

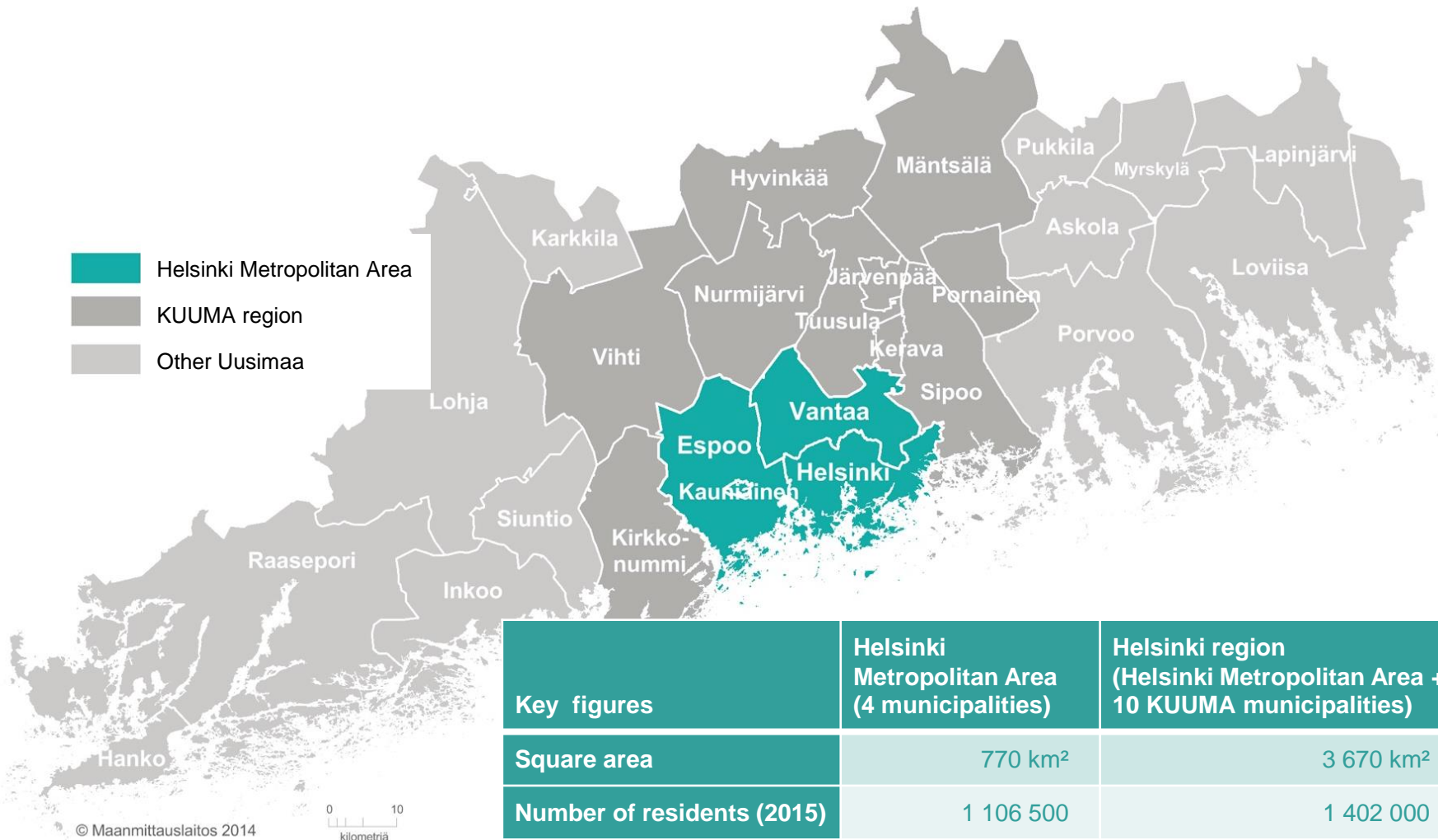


Experiences in selection and use of climate services in adaptation to cc planning

