



Geographies in times of crises

57. Maantieteen Päivät 2023 / 57th Finnish Geography Days 2023

8th – 11th of November 2023

Joensuu, Finland

Editors:

Oswald Sydd, Henrik Nielsen, Moritz Albrecht

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“Geographies in times of crises”

Climate extremes and their often-devastating impacts all over the world; the last Finnish parliamentary election results; a multitude of growing geopolitical tensions and armed conflicts including wars in Europe and Africa; the contested Finnish health and social services reform, the rapid degradation of global biodiversity, Sanna Marin’s dancing moves, the COVID-19 pandemic or last winter’s electricity bills and ChatGPT in higher education... This eclectic list of ‘crises’ highlights some starting points to embark on the theme *“geographies in times of crises”* for the Finnish Geography Days 2023 in Joensuu. It raises not only the multiplicity of crises currently materialising or perceived as such, but hints at their delineation, scope and effect, reaching from the everyday to planetary realms, including biophysical and social components, individual and communal identities, as well as scalar and temporal shifts. The emergence of crises themselves, livelihoods in times of crises or processes to prevent/halt/normalise crises are an interrelation of complex socio-spatial processes and henceforth at the core of geographical analysis.

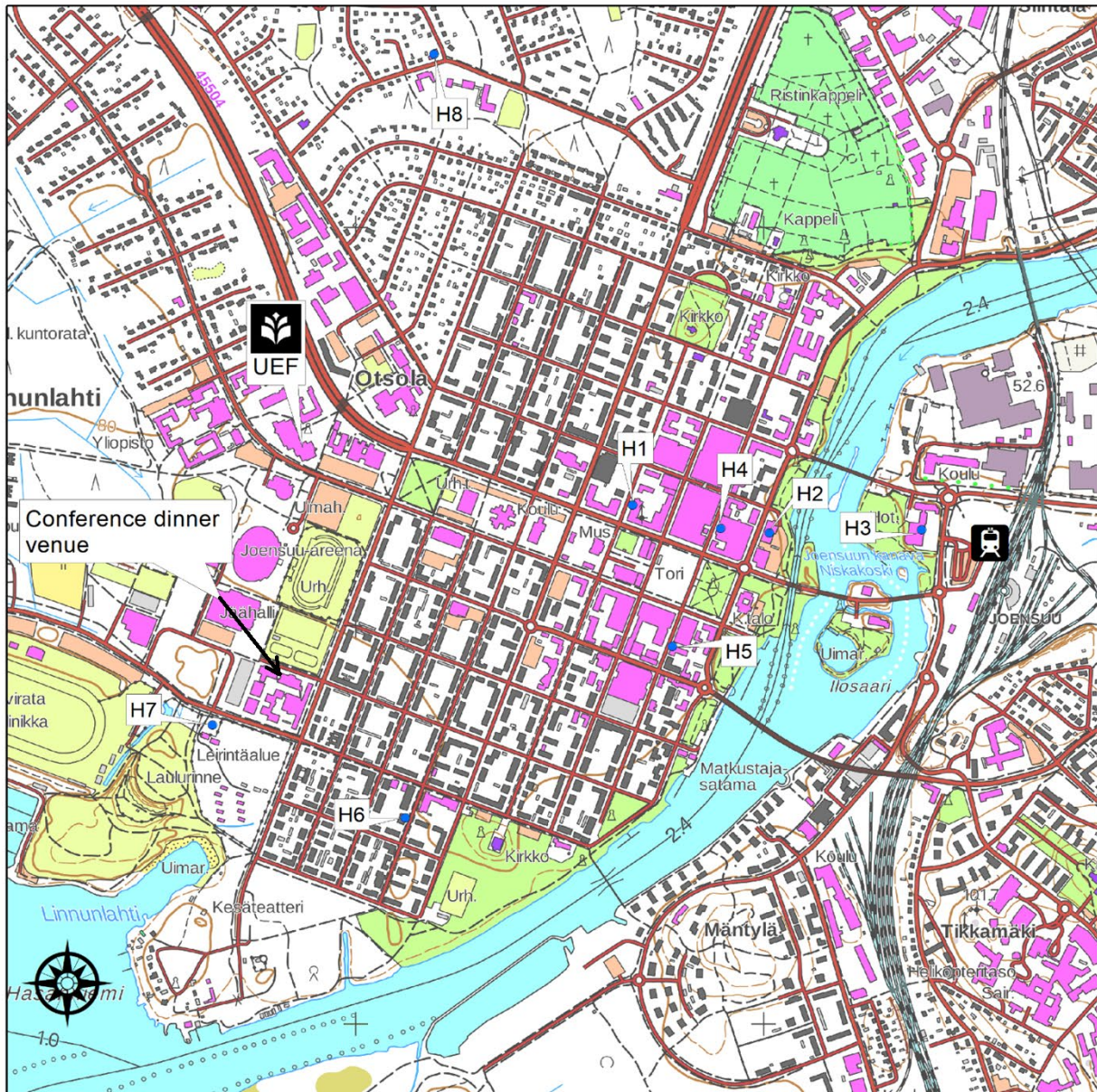
We therefore welcome you to the Finnish Geography Days 2023 under the theme *“Geographies in times of crises”* to discuss the big questions that highlight the implications of planetary crises, such as climate, biodiversity, urbanism or geopolitics, but also that engage with the varying small crises (or related problematisations) arising in every field of societal conduct, as well as on the geographical methods and approaches to assess the socio-spatial processes at play.

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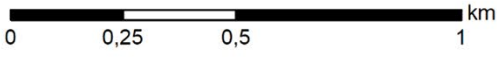
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City map and campus plan



- H1 Scandic Hotel
- H2 Lietsu Boutique Hotel
- H3 Sokos Hotel Kimmel
- H4 Sokos Hotel Vaakuna
- H5 Greenstar Hotel
- H6 ISLO Hostel /Finnhostel Joensuu
- H7 Linnunlahti Cottages
- H8 Partiotalo Hostel



National Land Survey Finland 2020

Schedule at a glance

Wednesday, 8th November 2023

13:00 – 13:05	Welcome
13:05 – 13:30	Presentation and discussion by Rob Kitchin, Maynooth University
13:30 – 14:00	Presentation and discussion by Eric Delmelle, University of Eastern Finland
14:00 – 15:00	PhD session I
15:00 – 15:30	Coffee break
15:30 – 16:30	PhD session II
16:30 – 16:45	Break
16:45 – 17:45	PhD session III
17:45 – 18:00	Final discussion
18:30 – 20:00	Doctoral school dinner (Kerubi)
20:00 –	Informal get-together at Kerubi – everyone welcome!

Thursday, 9th November 2023

08:15 – 08:45	Registration and info desk open (Metria lobby)
08:45 – 09:00	Welcome by Minna Tanskanen, Vice Dean University of Eastern Finland & Moritz Albrecht, Chair of MTP 2023 Organization Committee (M100)
09:00 – 10:15	Keynote: The politics and praxes of spatial data in understanding and managing crises by Rob Kitchin, Maynooth University (M100). Commentator: Olli Lehtonen (University of Eastern Finland)
10:30 – 12:00	Parallel sessions
12:00 – 13:00	Lunch
13:00 – 14:15	Parallel sessions and Panel 1
14:15 – 14:45	Coffee break
14:45 – 16:15	Parallel sessions and Panel 2
16:15 – 16:45	Coffee break
16:45 – 18:15	Fennia plenaries & panel with Burcu Yigit Turan, Tarmo Pikner, and Sanna Ala-Mantila. Commentators: Tero Mustonen; Maija Kuivalainen (M100), Moderator: Kirsi Pauliina Kallio
18:15 – 19:00	Fennia & HiMa reception (Metria lobby)
19:30 – 22:00	Conference Dinner (Tiedepuisto, Ravintola Puisto)

Friday, 10th November 2023

08:45 – 09:00	Registration and info desk open (Metria lobby)
09:00 – 10:15	Keynote: What can geography tell us about the relationship between energy and violence by Veli-Pekka Tynkkynen (M100) Commentator: Paul Fryer (University of Eastern Finland)
10:15 – 10:30	Coffee break
10:30 – 12:00	Parallel sessions and Panel 3
12:00 – 12:15	End of Conference, Moritz Albrecht, Chair of MTP 2023 Organization Committee (M100)
12:15 – 13:15	Lunch
13:15 – 15:00	SMS Board Meeting

Keynotes

Thursday, 9th November 2023

09:00 – 10:15

Auditorium M100

The politics and praxes of spatial data in understanding and managing crises

Keynote I: *Rob Kitchin (Maynooth University)*

This paper will consider the role of data and data-driven approaches for understanding and managing crises. On the one hand, it will examine critically how data are generated, published and utilised to make sense of the geographies of crises, focusing in particular on spatially referenced data. On the other, it will explore the role of geographers in constructing and using evidence for understanding crises from two perspectives: first, as scientists operating in a post-truth world seeking to provide key information and analysis to inform policy and political/media debate; second, as critical scholars that are mindful of the partiality, politics and situatedness of official statistics and scientific data and how data can be 'weaponised' rhetorically in debates. The paper will draw on twenty year's worth of applied data work to build data tools (open dashboards and interactive mapping modules) for understanding social and economic crises and critical data scholarship that critical interrogates the politics, veracity and utility of official state data. In particular, it will focus on the data used to make sense of a long crisis of housing in Ireland and the state response to Covid-19.

