the company
- Published first brochure with explanation of the project and timing
- 2003: an outside company for designing the disposal chosen
- 2004: OVAM (Public Waste Agency of Flanders) took the remediation over – mixed contamination, mixed responsibilities
- 2004: agreement on the financial aspects
- An external communication office was hired
- Established working group (WG) with local population “Dialog and consultation”

# Remediation works started 50 years after first environmental study

- 2006: Remediation started
- 2008: Partial remediation finished: volume 29 000 m<sup>3</sup>
- 2009: measurements done: some locations not completely remediated, e.g. due to land instability (bank of the channel, houses) ...



# Communication and stakeholder involvement

## Who were the stakeholders identified ?

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- Population (neighbours,...)
- Workers, families
- Local authorities
- Governmental institutions (ex. health institution)
- Industry, concerned companies
- Media
- Private actors (remediation enterprise,...)
- Politicians ...

# Communication and stakeholder involvement

## What were the public concerns?

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- “They were interested and happy to get somebody to explain them about the risk and remediation. Ask them for their opinion.”
- “They were not aware about radioactivity”
- “Why do you have to do such a dramatic intervention into environment and into our lives?”



# Communication and stakeholder involvement

## What were the most frequent questions?

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- What was found?
- What it means in terms of (health) risks to them?
- What is done to minimize the risks?
- How long it will take to remediate?
- If the contamination is found on their land: who has to pay the remediation?
- Whom they can turn to if they have questions?
- How will they be informed?
- How could such a pollution happen?
- Will their property loose on the market value?

# Communication and stakeholder involvement

## What was communicated?

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### Description of the contamination

- Its potential effects on health & ways to prevent this
- Remediation approach, what can be expected, from whom
- Responsibilities, who has to pay for remediation

### People wanted to know:

- Timetable; what is now and the next to come
- How to protect themselves and their children.

The population or media have NEVER asked for a specific description of remediation processes, technical details ...





# Communication and stakeholder involvement

## How was communicated, engaged?

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- Working groups with locals
- Information meeting(s) - (not hearings)
  - if possible with local authorities and concerned company, an independent health authority,...
  - If several speakers: preparation meeting necessary, clear guidelines about who communicates what, no discussion in front of population.
- Press conferences for local media (one hour before the information meeting, under embargo till beginning of meeting)
  - Contact points: Local and/or central
  - Media relation
  - Websites
  - Personal letters...

# Communication and stakeholder involvement

## What have we learned? 1/3

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- Use “One message, many voices” strategy: who will do what, at what time-perspective,...
- National or sub-national governmental institutions are considered to be neutral: opposite to local authorities or industry
- Level of population involvement has to be defined from the beginning.
- A permanently available contact is necessary

# Communication and stakeholder involvement

## What we have learned? 2/3

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- Make clear what contamination/exposure means; what it means to be exposed to e.g. 1mSv/year.
- Make sure that at public meetings the expert AND someone who can explain the message are both present.
- There are long and difficult discussions about the responsibilities → have these discussions where they belong: not before the public
- For media “Bad news is good news”.

# Communication and stakeholder involvement

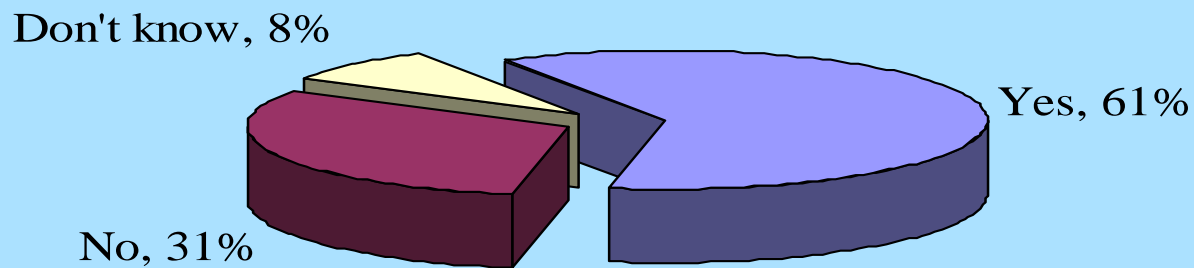
## What we have learned? 3/3

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- To employ an independent facilitator for meetings is necessary
- Transparency jeopardizes business decisions
- Authorities sometimes recognized as to be far from the problem
- Hard to coordinate many levels of authorities
- Proactive approach to the media has to be used
- Recognize public concerns and include them in the solution
- Opinion pools are a useful methodology

# Evaluation of the remediation process by public Opinion pool (2009)

Will the remediation have positive consequences?



