

# Gérer l'indésirable sur long-terme: Déchets hautement radioactifs comme “expérimentation à ciel ouvert”.

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# *Connaissances produites mais d'où?*

« Situated and embodied knowledges  
[are] an argument against various  
forms of unlocatable, and so  
irresponsible, knowledge claims »  
(Haraway, 1988, p.583)



# Situated knowledge



2009-2010



May 13

Socio-Political Processes and Plan Management in Controversial Settings  
Applied to the Plan for Long-Term Management of Type B & C Waste

Summary Report

Responsible publisher: Catherine Fallon

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ULg-Spiral: C. Zwetkoff, C. Parotte, S. Paile

UA: A. Bergmans, K. Van Berendoncks

2011-2013

## Taming uncertainty: towards a new governance approach for nuclear waste management in Belgium

Céline Parotte & Pierre Delvenne

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### Abstract

We focus on the new governance practices in Belgian nuclear waste management (NWM) from its 'participatory turn' in the late 1990s. Rather than praising (or rejecting) participation versus expert analysis, we make use of a theoretical and analytical framework in which the relevant dynamics for the analysis are 'opening up' and 'closing down' technological appraisals and commitments. Even though NWM agencies often plead for an integrative approach between expert analysis and stakeholder participation, in practice both exercises are often kept separate. We address this separation and its consequences and we find that societal concerns remain subsumed in the technical options that have long been favoured by the Belgian agency. This article encourages scholars, waste managers, and decision-makers to scrutinise the moments and situations in which opening up would be desirable, and when, by contrast, it would be better to close down options in NWM.

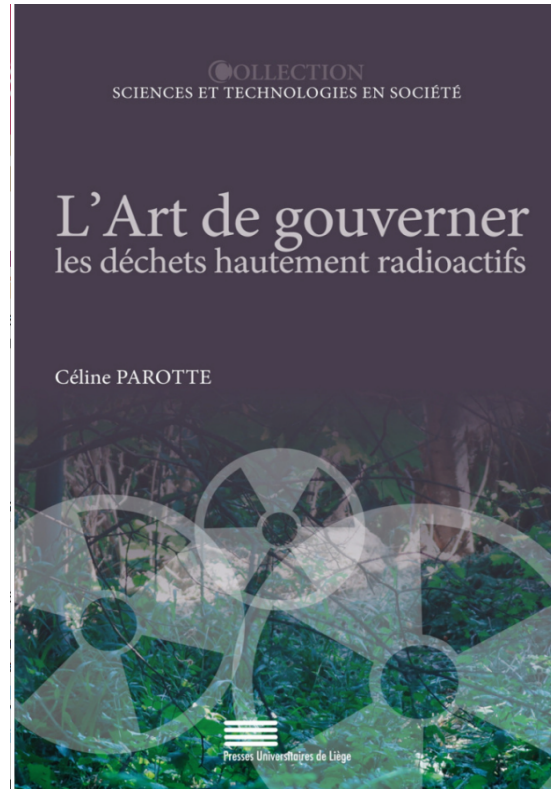
2015

# Situated knowledge

Modern2020 – « Engaging Local Stakeholders in RD&D of Monitoring Systems »  
WP5 Workshop Report, Antwerpen, 12-14th September 2018  
Axelle Meyermans, Céline Parotte, Pieter Cools, Göran Sundqvist & Anne Bergmans



2018



2018



November 2019  
The future for long-term management of high-level radioactive wastes and spent fuels in Belgium |  
Results of the first round of the Delphi inquiry  
Céline PAROTTE and Catherine FALLON, Spiral Research Center, RU Cité — Liège University



2019-2020 (février)

# Situated knowledge

Distanciation sociétale: mauvais timing pour la consultation publique belge sur le sort des déchets hautement radioactifs



Opinions (Débats/opinions)  
Contribution externe  
Publié le 07-04-2020 à 10h07 - Mis à jour le 07-04-2020 à 20h00

Une opinion de Céline Parotte, politologue à l'ULiège (Centre de recherches Spiral) et experte de la gestion des déchets radioactifs.



