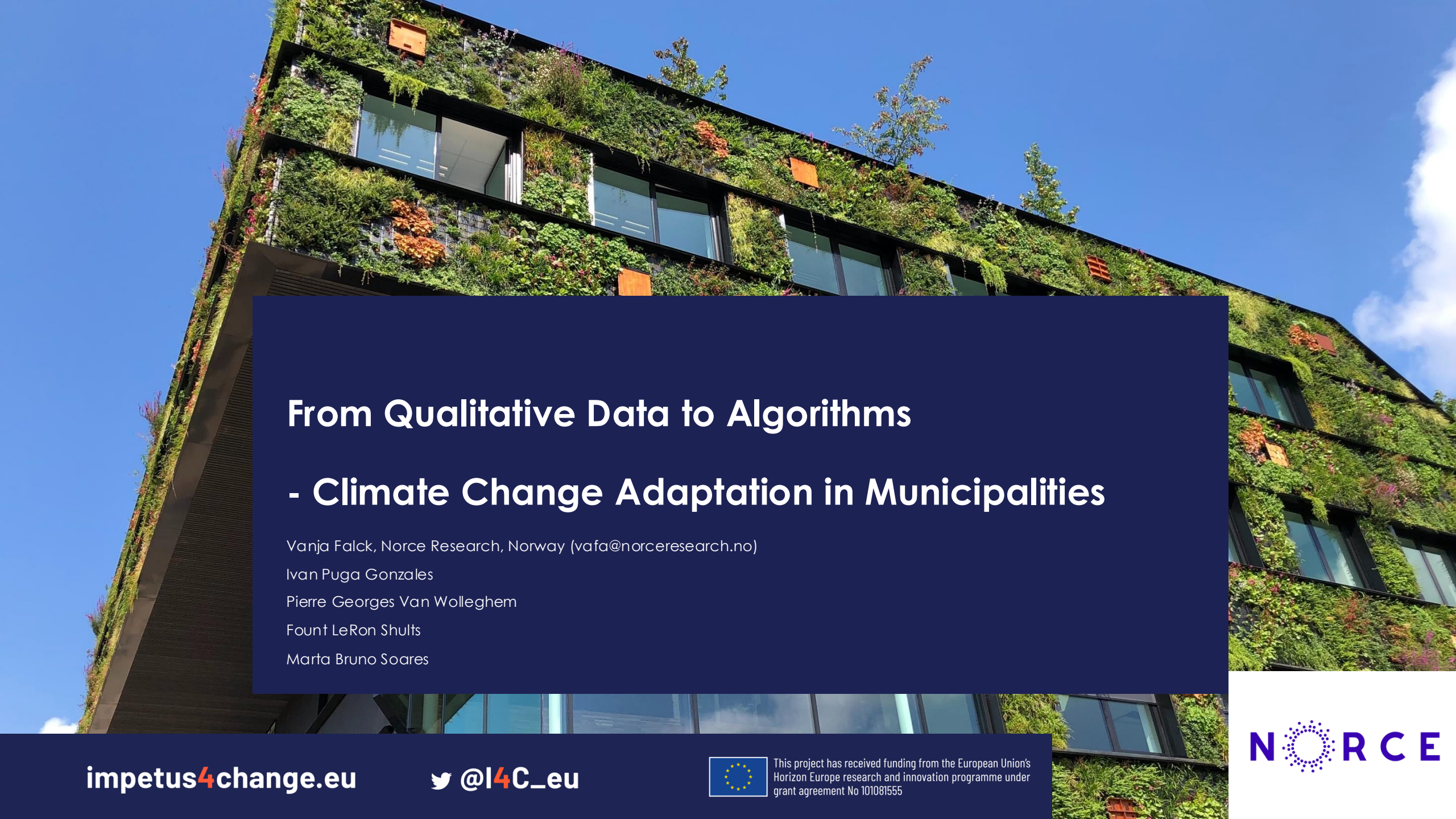

From Qualitative Data to Algorithms

- Climate Change Adaptation in Municipalities

Vanja Falck, Norce Research, Norway (vafa@norceresearch.no)

