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D9.68 Stakeholder panel results - Belgium

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Abstract

Within the framework of the WP3 of the TERRITORIES project, task 3.3, a stakeholder panel meeting was organised by SCK•CEN in Belgium to discuss site remediation aspects connected to the NORM (Naturally Occurring Radioactive Materials) industry. Prior to the meeting, a questionnaire was distributed in order to identify stakeholders' visions, concerns and preferences regarding stakeholder participation in decision-processes on environmental remediation of NORM sites.

The panel meeting took place on the 18th of March 2019 and was attended by representatives of the national and regional authorities, the industry, the Belgian Nuclear Research Centre and soil remediation experts. It consisted of two parts, focusing on: i) societal uncertainties in the remediation of NORM contaminations and ii) the experience with the use of multi-criteria decision analysis for Belgian NORM sites.

This report summarises the findings from the first part of the panel meeting. Drawing on results from media analysis and interviews with local residents, the questions discussed in the first part were: Is it possible to reduce social uncertainties and if so, in which way? Can stakeholder participation be an added value for reducing uncertainties?

The insights on the practical application of MCDA obtained in the second part of the panel will inform the TERRITORIES task 3.4 concerning the socio-economic analysis for environmental remediation (D9.70).

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1 Introduction

The TERRITORIES project targets an integrated and graded management of contaminated territories characterised by long-lasting environmental radioactivity, filling in the needs emerged after the recent post-Fukushima experience and the publication of International and European Basic Safety Standards. This project will interlink research in sciences supporting radiation protection (such as radioecology, human or ecological dose and risk assessments, social sciences and humanities, etc.), providing methodological guidance, supported by relevant case studies. The overall outcome will be an umbrella framework, that will constitute the basis to produce novel guidance documents for dose assessment, risk management, and remediation of NORM and radioactively contaminated sites as the consequence of an accident, with due consideration of uncertainties and stakeholder involvement in the decision making process.

WP3 of the TERRITORIES project focuses on “Stakeholder engagement for a better management of uncertainty in risk assessment and decision-making processes including remediation strategies”. It has as an overall objective to analyse the decision-making processes in long-lasting radiological exposure situations, taking into account all components of risk assessment, with two key points: management of uncertainties and stakeholder engagement.

Task 3.3 aims at anticipating stakeholder concerns and needs related to long-lasting exposure situations, by confronting them with the possible decisions – accounting for the uncertainties – that could be taken according to existing local, national and international decision-making processes (DMPs), doctrines and frameworks for NORM contamination and post-accident situations. Pluralistic evaluation processes like topical stakeholder panels, workshops and think thank groups will be used, with focus on the most uncertain decision factors and criteria which could impact the people’s living conditions in affected areas. To achieve this a stakeholder panel was organised in Belgium.

As an outcome, Task 3.3 aims to enhance and improve decision making processes through dialogue between technical experts and other stakeholders. This is achieved by i) the organisation of a stakeholder panel, ii) providing recommendations for future decision making processes for NORM contamination.

This report provides a detailed overview of the case study discussed in Belgium, the issues discussed during the stakeholder panel, recommendations and lessons learned, and strengths, weaknesses, opportunities and threats for future decision making processes in NORM contamination situations.

2 Stakeholder panel on case-study Belgian NORM site solid phase

2.1 Introduction

A stakeholder panel was organized in Belgium on May 18, 2019 at the premises of SCK•CEN in Brussels. The focus of the stakeholder panel was placed upon the participation of stakeholders in decision-making processes concerning NORM-related long-lasting exposure situations. Specifically, the stakeholder panel focused on factors and criteria that are most under influence of uncertainty and that possibly have a significant impact on the quality of life of people living in these long-lasting exposure situations. The stakeholder panel within the TERRITORIES project is one of three panels, with the other two held in France and Spain.

The Belgian stakeholder panel encompassed as a case study a site directly related to the NORM-industry (i.e. industry that uses raw materials that contain naturally occurring radionuclides and wherein elevated levels of these naturally occurring radionuclides can be present in the residues of the industrial process of these materials). The stakeholder panel entailed a discussion on stakeholder participation in the decision-making

processes related to this case, specifically concerning the remediation of NORM-contamination and the envisioned end-state of the site.