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Helsinki Metropolitan Area and Uusimaa



Key figures	Helsinki Metropolitan Area (4 municipalities)	Helsinki region (Helsinki Metropolitan Area + 10 KUUMA municipalities)
Square area	770 km ²	3 670 km ²
Number of residents (2015)	1 106 500	1 402 000
Dwelling units (2013)	567 000	712 000
Population density (2014)	1 434 residents/km ²	382 residents/km ²
Workplaces (2012)	617 000	719 000

Helsinki Region Environmental Services Authority (HSY)

Basic task

We produce and organise water services, waste management services and environmental regional information

Customers

Residents and business companies in the Helsinki Metropolitan Area

Member municipalities

Espoo
Helsinki
Kauniainen
Vantaa



HSY

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Climate services, a user's approach

- Climate services =
- Different services the basis of which is always (also) **climate and weather information**
- A climate service can be:
 - **historical data of climate in a specific location/ area** (current climate or climate in near history).
 - annual **forecast** of a specific event or trend
 - **information for planning of adaptation**, such as future flood risk maps, mean precipitation and variation etc.
- Climate service can contain only **graphs, but also maps, guidance and training**.
- Climate service can be a one time event or continuous action (monitoring). It can be free of charge or consultancy

Use of climate information: HSY and Helsinki Metropolitan Area

- HSY as a user of climate information:
 - Climate change adaptation planning
 - Water management planning, preparedness planning
- Examples of use of climate services in urban planning in the Helsinki Metropolitan Area:
 - Flood risk mapping and planning
 - Lowest recommended/ safe building elevations
 - Storm water flood risk maps

Experiences and examples: HMA adaptation to cc strategy preparation

- Climate information as background material: climate scenarios and river flood modelling (FMI, SYKE)
- Use of the information:
 - Background data for identification of impacts and planning
 - Risk analyses as such were not carried out – information of likelihoods not available except in general terms
- Climate information from research institutes :
 - Reliable, credible, undisputed information and sources
 - Awareness raising