## No

- Doesn't have any sense
- Was it really so radioactive
- Never had problems with that

## Yes

- The radioactivity is removed
- Clean ground
- Healthy environment
- Lower health risk
- Ground attest

# Evaluation of remediation process by public Opinion pool (2009)

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## Positive evaluation on

- Availability of involved sides
- The way of informing
- Land research activities



## Negative evaluation on

- Duration of the project
- Period with inconveniences
- Quality of replaced soil

## Conclusions for the Belgian case

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With stakeholder engagement process, the mutual understanding was improved

- Clear legal frame was needed
- Established consequent, long term communication and stakeholder engagement
- Constantly evolving policy and a spirit of permanent cooperation
- Empathic communication
- Open, clear and agreed upon lines of communication among stakeholders



# Social psychology behind NORM issues

**Human behaviour is primarily driven by perceptions and not by facts.**

One radiation – Many perceptions

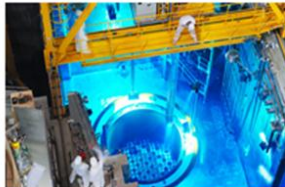
## Medicine

Diagnosis and therapy

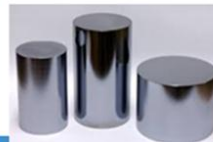


## Industry

Energy production



Food irradiation, Sterilization, Carbon dating, Quality control, Silicon doping  
Other applications: e.g. Airport control





# High perception of ionizing radiation

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General population have rather **high risk perception** of:

- Nuclear power

(Hamalainen 1991, Sjöberg and Drottz-Sjöberg 1991, Kanda et al. 2012)

- Nuclear testing

(Purvis-Roberts et al. 2007)

- Nuclear waste

(Sjöberg 2002)

- Nuclear waste disposal

(Skarlatidou et al. 2012, Perko et al. 2012)

- Nuclear accidents

(Perko, 2013)

# Low perception of ionizing radiation

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General population have rather **low risk perception** of:

- Natural radiation

(Turcanu et al. 2013)

- Medical use: e.g. X-rays

(Perko, 2014)

- Radon in houses

(Poortinga et al. 2008, Fisher et al. 1987 , Perko, 2013)

## Risk characteristics

Relevant for NORM material and predominant factors in 'high risk' judgement :

lack of transparency,

involuntary nature of exposure,

delayed or uncontrollable effects

lack of knowledge,

...

Factors	Low risk perception factors i.e. factors decreasing perceived risk	High risk perception factors i.e. factors increasing perceived risk
Benefits	High benefits	Low benefits
Choice of exposure	Voluntary	Involuntary
Type of risk	Chronic – kills one person at a time	Catastrophic – kills large numbers of people all at once
Familiarity	Old risk	New (unfamiliar or novel source)
Catastrophic potential	Common – a risk that people have learnt to live with	Dread – a risk that evokes an emotional fear response
Visibility of exposure	Visibility	Invisibility
Individual control	Possible	Not possible
Origin	Natural source	Man-made
Risk management ability	No possibilities a priori <sup>4</sup>	Lack of effective measures
Knowledge about risks	Known to the individuals exposed (possible precaution)	Not known to the individuals exposed
Uncertainty	Known to science	Not known to science
Manifestation	Immediate or reversible damage	Delayed or irreversible damage
Damage	Definitely not fatal	Definitely fatal
Fair distribution of damage	Equitably distributed	Not equitably distributed
Damage visibility	Anonymous victims	Victims identifiable
Victims	Adult males	Children and women
Social or scientific status	Consensus possible	Controversial

## Low knowledge about ionising radiation



“Exposure to radiation will always lead to radioactive contamination.”



“Radioactive waste is produced only by nuclear power plants.”



“Vegetables grown near a nuclear power plant cannot be safely consumed because of radioactivity.”