Within the framework of the TERRITORIES project (WP3, Task 3.2 (Guillevic et al., 2018) a case-study was conducted on this site concerning stakeholder participation and the identification of uncertainties through a multi-method approach. This included a document review, a media-analysis, interviews with local people living in this specific site, and a survey with expert. The insights gained from this case study were used as a basis for the stakeholder panel. The results of the document analysis, the media analysis and the interviews have been previously published (Guillevic et al., 2018). The results of the expert survey can be found in this report (3 Uncertainties as identified from expert surveys), as well as a summarizing overview of the lay- and expert uncertainties in this specific case study.

2.2 Uncertainties identified in relation the Belgian NORM site

i. Uncertainties as identified from document review

The document review revealed several societal uncertainties related to NORM-contamination (Guillevic et al., 2018). In the following section an overview is given of the societal-uncertainties as identified through document analysis.

The societal uncertainties as identified in Guillevic et al. (2018) resulted from a review of European legislation and guidelines relevant to existing exposure situations and the international recommendations and standards underpinning this legislation. Key issues were identified which might result in societal uncertainties.

Several **causes** of uncertainties were identified resulting from specific issues with ***national policies and legal and regulatory frameworks***. These include, among others, **a lack of, or incomplete, or ineffective** national policy or legal and regulatory framework, specific regulations such as for industry, non-independence of the regulatory authority, synergies among regulators and complicated administrative procedures at the national level, uniform standards for managing NORM waste. These issues are prevalent across many EU Member States.

Furthermore, several **causes** for societal uncertainties result from ***technological and technical decisions*** made on NORM remediation and decisions about remediation technology, as well as the enabling infrastructure. These include, among others, issues with site characterization, environmental impact assessments, estimation of exposure doses to population, doses for remediation workers, choice of remediation strategy based on the site characterization or cost-benefit analysis, environmental and dose impact assessment, characterization of background levels for natural radionuclides, timing of remediation, accessibility to appropriate technology, infrastructure to implement technology, constraints due to workplace environment, remediation goals, and the long-term effectiveness of remediation strategies.

Guillevic et al. (2018) identified societal uncertainties related to the following key issues: historical knowledge, residues and waste management, financial decisions, socio-ethical decisions and risk perception, communication, and remediation.

Table 1 Uncertainties as identified from document analysis (Guillevic et al., 2018)

Key issues						
Uncertainties	Historical knowledge	Residues and waste management	Financial decisions	Socio-ethical decisions and risk perception	Communication	Remediation
	Unknown location of contamination	Uncertainties due to waste categorization	Costs of the remediation	Uncertainties related to different risk perceptions of contaminated or remediated sites	Unsuitable objectives of communication plans about remediation program	Uncertainties caused by limited technical knowledge of general population and other stakeholders
	Unknown physical condition	Identification of appropriate waste stream management	Who will pay costs of remediation	Ethical uncertainties on the balance between the principle of individual dose limitation and to positive benefits for the greatest number of people	Understanding of constraints such as control/restrictions on use	Uncertainties due to groups and individuals opposed to the programme
	Unknown exposures	Capacity of disposal/repository	Shared ownership of pollution	Ethical uncertainties related to cost/benefit analysis	None or poor communication about the contaminant	Uncertainties related to different demands and concerns between stakeholders
	Remediation of cultural heritage sites	Uncertainties due to classification of material	Assignment of responsibility for remediation	The meaning of end state, clean-up, remediation	Scientific uncertainties related to low doses and lack of communication about limitation of knowledge	Uncertainties related to a limited budget to cover stakeholders' demands

	Lack of records	Uncertainties resulting from double standards in EU regulations (dose rates)	Availability of funds	The socio-ethical justification of using specific models for radiological assessments	Use of ambiguous semantics in communication	Uncertainties triggered by a negative experience with remediation programmes
			Polluter doesn't exist anymore	Health impact of remediation works	Style of communication	Uncertainties related to a lack of trust between stakeholders
			Long-term stewardship	Protection of vulnerable societal groups		Uncertainties resulting from little recognition of the links between environmental, economic, and social concerns
			The radiological risk analyses in line with short and long-term costs	Lack of consensus on the choice of a remediation		Uncertainties triggered by poor stakeholder involvement
			Remediation impact on the socio-economic development	Lack of radiation safety culture and industrial hygiene		
				Risk and remediation prioritizations		
				Transparent use of financial resources.		

ii. Uncertainties as identified from media analysis

The media analysis revealed several societal uncertainties related to NORM-contamination (Guillevic et al., 2018). In the following section an overview is given of the societal uncertainties as identified from the media analysis:

Table 2 Uncertainties as identified from media analysis (Guillevic et al., 2018)