Ivan Puga Gonzales

Pierre Georges Van Wolleghem

Fount LeRon Shults

Marta Bruno Soares

impetus4change.eu

@I4C_eu

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NORCE

From Qualitative Data to Algorithms on Knowledge Flow

Qualitative Data → In-depth interviews

Analysis → Reflexive Thematic Analysis

Algorithms: Computational receipts or rules

Philosophy of Science: Assemblage Theory

Agents: Municipalities

Theme: Flow of knowledge in network of municipalities

In-Depth Interviews

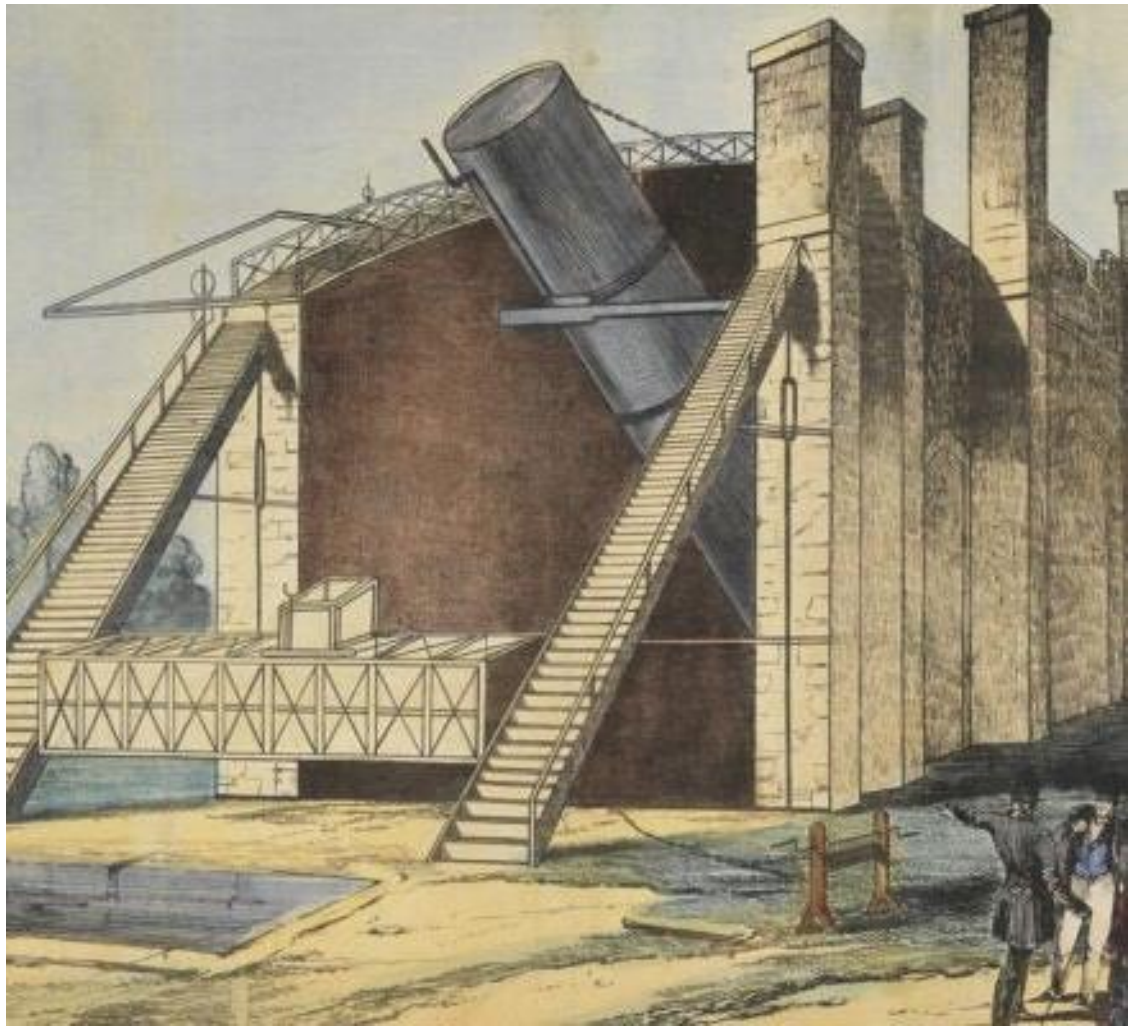
20 informants

- Selected by ICLEI → among their partners

ICLEI = The International Council for Local Environmental Initiatives (a global network founded in 1990 – sustainable urban development)