Friday, 10th November 2023

09:00 – 10:15

Auditorium M100

What can geography tell us about the relationship between energy and violence?

Keynote II: *Veli-Pekka Tynkkynen (Helsinki University)*

Scholars within energy humanities argue that energy is a worldview-forming factor. Slaves, an energy commodity central for the Roman Empire, were naturally dreaming of becoming free. As individuals they strived for freedom, but as members of the community they supported slavery, because everyone understood that the society and the Empire could not be maintained without slavery and the energy it provided. Today, in a similar vein we take for granted the worldview shaped by energy. Modern world is still by far hooked on to fossil energies. Even though knowledge on the detrimental local and global environmental effects of fossil-fuel based system is mounting, there are still blind spots in our understanding on the versatile negative effects of our petro-addiction. Fossil energy is violent in at least two ways: it leads to global destruction by accelerating climate change, but it also drives conflict over the

control of these resources and pushes Petrostates down a path of violence. A spatial glance and the discipline of Geography can help to better understand the relationship between energy and violence and think of ways to curtail the problem. The keynote looks at these blind spots through the discussions within energy Geography (new geographies of energy), as well as within energy humanities and analytics of political power.

Friday, 10th November 2023

16:45 – 18:15

Auditorium M100

Fennia plenary 2023: Planetary Urbanism

Burcu Yigit Turan (Swedish University of Agricultural Sciences), Tarmo Pikner (Tallinn University) & Sanna Ala-Mantila (Helsinki University)

Commentators: Tero Mustonen (University of Eastern Finland), Maija Kuivalainen (University of Eastern Finland)

Moderator: Kirsi Pauliina Kallio (Tampere University)

The broad context of this Fennia Panel is the contemporary 'planetary turn' identified by critical scholars, specialists from various fields, NGOs, intergovernmental bodies, politicians, and civil society actors across the world. It refers to what geographers often call 'scale jump', that is, a shift of spatial attention. In this case, the jump is perhaps most importantly from scales such as 'global' and 'transnational', to the planetary perspective. While the shift may first seem semantic, those attentive to the current environmental situation of the globe see it fundamental. Whereas 'globalization' draws attention to the global mobilities of people, goods and ideas, with strong emphasis on the economy and the capitalist world order, 'transnationalization' stresses the changing connections and disruptions between states, primarily political power relations between them, but acknowledging also cultural and social dimensions of the constantly transforming relational world. Both concepts are often coupled with the idea of 'translocalization' where scalar attunement is toward cities, city-regions, and other regions and localities that together form economically, politically, socially, and culturally significant spatial configurations.

Diverting from these, the planetary turn urges us to see the world as a living environment consisting of fragile ecosystems that humans, among other species, are completely dependent on. A concern broadly shared by 'planetarists' is that tipping points in the human-induced destruction of the planet are close if not already at hand. Brought together with the translocal perspective, this worry gets an urban face. The over-consumption of the world's resources takes place in urban centers, making the production of carbon emissions an urban matter, similarly to nature loss that actually happens most alarmingly beyond urban agglomerations. Major urban areas are connected through worldwide city-regional networks, driven by capitalist logics with an obvious northern-western tilt, and leaving other areas

disconnected and depriving. Currently, the whole planet is made to serve the increasingly rapid urbanization, which is leading to the collapse of ecosystems in various locations, to irreversible climate change with earth-shattering consequences, and to deepening inequalities between places and people. To stop and reverse this development, a radical change from globalization and transnationalization towards planetary balance and justice is needed. It needs to build on viable ecosystems and socially just environmental sustainability, through urban change. The panel discusses these and other aspects of the 'planetocene' from urban perspectives.

Panels

Thursday, 09 November 2023

13:00 – 14:45

Auditorium M109

Panel 1: Maantiede opiskelijavalintauudistuksessa

Panel chairs: Minna Tanskanen (Itä-Suomen yliopisto), Olli Ruth (Helsinki yliopisto), Sanna Mäki (Turun yliopisto), Sanna Varanka (Oulu yliopisto)

Yliopistojen opiskelijavalintaa uudistetaan voimakkaasti. Toukokuussa 2023 julkistettiin todistusvalinnan pisteytysesitys, ja yliopistot päättävät uudesta pisteytyksestä elokuun 2023 aikana. Seuraavaksi uudistushankkeessa keskitytään valintakoevalinnan kehittämiseen, ja myös maantieteen yhteisvalinnasta on pyydetty edustaja asiantuntijatyöryhmään, joka aloittaa työskentelynsä nyt syksyllä. Maantiede on jo tähän mennessä päässyt kehitystyössä varsin näyttävästi esille, ja yhteisvalinnan kokemuksille on annettu arvoa. Arvokasta on myös se, että maantieteen paikka on nyt tunnustettu luonnon- ja yhteiskuntatieteellisten alojen rajapinnalle.

Paneelissa esitellään vuonna 2020 aloitettu maantieteen yhteisvalinta ja avataan yhteisvalinnasta tähän mennessä kertyneitä kokemuksia. Paneelissa esitellään myös todistusvalinnan uudet pisteytysmallit ja visioidaan valintakoevalinnan tulevaisuutta maantieteen näkökulmasta.

Panelists:

Olli Ruth (Helsingin yliopisto)

Sanna Mäki (Turun yliopisto)

Thursday, 09 November 2023

14:45 – 16:15

Auditorium M109

Panel 2: Visiting the dead: documentary screening & discussion on Palestinian landownership in a colonial regime

Panel chair: Mikko Joronen (Tampere University)

This session offers a screening of a research documentary "Visiting the Dead" (2023). The documentary follows Palestinian landowners' claims for land under the settler colonial regime, particularly of accessing and cultivating the lands annexed for Israeli settlement expansion purposes at West Bank. It focuses particularly on Palestinian landowners' annual visits to their lands now located behind the separation wall and their aims to maintain political claims for

lands near Jabal Abu Ghneim (nowadays also known as Har Homa settlement) in Bethlehem (West Bank) through cultivation practices and bodily presence. The document touches on number of themes related to contemporary colonisation processes, ecological degradation, and politics of future-making in Palestine, particularly the state mechanisms of land appropriation, slow erasure of native presence and connection to land, destruction of olive groves and 'spaciocide' of Palestinian spaces, and the politics of memory and forms of embodied political claims, which will be further discussed by a panel after the film screening. The documentary (c.30 mins) was conducted as part of the research material collection of the Academy of Finland funded project 'Present-futures in/of Palestine' (2019-2023), and is further related to its public dissemination and benefit -sharing practices. The screening is accompanied with introduction, commentaries from panellists, and open discussion on the topic.

Panelists:

Wassim Ghantous (Tampere University)

Tiina Järvi (Tampere University)

Mikko Joronen (Tampere University)

Friday, 10 November 2023

10:30 – 12:00

Auditorium M100

Panel 3: Geography in crisis

Panel chairs: Henrik Nielsen, Virpi Kaisto (University of Eastern Finland)

After Russia's full-scale attack on Ukraine in February 2022, cooperation with Russian universities, individuals and other partners has been halted. That means research projects have been stopped, articles made difficult to finish let alone publish. The war seems to be at stillstand now and the restrictions and sanctions put on interaction with Russia and Russians could be in place for a very long time. In this panel we wish to explore and discuss how we, as geographers, can navigate this new geopolitical reality in which we cannot do fieldwork in Russia or collaborate with Russian partners. We would like to hear from researchers from all areas of geography, physical as well as human, regarding how to conduct geographical research in, as well as about, Russia in the current situation. Some of the questions that we would like to discuss are:

Is it possible to do (objective) research in Russia?