Key issues										
	Waste management	Financial	Public and environmental health	Remediation management	Lack of trust in authorities	Communication issues	Future Concerns	Contradictions on messages	Ambiguity about the problem	Reputation of the polluter
Uncertainties	Long term disposal	Total financial cost	Fear for a decrease in the quality of public and environmental health	Remediation strategy	People believe that the government doesn't take this problem seriously	Poor communication between scientists, politicians and the local population	Prosperity of municipalities	Everything was fine and then one day people were told the ground is contaminated	Ambiguity about waste composition	The industry fears a loss of its reputation
	Effectiveness of long-term disposal	Financial planning	Impact on social and cultural life	Area for remediation	The government is unwilling to take action	Communication was not always clear and delayed	Future of industry	It is no problem to walk nearby the river, yet radioactivity is measured	Ambiguity about progression	
	Amount, redistribution and destination of waste	Source of finance	Impact on surroundings	Effectiveness of remediation	Only the regional level takes actions but the federal government didn't do anything	Poor communication between the government and the municipalities	Farmers wonder about their grounds	The industry has to remediate, although private grounds perhaps not	Ambiguity about guidelines	

	Regulation concerning storage	Communication on finance	Risks of the dangerous substances getting into the food chain	Transparency on remediation	Lack of trust in the industry as an authority	Contradictions in opinions of municipalities, local populations and industries	Will polluted zones remain polluted for a long time	No real danger, yet the grounds have to be remediated	Ambiguity in difference between laws and standards	
	Facility dismantlement or temporarily cleaned	Disagreement on responsibility	Purpose of the ground	Who will remediate private grounds?	Lack of transparency	Denial of contamination and historical pollution	Will the living quality diminish	There is said to be no real danger, although people shouldn't live in the areas.	Ambiguity in knowledge from politicians	
	Categorization of multiple forms of radioactive waste	Fear for the loss of jobs for a lot of people who work in the industries	Living quality	Cultural heritage sites		Contradiction in the opinion of the industry and political parties		The contamination problem is said to be a surprise, although it is historical pollution.	Ambiguity on sufficiency of information	
		Value of houses and grounds	Impact of radioactivity and the local industry on public health	Nuisance stemming from remediation		Contradiction in who will have to pay		The soil can still be used, although the ground water cannot	Need for new research	
			What to do when a worker becomes sick	Historical or current contamination				There is no information whether precautions	If the industry don't recognize the problem,	

								should be taken or not.	it is hard to point out the risks	
		Specific risk for children						The industry says that the salt losses are like seawater, yet political parties state the opposite.		
		People worry about getting cancer						Contradiction in what the government says and what has to be done.		
								There is radiation, but when new houses are built, there is said to be no problem or danger.		
								The industry says that there is no problem, yet effects have already been detected in fish and vegetation		

iii. Uncertainties as identified from interviews with local population

Interview analysis revealed several societal uncertainties related to NORM-contamination. In the following section an overview is given of the societal-uncertainties as identified from the interviews;

Table 3 Uncertainties as identified from interviews with local population

Key issues				
Uncertainties	Behaviour	Knowledge	Time	
			Noticeable pollution	Pollution not noticeable
	People do not tend to perceive their direct environment (i.e. house and garden) as contaminated due to the historical contamination when no reference is made to this contamination	Little to no knowledge of what the term NORM means	When pollution is noticeable, the intensity of the concern is greater Knowledge on the source of the odour pollution, and the actor responsible for it. Besides odour pollution, different types of pollution were noticed 30 years ago and described in detail	When pollution cannot be perceived through the senses (smell, vision, etc), the intensity of the concerns is less than when pollution is noticeably present
	People perceive home-grown vegetables as cheaper than those available for purchase and they are perceived <i>in general</i> as healthier.	Experienced pollution resulting from the industrial process; very little to no knowledge on what type of pollution is/was present in their area.	Uncertainty was experienced by those people that were/are economically dependent on the industry	Trust in those responsible is not absolute and can lead to uncertainty
	Uncertainty about whether home-grown vegetables are healthier than those available for purchase Uncertainty on the cause of the pollution being either [air pollution], [historical pollution], or [other]".	Uncertainty concerning the exact areas of remediation Uncertainty exists concerning the timing of the remediation	Lack of trust in the government and the industry. People were uncertain about which actors could be trusted or whether any of the involved actors could be trusted at all	Distrust in responsible actors and current measures resulting from perceived misinformation or a lack of transparency
	Uncertainties related to the 'hope' that in case remediation is necessary, it will be done			

