***German and Swiss Nuclear Waste Policy**.*
Attempts of New Participative Governance under Tricky Conditions

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Overview

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Introduction

- Worldwide no civil repository for high active waste (HAW) has been taken into use, yet
  - Only Finland and Sweden make good progress
  - Other countries like Germany and Switzerland are far behind their original schedule, but have recently made some progress (GER: new law on site selection 2013, CH: new site selection procedure started 2008)
- GER and CH started in the late 1960s with programmes for nuclear energy production
  - Very important for power industry and important for energy supply
  - Accidents (Chernobyl and Fukushima) as well as delay in finding a repository changed the context of debate
  - BUT: scepticism whether phase-out will persist (in GER and CH), strong link to possible or impossible success in waste disposal efforts

2. State of Research

- Only little social science and interdisciplinary research about nuclear waste management in Germany (some more “grey” literature)
  - 2 historical studies (Tiggemann 2004, Möller 2009), one monography in the TA context (Streffer et al. 2011) and limited number of social science publications reflecting to some extent the German case (e.g. Roose 2010, Hocke/Renn 2009, Grunwald 2010e: 254-257)
  - The scientific attention esp. in analysing the social problem and nuclear policy was particularly high in the late 1970s and early 1980s, but disappeared around Chernobyl
- Some more literature on the Swiss case
  - Wellenberg case (1990s and early 2000) analyzing the background and some survey research (e.g. Krütli et al. 2010a, Scholz et al. 2007),
  - Some theoretical work on decision-making (e.g. Krütli et al 2010b, Flüeler 2006)
  - but no analyses of current nuclear waste policy (starting 2006)
- Internationally, small hype in social sciences (see Solomon et al. 2010, Strandberg et al. 2009)

3. ITAS Approach

- What does ITAS stand for?
  - focus on side effects of new technologies
  - independent research (e.g. NanoHealth 2006-9) and scientific policy advice (ESchT, TAB at the German Bundestag, STOA, ETAG)
  - Conceptual approach: “problem-oriented research”
- Nuclear waste research at ITAS, because:
  a.) technology matters (German history: NEZ up to 1979 , final maintenance-free disposal, R&R)
  b.) final disposal technologies are considered relevant for TA because of the serious problems in R&D, the enormous delay in implementation and the difficulties in governance (caused by the long timespans for isolation, uncertainties and the related social conflict)
  c.) RWM as a social conflict means that the irritating discussion about the reasons for public dissent does not lead to conflict resolution

(ITAS Approach 2)

- Our perspective on problem-oriented RWM research:
  RWM as a doubly-complex and wicked problem
  (technically complex: reaching the isolation aim, socially complex: no solution can fulfil all expectations)
- Research focus:
  - context structures for the social conflict
  - dissent and the collective action of experts
  - governance and effects of deliberation
- One example: Monitoring as a socio-technical process (Hocke / Bergmans / Kuppler 2012)

(itas approach 3)

- First central observations
  - NIMBY, NIMTOO create difficult environment for new governance approaches (Greenberg et al. 2009)
  - unsolved dissent among experts (esp. site specific questions like suitability of the host rock, maintenance-free or R&R)
  - no public support for concrete sites or at least toleration of site selection activities (e.g. in CH and GER),
  - media: fascinated by conflicts and not in conflict resolution
  - party political structures and political culture as central factors determining the process (including the related debate and possibilities of conflict mediation)
    (German case: stable culture of distrust between central collective actors)

4. The German Case (1)

- Decision on deep underground disposal, but a number of changes in the concept since the 1970s
- Massive social conflict about nuclear energy and waste storage since the late 1970s (see Roose 2010, Rucht 1980, 2007)
- Blockages in decision-making over decades with (1) political dissent between ministries, political parties, industry and civil society and (2) partially unclear “division of labour” at national level (authorities: implementor vs. supervisor; responsible federal / state ministries)
- Since the end of 1990s first attempts at changing political mode of RWM („new governance“, research like COWAM and NEA 2004)
- AkEnd proposal with excellent international reputation, but no national implementation (Radkau / Hahn 2013: 354f)
- “Black-yellow” government since 2010: promises of dialogue and a new law (Röttgen adminstration 2009-12; Altmaier administration 2012/13)

(German Case 2) Final Repositories in Germany

Morsleben: former disposal of the GDR, currently being closed down after severe problems.

Konrad Mine: disposal site for LLW& MAW, storage 2023/24?

Asse 2: research mine with uncontrolled ingress of water (12 m^3/day).

Gorleben: HAW, massive social conflict, included in site selection procedure according to site selection act (2013)

(german case 3)

- Repository Site Selection Act entered into force end of July 2013
  - Open-ended search for a repository site will be started, Gorleben is still in the game (position of the Altmaier administration)
- Act as legal framework, a number of central aspects will be discussed again by stakeholders in a pluralistic commission established by the law (2014/15)
  - Act is presented as “national consent”, but still dissent for example over:
    > basics of site selection process and criteria
    > quality of participation (stakeholders, interested national public)
    > role of Gorleben
- Ongoing national struggle with all involved stakeholders