Opinie - Céline Parotte (<https://www.dewereldmorgen.be/custom-schrijver?g=Céline-Parotte>). (<https://www.dewereldmorgen.be/schrijver/opinie/>)  
Social distancing: slechte timing voor openbare raadpleging over toekomst van radioactief afval

Avril 2020

EUROPEAN JOINT PROGRAMME ON RADIOACTIVE WASTE MANAGEMENT - EURAD  
A step change in European collaboration towards safe radioactive waste management.



Fig 1. Representation of countries involved in the joint programming

## Vision

*A step change in European collaboration towards safe RWM, including disposal, through the development of a robust and sustained science, technology and knowledge management programme that supports timely implementation of RWM activities and serves to foster mutual understanding and trust between Joint Programme participants.*

Mai 2020 – ...

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## A nuclear real-world experiment: Exploring the experimental mindsets of radioactive waste management organisations in France, Belgium and Canada

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### ARTICLE INFO

**Keywords:**  
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Experimental mindset  
High-level radioactive wastes  
RWM organizations  
National radwaste policies  
Deep geological disposal

### ABSTRACT

Following the theoretical approach of Herbold (1995), Gross and Krohn (2005), and Van de Poel et al. (2017), this article argues that nuclear waste management is a real-world experiment. Based on this first assumption, we examine how radioactive waste management (RWM) organizations conceive or organize their experiments. Through three illustrative case studies in France, Belgium and Canada, we highlight how the RWM organizations obliged to participate in complex networks and unable to completely control the experimental process, adopt two different attitudes: an "open" or "closed" experimental mindset. We argue that these mindsets provide different answers to the questions: which main variables to focus on, how and who should design them, how to deal with conflicts and unexpected events, what are the justifications for participation and expert analysis, and what are the expected outputs and outcomes. The findings underline that although some RWM organizations have -at least since the participatory turn- had some 'open' mindset moments in some cases, they quickly revert to a closed mindset. We conclude by emphasizing the need for practitioners and scholars to further examine and evaluate the virtues of the open mindset when the experimenter assumes the program has a real-world experimental status. This status recognizes the limits of control over experimental conditions, allows for more substantial moral considerations when making technical choices before wider audiences and allows for collective sharing of responsibility, knowledge production and trade-offs over such a long-term and controversial program.

Août- Septembre 2020

# Plan

1. Gouverner en période d'incertitudes (Callon, Lascoumes, Barthe 2009)
2. Faire face aux critiques (Topçu 2013, Wynne 2007, Stirling 2006)
3. Organiser la participation (Johnson 2009, Barthe 2006, Parotte 2018a, Parotte 2020)
4. Intégrer les effets de la (non) participation des publics (Parotte 2018a, Meyermans et al. 2018)
5. What's next? Pistes de réflexion avec le concept d' "expérimentation à ciel ouvert" et d'attitude expérimentale ouverte (Parotte 2020)