3 Uncertainties as identified from expert surveys

Interview analysis revealed several societal uncertainties related to NORM-contamination. In the following section an overview is given of the societal-uncertainties as identified from expert surveys:

Table 4 Uncertainties as identified from expert surveys

Key issues			
Uncertainties	Technical	Stakeholder participation	Societal uncertainties
	Uncertainty about how to move waste from multiple disposal sites to one repository	Uncertainty about how to deal with opposing or conflicting needs and desires	Uncertainties about land usage after remediation
	Uncertainty due to ground characteristics		Uncertainties on how to deal with unfulfilled expectations
			Uncertainties resulting from a difference in expectations and scientific need for remediation
			Uncertainty resulting from concerns on financial responsibilities
			Uncertainty about how to communicate on the difference between a cost-benefit approach and a 100% removal of contamination

3.1 Stakeholder panel

i. Logistics

The stakeholder panel was organized on March 18, 2019 in the offices of SCK•CEN in Brussels. An invitation letter (ANNEX I) was sent via email to identified key stakeholders in the Belgian case study. This invitation letter was accompanied by a brief introduction to the case study. Furthermore, the invitation letter was accompanied by an expert survey (ANNEX II). Invited participants were asked to complete this survey regardless of their availability to participate to the panel meeting. As an introduction to the panel, two introduction sessions were organized; one by OVAM on standard procedures in soil remediation and one by FANC on the Belgian NORM-site. These two sessions were placed on the agenda (ANNEX III). Additionally, the results of the expert survey along with the results of the aforementioned research (interviews with local population, media analysis) were presented during the panel meeting. The stakeholder that participated to the panel were experts in their respective field: federal and Flemish government representative, industry representative, consultancy firms, and members of a research center.

ii. Participants

The following stakeholders participated to the panel discussion.

Table 5 Participants in stakeholder panel

Organisation	Type of organisation	Individual
Federal Agency for Nuclear Control (FANC)	Government (federal)	Boris Dehandschutter
Tessenderlo Group	Industry	Jules Houtmeyers
		Tom Claes
OVAM	Government (Flemish)	Caroline Van Gool
		Nick Bruneel (Cancelled)
RSK Group	Environmental expert	Alex Extors
Geolab	Soil expert	Annick Vuye
SCK-CEN	Research Centre	Nathalie Vanhoudt
		Lieve Sweeck
		Catrinel Turcanu
		Bieke Abelshausen (Cancelled)
		Hans Vanmarcke

iii. Background information

Background information on the Belgian Case-study site was provided to the participants of the panel beforehand. The information provided to the participants is depicted below:

The site of interest is subject to contamination resulting from industrial activities with naturally occurring radioactive material (NORM) of the Chemical company Tessenderlo Group. The contamination is mixed contamination (chemical and radioactive) and requires therefore a decision-making process concerning remediation strategies that takes into account this specific mix of contaminants. The 'Kepkensberg' site is located in the province of Limburg and consists of three areas:

- The **CaF₂ sludge heap** has a surface of approximately 26.3 ha. From a geographical point of view, the site is located in the 'Southern Kemps' and the embranchments of the 'Hageland'. The sludge heap is built against the southern side of a typical northeast-southwest orientated

- ridge ('Diestiaan hill') of the 'Hageland' called the 'Kepkensberg'. After industrial activities have ended and remediation measures have been implemented, the site will be classified as 'natural reserve'.
- The **wastewater basin** is on its eastern side adjacent to the sludge heap and is located in the valley of two local rivers. It has a surface of approximately 10 ha. After industrial activities have ended and remediation measures have been implemented, the site will be classified as 'natural reserve'.
 - The area '**Spoorwegstraat**' is located south-west of the sludge heap and has a surface of a few ha. The area will be classified as 'natural reserve' after remediation measures are taken.

Additionally, remediation is ongoing off the banks of the rivers Laak and Winterbeek. "The main factor justifying the remediation is the chemical component – notably cadmium – but the radiological component has also to be taken into account in the remediation project." (Blommaert en Mannaerts, 2011). The disposal of the clean-up materials from the river banks will be done at the therefore designated site 'Kepkensberg'.

The site is located approximately 1.5 km north-east of the centre of a small town (about 8000 inhabitants). The land adjacent to the site is classified as 'natural reserve' or 'agricultural land'. The area is drained by two small rivers that belong to the Scheldt basin. In addition, there is a canal 2 km north-east of the site. There is a swampy zone adjacent to the area 'Spoorwegstraat' and this zone is sensitive to flooding. Also the area south-east of the sludge heap is sensitive to flooding.



