

The municipality as low-carbon lab: promises and perils



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Agenda

- Research problem: experimentation for global sustainable technology vs. local concerns
- Theoretical perspective: experimentation in SNM and in local contexts
- Context: Carbon-Neutral Municipalities
- Data and methods
- Promise and perils of experimentation: the local perspective
- National steering group perspective
- Conclusions and implications

Research problem

- Experimentation is popular in strategic niche management: variation, selection, retention of sustainable technologies in diverse local contexts
- Experimentation is advocated more broadly as a way to search for solutions to society's problems
- How do local people experience experimentation?
- What do locals and those in charge of the experiment learn?
- In an "ordinary" (not avant-garde, not controversial) context

Theoretical perspective

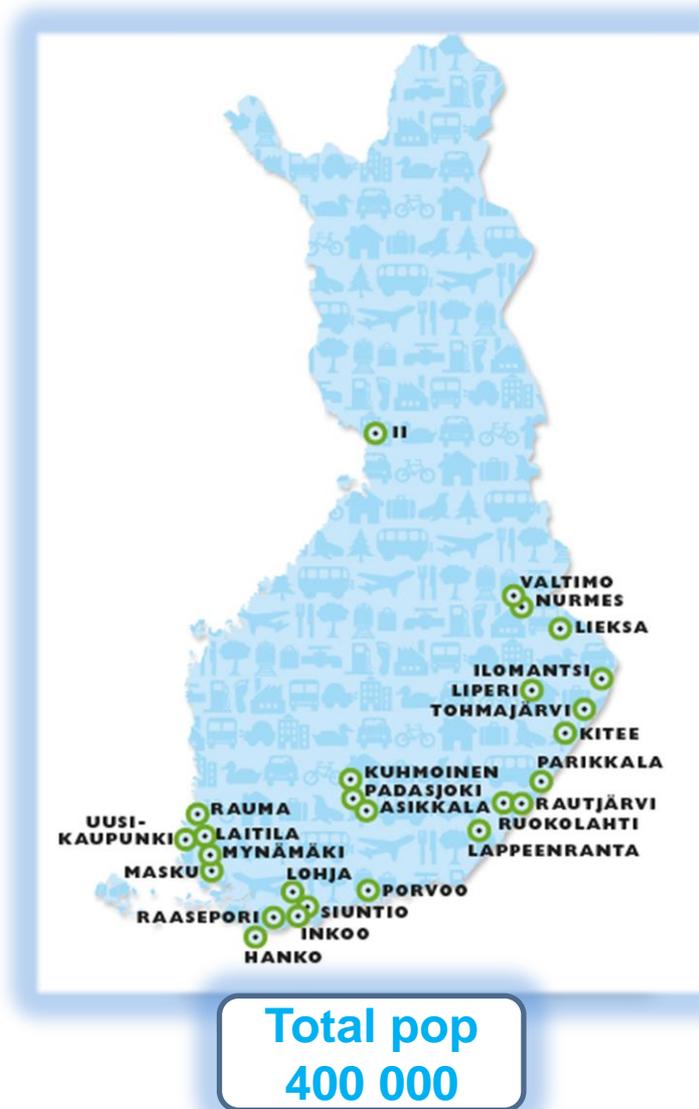
- Strategic niche management: "protected spaces" allow experimentation with co-evolution of technology, user practices and regulatory structures (Schot and Geels 2008)
- Local projects as sites for learning: variation, selection, retention - > aggregation at a global niche level of sus tech proponents (Geels & Raven 2006)
- Grassroots innovation: appropriate and diverse (Seyfang & Smith 2007)
- Connections with local climate governance – but also tensions (Hodson & Marvin 2008; Quitzau et al. 2012; Bulkeley & Broto 2013; Naess & Vogel 2013)
- Local experiments as political and controversial (Heiskanen et al. 2007; Hodson & Marvin 2007; Raven et al. 2008; Bulkeley and Broto 2013)

Lack of research on how locals experience involvement in experimentation



Empirical context

- Carbon-neutral municipalities (CANEMU 2008-) in Finland
 - Five small municipalities volunteered as "change laboratories" by working to curb their greenhouse gas emissions ahead of schedule (-80% by 2030)
 - Later joined by several new 'partner municipalities'
 - Coordinated by Finnish Environment Institute
- Generally considered a great success (several kinds and large amount of actions taken, carbon emissions ↓ ~20%)



Data and methods

- Citizen perspective: Data collection in Mynämäki (pop. 8000) in 2012
 - Interviews with 'activists': Council members, committee members, chairpersons of local NGOs, local businesses (12 interviews)
 - Interviews with 'ordinary residents': at cafés, library, Jobless Association (28 interviews)
 - Background of small-scale participant observation since 2008



- National supporters' perspective
 - Eight interviews with national organizers, ministries, funding bodies

Study context: centre of Mynämäki



Study context: outside the centre



Promises of experimentation

- Self-sufficiency and the use of local resources (rushes, beetroot stalks...)
- Attract renewable energy investment
- Support outlying villages
- New lines of business/activity
- Develop skills & engage with technology
- Attract outsiders & new ideas
- Reputation and brand image
- Concrete achievements



Reputation & credibility

We have [now] gotten over the hardest part. At the start, people were afraid whether this would entail financial commitments, and whether we would be punished if we don't achieve the targets. Or if we would lose face! ... But luckily, we had just decided on the district heating system, so we had one concrete project to get us started ... Then the project started to get positive publicity, and it became easy to carry the project forward. KL and HS [Two nation-wide newspapers] published articles on the topic. This provided a positive spin and people became enthusiastic.