# 1. Gouverner en période d'incertitudes



Onkalo - Posiva

Journée d'étude

## Le stockage géologique de déchets nucléaires



21 février 2019

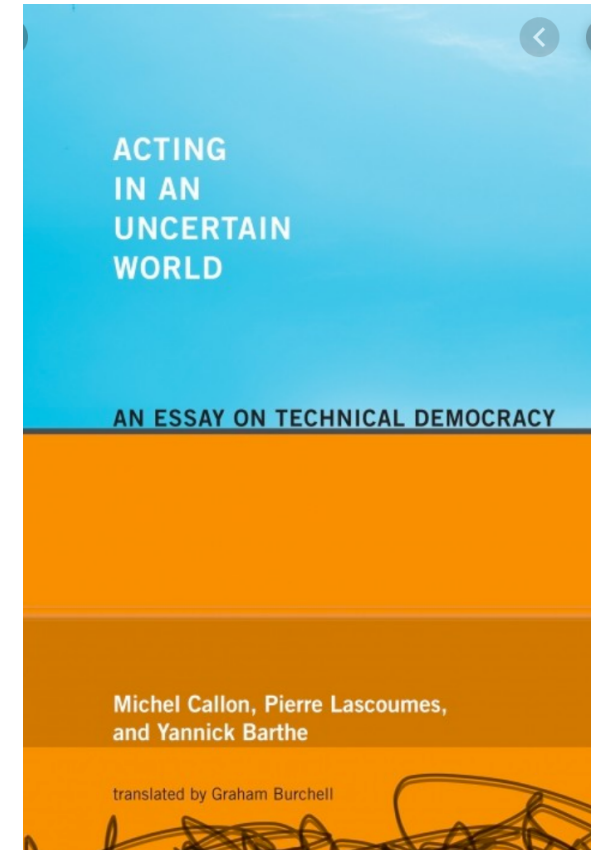
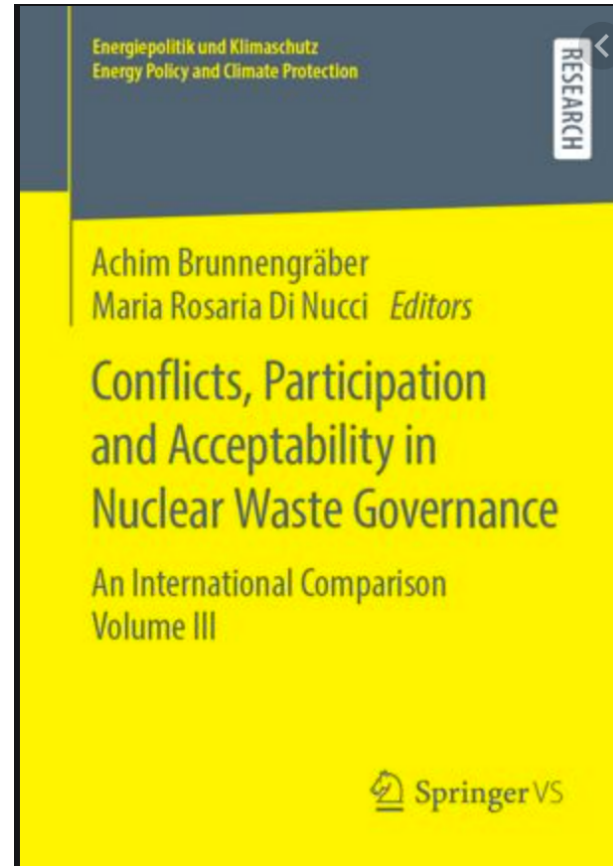
  
Société Belge de  
Géologie de l'Ingénieur et  
de Mécanique des Roches

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# 1. Gouverner en période d'incertitudes



Bure Neighborhood – Parotte 2018

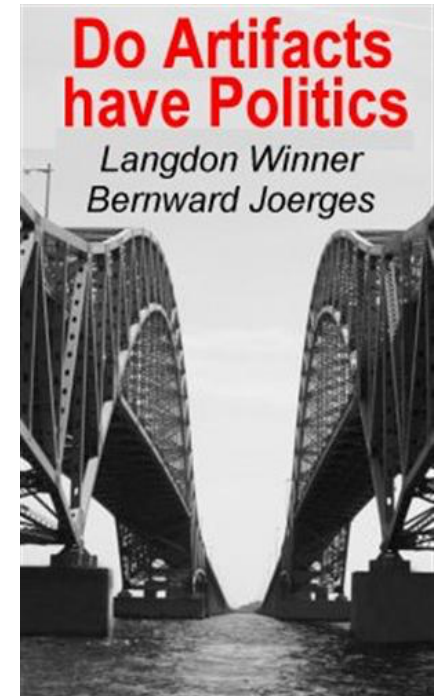




- Deal with it! Incertitudes et déchets nucléaires, business as usual?

« Dealing on daily basis with the *sociotechnical* unknown and unexpected » (Chalas, Gilbert and Vinck 2009).