Figure 1 – Aerial view of the site

iv. Discussion

The discussion held during the stakeholder panel had the aim of answering the following questions:

- Is it possible to reduce societal uncertainties?
- In what manner can societal uncertainties be reduced?
- Can stakeholder participation be an added value in the reduction of uncertainties?
 - In what manner (not)?
- Currently, stakeholders are mainly experts, can this be opened up to others?

(1) Trust a key factor for communication and participation

The stakeholder panel started with the discussion on the inclusion of the population in the decision-making process. Several stakeholders indicate that they do not, on a daily basis, directly cooperate closely with the local population. Information is passed on to the local municipality and this municipality is responsible for the communication with the local population. Stakeholders indicate that they provided to these municipalities the relevant information needed. It is recognized by the stakeholders in the panel that local municipalities (Mayors and Environmental officials) are an important aspect in cooperation with the local population.

It is noted by the stakeholder panel that the public needs to have trust in what an expert does and this trust is something you need to earn by being trustworthy and pass on important values such as transparency. In the case-study site, the historical pollution was a result of the previous legal framework allowing these discharges; this situation did however need to be remediated. As the responsible industry is remediating the site, this is considered a positive evolution. Most likely this will ensure trust with the local population. Cooperation with the local population, stakeholders indicate, might however be more difficult in cases where something new is planned, compared to when something needs to be rectified from the past. An example of underground nuclear waste disposal is presented as a possible complex situation wherein local population might be reluctant and cooperation might be more challenging.

Another specific element to the case-study site, is the employment of many people in the vicinity by the involved industry. This resulted in people having more knowledge of the situation and therefore more expertise and trust.

(2) Advice for future remediation projects

When stakeholders were asked what their advice would be to someone who is starting a new soil remediation project, they indicated that an important factor is building trust. It is reported as very important that stakeholders have trust in what is communicated. An example given is the organization of open-days by Tessengerlo Group to give the opportunity to employees to invite their friends and family to visit the company. Furthermore, it is indicated that by giving employees the right information on environmental aspects, they can share this in leisure time in a correct manner with their family and friends.

Another example is the “info-market” organized by the neighborhood in relation to the ‘Winterbeek-project’. During this market, information was not provided in group-format, but everyone could ask personal advice making the information discussed understandable (“very low-threshold”) and actionable.

A note is however made, that communication needs to be adapted to the remediation that is ongoing. The example is given that communication in the starting-phase, when not everything is known is different from communication in a later phase when a lot more information is available.

Open and regular communication is therefore considered as important and is deemed to contribute to changing a rather negative atmosphere into a more positive one.

Actual participation of the local population to the decision-making process is considered as possible by the stakeholders, but is rather limited.

(3) Stakeholder participation in decision-making – End state

Stakeholders participating in the panel discussion indicate that participation and communication are two different things. Participation entails contributing to the decision-making process. Asking input on how activities need be carried out should be left up to experts. Moreover, it is mentioned by the participants that participation is a process mainly involving the government as the vision of the public is often limited and interests are rather personal.

Projects can however be modified based on reactions from the public. Input from the public is, according to the panel stakeholders, definitely taken into account, even though it is not always considered extensive and personal. Participation, as indicated by the stakeholders, can be necessary when the project experiences difficulties. This does however entail that local residents might have expectations that cannot be fulfilled; f.e. complete remediation is expected but not feasible.

Furthermore, stakeholders in the panel indicate that people who join in public meetings are open to be informed. They are not necessarily positive but their willingness to join allows room for discussion, questions can be answered and solutions can be found. For this reason, participation in public meetings is highly appreciated by the panel stakeholders. Difficulties mainly arise when people are not willing to join in. Close cooperation with municipalities is important to attract people to public meetings, since people can, obviously, not be forced to attend.

Concerning the 'Kepkensberg' site, the end-state is already determined in the Flemish regional plans. Possible limitation might however be set on usage concerning the 'Winterbeek'; such limitations will be included in the soil remediation certificates of future land owners.

4 Conclusions

From the panel discussion, it can be concluded that the inclusion of local populations in decision making processes is done via the means of communication rather than direct participation in the decision-making processes. The main reasons provided for this are that input for decisions on the remediation strategy are best made by experts, since local residents might have unrealistic expectations that could vary significantly on an individual basis. Input for decision-making is however requested in public meetings, and project strategies might be adapted when this is considered beneficial and feasible. Furthermore, governments (local municipalities) as representatives are included in the decision making process.