Is it ethical to do research in Russia?

Is it safe for us and Russians if we do fieldwork in Russia?

Can we study Russia from a distance and still do relevant research?

Can we publish in Russian based journals?

Can we cite what is being published in Russian based journals?

Should we try to keep up relations with Russian partners and colleagues?

And many more...

We would like to hear what colleagues think about the new reality and how they navigate through it.

Panelists:

Olga Davydova-Minguet (University of Eastern Finland)

Paul Fryer (University of Eastern Finland)

Elena Nikiforova (University of Helsinki)

Timo Kumpula (University of Eastern Finland)

Veli-Pekka Tynkkynen (University of Helsinki)

Olga Brednikova (Independent researcher)

Sessions

Auditorium M100, Thursday

08:45 – 09:00

- Welcome by Minna Tanskanen, Vice Dean University of Eastern Finland & Moritz Albrecht, Chair of MTP 2023 Organization Committee

09:00 – 10:15

- Keynote: The politics and praxes of spatial data in understanding and managing crises by Rob Kitchin (Maynooth University)

Auditorium M103, Thursday

Session 7: Beyond the pretty picture: Remote sensing for biodiversity and ecosystem condition monitoring

Chair: Miguel Villoslada & Topi Tanhuanpää (University of Eastern Finland)

10:30 – 12:00

- **Foliar chlorophyll and carotenoid contents of European aspen assessed with airborne hyperspectral imaging** *Sarita Keski-Saari, Markku Keinänen (University of Eastern Finland), Janne Mäyrä, Arto Viinikka (Finnish Environment Institute), Laura Poikolainen, Topi Tanhuanpää, Sonja Kivinen (University of Eastern Finland), Petteri Vihervaara (Finnish Environment Institute) & Timo Kumpula (University of Eastern Finland)*
- **UAV- and handheld-hyperspectral imaging for Sphagnum discrimination and vegetation modelling** *Franziska Wolff (University of Eastern Finland), Sandra Lorenz (Helmholtz-Zentrum Dresden-Rossendorf), Anette Eltner (Universität Dresden), Pasi Korpelainen & Timo Kumpula (University of Eastern Finland)*
- **Hyperspectral UAV imagery adds marginal value to characterizing tundra vegetation** *Pauli Putkiranta, University of Helsinki, Aleksi Räsänen (Natural Resources Institute Finland), Rasmus Erlandsson (Stockholm University), Tiina H.M. Kolari, Pasi Korpelainen (University of Eastern Finland), Yuwen Pang (University of Helsinki), Miguel Villoslada, Franziska Wolff, Timo Kumpula (University of Eastern Finland) & Tarmo Virtanen (University of Helsinki)*

- **Time Series Assessment of Anthropogenic Pressures on Natural Vegetation Cover – A Case study of the Zambezi Region** *Alfred Colpaer & Augustine-Moses Gaavwase Gbagir (University of Eastern Finland)*

13:00 – 14:15

- **Input data resolution affects the conservation prioritization outcome** *Topi Tanhuanpää (University of Eastern Finland)*
- **How different reindeer grazing practices effect on land cover and ecosystem carbon exchange in a sub-arctic high-elevation peatland** *Timo Kumpula, Henni Yläanne (University of Eastern Finland), Sari Juutinen (Finnish Environment Institute) Liang Chen (University of Eastern Finland), Oliver Sonnentag (University of Montreal), Natascha Kljun (Lund University,) Pasi Korpelainen, Frank Berninger & Miguel Villoslada (University of Eastern Finland)*
- **Novel herbivore outbreaks in Northern Finland** *Henri Wallen & Sari Stark (University of Lapland)*

14:45 – 16:15

- **Insights into the synergistic use of Unoccupied Aerial Vehicles and satellite images to model above ground biomass fractions and topsoil moisture in the Arctic** *Miguel Villoslada (University of Eastern Finland), Logan Berner (Northern Arizona University), Timo Kumpula (University of Eastern Finland), Sari Juutinen (Finnish Meteorological Institute) & Henni Yläanne (University of Eastern Finland)*
- **Boreal tree species classification and standing deadwood detection based on UAS approach** *Anton Kuzmin (University of Eastern Finland)*
- **Application of Random Forest regression for modelling spatial distribution of the active layer thickness in palsas** *Mariana Verdonen, Miguel Villoslada, Pasi Korpelainen, Tiina Kolari, Teemu Tahvanainen & Timo Kumpula (University of Eastern Finland)*

Auditorium M105, Thursday

Session 1: Migration crisis, migration in crisis: Complex effects of (supra-)national policies on human mobility

Chair: Gintare Kudzmaite, Kirsi Pauliina Kallio (Tampere University)

10:30 – 12:00

- **The framing of migrants in the EU's New Pact on Migration and Asylum** *Häkli Jouni, Gintarė Kudžmaitė & Kirsi Pauliina Kallio (Tampere University)*
- **The Politics of Performing Care: An Analysis of the Portrayal of Care by the Political Parties after the Exodus of Rohingyas** *Morsaline Mojid (University of Hawaii at Manoa)*
- **From a gate into a fence? Changing visual media representations of the Finnish-Russian border** *Virpi Kaisto (University of Eastern Finland)*
- **Right to leave, right to stay, right to return? High school students' interpretations of climate mobilities** *Kirsi Pauliina Kallio, Jouni Häkli & Kimmo Härmä (Tampere University)*
- **Postcolonial empathy education: school interventions in Finland and Greece on climate mobilities** *Vilhelmiina Vainikka & Kirsi Pauliina Kallio (Tampere University)*

Session 16: Villages and research on villages in the 2000's / Kylät ja kylien tutkimus 2000-luvulla

Chair: Päivi Oinas (University of Turku), Torsti Hyyryläinen (University of Helsinki) & Maarit Sireni (University of Eastern Finland)

13:00 – 14:15

- **Tulevaisuuskestävät taajamaverkostot** *Emilia Rönkkö (Oulun yliopisto)*
- **Syrjäkylä mobiilina sommittumana** *Pertti Rannikko (Itä-Suomen yliopisto)*
- **Kylät: nukkumalähiöitä vai noodeja globaaleissa verkostoissa?** *Päivi Oinas (Turun yliopisto)*

14:45 – 16:15

- **Kylät toimijoina ja kuntien kumppaneina kestävyysmuutoksessa** *Torsti Hyyryläinen, Annamari Kiviaho (Helsingin yliopisto) & Tauno Linkoranta (Varsinais-Suomen kylät ry)*
- **Tietoteknologian paikallinen tuleminen, Sivakka ja Rasimäki** *Jukka Oksa (Itä-Suomen yliopisto)*
- **Aineen ja tunteen kylät** *Katariina Kotila (Itä-Suomen yliopisto)*
- **Turvallinen kylä: tila, käytännöt ja tunteet** *Maarit Sireni & Mari Kattilakoski (Itä-Suomen yliopisto)*

Auditorium M106, Thursday

Session 10: Rural geography in times of the polycrisis – drifting without a direction?