« Technologies [such as nuclear power plant] are inherently political. (...) Man-made systems appear to require or to be strongly compatible with particular kinds of political relationships » (Winner, 1987, p.22).



# 1. Gouverner en période d'incertitudes



**INSOTEC – International  
Socio-Technical  
Challenges for  
Implementing Geological  
Disposal**



## 2. Faire face aux critiques: “uninvited” critics

 Belgium : oppositions locales (1988-1994)

 Canada : oppositions locales (1978-1981)

 France : oppositions locales (1987-1990)

« Uninvited public engagements usually arise in response to expert-led, expert-justified interventions and misrepresentations, exacerbated by further expert-led impositions of provocative and alienating definitions of what the issues and concerns are; thus also, by misrepresentation and lack of recognition of those publics themselves » (Wynne 2007, p. 107)

## 2. Faire face aux critiques: “invited” critics

« Invited public involvement nearly always imposes a frame which already implicitly imposes normative commitments ».  
(Wynne 2007,p.107)

### Le tournant participatif des gestionnaires



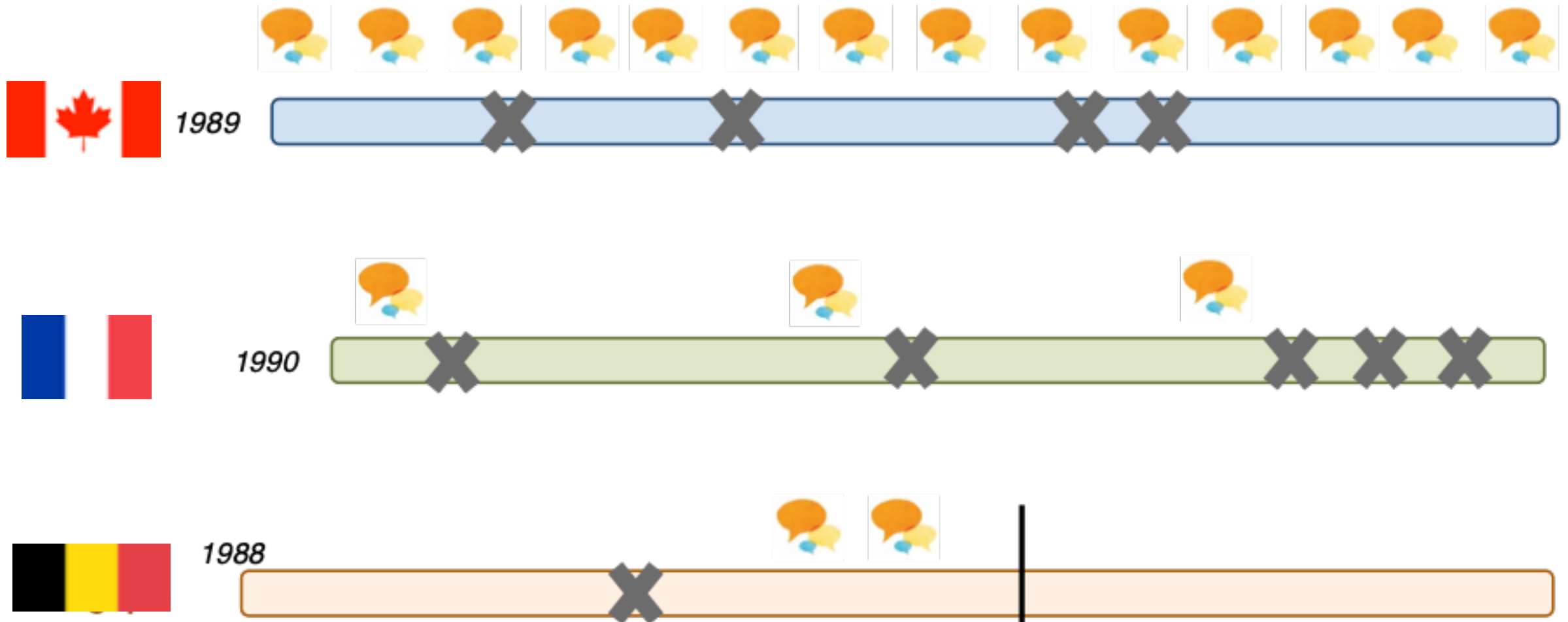
Source: FRD - Pictures of Belgian Consensus Conference (2009-2010)