Specifically, communication is considered as a vital aspect concerning local population. The provision of actionable information, tailored-made and low-threshold advice are considered as excellent examples of communication with the public. These examples can greatly benefit the relation with the local population, answer questions and provide solutions for these residents. An important aspect for effective communication is trust. Trust is considered as something that needs to be earned by being for example transparent. Communication on a regular basis, adapted to the current remediation phase, and thereby the information that is available are important aspects. These aspects of communication are considered valuable good-practices that can be recommended to future remediation projects.

5 References

Guillevic, J., Croüail, P., Maître, M., Schneider, T., Baudé, S., Hériard Dubreuil, G., Perko, T. et al (2018). D 9.65 – Decision processes/pathways TERRITORIES: Synthesis report of CONCERT sub-subtask 9.3.3.1. http://www.concert-h2020.eu/Document.ashx?dt=web&file=/Lists/Deliverables/Attachments/55/D9-65_TERRITORIES_Decision_processes_pathways_final_30012018_approved.pdf&guid=01b5ac77-b2ec-4cda-9c98-917dba396f0f

Blommaert, W. & Mannaerts K. 2011. Application of an environmental remediation methodology: theory vs practice. Reflection and two Belgian case studies. Proceedings of the 14th international conference on Environmental Remediation and Radioactive Waste management (ICEM2011), pp. 11.

6 Annex I Stakeholder panel invitation letter



Beste,

Met dit schrijven contacteren wij u om te informeren naar uw interesse in een deelname aan een stakeholder panel in het kader van het Europese project **TERRITORIES (To Enhance unceRtainties Reducation and stakholders Involvement TOWARDS integrated and graded Risk management of humans and wildlife In long-lasting radiological Exposure Situations)**. De focus van dit project ligt op de participatie van stakeholders aan beslissingsprocessen betreffende langdurige blootstelling situaties. Specifiek spitst het stakeholder panel zich op die factoren en criteria die het meest onderhevig zijn aan onzekerheden en die een significante impact kunnen hebben op de levenskwaliteit van personen in langdurige blootstelling situaties in verschillende landen waaronder België, Frankrijk en Spanje.

Het stakeholder panel in België zal specifiek een site behandelen die direct gerelateerd is aan NORM-industrie. (d.w.z. industrie die ruwe materialen gebruikt die natuurlijk voorkomend radioactief materiaal bevatten en waarin verhoogde waarden van natuurlijk voorkomende radionucliden kunnen aanwezig zijn in residuen van het verwerkingsproces van deze materialen). Het stakeholder panel omvat (1) een algemene discussie over stakeholder participatie in bestaande beslissingsprocessen omtrent de sanering van NORM-vervuiling en de vooropgestelde nabestemming, en (2) een discussie over het gebruik van beslissingsanalyses met multi-criteria (MCDA) en de aanbevelingen die hieromtrent gemaakt kunnen worden voor toekomstige gebruik van deze analysemethode.

Ter voorbereiding van dit panel en als onderdeel van een bredere studie in de voorgenoemde landen, willen we ook graag uw deelname vragen aan een korte vragenlijst. Dit om uw visie, bezorgdheden en voorkeuren te identificeren betreffende stakeholder participatie in beslissingsprocessen omtrent de sanering van NORM-vervuiling in de verschillende landen (vragenlijst toegevoegd in bijlage). We willen u dan ook graag vragen om deze vragenlijst in te vullen en te e-mailen naar @sckcen.be voor 08 Maart 2019.

Indien u interesse heeft om deel te nemen aan het panel, gelieve ons dan te informeren via wederkerende e-mail. Het panel wordt georganiseerd op 18 Maart 2019 in de hoofdzetel van SCK•CEN in Brussel, Herman-Debrouxlaan 40, 1160 Brussel. Verdere details zullen volgen na bevestiging van deelname. Indien u nog vragen heeft, horen wij deze graag.

Wij kijken alvast uit naar uw antwoord en hopen op uw deelname.