Chair: Olli Lehtonen (University of Eastern Finland)

10:30 – 12:00

- **Co-producing sustainable energy practices in rural North Karelia** *Jani Lukkarinen (Finnish Environment Institute)*
- **The withdrawal of the state: Spatial distribution of central government jobs in Finland in 1987–2021** *Simo Rautiainen (University of Eastern Finland)*
- **Distilling priorities for municipal development via researcher-practitioner collaboration: a map-based survey and future workshop in rural community in Northern Finland** *Salla Eilola (University of Eastern Finland), Sirpa Rasmus (University of Lapland) & Nora Fagerholm (University of Turku)*
- **Rural housing markets during COVID-19 – Mapping changes with Etuovi.com dataset** *Olli Lehtonen (University of Eastern Finland) & Olli Voutilainen (Natural Resources Institute Finland)*

Session 9: Catchment processes and their interactions)

Chair: *Elina Kasvi & Petteri Alho (University of Turku)*

13:00 – 14:15

- **Assessing the Impact of Halting Hydropower Dam Operations on Downstream Flow Characteristics Using State-of-the-Art Modelling Approach** *Sadeqi Amin (University of Turku)*
- **Near-bed flow characteristics under varying ice covers in a meander bend** *Karoliina Lintunen (University of Turku)*
- **Nature-based solutions for watershed management in human impacted peri-urban watersheds** *Aino Saarinen (University of Turku)*

14:45 – 16:15

- **Impact of anthropogenic and climate change on river dynamics - utilizing digital twins and geoinformatics** *Asfand Tehseen (University of Turku)*
- **Knowledge on river-sea interactions and delta processes in the sub-arctic Tana River (Teno) delta for better climate change adaptation** *Tua Nylén (University of Helsinki), Mikel Calle, Harri Tolvanen (University of Turku) & Tapio Suominen (University of Helsinki)*
- **Temporal shift of hydroclimatic regime and its influence on migration of a high latitude meandering river** *Linnea Blåfield (University of Turku), Hannu Marttila (University of Oulu), Elina Kasvi & Petteri Alho (University of Turku)*

Auditorium M107, Thursday

Session 14: Stakeholder and policy responses to multidimensional food security challenges in diverse regions

Chair: Erja Kettunen-Matilainen & Ayu Pratiwi (University of Turku)

10:30 – 12:00

- **A billion-euro industry? (De-)territorialisation processes of Norway's seaweed farming assemblage** *Moritz Albrecht (University of Eastern Finland)*
- **Fighting deforestation: Evaluating agroforestry networks via randomized control trials in Indonesia** *Ayu Pratiwi (Turku University) & Petr Matous (University of Sydney)*
- **Potentials and challenges for a zero-loss agriculture in Europe: the case of beef production in North Karelia** *Oswald Sydd (University of Eastern Finland)*
- **EU-Indonesia policy dialogue on palm oil amidst global food security crisis** *Erja Kettunen & Ayu Pratiwi (University of Turku)*

Session 13: Geographies of ownership / Omistamisen maantieteet

Chair: Tuomo Alhojärvi (University of Eastern Finland)

13:00 – 14:15

- **Auton omistamisen välttämättömät tilat ja tilanteet suomalaisessa mediakeskustelussa** *Juhana Venäläinen (Itä-Suomen yliopisto)*
- **Metsän omistamisen maantieteet** *Ari Lehtinen (Itä-Suomen yliopisto)*
- **Kuntien omistamien energiayhtiöiden omistajaohjaus energiademokratian ideaalin kautta tulkittuna** *Antti Saarelainen (Itä-Suomen yliopisto)*

Session 5: Adaptive strategies of businesses in times of crises and transformations

Chair: *Maija Halonen (University of Eastern Finland) & Irene Kuhmonen (University of Jyväskylä)*

14:45 – 16:15

- **Farmers' transformative capacities in the making of a sustainable food system** *Irene Kuhmonen (University of Jyväskylä)*
- **Spatial bricolage in small rural tourism businesses** *Inna Kopoteva (University of Helsinki)*
- **Rethinking the concept of small-scale mining for a European social context** *Olga Sydd (University of Eastern Finland)*
- **The transformation of Finnish forest-based companies through collaborative business models** *Annikka Näyhä (University of Jyväskylä) & Venla Wallius (European Forest Institute)*
- **Resilience of peripheral forest industry in time of crises** *Maija Halonen (University of Eastern Finland)*

Auditorium M108, Thursday

Session 17: Participatory and Deliberative Spaces of Local Governance

Chair: *James Scott & Matti Fritsch (University of Eastern Finland)*

10:30 – 12:00

- **Setting Objectives in Local Governance: A Collective Intelligence Approach to Citizen Participation in Three Nordic Cities** *Mikko Rask (University of Helsinki)*
- **The Ambivalent Roles of Place in Local Democratic Governance Processes** *James Scott (University of Eastern Finland)*
- **Balancing Landscape Values and Tourism Choices: Integrating Participatory Mapping and IPBES Values Analysis** *Liliana Solé, Katri Väänänen (University of Turku), Kyle Hearn (University of Navarra), Alex Lechner (Monash University) & Nora Fagerholm (University of Turku)*
- **Relying on LEADER? A place-based policy approach in the rural development of Finnish municipalities** *Ella Mustakangas (Tampere University)*

Session 2: 3D participatory methods for urban and landscape planning

Chair: Carolin Klonner, Nora Fagerholm & Salla Eilola (University of Turku)

13:00 – 14:15

- **3D Participatory Mapping** *Carolin Klonner, Nora Fagerholm & Salla Eilola (University of Turku)*
- **3D Reconstruction of Historical Monuments from Photogrammetric Processing of Images Obtained Using Low-cost UAV and Traditional Digital Camera** *Gbagir Augustine-Moses & Alfred Copaert (University of Eastern Finland)*

Session 6: Using and perceiving nature in the urbanized society

Chair: Riikka Puhakka (University of Helsinki), Kati Pitkänen (Finnish Environment Institute) & Nora Fagerholm (University of Turku)

14:45 – 16:15

- **Outdoor recreation and connection with nature among young people in Finland** *Riikka Puhakka (University of Helsinki), Ann Ojal, Marjo Neuvonen, Joel Manner & Seija Tuulentie (Natural Resources Institute Finland)*
- **Nature's role in the eudaimonic wellbeing – creative nature writings from people who use mental health association's services** *Johanna Jämsä (University of Turku)*
- **Not in my leisure area! (NIMLA): Mining-related disputes associated to tourism and second homes in Finland from the geosystem services perspective** *Toni Eerola (Geological Survey of Finland)*

Auditorium M109, Thursday

Session 4: Geography as a Promoter of Active and Environmentally Responsible Citizenship / Maantiede aktiivisen ja ympäristövastuullisen kansalaisuuden edistäjänä

Chair: Anssi Huoponen (University of Eastern Finland), Sanna Mäki (University of Turku) & Minna Tanskanen (University of Eastern Finland)

10:30 – 12:00

- **Geomediakyvykyys, kriittinen geomedialukutaito ja niiden merkitys nuorten arjessa ja kansalaisuuteen kasvussa** *Heli Kainulainen, Hirvensalo, V., Hynynen, L., Jylhä, M., Lammi, P., Nylén, T., Pellikka, A., Päivärinta, R. & Muukkonen, P. (Helsingin yliopisto)*
- **Geomedia kouluopetuksessa - opintojakso työelämälähtöiseen osaamisen vahvistamiseen** *Sanni Pirttilä & Ville Tahvanainen (Itä-Suomen yliopisto)*
- **Geography in the matriculation examination: How the number of geography courses in school impact the students' choices of demanding tasks in the exam** *Christina Ruth (University of Helsinki) & Tomas Hanell (Migration institute of Finland)*
- **Pedagogista kokeilua Galleria Kasvihuoneella** *Lauri Jantti (Helsingin yliopisto)*
- **Lukion uskonnonopettajien ammatillinen osaaminen ja kasvu ympäristökasvatuksen näkökulmasta** *Marika Pakarinen (Itä-Suomen yliopisto)*

13:00 – 14:45

Panel 1: Maantiede opiskelijavalintauudistuksessa

Chairs: Minna Tanskanen (Itä-Suomen yliopisto), Olli Ruth (Helsinki yliopisto), Sanna Mäki (Turun yliopisto), Sanna Varanka (Oulu yliopisto)

14:45 – 16:15

Panel 2: Visiting the dead: documentary screening & discussion on Palestinian landownership in a colonial regime

Chair: Mikko Joronen (Tampere University)

Auditorium M100, Friday

09:00 – 10:15

- Keynote: What can geography tell us about the relationship between energy and violence by Veli-Pekka Tynkkynen (Helsinki University)

10:30 – 12:00

- Panel 3: Geography in crisis

Panel chairs: Henrik Nielsen, Virpi Kaisto (University of Eastern Finland)

Auditorium M103, Friday

Session 8: The capacity for regional renewal in a world of crises / Alueiden uudistumisen kapasiteetti kriisien maailmassa

Chair: Heli Kurikka, Jari Kolehmainen & Markku Sotarauta (Tampere University)

10:30 – 12:00

- **Ilmaa kevyempi paikallinen elinvoima?** *Jari Kolehmainen (Tampereen yliopisto)*
- **Regional allocation of public expenditure in Finland: Equity or efficiency?** *Teemu Makkonen, Olli Lehtonen (University of Eastern Finland) & Tommi Inkinen (University of Turku)*
- **Perceived regional opportunity spaces and social filters shaping regional development.** *Heli Kurikka (Tampere University)*