- Deal with it! Des critiques multiples

Pourquoi participer ou faire participer? (Stirling 2006)

1. Justification **normative** « democratically the right thing to do »
2. Justification **instrumentale** « with particular purpose of creating public acceptance »
3. Justification **substantielle** « improving knowledge production »

### 3. Organiser la participation sur le sort des déchets



### 3. Organiser la participation sur le NWM



Que désirent les parties prenantes belges pour le futur? (Parotte, Fallon 2020)

1. **Être informé, recevoir des informations de qualité, être consulté est le strict minimum**
2. Plus de la moitié des répondants considèrent qu'une organisation sous forme de **partenariat**, où les décisions sont prises par le biais d'une négociation entre les autorités publiques et les parties prenantes, est pertinente.
3. Plusieurs participants soulignent que, selon eux, "**participer n'est pas la même chose que décider**" et insistent sur le rôle des autorités publiques dans la prise de décision

- Deal with it! Organization de la participation sur le NWM

**1. *Quand est-ce le moment d'associer les publics et les experts?***

**2. **Que devrait-être le rôle de la loi ?****

En Belgique, un grand nombre de répondants considèrent que la législation a un double rôle à jouer. La loi devrait préciser le niveau minimum de consultation pour l'avenir, mais l'initiative devrait être largement laissée à l'organe responsable des consultations (à l'image de ce qui se fait au Canada). La loi peut définir certaines des étapes clés du processus de consultation dans le cadre du processus global (reflétant ce qui est fait en France). (Parotte, Fallon 2020)



# 4. Les effets de la (non) participation des publics



**Table 1**

Comparison of the process of real-world experiment on high-level radioactive waste management in France, Canada and Belgium.

Process of real-world experiment	France	Canada	Belgium
Conceptualization phase	<b>Open mindset</b> of OPECST Invisible role of ANDRA	<b>Open mindset</b> of the powerful NWMO	<b>Open mindset</b> of the powerful ONDRAF/NIRAS
Selected outputs	<b>Reversibility principle</b> (supported by Government decision in 2006)	<b>Adaptive Phase Management principle</b> (supported by Government decision in 2007)	/(No government decision)
Operationalization phase	<b>Closed</b> mindset of powerful NWMO. (supported by policy framework that strictly <b>constrains experimenter's roles and practices</b> )	<b>Open mindset</b> of the powerful NWMO (supported by policy framework that strictly <b>constrains experimenter on HLRW principles</b> )	<b>Closed mindset</b> of the powerless NWMO (with an unchanged policy framework)
Siting phase	Host territory ( <b>one preselected site, Bure</b> )	Host territories ( <b>two potential volunteer sites</b> )	Host territories: ( <b>none</b> )
Audiences' reactions	Strong local opposition from concerned audiences	Local Support/Disinterest from potentially concerned audiences	Disinterest from potentially concerned audiences

Parotte, 2020, p.8

- Deal with it! Les effets de la (non) participation des publics
  1. Comment identifier les (futures) parties prenantes ? Comment mobiliser les publics inactifs/désintéressés ?
  2. Dans quelle mesure ces résultats influencent-ils *réellement* la conception du programme des gestionnaires à long terme des déchets?