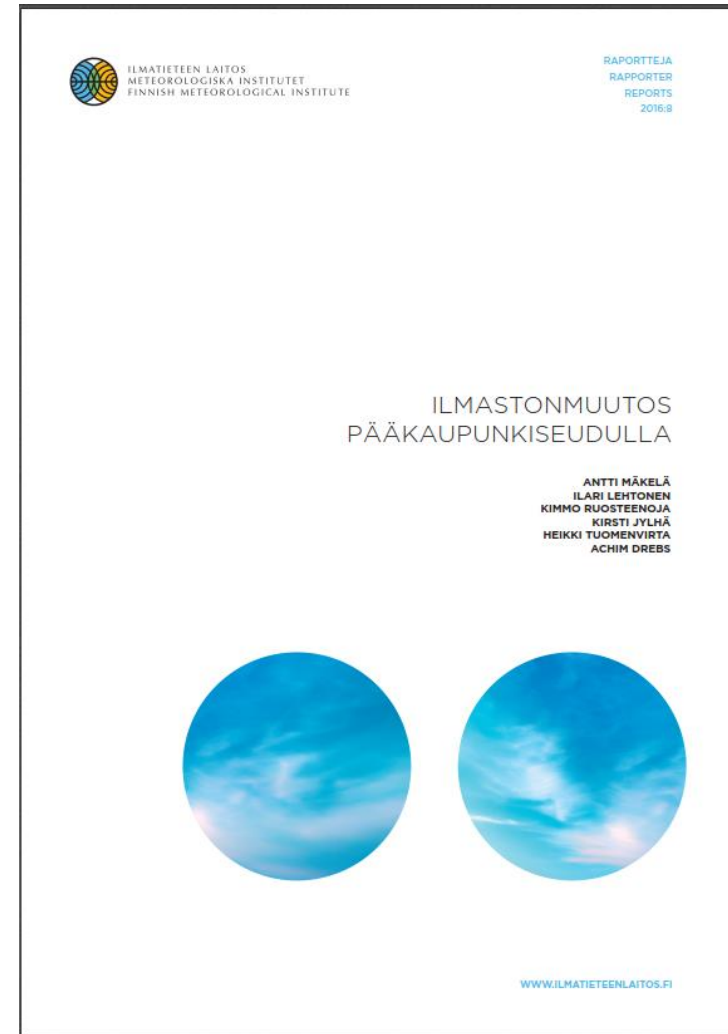
Background studies 2009-2010

- "Climate is changing in the Helsinki Metropolitan Area"
 - Climate and sea level change scenarios for the area (Finnish Meteorological Institute)
 - Modelling the risks of river floods in River Espoo and Vantaa (Finnish Environment Institute SYKE)
 - A study of impacts of climate change in the region and survey of existing preparedness plans, programs, guidelines, legislation and adaptation research (HSY)
- Experts and planners of the cities were also interviewed on the consequences of extreme weather to their everyday work