Auditorium M105, Friday

Session 15: Health and well-being in times of crises

Chair: Maija Toivakka (University of Eastern Finland), Eric Delmelle (University of Eastern Finland & The University of North Carolina at Charlotte), Olli Lehtonen (University of Eastern Finland)

10:30 – 12:00

- **Residential Mobility in Health Geography and its Implications for Spatial Analysis** *Eric Delmelle (University of Eastern Finland)*
- **Spatio-temporal dynamics of the last Finnish Variola epidemic, 1918–19** *Antti Härkönen (University of Eastern Finland)*
- **Relationship between distance to health services and multimorbidity in Kainuu, Finland** *Tiina Lankila & Harri Antikainen (University of Oulu)*
- **Mining geographical patterns of multimorbidity – experiences from Finland** *Maija Toivakka, Olli Lehtonen, Tiina Laatikainen (University of Eastern Finland)*

Auditorium M106, Friday

Session 11: Geography of Sustainability Transition Governance / Kestävyyssmurroksen hallinnan maantiede

Chair: Petri Kahila & Juha Halme (University of Eastern Finland)

10:30 – 12:00

- **Enabling Sustainable Transitions in European Rural Areas** *Petri Kahila & Juha Halme (University of Eastern Finland)*
- **Governing “Anomalies”: The Challenges of Translating and Governing Multiple Forest Hazards** *Uula Saastamoinen (Finnish Environment Institute Syke)*
- **Measuring sustainable urban development in residential areas of the 20 biggest Finnish cities** *Sanna Ala-Mantila, Antti Kurvinen & Aleksi Karhula (University of Helsinki)*

Auditorium M107, Friday

Session 19: Current challenges and practices in Finnish (urban) planning and development

Chair: Moritz Albrecht (University of Eastern Finland), Patrik Hämäläinen (City of Joensuu) & Jani Karhu (University of Eastern Finland)

10:30 – 12:00

- **Smart, sensual, safe, social, and spacious urbanism and the strategy of symmetric city centre: The case of medium-sized city of Joensuu in the periphery** *Ilkka Pyy (University of Eastern Finland)*
- **Joensuun yleiskaavoituksen kehityslinjat 1950-luvulta 2000-luvulle** *Jani Karhu (Itä-Suomen yliopisto)*
- **Land use planning in times of climate change - examples from Joensuu** *Patrik Hämäläinen (City of Joensuu)*

Auditorium M108, Friday

Session 12: Maps in crises / Kartat kriiseissä: kartografia yhteiskuntakritiikkinä ja kansatutkimuksena

Chair: Tuomo Alhojärvi (University of Eastern Finland) & Johanna Hohenthal (University of Helsinki)

10:30 – 12:00

- **1323 attitude and the regime of ambiguity** *Joni Vainikka (University of Helsinki)*
- **Nuorten geomediataidot ja osaamisen tasot maantieteen opetuksessa** *Panu Lammi, Virpi Hirvensalo, Tua Nylén, Laura Hynynen, Markus Jylhä & Petteri Muukkonen (Helsingin yliopisto)*
- **Kanssakartoitettu kaupunki: Tilallinen toimeentulo ja kartografia yhteisvaurautena** *Tuomo Alhojärvi (Itä-Suomen yliopisto)*
- **Critical analysis of energy maps for sustainability transition** *Johanna Hohenthal & Jenny Rinkinen (Lappeenranta University of Technology)*

Abstracts

Session 1 Migration crisis, migration in crisis: Complex effects of (supra-)national policies on human mobility

Chairs: Gintare Kudzmaite, Kirsi Pauliina Kallio (Tampere University)

Auditorium M105, Thursday 09 November 2023

The framing of migrants in the EU's New Pact on Migration and Asylum *Häkli Jouni, Gintarė Kudžmaitė & Kirsi Pauliina Kallio (Tampere University)*

The latest EU policy initiative to regulate migration to the European Union is called the New Pact on Migration and Asylum. A key objective of the 'New Pact' is to break the deadlock of the Dublin Regulation through a flexible solidarity mechanism where the EU member states can, in principle, decide on how to contribute to asylum management. While some commentators see the new policy as a step towards a more humane approach to migration, others point to a yawning gap between the tone of the New Pact and the way it sets out the objectives of the EU migration policy. This presentation focuses on the results of a terminology analysis of how migrants are discussed and represented in the New Pact. As EU's migration and asylum policies set the parameters to the governance of forced migration and access to asylum in the member states, they also provide framings for the practical encounters between asylum seekers and the migration regime. These framings legitimize certain approaches to the management of asylum migration and the related interpretation of international human rights treaties both in the member states and in the EU. Tracing the official voice of the EU, we explore three major frames through which the New Pact characterizes migrants as part of its attempt to modify the European asylum migration governance. These frames are related to human classification, spatial coordination and temporal control, each connected to the management of encounters between migrants and the migration regime. We conclude by discussing what the New Pact's framings reveal about the EU's approaches to human vulnerability, dignity, and agency.

The Politics of Performing Care: An Analysis of the Portrayal of Care by the Political Parties after the Exodus of Rohingyas *Morsaline Mojid (University of Hawaii at Manoa)*

On August 2017, when the Rohingya refugees started to arrive at the border of Bangladesh in mass numbers, the sitting government first ordered to close the border. However, the attitude changed reflecting the emotion of the local people. Rohingyas received enormous support from the people of Bangladesh, which eventually set the tone of the political parties. Major oppositional parties started criticizing the government's credibility in dealing with an unfolding humanitarian crisis. The sitting government, on the contrary, blamed the main oppositional party for creating obstacles in solving the Rohingya issue. Thus, it became a

center point of contention between the two major political parties in Bangladesh. So much so, that it played a key role in the upcoming national election of 2018. Political parties tried to outperform each other in demonstrating compassion and care for refugees. The goal was to (re)build an image of compassion and justice to gain public support. In this paper, I focus on such calculated kindness that political parties in Bangladesh showed toward refugees to harness public support. Drawing on media analysis, interviews, and numerous online resources, I argue that a political performance of care towards refugees played a significant role in the changing attitude toward the political parties in Bangladesh.

From a gate into a fence? Changing visual media representations of the Finnish-Russian border *Virpi Kaisto (University of Eastern Finland)*

This paper presents a study into the media representations of the Finnish-Russian border during the last ten years (between 2013 and 2022), when the political relations between Finland and Russia have gradually deteriorated and everyday life at the border has experienced major changes. The data for the study were collected from the leading Finnish daily newspaper Helsingin Sanomat. The study focuses on visual media representations, more specifically, on photographs published in the newspapers. No previous study has investigated press images of the Finnish-Russian border. Pauwels (2015, 62) claims that meticulous empirical study of images can “challenge and enrich current insights and convictions” and thereby enhance research in social sciences. In this study, the press photographs provide answers to the following questions: In what ways have the border and border-related phenomena been represented in the Finnish national media? What kinds of discussions have taken place in relation to the border in the changing social and political context? Do the images offer an alternative reading of the Finnish-Russian border and its meanings and representations in the Finnish society? The study is a part of the FWO funded “Borders and Borderlands Revisited” research project carried out at University of Antwerp.

Right to leave, right to stay, right to return? High school students' interpretations of climate mobilities *Kirsi Pauliina Kallio, Jouni Häkli & Kimmo Härmä (Tampere University)*

In this presentation, we introduce results from a pilot study in a Finnish upper secondary school, where we set out to learn from the students about how they understand the connection between climate change and (forced) migration, and to test out some methods for teaching this challenging topic. The theme presents similar challenges to educators as other “wicked problems” (Rittel & Webber 1974) related to climate change, recently also identified as “polycrises” (Henig & Knight 2023). We approach climate change education from a geographical perspective through the concept of ‘climate mobilities’. The pilot study is part of a broader research project where one of our key aims is to develop a pedagogical approach and teaching methods drawing from postcolonial empathy education (e.g. Zembylas 2022), primarily for basic education where the theme of climate mobilities is currently largely missing. Findings from this study strengthened our preconception that natural scientific

thinking dominated students' understanding of climate change, and they set out to solve all problems related to it by means of generic problem solving, which often fails in case of wicked problems. Secondly, a "helping discourse" (Rinne 2019) informs largely the students' agency of solidarity and responsibility for climate mobilities, grounded in a territorial, state-based spatial imagination that reproduces colonial relations between 'us' and 'them'. While the students' caring expressions should not be overlooked as valuable in themselves, we identify here risks related to what Baldwin calls "new racism" and what Turner and Bailey (2022) identify as the rise of "new apartheid". Finally, we found that by bringing empathic elements to the teaching, these approaches could both be challenged to some extent, and the students' attention could be directed towards a spatially relational understanding of mobilities in the time of climate change.