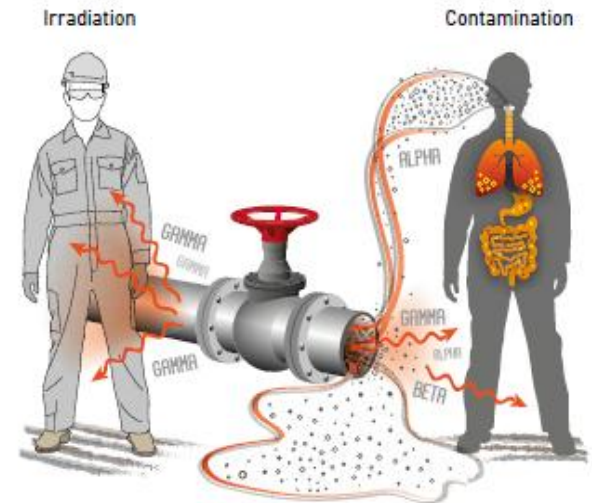


Figure 8: Exposure to NORM from internal and external sources



Source: SCK•CEN Barometer 2013, Turcanu C. & Perko T.

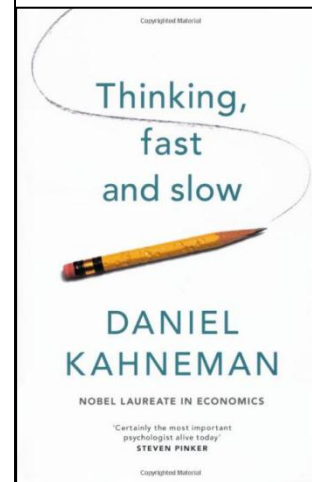
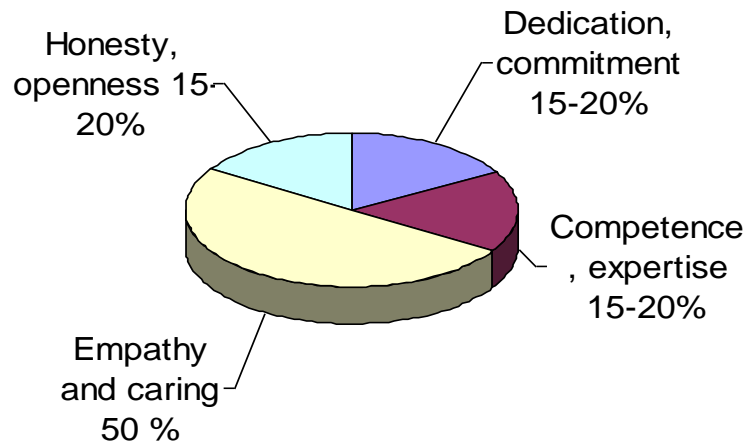
Source picture:  
International Association of Oil & Gas Producers, 2016

# Social psychology behind NORM issues

Human behaviour is primarily driven by perceptions and not by facts. (Renn 2008).

Risk perception is biased by:  
(Mis)interpretations  
Past experiences  
Intuition  
Emotions  
Personal interest  
Existing wide spread images  
Access to information  
Credibility  
Trust  
...

What influences peoples trust



# Social psychology behind NORM issues

is primarily driven by  
by facts. (Renn 2008).

Stakeholder engagement process:

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- Stimulates systematic information processing – long term solutions.
- Develops ownership of solutions.

Empathy  
and caring  
50 %

Thinking,  
fast  
and slow



DANIEL  
KAHNEMAN

NOBEL LAUREATE IN ECONOMICS

"Certainly the most important  
psychologist alive today"  
STEVEN PINKER

Copyrighted Material

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# Wrong thoughts about communication

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- Communication is less important than education.
- Not enough time and resources for a risk communication program.
- Telling the public about a risk will unnecessarily alarm people.
- We shouldn't go to the public until we have solutions to the problem.
- These issues are too difficult for the public to understand.
- Technical decisions should be left in the hands of technical people.
- Uncertainties should not be communicated.

# Recommendations related to communication and stakeholder involvement in NORM topics

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- Participate in networks with active, empowered citizen communicators
- Establish “Science Media Centres” as centralized scientific data services for journalists
- Translate, simplify and clarify content; use familiar reference points
- Create / support online banks of information that journalists and other stakeholders can consult
- Adapt institutional communication culture to the actual communication landscape
- Admit scientific uncertainties and provide balanced information
- Engage with stakeholders early
- Know your public's needs and perceptions and how they receive and understand information



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