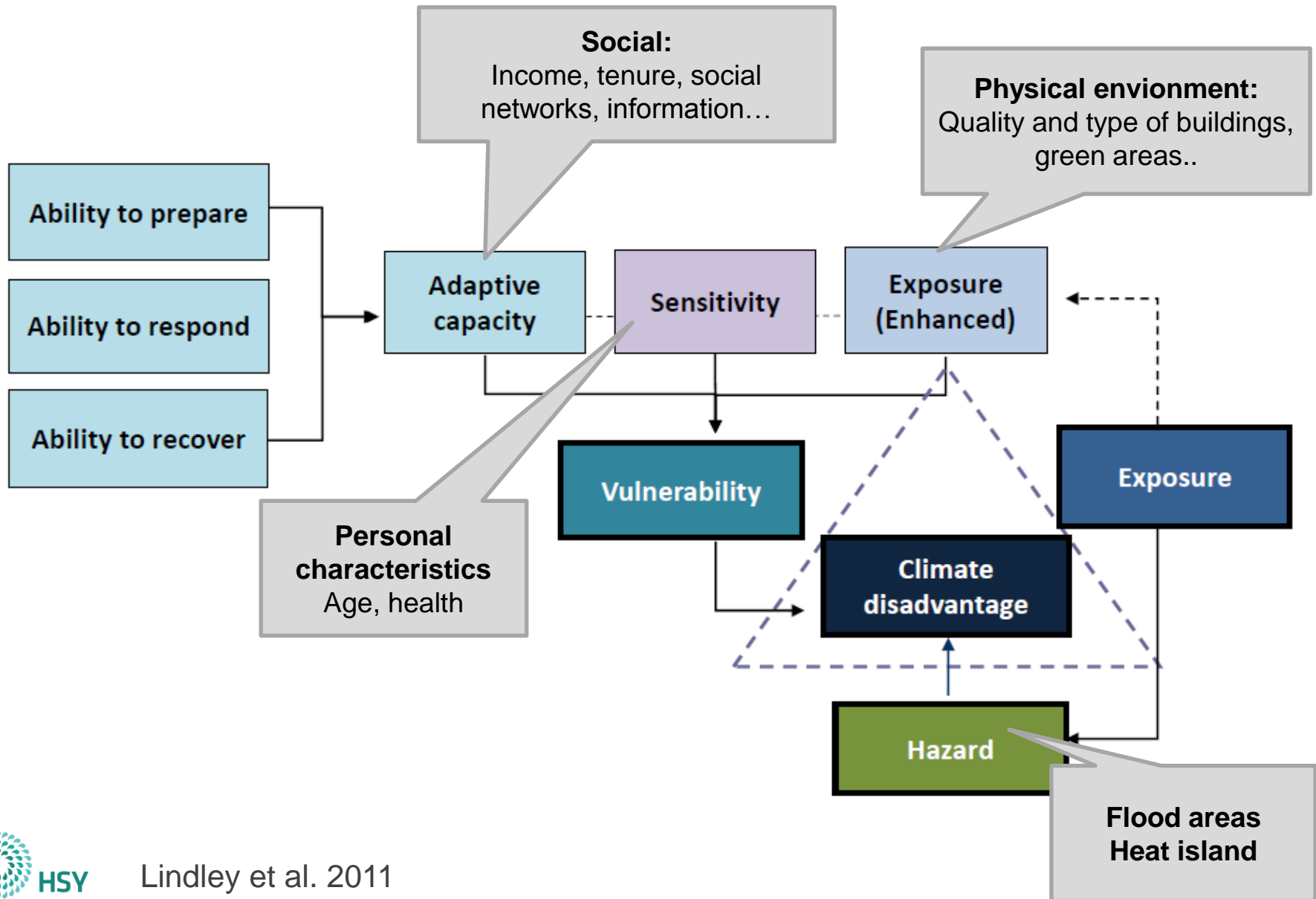


Updated scenarios (2016)

- FMI produced a report for adaptation planning at the HMA
- Climate change in the Helsinki Metropolitan Area
- A "layman's report"
- <https://helda.helsinki.fi/handle/10138/170155>