Postcolonial empathy education: school interventions in Finland and Greece on climate mobilities *Vilhelmiina Vainikka & Kirsi Pauliina Kallio (Tampere University)*

Empathy can be understood as a tool with which people can relate to the feelings and experiences of others through an intersubjective process. It is like a muscle that can be trained, but people differ in their ability to use and develop empathy. While widely studied as a social phenomenon, in this presentation we show what geographical perspectives can offer. The scholarship typically considers empathy to consist of cognitive and affective dimensions, which also underlie moral agency. Building on previous work, we also recognize its other dimensions to which the spatial approach could be added: associative, embodied, narrative and reflective. Furthermore, the critique underlines the importance of distinguishing empathy (as a human capacity to relate) from sympathy (as a normative relationship), which is also important in our postcolonial approach. In the project "The civic potential of climate mobilities" (HUMANE-CLIMATE), funded by the Research Council of Finland, we work with children and youth most of whom have no direct experience of or connection with climate mobilities. Our two cases are Tampere, Finland and Athens, Greece. In this context, we want to introduce and develop the concept of "geo-empathy" to climate education (Sorum 2011), to highlight the spatial dimensions of the expression and experience of empathy. Empathy is linked to spaces and places in many ways, e.g., through place attachment, geographical distance-proximity, spatialities of climate change, and norms related to the use of public space. In advancing postcolonial and relational knowledge co-creation, we move beyond territorial and colonialist "us and them" mindsets and instead view humans as mobile, social, and interconnected with nature. In the presentation we will introduce our plan for school interventions in primary and secondary schools aimed at increasing understanding of climate mobilities, by means of arts-based methods such as drama education, drawing, collective poetry writing and collage work. We want to empower children and young people to realize their own capacity for empathy in connection with others, also through collective action. Being heard and seen is fundamental to agency, and encouraging young persons to find their potential in living with climate change is crucial to their empowerment as climate citizens.

Session 2 3D participatory methods for urban and landscape planning
Chairs Carolin Klonner, Nora Fagerholm & Salla Eilola (University of Turku)
Auditorium M108, Thursday 09 November 2023

3D Participatory Mapping *Carolin Klonner, Nora Fagerholm & Salla Eilola (University of Turku)*

The use of 3D participatory mapping approaches for urban planning are considered to be a great opportunity for citizen engagement. There have already been several studies referring to this topic. However, there is a gap when it comes to the review of limitations and potentials of such methods¹. Within the GreenPlace² project, a pilot study with the city of Turku shed a light on such limitations and potentials of digital participatory mapping surveys using 3D data³. The focus was on the future development of the Aninkainen area in the city of Turku, Finland. Urban residents were able to share their preferences via the survey. The map-based survey platform Maptionnaire⁴ offers various options for mapping background and data visualisation. It was used in combination with a 3D city model and laser scanning data (trees) as well as oblique aerial photos (buildings) based on Kunta3D, a collaborative city publishing tool by Sova3D. Residents could participate in this browser-based survey using computers, tablets or smartphones. Results show, for example, the usability differences in technical devices as there was a higher drop-out rate of smartphone users and the latter report more difficulties in navigating and map marking. Based on the insights of this study, a follow up survey with 3D data will take place in the city of Bochum, investigating the effect of green spaces on health as well as the usability of 3D data for collecting citizen experiences. Results will be compared to the same survey which utilises 2D maps in order to investigate the effects of 3D maps on user engagement.

3D Reconstruction of Historical Monuments from Photogrammetric Processing of Images Obtained Using Low-cost UAV and Traditional Digital Camera *Gbagir Augustine-Moses & Alfred Copart (University of Eastern Finland)*

The use of 3D models has many applications in many fields. Recent advances in technology have made it possible to integrate low-cost UAVs (Unmanned Aerial Vehicles) and camera systems to reconstruct 3D representation of different land surface features. One such application of low-cost UAVs is the reconstruction of archaeological sites, monuments, and buildings. This has opened a door of opportunities for the documentation and preservation of historical monuments at a low cost. The use of Structure from Motion (SfM) is one of the photogrammetric approaches used in 3D reconstruction. Here we demonstrate and show how this low-cost technology can be used to map and reconstruct photorealistic 3D models of historical monuments, sites, and buildings. The data used was collected using the DJI Mavic Air 2 S and a hand-held Apple iPhone SE. Data collection using UAV was semi-automated while all hand-held camera pictures were manually taken. Both the UAV and hand-held camera pictures were taken from multiple angles around the objects. The data format was traditional

RGB .jpeg images. For 3D reconstruction, we used WebODM, the browser version built upon the command line OpenDroneMap (ODM) software. ODM is a free and open-source software alternative to processing UAV images. We achieved high quality 3D textured models of different historical monuments and buildings, including the Pielisjoki castle, Uno Aron Ryhtipatsas, and the Joensuu town hall. Key words: WebODM, low-cost UAV, open-source drone image processing software, 3D Models, Orthomosaic, Unmanned aerial vehicle, topographic mapping.

Session 4 Geography as a Promoter of Active and Environmentally Responsible
Citizenship / Maantiede aktiivisen ja ympäristövastuullisen kansalaisuuden
edistäjänä

*Chairs: Anssi Huoponen (University of Eastern Finland), Sanna Mäki (University of
Turku) & Minna Tanskanen (University of Eastern Finland)*

Auditorium M109, Thursday 09 November 2023

Geomediakyvykkyys, kriittinen geomedia lukutaito ja niiden merkitys nuorten arjessa ja kansalaisuuteen kasvussa *Heli Kainulainen, Hirvensalo, V., Hynynen, L., Jylhä, M., Lammi, P., Nylén, T., Pellikka, A., Päivärinta, R. & Muukkonen, P. (Helsingin yliopisto)*

Vaikka geomedia on suhteellisen uusi käsite suomalaisissa opetussuunnitelmissa, se kuvaa erityisesti maantieteen opetuksessa jo aiemminkin esiintyneitä maantieteellisiä menetelmiä ja maantieteellistä tietoa uudella tavalla kiteytettynä. Viimeisin Lukion opetussuunnitelman perusteet 2019 määrittää käsitteen geomedia tavaksi kerätä ja esittää maantieteellistä tietoa erityisesti karttojen ja paikkatiedon avulla. Lisäksi geomediaan katsotaan kuuluvan myös kaaviot, diagrammit, valokuvat, videot, uutiset ja tilastot, jotka välittävät alueellisesti tai paikallisesti sidottua tietoa. Jopa sijaintimääreen sisältävät sosiaalisen median viestit katsotaan tällaisiksi. Informaation nopeus ja määrä sekä tahaton tai tarkoituksella harhaanjohtava tai väärä informaatio – joita usein nähdään suurien viheliäisten maantieteellisten ilmiöiden yhteydessä – vaativat nuorelta hyviä kriittisiä geomedia lukutaitoja: kuten kartanlukutaitoa, diagrammilukutaitoa, maantieteellisten ilmiöiden ymmärrystä, lähdekritiikkiä jne. CRITICAL-hanke tutkii lasten ja nuorten kriittistä medianlukutaitoa. Maantieteen näkökulmasta he kohtaavat päivittäin arjessa geomediaa – arjen geomediaa oppituntien ulkopuolella. Tutkimuksessamme haastattelimme maantiedon opettajia (n=16) mm. siitä, mikä on geomedian rooli heidän oppilaidensa arjessa ja miten se näkyy koulutuksessa. Haastatellut opettajat työskentelevät 7–19 vuotiaiden oppilaiden kanssa. Tulokset osoittavat, että useimmat opettajat pitävät geomediaa hyödyllisenä yleiskäsitteenä opetussuunnitelmassa, mutta käsitteen ymmärrys on rajallinen, ja harvat opettajat käyttävät sitä luokkahuoneessa. Opettajien käsitykset digitaalisesta geomedian opetuksesta olivat moninaisia, mikä viittaa jossain määrin epäselviin odotuksiin opiskelijoiden oppimisen suhteen. Luokkahuoneen ulkopuolella oppilaat altistuvat pääasiassa visuaalisille geomedian muodoille. Tulokset paljastivat opettajien huolen oppilaiden pintapuolisesta kriittisestä

