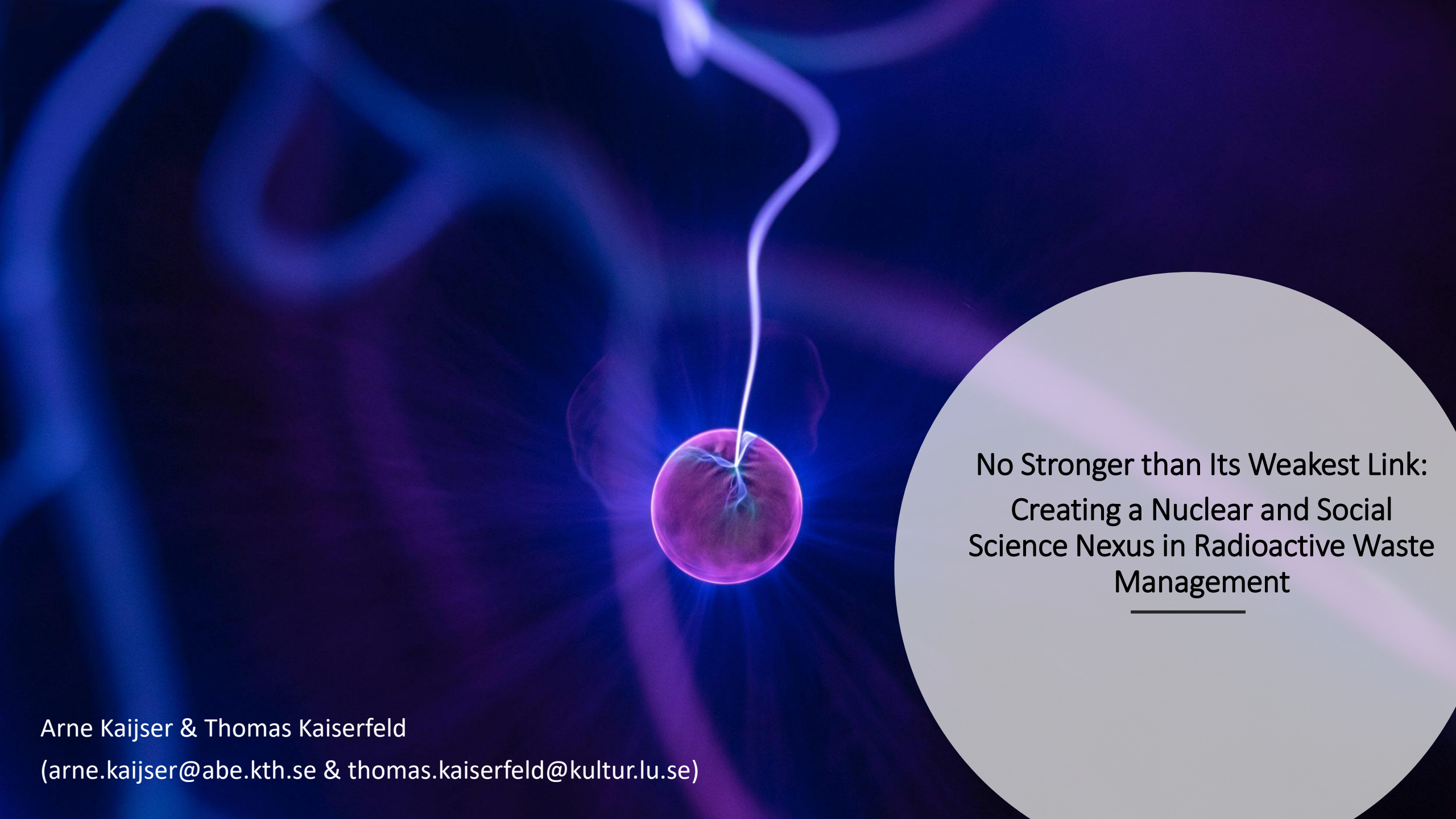

No Stronger than Its Weakest Link: Creating a Nuclear and Social Science Nexus in Radioactive Waste Management

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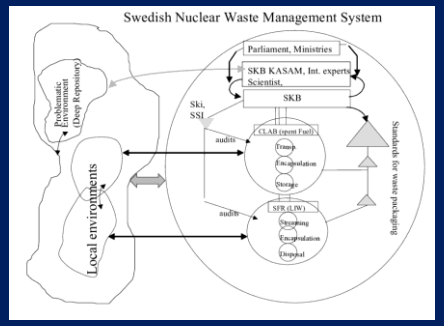
Our problem

How can competence in the humanities and social sciences effectively be mobilized to contribute to the problem area of how to best manage spent nuclear fuel, an area traditionally dominated by scientists and engineers?