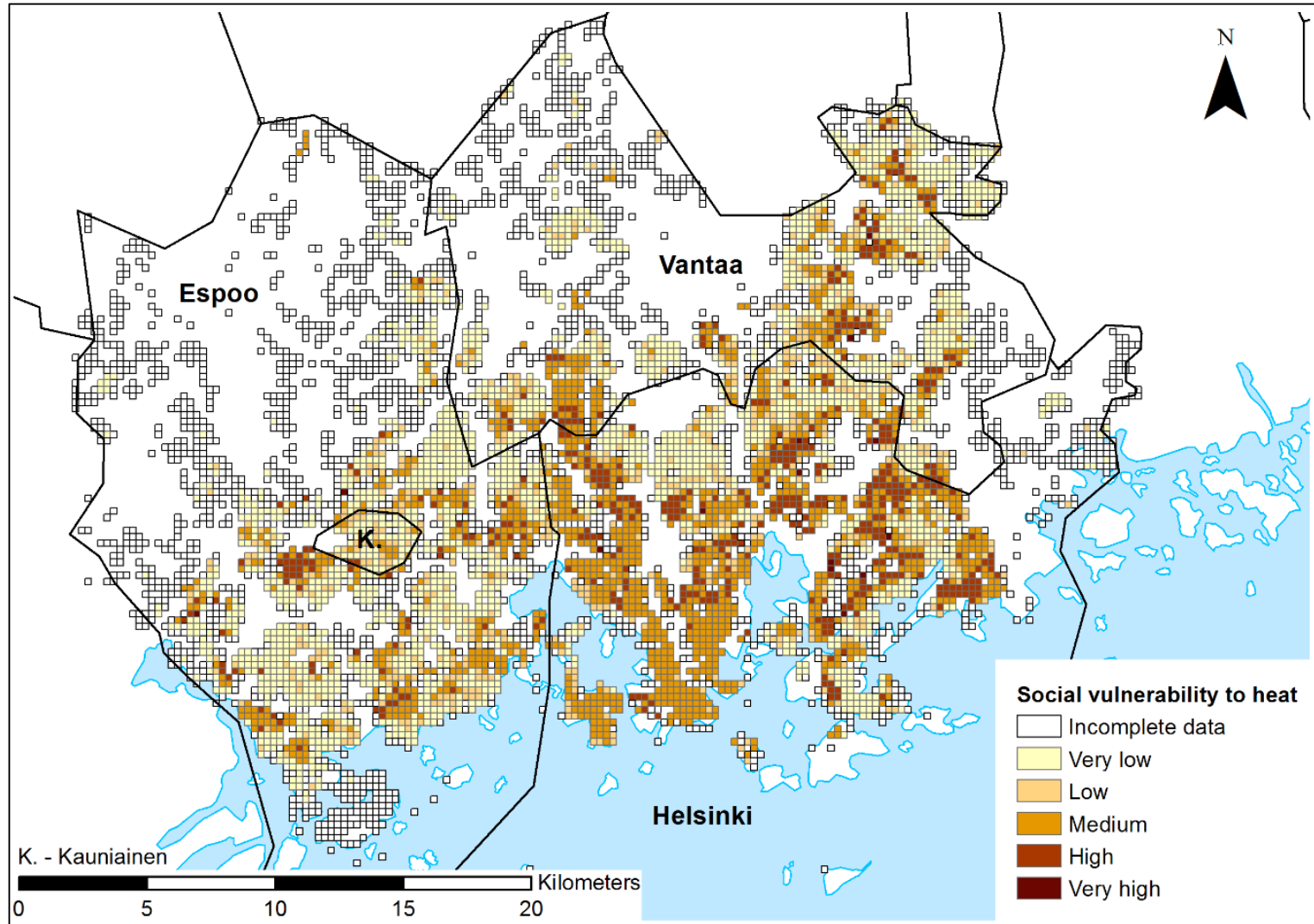


Mapping of social vulnerability to climate change