# 5. What's next? Pistes de réflexion

**Première étape:**  
**Assumer ce programme comme une**  
**“expérimentation à ciel ouvert”**



## 5. What's next? Pistes de réflexion

### Seconde étape:

**Adopter** une attitude  
experimentale **ouverte**

« If all [actors] embrace the uncertainties inherent in the HLRW program, their mindsets fundamentally changes the way in which these uncertainties are managed and communicated » (Parotte, 2020, p.7)

- Attitude experimentation ouverte? La difficile mise en oeuvre
  1. Lutte contre le **path dependency** « for decades, a closed mindset has been the norm for some RWM »
  2. **Partage difficile de pouvoir** sur la production de connaissances « It means partially recognizing that the final version of the envisioned outcome (deep geological disposal) beyond the conceptualization phase is not yet known »

# Conclusions

1. Reconnaître que la gestion des déchets radioactifs est un problème ***sociotechnique***.
  - “From the best available geological formation for HLW disposal to finding one that is good enough” (Solomon 2010 p.21)
2. Les critiques invitées et non invitées sont les deux faces d’une même pièce démocratique
  - Controlling or embracing critics?

# Conclusions

3. Participation progressive : les formes peuvent être ***cumulées*** et ***adaptées*** selon la timeline du processus décisionnel.

- “when the final outcomes are unknown, procedural settings remain the key.”

4. Les effets de la (non) participation des publics sont des informations supplémentaires à intégrer aux programmes de gestion.

- Controlling other dimensions than safety/technical ones?
- Knowledge of experts matters but it is not the only one knowledge that matter!

# Conclusions

## 5. Problème d'experts? Un problème **collectif**

- “Decision power is no longer solely in the hand of RWM organization and should not be” .

Faced with the impossibility of controlling all the variables in these time-frames, responsibilities, knowledge production and trade-offs have to be shared *collectively* as do the potentially greater (unexpected) risks with irreversible effects and financial responsibilities will *de facto* be a “common good”.



# Questions?

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## Positionnement suédois sur l'échelle de participation (Arnstein)

- “A Swedish stakeholder gave the remark that they find themselves at **a journey throughout the participation ladder**. She mentioned that they started out almost at the level of ‘manipulation’, but that this had radically changed over time when the municipality (the main institution for local stakeholder engagement in the Swedish radioactive waste disposal project) started to delegate control to the citizens. As such, they would say that they are now almost on the spot of ‘citizen control’” (Meyermans et al. 2018, p. 5).

## Deficit Model as the minimum:

- “This discussion [at the Modern 2020 workshop] underlines how the deficit model, which promotes top-down information, remains the main discussion topic for local stakeholders. They did not suggest changing the way nuclear experts should communicate or inform local stakeholders. Rather, local stakeholders **insist on how the quality of information, provided by nuclear and technological experts, should be improved.** In order to increase this quality, local stakeholders stress that technical experts should take the local stakeholders’ perspectives into account and be open-minded to other perspectives. Then, both parties would be able to mutually learn adequate ways of communication.” (Meyermans et al. 2018, p. 7)

# Experimental mindsets: open or closed

	<b>Open experimental mindset</b>	<b>Closed experimental mindset</b>
Main endpoint of the mindset (entry point of the approach)	Process as the main variable to control	Final output as the main variable to control
Premises regarding the design of the final outcome	The design final outcome remains unknown and is evolutive	The design of final outcome is pre-fixed in advance
Mode of Planning	Flexible planning	Rigid planning
Statement about the control of variables	Recognizing that controlling all variables is impossible. (anticipation mode is limited)	Controlling all variables (anticipation mode)
Statement about unexpected events or surprises	Embracing surprises and adapt the protocol accordingly	Reluctant to surprises and demonstrate how the initial protocol can respond accordingly
Statement about the conflicts and unexpected events	Conflicts and unexpected events are the business-as-usual	Conflicts and unexpected events have to be healed
Rationales of participation and expert analysis	Normative, instrumental and substantive: Participation and expert analysis as “normative” tool: consensus is not expected.	Instrumental and substantive: Participation and expert analysis as “pacification” tool: consensus is expected.
Produced output	Tend to opening up appraisals and commitments (in a sense of Stirling 2008)	Tend to closing down appraisals and commitments (in a sense of Stirling 2008)