Met vriendelijke groeten,

Het SCK•CEN TERRITORIES team

7 Annex II Stakeholder panel expert survey letter

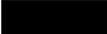
Beste,

In het kader van het Europese project TERRITORIES (**T**o **E**nhance **u**ncertainty **R**eduction and **I**nvolvement **T**owards integrated and graded **R**isk management of humans and wildlife **I**n long-lasting radiological **E**xposure **S**ituations) willen wij graag uw medewerking vragen. Ter voorbereiding van een stakeholder panel over beslissingsprocessen betreffende langdurige blootstellingsituaties en meer specifiek betreffende de inclusie van stakeholders in het beslissingsproces omtrent sanering, willen we u vragen een korte vragenlijst in te vullen.

De vragenlijst zal polsen naar uw persoonlijke en/of uw organisaties' betrokkenheid in het beslissingsproces betreffende de sanering van NORM vervuiling in een Belgische gemeente. Verder behandelt de vragenlijst uw ervaring met de betrokkenheid van andere stakeholders in het beslissingsproces, de methode die gebruikt werd om tot een beslissing te komen, de criteria en factoren die hierin aan bod kwamen en eventuele onzekerheden (wetenschappelijke of sociale, financiële, perceptie van omwonende...) die de beslissing beïnvloedden.

De vragenlijst zal ongeveer 30 minuten in beslag nemen. Indien u dit wenst, kan anonimiteit verzekerd worden. In geval dit gewenst is, kan u dit aanduiden in de vragenlijst en de vragen betreffende uw persoon en uw organisatie openlaten. Indien u enkel anonimiteit wenst van uw persoon en niet van uw organisatie, kan u ook dit aanduiden in de vragenlijst.

Alvast bedankt voor uw medewerking.

Indien er verdere vragen en/of opmerkingen zijn, kan u steeds contact opnemen met het SCK•CEN-TERRITORIES team via  [@sckcen.be](mailto: @sckcen.be)

Met vriendelijke groeten,

SCK•CEN-TERRITORIES team

Gelieve hieronder aan te duiden welke vorm van anonimiteit wenselijk is:

- Ik wens volledig anoniem (persoonsgegevens en organisatiegegevens) deel te nemen aan de vragenlijst
- Ik wens gedeeltelijk anoniem (persoonsgegevens) deel te nemen aan de vragenlijst
- Ik wens gedeeltelijk anoniem (organisatiegegevens) deel te nemen aan de vragenlijst
- Anonimiteit moet niet gegarandeerd worden

Vragenlijst TERRITORIES project

De vragenlijst (en het stakeholderpanel) behandelt de volgende site in België:

De betreffende site is onderhevig aan vervuiling resulterend van de industriële activiteit met natuurlijk radioactieve bronnen (NORM) van het chemiebedrijf Tessenderlo Group (Blommaert en Mannaerts, 2011). De vervuiling is een gemengde vervuiling (chemisch en radioactief) en vereist dus een beslissingsproces betreffende sanering- en remediëringsstrategieën die dit soort vervuiling in acht neemt. De site 'Kepkensberg' is gelokaliseerd in de provincie Limburg en bestaat uit drie gebieden.

- Het eerste gebied betreft een CaF₂ slibbekken met een oppervlakte van ongeveer 26.3 ha. Vanuit geografisch standpunt is de site gelokaliseerd in de 'Zuidelijke Kempen' en de uitlopers

van het 'Hageland'. Het slibbekken is geplaatst tegen de zuidelijke zijde van de noordoost-zuidwest georiënteerde heuvel (Diestiaan heuvel) van het 'Hageland', namelijk de 'Kepkensberg'.

- Het afvalwaterwachtbekken grenst met de oostelijke zijde aan het slibbekken en ligt in het dal van de Laak en de Kleine Beek. Het bassin heeft een oppervlakte van ongeveer 10 ha.
- Het gebied "spoorwegstraat" is gelokaliseerd ten zuidwesten van het slibbekken en heeft een oppervlakte van een paar hectaren.

De bestemming van bovenstaande gebieden is in de huidige situatie industriegebied. Na het beëindigen van de industriële activiteiten wordt de nabestemming natuurgebied.

Aanvullend is er een remediëringsproject van de oevers van de rivieren Laak en Winterbeek. "De voornaamste verantwoording voor deze remediëring is de chemische component, namelijk cadmium, maar de radiologische component moet ook in rekening gebracht worden in het remediëringsproject" (Blommaert en Mannaerts, 2011). De berging van het opgeruimde materiaal van de rivieroevers wordt geborgen op de hiervoor heringerichte 'Kepkensberg'.