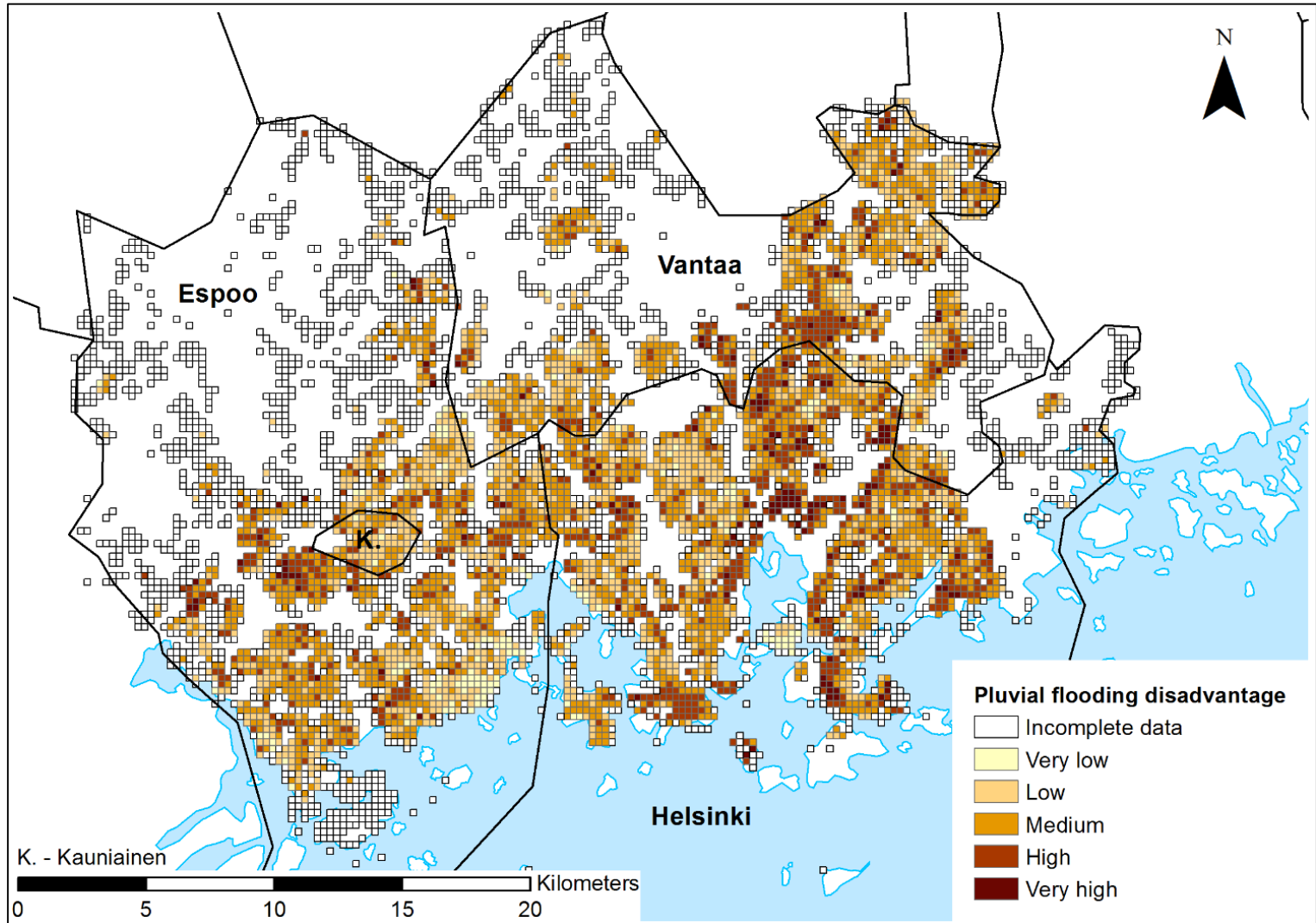
Results: Social vulnerability to high temperatures