5. Innovative Elements in the Swiss Case

- Political decision for a restart of the siting process after serious complications and concerns around 2000/01 (Benken for HAW and Wellenberg for LLW / MAW)
  - Expert-led conceptualization of new procedure (EKRA 2000, EKRA 2002)
- Implementation of a stepwise approach: Sectoral Plan for Deep Geological Repositories as a collectively binding decision-making process
  - first drafts discussed over 2.5 years with a wide range of authorities and stakeholders, installation of a number of arenas for debate (e.g. focus groups)
- Main responsibility: UVEK and Federal Council, delegated competences to the SFOE, no direct influence of the cantonal level (see Jost 2012 and Minhans / Kallenbach 2012)
  - Nagra (producers' cooperative) responsible for site investigation and safety demonstration, ENSI (Swiss Federal Nuclear Safety Inspectorate) as supervisory body, KNS as a second advisory board
  - single steps in step-wise approach closed by Federal Council decision, final decision by parliament, possibility for nation-wide referendum about the site specific Nagra concept approval ("Rahmenbewilligungsbescheid")

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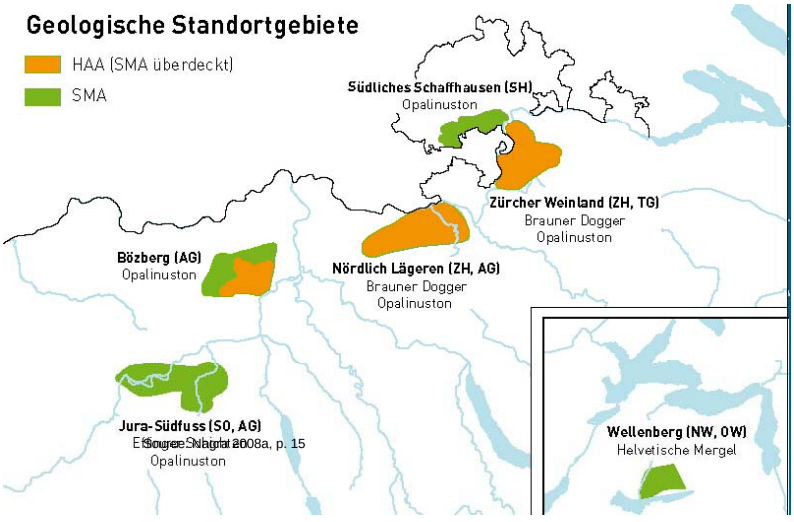
(Swiss Case 2)

Geological Siting Regions



Source: Nagra 2008a, p. 15

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(Swiss Case 3)

- Waste storage concept: storage in deep geological underground, clay as the preferred host rock, R&R possible for the operational phase, possibly also for a limited time-span after closure (Kuppler / Hocke 2012)
  - 7,300m^3 HAW, 93,000m^3 LLW/MAW
  - financing: waste producer (disposal fund)
- Legal framework: Nuclear Energy Act (2003) and Nuclear Energy Ordinance (2004), Sectoral Plan (2006) including a number of official documents regulating specific tasks (e.g. participation)
- Status:
  _ Suitable geological features (regions) identified,
  _ currently identification of possible surface sites and selection of at least two sites for HAW and LLW / MAW, each.

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(Swiss Case 4)

- Central characteristics of the Swiss type RWM
  - transparency and stakeholder involvement play central role, but participation primarily in decisions on above-surface-installations
  - installation and operation of 6 regional citizen conferences with around 100 members each (half of them representatives of really small municipalities, some also from Germany)
  - broad discussion and documentation of changes and positions during all phases (incl. preparation of the plan)
  - strong commitment to communication: officers of federal authorities and Nagra willing to and prepared for debate with and information of the interested public
- Current challenges
  - Finding sites for the surface installations (regional conference Nördlich Lägern with serious internal conflict <in 2013>)
  - Conflicts with two prominent and highly qualified experts (2012) over allegations of lack of independence of the supervisory bodies and premature site selection (Nagra)

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6. ITAS workpackage in ENTRIA

- Comparing three disposal options independent of specific sites:
  Option 1: maintenance-free geological disposal
  Option 2: geological disposal with retrievability
  Option 3: above-surface storage
- ITAS works on „Governance between Science and Public Protest"
  - Current state of affairs and problem definition
  - linking formal and informal modes of decision-making
  - International comparison (GER, CH, S) (in cooperation with FU Berlin)
  - Focus groups on conflict resolution
  - Coordination of interdisciplinary work on „TA und Governance".
- First results:
  (1) Monitoring as social innovation (technical monitoring needs to be accompanied by social framework if meaningful information is to be retrieved) (Kuppler / Hocke 2012);
  (2) safety indicators in public communication (Hocke / Röhlig 2013)

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7. Conclusion

- RWM and nuclear waste policy always was „deliberation": the type and number of influential collective actors changed
  - nuclear-critical actors nowadays more influental
- Decision-making in postmodern / post parliamentary policy structures forced governmental organizations to consider new modes of governance
  - Difficulty of integration into robust policy making and existing political culture: co-manegement vs. symbolic integration (cf. Arnstein 1969)
- Germany: democratic reforms ambivalent
  _ reforms on local not national level
  _ RWM: Germany as „developing country"(Kreusch)
- Switzerland: „half-direct" form of direct democracy (Linder 2005: 242), but not open to citizens' "co-management" (Arnstein)
- Switzerland in comparison to Germany more transparent and open to conceptual changes based on citizens' demands as long as power structures are not affected

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Thank You!

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Backup Slides

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X5 Different Forms of Partizipation (Arnstein 1968)

Partizipation
Kontrolle durch Bürger
Übertragung von Macht
Partnerschaft

Schein-Beteiligung
Beschwichtigung
Anhörung / Beratung
Information

Nicht-Beteiligung
Therapie
Manipulation

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