The Swedish Nuclear Waste System is a socio-technical system consisting of 5 components

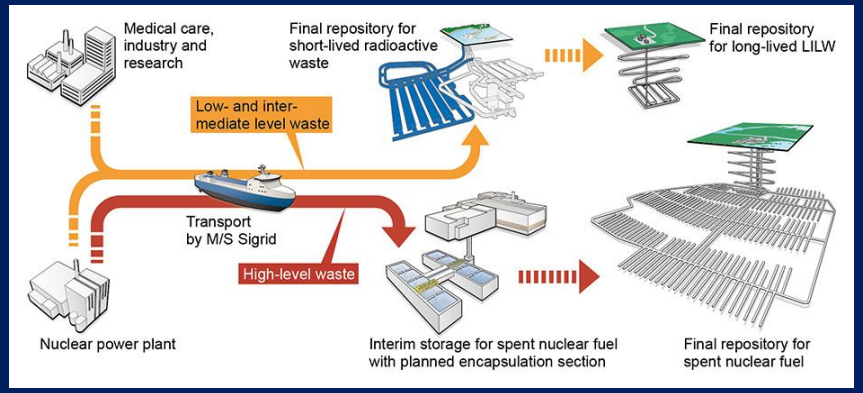
Organization



Legislation

Financing

Design and implementation



Siting.

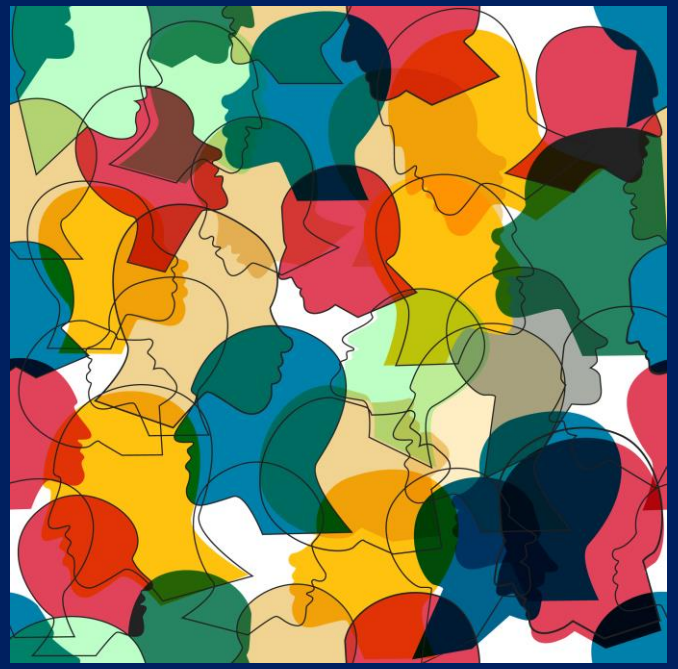
Our research questions

A socio-technical system has a ”system culture” based on the values of the system builders. We ask:

1. Has the system culture of the Swedish Nuclear Waste System changed due to influence from insights supplied by social sciences and humanities?