Combination of all indicators relevant to social vulnerability to high temperatures



Results: Pluvial flooding disadvantage

Social vulnerability to flooding + pluvial hazard

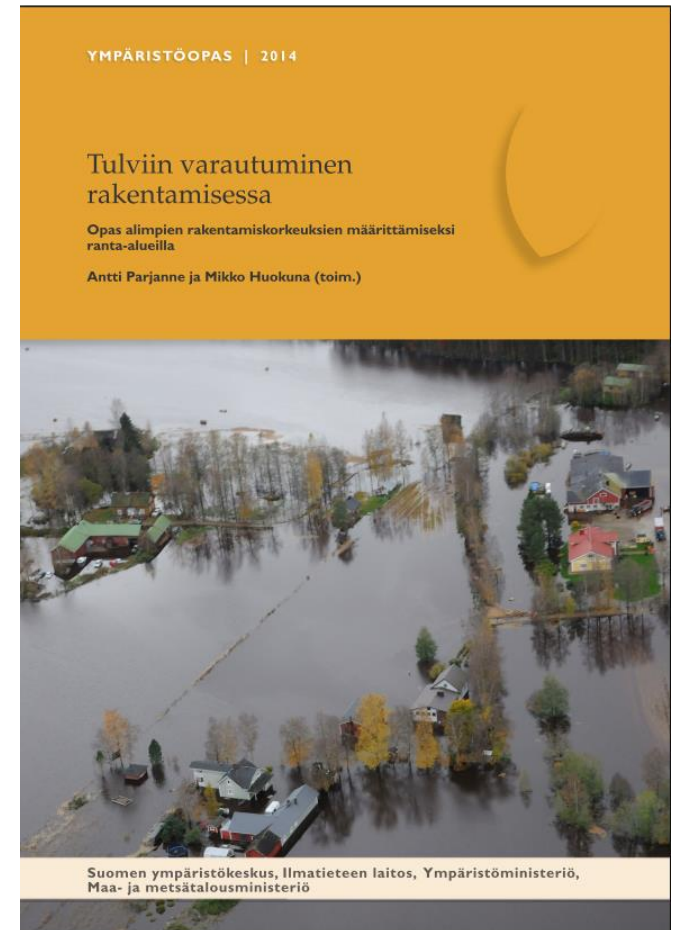
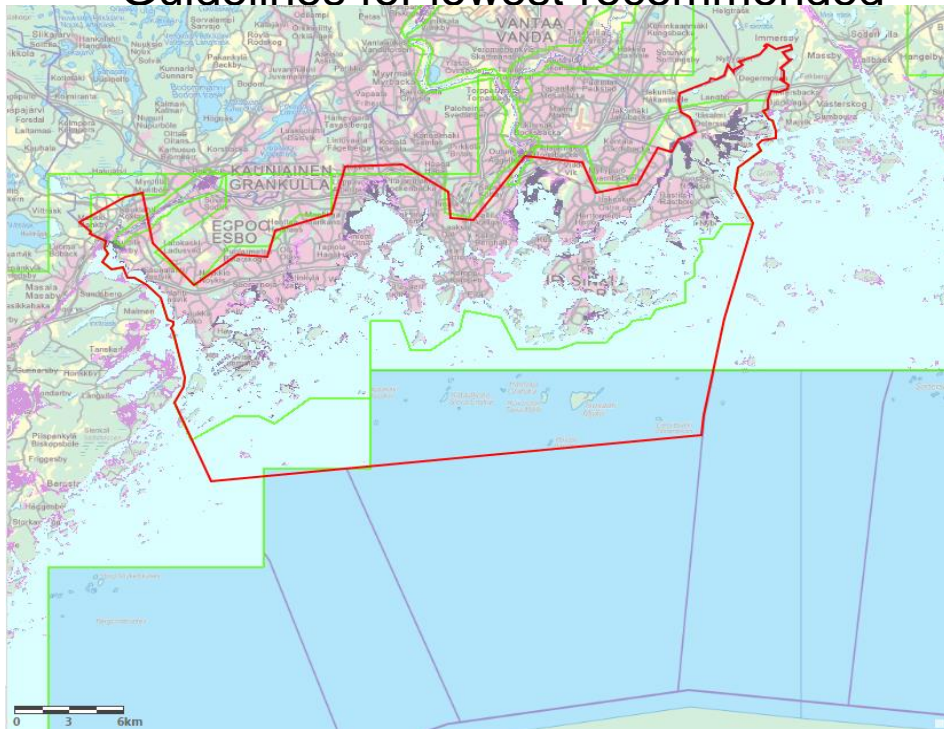