geomedialukutaidoista, mutta toisaalta myös geomedian mahdollisuuden tehostaa opiskelijoiden tiedonhallintaa nyky-yhteiskunnan digitaalisissa ympäristöissä. Geomediaopetus antaa oppilaille taitoja käyttää geomediaa arkielämässään ja hankkia monia tulevaisuuden kannalta relevantteja taitoja. Osin ristiriitaiset havainnot geomedian käsitteen arvostuksesta ja tunnistamisesta, mutta toisaalta huoli digitaalisen geomedian opetuksen kirjavuudesta, synnyttävät syystäkin huolen opettajankoulutuksen riittävydestä. Olemme lanseeranneet CRITICAL-hankkeen havaintojen myötä käsitteen ”geomediakyvykyys”, joka koostuu 1) yleisestä geomedialukutaidosta, joka on perustasoinen taito, sekä korkeammista ajattelun taidon tasoja edustavasta 2) kriittisestä geomedialukutaidosta. Kriittinen geomedialukutaito tarkoittaa kykyä tulkita ja arvioida erilaisia geomediaesityksiä kriittisesti, mihin kuuluu kyky ymmärtää, miten ja mitä tarkoitusta varten esimerkiksi kartat ja muut visuaaliset esitykset on laadittu sekä, mitä aineistoja niiden takana on ja mitä tietoa niiden avulla voidaan välittää. Kriittinen geomedialukutaito auttaa nuorta ymmärtämään, miten erilaisia geomediaesityksiä voidaan käyttää tehokkaasti erilaisissa tilanteissa ja miten niitä tulisi tulkita oikein. Mielestämme tämä on tärkeä kansalaistaito.

Geomedia kouluopetuksessa – opintojakso työelämälähtöiseen osaamisen vahvistamiseen *Sanni Pirttilä & Ville Tahvanainen (Itä-Suomen yliopisto)*

Tämä esityskeskittyy Itä-Suomen yliopistossa keväällä 2023 järjestettyyn ”Geomedia kouluopetuksessa” - opintojaksoon, joka on suunniteltu tukemaan tulevia maantieteen aineenopettajia geomediataitojen kehittämisessä, erityisesti työelämän tarpeisiin vastaamiseksi. Geomedia on saanut keskeisen roolin maantieteen opetuksessa, mutta monet opettajat kohtaavat haasteita sen integroimisessa opetukseensa. Tämä saattaa heikentää heidän valmiuksiaan ja intoaan hyödyntää geomediaa opetuksensa osana. Maantieteen opetuksen digitalisoituminen korostaa opettajien tarvetta ymmärtää geomediaopetuksen merkitys ja mahdollisuudet. Opettajan on oltava tietoinen geomedian käsitteestä ja sen roolista opetussuunnitelmassa. Lisäksi opettajan on hallittava käytännön taitoja, kuten oikeiden työkalujen ja ohjelmistojen valitseminen ja käyttö esimerkiksi maantieteellisen tiedon analysointiin ja visualisointiin. Tämän esityksen tavoitteena on syventää ymmärrystä siitä, kuinka geomedian parempi hallinta ja erilaisten geomediataitojen omaksuminen voivat tukea maantieteen aineenopettajien valmiuksia työelämässä. ”Geomedia kouluopetuksessa” - opintojakso koostui seuraavista aihekokonaisuuksista: geomedian käsite ja sen merkitys opetussuunnitelmissa sekä opetuksessa, tekijänoikeuden merkitys ja huomiointi geomediassällöissä sekä käytännön geomediataidot. Käytännön geomediataitojen sisältöihin kuuluivat muun muassa valokuvatulkinta, taulukoiden ja karttojen tuottaminen, analysointi ja esittäminen, avointen kartta- ja paikkatietoaineistojen sekä -sovellusten hyödyntäminen, sekä kansalaistiede ja geomedian sovellukset. Opintojakson tavoitteiksi asetimme, että suoritetuana opintojakson opiskelija hallitsee seuraavat osa-alueet: ymmärrys geomedian merkityksestä opetussuunnitelmissa ja opetuksessa, valmiudet hyödyntää erilaisia geomediataitoja luovasti maantieteen opetuksessa, taito soveltaa geomediaa eri luokkaasteilla sekä valmius soveltaa opetusteknologiaa geomediataitojen opetuksessa ja oppimisessa. Opintojakson päätteeksi keräsimme opiskelijoilta aineistoa

sähköisellä kyselyllä. Esityksessämme tarkastelemme tarkemmin sekä opintojakson sisältöjä että kyselyn tuloksia. Kysyimme opiskelijoilta muun muassa heidän vahvuuksistaan ja kehityskohteistaan geomediataitojen suhteen. Opiskelijat tunnistivat vahvuutensa, erityisesti kyvyn soveltaa geomeediaa omassa opetuksessaan, ymmärryksen erilaisista geomediataidoista sekä valmiudet käyttää erilaisia opetukseen liittyviä sovelluksia ja ohjelmia. Toisaalta opiskelijat ilmaisivat tarpeen lisäharjoituksille erityisesti raskaampien GIS-sovellusten käytöstä sekä eritoten aineiston hankinnasta. Kyselyssä kävi ilmi, että yli puolet vastaajista kokivat, että heidän käsityksensä geomediasta oli laajentunut opintojakson aikana, ja noin kolmannes mainitsi nytyymmärtävänsä paremmin, miten geomediataitoja ja -sisältöjä voidaan opettaa. Kyselymme tulokset viittaavat siihen, että opintojakso voi edistää maantieteen aineenopettajaopiskelijoiden työelämävalmiuksien kehittymistä ja valmistaa heitä monipuoliseen geomedian hyödyntämiseen opetuksessaan.

Geography in the matriculation examination: How the number of geography courses in school impact the students' choices of demanding tasks in the exam *Christina Ruth (University of Helsinki) & Tomas Hanell (Migration institute of Finland)*

The upper secondary school in Finland has experienced major changes in both the national curriculum and in the matriculation examination, a nationwide exam that is taken during the final year of upper secondary school. The digitalization of the exam in recent years has had an impact on the assignments in the test. Our research question concerns the causal relationship between the number of geography courses a school offers and the quality of the students' answers. Our empirical material consists of the students' performance on the geography assignments in the matriculation examination in the spring of 2010 (an analogue exam) and 2020 (a digital exam). The performance is studied in relation to the share of the students' answers on questions which, according to Bloom's revised taxonomy, require higher-order cognitive skills. We utilise multiple regression and control for several contextual factors. We find strong empirical evidence for a positive correlation between the number of geography courses a school offers and the level of difficulty of the assignments that the students choose to tackle. This correlation exists in the digital exam of 2020, but not in the analogue exam a decade earlier. Our findings have important implications for forthcoming development of national curricula and matriculation examinations.

Pedagogista kokeilua Galleria Kasvihuoneella *Lauri Jantti (Helsingin yliopisto)*