De volledige site is gelokaliseerd ongeveer 1.5 km ten noordoosten van Tessenderlo. Het gebied aansluitend op de site is geclassificeerd als natuurgebied of landbouwgebied. De omgeving wordt afgewaterd via twee kleine rivieren die deel uitmaken van het Scheldebekken. Het Albertkanaal ligt 2 km ten noordoosten van de site. Er grenst een moerassige zone aan het gebied 'Spoorwegstraat' en deze zone is gevoelig voor overstromingen evenals een zone ten zuidoosten van het slibbekken.

Deel I: Beslissingsprocessen betreffende de sanering en remediëring én het vooropgestelde nabestemming

(1) Betrokkenheid in beslissingsprocessen betreffende de sanering en remediëring én het vooropgestelde nabestemming

(1a1) Indien van toepassing, welke rol had uw organisatie (en/of heeft uw organisatie nog steeds) in het beslissingsproces betreffende

- sanering en remediëring?
- de vooropgestelde nabestemming?

(1a2) Voor welk gebied (welke gebieden) is/was uw organisatie betrokken?

(1b1) Welke rol had u (en/of heeft u nog steeds) in het beslissingsproces betreffende:

- sanering en remediëring?
- de vooropgestelde nabestemming?

(1b2) Voor welk gebied (welke gebieden) was u betrokken?

(2) Stakeholder participatie in beslissingsprocessen betreffende de sanering en remediëring én het vooropgestelde nabestemming

(2a1) Welke stakeholders waren/zijn betrokken in het beslissingsproces en op welke manier waren/zijn zij betrokken betreffende:

- sanering en remediëring?
- de vooropgestelde nabestemming?

(2a2) Zijn/waren er stakeholders waarvan u vindt dat deze wel betrokken moeten/moesten zijn in het proces maar dit tot dusver niet zijn/waren betreffende:

- sanering en remediëring?
- de vooropgestelde nabestemming?

(2b) Heeft u overwegend uitdagingen of opportuniteiten ondervonden betreffende de betrokkenheid van verschillende stakeholders in het beslissingsproces betreffende:

- sanering en remediëring?
- de vooropgestelde nabestemming?

(3) Wetenschappelijke en sociale onzekerheden in beslissingsprocessen betreffende de sanering en remediëring én het vooropgestelde nabestemming

(3a1) Bent u geconfronteerd geweest met wetenschappelijke onzekerheden in het beslissingsproces betreffende:

- sanering en remediëring?
- de vooropgestelde nabestemming?

(3a2) Bent u geconfronteerd geweest met sociale onzekerheden (financiële onzekerheden, perceptie van omwonenden...) in het beslissingsproces betreffende:

- sanering en remediëring?
- de vooropgestelde nabestemming?

(3c1) Heeft u enige suggesties ter verbetering van het in rekening brengen van wetenschappelijk en/of sociale onzekerheden?

(3c2) Heeft u enige aanbevelingen aan anderen die in een gelijkaardig beslissingsproces betrokken zijn?

Deel II: Beslissingsprocessen betreffende sanering en remediëring

(4) Methode van het beslissingsproces betreffende sanering en remediëring

(4a1) Multi-criteria analyse werd gebruikt om een beslissing te nemen betreffende de remediëringstrategie voor de voorgenoemde site? *(Indien niet gekend, ga naar vraag 4b1)*
Welke aspecten van de methode vond/vindt u voornamelijk behulpzaam? En waarom?

(4a2) Welke aspecten van de methode vond/vindt u eerder uitdagend? En waarom?

(4b1) Welke criteria, in hoeverre u weet, worden/werden gebruikt in dit beslissingsproces?

(4b2) Welke van deze criteria vond/vindt u essentieel of overbodig? En waarom?

(4b3) Vond/vindt u dat bepaalde criteria ontbraken om de gepaste remediëringstrategie te bepalen? En waarom?

(4b4) Had/Heeft u enige suggesties ter verbetering van de methode en de criteria?

Bedankt voor uw medewerking!

8 Annex III Stakeholder panel agenda

TERRITORIES Stakeholder panel – agenda	
09.00u - 09.30u	Introductie in NORM-site – Boris Dehandschutter (FANC)
09.30u - 10.00u	Standaardprocedure bodemsanering (BATNEEC-principe) - Nick Bruneel (OVAM)
10.00u - 10.30u	Introductie in TERRITORIES en resultaten survey
10.30u - 10.45u	Koffie
10.45u - 11.45u	Stakeholder Panel - Onzekerheden
11.45u - 12.30u	Stakeholder Panel - MCDA
12.30u	Lunch (Broodjes)