Good examples (from a practitioner's point of view)

- Flood risk maps and planning
- Lowest recommended building elevations and updated sea level rise scenarios
- Wave research project, Helsinki and FMI
- Common factors?
 - Need for climate service clear
 - Initiative for the project from the user/practitioner
 - Information is produced also in collaboration (co-working)
 - Applied science – sometimes too applied? Interest of research institutes for it?

Preparing for floods

- Preparing for sea floods and sea level rise
 - New sea level scenarios
 - Guidelines for lowest recommended





Turvalliset rakentamiskorkeudet Helsingin rannoilla vuosina 2020, 2050 ja 2100



Helsingin kaupunki
Kiinteistövirasto



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

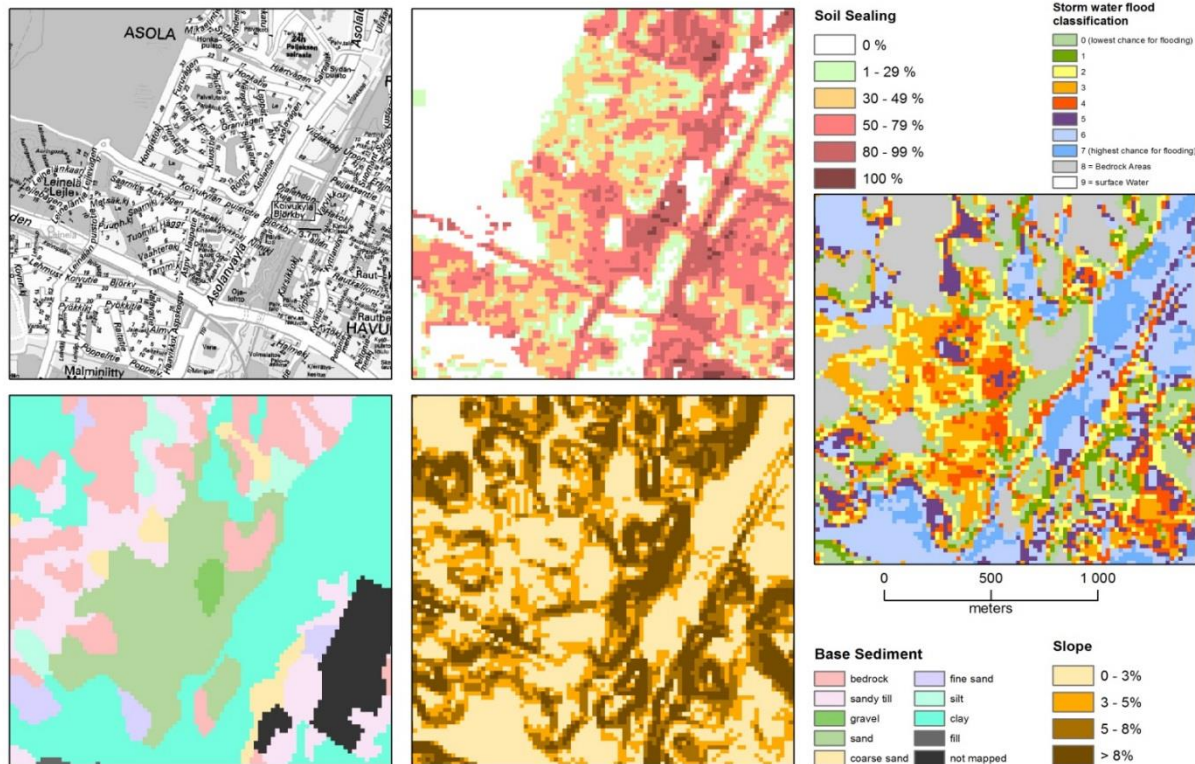
RAPORTEJA
RAPPORTER
REPORTS
2014:6

PITKÄN AIKAVÄLIN TULVARISKIT JA ALIMMAT SUOSITELTAVAT RAKENTAMISKORKEUDET SUOMEN RANNIKOLLA

KIMMO KAHMA
HILKKA PELLIKKA
KATRI LEINONEN
ULPU LEIJALA
MILLA JOHANSSON

Good work but not used so much, why?

- CliPLivE – Storm Water Flood Classification tool and maps
 - Actors – carried out by GTK, HSY and City of Vantaa – more participation from the urban planning community needed?



Some observations

- **Different targets:** in research you need to publish in peer reviewed journals to get **credits**
 - takes time, results cannot be used before publication, also research interests may differ (not always practice oriented)
 - Climate service users often need results sooner, and solutions to concrete problems (that cannot always be generalized)
- For example, more information would be needed of future sea level rise
 - Conflicting time tables – when will the information be available for use if the results are published as a scientific article?
 - Preliminary results are rarely given
- How could climate information steer action better? Sense of urgency?

Some observations (2)

- **Uncertainties** – possibility of climatic thresholds?
- **Funding** – to get funding even for practice/action oriented or strategic projects requires time, resources and expertise – stakeholders/users do not always have those
- **Communication** of research results:
 - Can be challenging to practitioners – “lay man’s” communication sometimes considered to simply results/ facts too much
- Urban and adaptation planning aims at **making a change** – presenting information in a format that helps this?

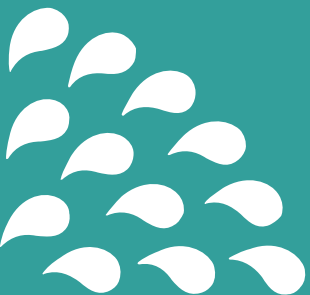
Some thoughts

- **Co-production** of scenarios and information – working with the users in their own projects
- **Communication** – translating climate information to users' languages
- "Guidebooks" prepared by the users?
- Cooperation and working – a **learning** experience
- Climate research updates for cities' climate experts, risk management professionals?
- Access to information?
- Funding for this type of work?

Puhtaasti parempaa arkea | En rent bättre vardag | Purely better, every day

Thank you!
KIITOS!

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Helsingin seudun ympäristöpalvelut -kuntayhtymä
Samkommunen Helsingforsregionens miljötjänster
Helsinki Region Environmental Services Authority