2. If so, how did this change occur?

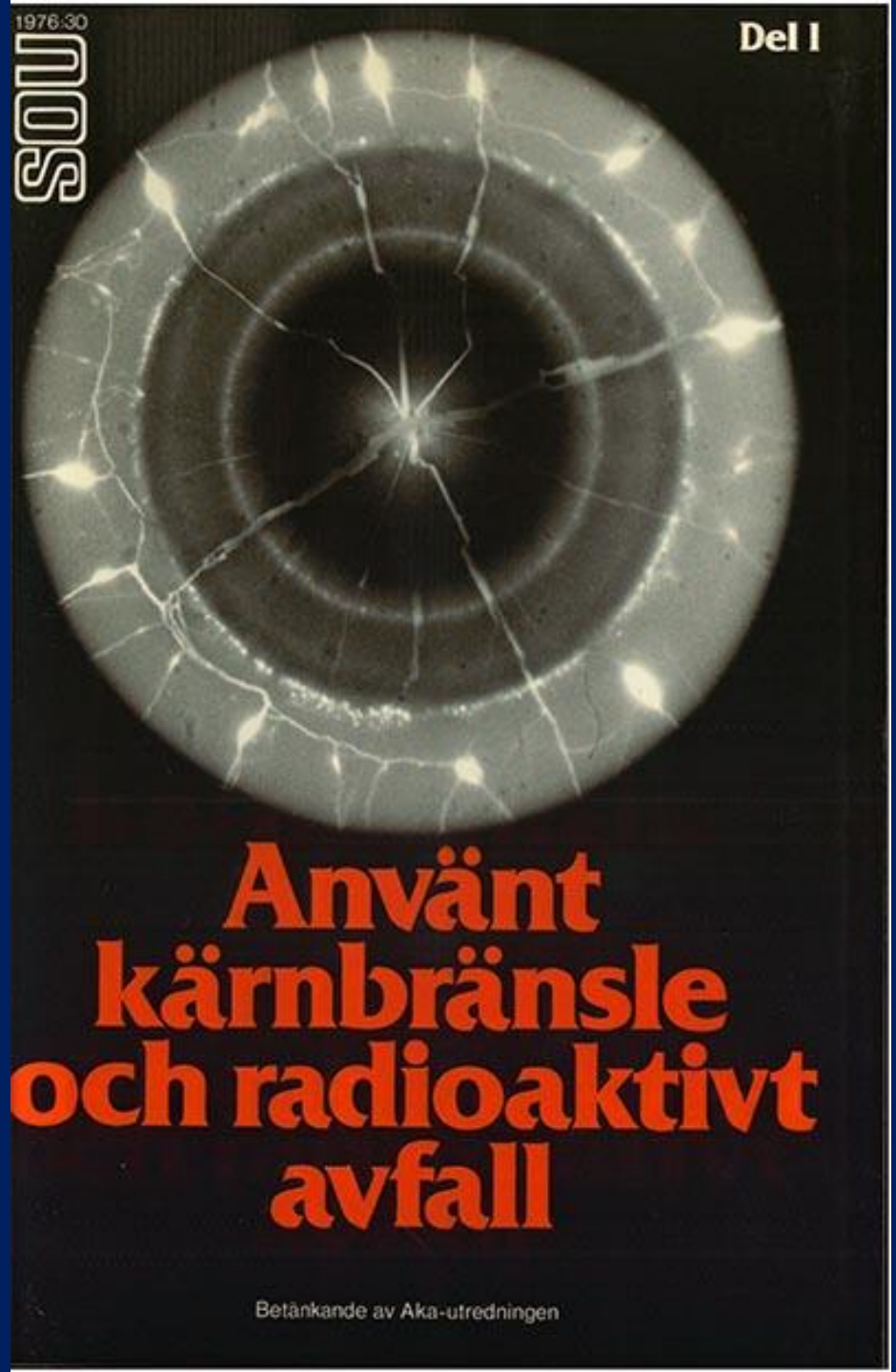
System Culture



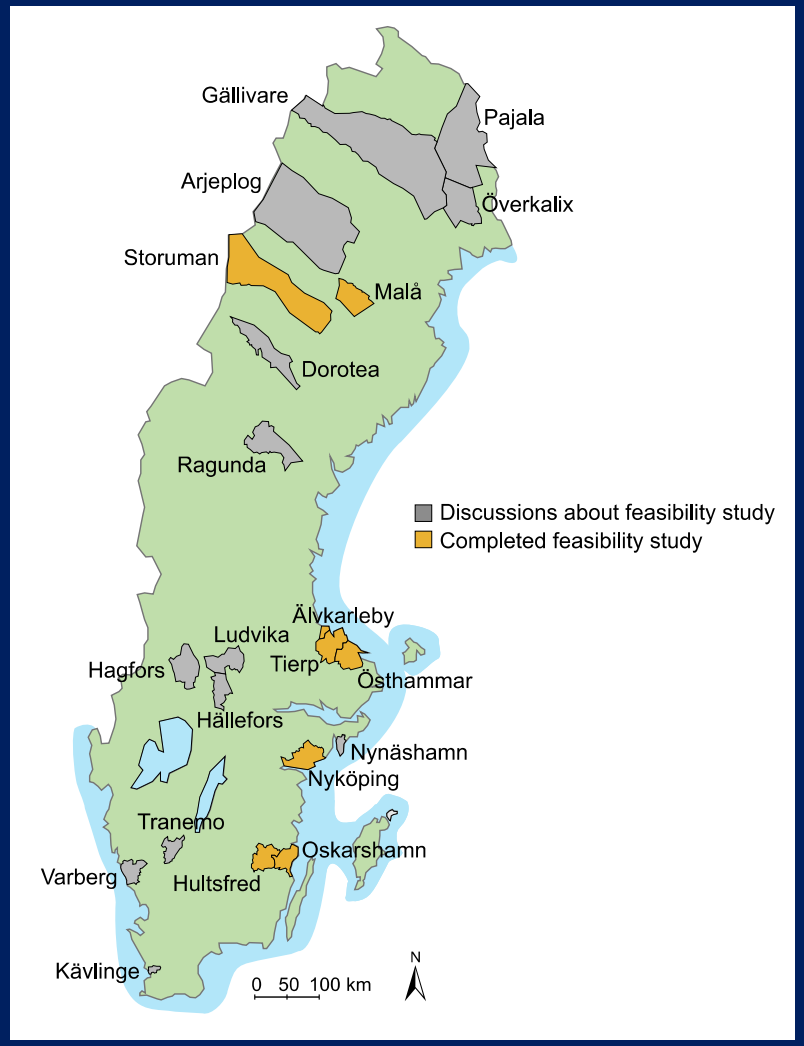
The Swedish Nuclear Waste System was formed in the 1970s