Concrete achievement & credibility

CANEMU is a good thing because it offers more energy alternatives. They provide savings in the municipality through energy efficiency and ground source heat and renovations for homes... It makes sense because they lower the cost of living and save the taxpayers' money.

I live in a block of flats in the centre, which is heated with electricity. We got the idea to install air-source heat pumps in all apartments. But there are lots of older people living in the building, and they didn't take to the idea. – Then what happened was that I and two other residents decided to get the air-source heat pump and I have noticed that my heating bill has been 1500 kWh less – we didn't get more than three residents to take it – but it wasn't a bad project, at least I personally am satisfied.

Perils of experimentation

- Disappointment and frustration over stalled projects
- Risks and complexities of assessing new systems: will they pay off financially?
- Knowledge base: Do locals know how to build a passive house?
- Local business development vs. commercial motives under the guise of carbon neutrality?
- Social risks of appearing foolish, getting on the wrong side of someone, jumping on a bandwagon...

Concern about social risks

I haven't really been involved a lot, in these kinds of political things... it is best to keep the middle road, considering there are so many different viewpoints (man, retired builder and electrician)

Lots of people here work for the same goals as CANEMU but don't want to say they are involved (man, farmer)

What have local people learned?

- To focus on sensible solutions (since they bring short term rewards and enhance the credibility of the project)
- Focus has turned to energy efficiency & renewable heating in public buildings, businesses and homes
- Sensible entails a lot of hard work, too!



National supporters: main lessons

- Face-to-face engagement gets municipal decision makers on board –
> **green economy is believable**
- Expert support stimulates voluntary action -> **win-win solutions in energy efficiency and renewable energy**
- "Experience-based rules", stories, model calculations
- Other municipalities have joined
- "Proof of principle" (Späth & Rohrer 2010)



HINKUmappi on ilmastotekojen näyteikkuna. Lisää omat toimesi ja katso, mitä muut ovat tehneet.

VAPAA HAKU: Haku Tarkennettu haku

TUKEVIMMAT HINKUMAPIN TOIMENPITEET

Otsikko	Kunta
Omakotitalon öljylämmityksen vaihto maalämpöön	Uusikaupunki
Öljylämmöstä maalämpöön	Uusikaupunki
Omakotitalon maalämpö	Uusikaupunki
Omakotitalon öljylämmityksen vaihto maalämpöön	Uusikaupunki
Öljylämmitys maalämpöön	Uusikaupunki
Öljylämmityksen vaihto maalämpöön	Uusikaupunki
Omakotitalon maalämpö	Uusikaupunki
Omakotitalon öljylämmityksen vaihto maalämpöön	Uusikaupunki
Omakotitalon öljylämmitys maalämpöön	Uusikaupunki

1 2 3 4 5 6 7 8 9 10 ...

A map of Uusikaupunki, Finland, with several red location pins indicating HINKU project sites. The map includes a search bar and navigation controls.

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KUMPPANIRYHMYKSET

- Postira
- PricewaterhouseCoopers
- Rahaa
- Rakennustaloustieteiden RT ry
- Romutek
- Savonias
- Schneider Electric
- Sensore
- Sivonin
- Skanska
- Ukkonen ja Ovet

HINKU-HANDE

Uutiskirje HINKU

Conclusions and implications

- Different places can be different kinds of "experiments" (at different times)
- Local people experience experiments differently than scientists in a lab: no symmetrical approach to success & failure
- National supporters likewise: proof that we can reduce GHGs
- Local climate action experiments cannot afford to fail (a lot)

- Maintaining momentum and credibility requires quick wins which can favour fairly conventional technologies
- Adaptation of existing technologies is an achievement too – entails failures to learn from, but communications focus on successes
- We need investment in "more difficult" technologies too
- SNM experiments need to carefully select "protected spaces" & states need to offer massive support

Thanks!



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Concrete projects	Status 2013
Energy audits, monitoring, improvements and investments (oil to GSHP and woodchips), LED in municipal buildings	Several completed
Energy town plan	Strategy + some concrete
District heat system (town centre)	Completed + to be expanded
Individual heating system changes (GSHPs, solar heaters, heat recovery, wood chips) in companies, farms and homes	Several investments
Energy Evenings, Open Homes tours	Several organized & well attended
Plan for energy renovation training programme at local vocational school	Proposed to school council
Village joint heating systems	Several efforts, none yet
Passive apartment house	Plan approved, no house yet
Waste heat recovery from bakery	Discussion stage
Wind power for vocational school	Not yet, at least
Small wind demonstration park	Idea, some prep. work
Wind turbines on farms or in forests	Idea, some prep. work
Online car pooling scheme	Done, 23 users
Carbon footprinting and new recipes for school lunches	Done
Local food	? some claim progress, others disagree