- ICLEI staff
- Municipalities (Europe + Turkey)
- Research Institutions

- TELL THE STORY
- Semi-structured interviews
- First hand experiences



Get the Stories (the Doing)

- get to the processes
- get challenges
- get obstacles
- get perceived and actual solutions

Key: Climate Change Adaptation in the Making

Analysing Texts

Reflexive Thematic Analysis:

Derived from Grounded Theory

- Open Coding: identify categories
- Axial Coding: setting categorie together and puzzle the sub-themes

Assemblage Theory (Deleuze and Guttari to DeLanda):

- Used in Science and Technology Studies
- Practice oriented (in the making)
- Networks, co-creating and circulating knowledge

How to Make Knowledge Relevant?

From knowledge to implementation in municipalities

Twist it to fit local contexts

Wrap it in something else that is relevant

Relevance is also political – does it fit?

Themes and Proxy Indicators

Thematic Analysis
(Axial Coding in Grounded Theory)

Co-creation - exploiting knowledge through cooperation – having facilitators

Material and personnel resources - means to implement climate change adaptations

Management efficiveness – do staff have the skills and opportunities, given existing resources, to translate knowledge into operations in the municipality?

Perceived urgency - if the climate threats appear – actions will be taken immediately

Political gatekeeping - some persons or groups may block efforts to implement climate change adaptation in a muncipality – the same actors might enable implementation

Make it relevant – co-creation - transformation to practical use in the municipality – hit the political trends – hike on other interventions – urgency ….

To Algorithm Elements

Experiences – municipality's previous transfer knowledge to actions

Helpers boost – get assistance to translate knowledge into actions

ICLEI boost – facilitators that know how to translate knowledge into operations in municipalities.

Resources – the means to act

Enablers boost – urgency is one

Barriers – negative political gatekeeping

- interprete knowledge (wrong) in ways that leads to waist of resources on non-supportive actions

Usability Algorithm

Usability =

Base Usability +

Enablers Boost +

ICLEI Boost +

Helpers Boost −

Barriers

Table 2: Components in the algorithm for knowledge usability in municipalities

Base Usability	**Base score, reflecting municipality preparedness**
Experience	Involvement in past projects; parametrised by project participation, ICLEI event attendance, and past success (CORDIS, 2005-2025) (Section 2.3 and 3.1)
Resources	Internal human/financial capacity and data access; parametrised by GDP per capita, World Bank Index, and ICLEI tools (Section 2.3 and 3.1)
Boosts	**Temporary and contextual increases in usability**
Enablers Boost	Urgency and stakeholder engagement; modelled using national-level INFORM Risk Index data, increases usability score by up to max 10%
Helpers Boost	Peer support and exchange; network-based on previous interactions, influenced by experience, relevance, connection strength, political/economic similarity; increases usability score by up to max 20%
ICLEI Boost	Direct ICLEI support; 20% increase in base usability for participating municipalities
Barriers	**Factors blocking implementation**
Political Gatekeeping	Political leadership as an enabler/obstacle; operationalised using party climate positioning data (V-Party, CHES) (Section 2.3)
Wrong Extrapolation	Misapplication of information; probabilistically operationalised in the model

Validity?

In-Depth Interviews – selecton – interviews - saturation
Textual Analysis – reflexivity and assumptions
Philosophy of Science → Clarify assumptions
Transformation to algorithms – on an abstract notion of knowledge flow…

Questions?

Contact:
Vanja Falck, Norce Research
vafa@norceresearch.no

The Municipality Knowledge Networks