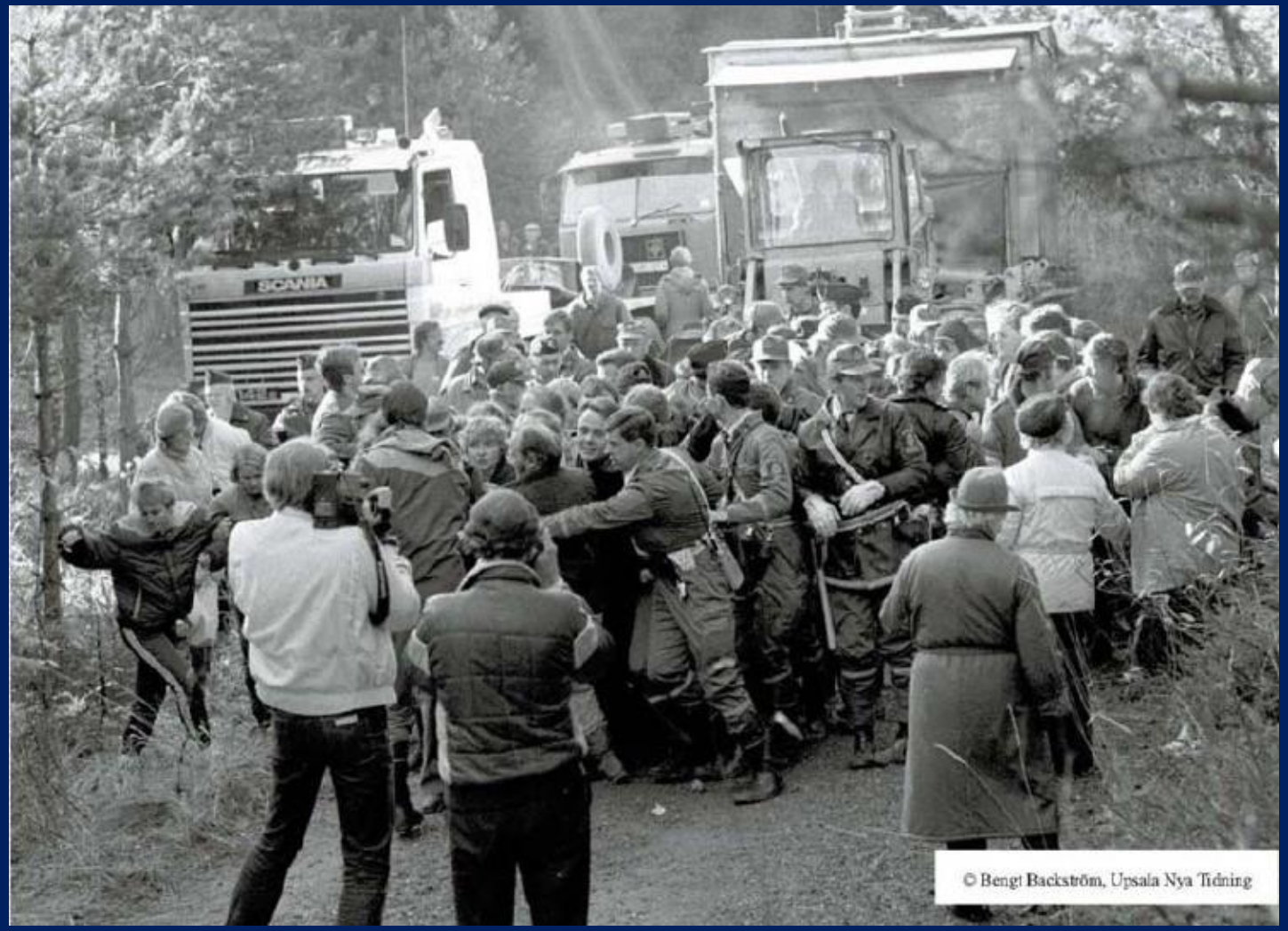
In 1976, a public report proposed
—owners' responsibility
—regulation by state authorities
—funding by a charge on produced power
—deep geological disposal

The experts of the committee were engineers and scientists and the "system culture" of the Swedish nuclear waste system became technocratic.



In the early 1980s, test drilling teams at potential sites for a repository were met with strong local protests





In 1985, energy minister Birgitta Dahl creates a forum KASAM, National Council for Nuclear Waste, for discussion and reflection of nuclear waste issues between the implementer SKB and regulators

Former minister and physiologist Camilla Odhnoff appointed KASAM chair

KASAM organized workshops annually with themes such as:

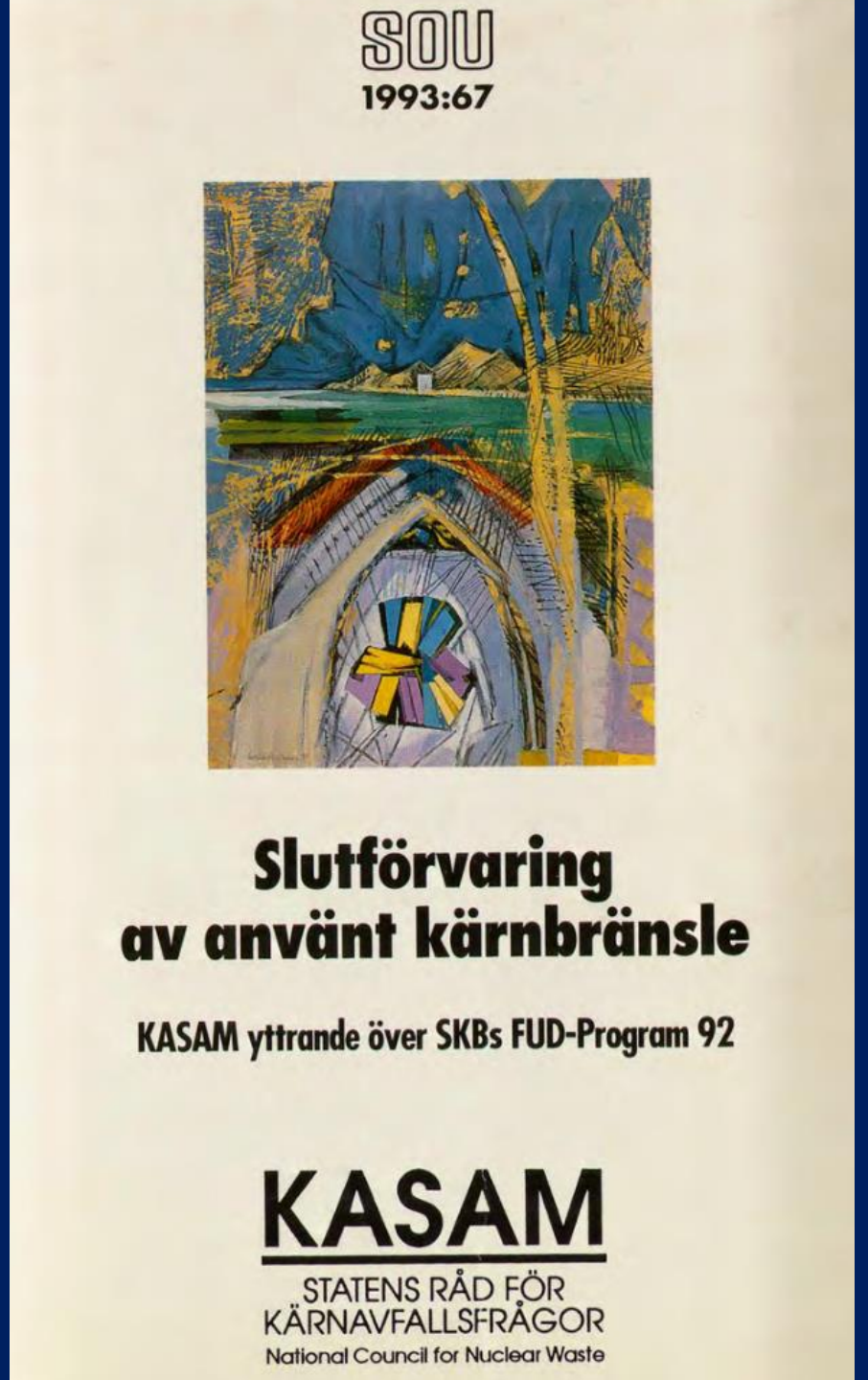
”Ethics, Radioactive Waste and Uncertainty”

”Decisions under Uncertainty”

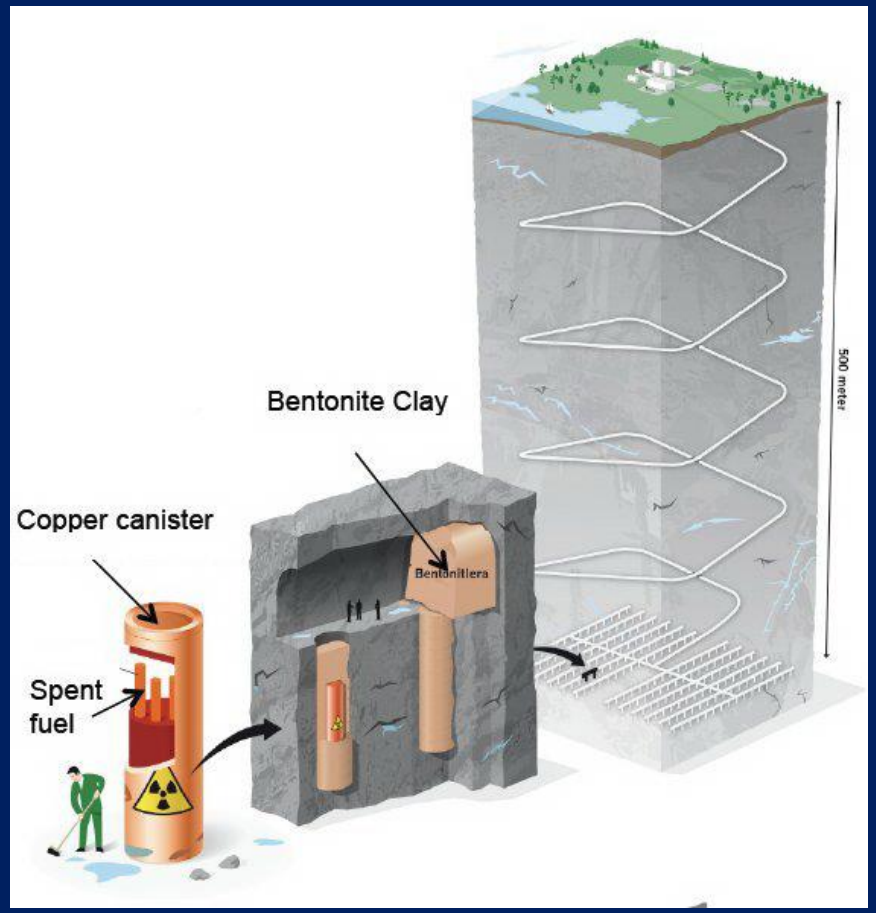
”Are There Definite Answers?”

”Acceptance, Tolerance and Participation”

”Nuclear Waste and Decision Making”



SKB adopts a new siting strategy in the early 1990s in which approval of municipalitiess is essential. Geological conditions need be sufficiently good since it is one of several barriers. Others are copper canisters, bentonite clay and bedrock.



In 2011, implementer SKB submits license application for encapsulation plant and deep geological disposal.
In 2017, in a five-weeks long hearing in the environmental court ends, all parties and stakeholders are heard

Conclusions

We claim that the system culture has indeed changed. Implementer and regulator have a broadened competence base. Decision-making processes rely on engineering and social factors. All involved organizations have realized the importance of social factors, not the least evident in the hearing of the environmental court.

Local opposition against drilling teams spurred government to establish KASAM and KASAM set about a process that led to a broadening of perspectives amonc implementers and regulators.

Crucial for the change of the system culture was that all important actors did adopt a broader approach. A socio-technical system is no stronger than its weakest link.