Maantieteen opetuksen osalta suomalaisen yläkoulun ja lukion opetussuunnitelmien perusteet korostavat ongelmanratkaisu- ja tutkimustaitoja, yhteisöllistä ja vuorovaikutteista työskentelyä, monipuolisia oppimisympäristöjä ja mainitsevat, että opetuksen tulisi liittyä opiskelijoiden jokapäiväisiin kokemuksiin sekä samalla antaa aikaa ja tilaa opiskelijoiden omalle ajattelulle, luovuudelle ja toiminnalle. Perusteissa todetaan, että oppiaineiden tehtävinä on "tukea oppilaiden maailmankuvan rakentumista" (POPS) ja "avartaa opiskelijan maantieteellistä maailmankuvaa (LOPS). Samaan aikaan globaalisti verkottuneessa ja

erilaisten viheliäisten ongelmien värittämissä maailmassa on huutava tarve pedagogioille, joissa yksilökeskeisen ja instrumentaalisen eetoksen sijaan korostuu sosio-ekologinen ote. Miten vastata haasteeseen? Minkälaisin menetelmin voidaan luoda kytkentöjä nuorten arkisten maailmojen ja opetuksen muodollisten tavoitteiden ja tietosisältöjen välille? Minkälaiset kokeelliset asetelmat ovat omiaan tekemään tilaa maantieteelliselle ajattelulle ja oppilaan maailmasuhteen syventymiselle? Millainen opetus voi luoda ja vahvistaa huolenpitoa maailmasta? Esitykseni johdattelee näiden kysymysten äärelle esittelemällä Galleria Kasvihuone -nimiseen kaupunkitaidehankkeeseen kytkeytyvää pedagogista kokeilua. Hankkeessa julkiseen kaupunkitilaan Helsingin ydinkeskustaan, yliopiston Porthania-rakennuksen edustalle rakennettiin kierrätysmateriaaleista pienikokoinen rakennelma, kasvihuoneen ja taidegallerian yhdistelmä. Monia toimijoita yhteen tuoneessa hankkeessa nuoria osallistanut pedagoginen kokeilu tarkoitti sitä, että Galleria Kasvihuoneen keskeinen sisältö luotiin kevään 2023 aikana yhdessä helsinkiläisessä yläkoulussa opiskelevien 8. luokkalaisten nuorten kanssa. Galleria Kasvihuone -tapauksen kautta avaan väitöskirjatutkimustani, jossa pureudun kokeellisiin menetelmiin ja käytänteisiin yläkoulun ja lukion maantieteen opetuksessa. Osallistavia menetelmiä hyödyntävässä ja niitä kokeilevassa tutkimuksessani lähestyn oppimista maantieteellisenä prosessina käyttäen sytykkeenä Noora Pyryyn ”kasvatusmaantieteeksi” nimeämää teoreettista kehystystä oppimiselle. Kasvatusmaantiede keskustelee projektioppimisen ja ilmiöpedagogiikan kaltaisten lähestymistapojen sekä ympäristökasvatuksen tavoitteiden kanssa, mutta relationaalisuutta korostaen (ks. Nonrepresentational theory, NRT) haastaa lähtökohdan oppimisesta yksilön sisäisenä prosessina.

Lukion uskonnonopettajien ammatillinen osaaminen ja kasvu ympäristökasvatuksen näkökulmasta *Marika Pakarinen (Itä-Suomen yliopisto)*

Esityksessäni tarkastelen pro gradu -tutkielmani pohjalta lukion evankelisluterilaisen uskonnon aineenopettajien ammatillista osaamista ja kasvua ympäristökasvatuksen näkökulmasta. Vuoden 2019 lukion opetussuunnitelman perusteissa kestävä elämäntapa, ympäristöosaaminen ja ilmastonmuutoksen hillitseminen ovat nousseet aikaisempia opetussuunnitelmia merkittävämpään asemaan. Lukion opetussuunnitelman perusteet ovat myös vaihtuneet viimeisen vuosikymmenen aikana kaksi kertaa, ja osin muuttuneet kurssisisällöt ja -tavoitteet sekä laaja-alaisen osaamisen osa-alueiden lisääminen opetussuunnitelmaan vaativat aineenopettajilta kykyä kehittää omaa osaamistaan vastaamaan opetussuunnitelman määrittämiä opetuksen raameja. Uskonnonopettajien haasteena on lisäksi moninaistuva yhteiskunta, jossa erilaisten katsomusten kohtaamiset ovat lisääntyneet, ja jossa katsomuksiin liittyvät kulttuuriset ja yhteiskunnalliset muutokset ovat olleet viime vuosikymmeninä nopeita. Myös ympäristöteemojen vahvempi nouseminen sekä yhteiskunnalliseen keskusteluun että lukion opetussuunnitelman perusteisiin asettaa uskonnonopettajien ammatilliselle osaamiselle uudenlaisen haasteen. Millaiset valmiudet lukion evankelisluterilaisen uskonnon aineenopettajilla on ympäristökasvatuksessa tullessaan työelämään, millaista ympäristöosaamista heillä on ja miten he kehittävät

osaamistaan? Entä millainen ammatillisen kasvun polku uskonnonopettajilla on ympäristökasvatuksen näkökulmasta? Pro gradu - tutkielmassani haastattelin neljää lukion uskonnonopettajaa, jotka ovat opiskelleet pääaineenaan teologiaa Itä-Suomen ja Helsingin yliopistoissa ja opettavat tällä hetkellä evankelisluterilaista uskontoa lukiossa. Esityksessä tarkastellaan muun muassa sitä, millaiset asiat ovat uskonnonopettajien ympäristökasvatusosaamisen keskiössä, miten ympäristökasvatuksen teemat soveltuvat uskonnonopetukseen sekä sitä, miten uskonnonopettajien kokemus ympäristökasvattajuudesta on kehittynyt opintojen aikana ja työelämässä.

Session 5 Adaptive strategies of businesses in times of crises and transformations
Chairs: Maija Halonen (University of Eastern Finland) & Irene Kuhmonen (University of Jyväskylä)
Auditorium M107, Thursday 09 November 2023

Farmers' transformative capacities in the making of a sustainable food system *Irene Kuhmonen (University of Jyväskylä)*

Farmers are arguably the most important actors in the food system's sustainability transition: the majority of environmental impacts of food systems takes place at the farm-level, as the result of farmers' decision-making. At the same time, farmers are struggling to make a living from agriculture in the cost-price pressure posed by the input suppliers and retailers, while being expected to act as transformative agents in the food system's sustainability transition. From here I set out to ask, whether farmers hold the transformative capacities required by the systemic transformation challenge. By adopting the lenses of critical realism and systems thinking, I argue that to understand farmers' role in the sustainability transition, it is necessary to view the food system structure and agents operating within it as separate entities with both of them having causal powers on each other on their own right. The causal impact of the food system can be conceptualised through the concept of regime, which refers to the temporally stable organisation mode of the system prevailing across a certain timeframe. The strength of the power of agency over structure vs. structure over agency is dependent on the life cycle stage of the regime, with mature, locked-in regimes exerting strong causal powers on agents and thereby reducing their agentic leeway. The methodology of this research consisted of two farmer surveys and a qualitative review of historical literature. The results revealed that the Finnish food system is characterised by strong path dependencies and lock-in mechanisms around fossil metabolism and a strive for continuous economic growth, which translates at the farm level to the need to grow or intensify the production or look for additional income sources. Due to a tightening cost-price squeeze and an increasing push towards economies of scale, the spectrum of farm-level economic viability is becoming more restricted. This is a challenge for the promotion of sustainability transition in agriculture, as commitment to farming as a source of livelihood was connected to farmers' efforts to engage in more sustainable pathways. Further, as any transformations require resources, farmers'

transformative capacity is limited by the continuous outflow of resources away from agriculture.

Spatial bricolage in small rural tourism businesses *Inna Kopoteva (University of Helsinki)*

In times of crises and transformations, entrepreneurial resource mobilization is crucial for business development. Entrepreneurship bricolage, as theorized by Baker and Nelson (2005), illustrates how entrepreneurs create value in resource-constrained environments by creatively assembling available resources. The term "bricolage," coined by Levi Strauss (1966), describes the behaviour of a jack of all trades who makes do with whatever is at hand. The theoretical framework of entrepreneurship bricolage focuses on adaptive practices, emphasizing resourcefulness, improvisation, and the strategic combination of diverse resources. This framework acknowledges the non-linear and unpredictable paths entrepreneurs take to create value and navigate uncertainties. Spatial bricolage in small rural tourism businesses is a dynamic and adaptive approach, creatively utilizing local resources within the immediate spatial context. This involves making the most of available resources to overcome challenges and enhance the tourism experience. Key aspects of spatial bricolage include local sourcing, emphasizing the physical and non-material resources of the rural setting. By sourcing locally, businesses minimize costs and provide authentic experiences. Community involvement is integral, as businesses engage with the local community for support, collaboration, and labour. This fosters a sense of shared ownership and strengthens community bonds. Storytelling is a powerful form of commodification within spatial bricolage, with businesses creating narratives that highlight the unique aspects of their spatial context. These stories become intrinsic to products and services, legitimizing offerings and preserving local traditions. In the digital age, spatial bricolage extends beyond physical spaces, as businesses leverage online platforms for marketing and adaptation. The integration of digital spaces becomes strategic for navigating challenges while maintaining the essence of rural locations. Spatial bricolage in small rural tourism businesses promotes resilience and sustainability. By creatively responding to the unique features of their spatial context, businesses not only overcome challenges but also contribute to the vibrancy of the local community. Visitors experience the genuine charm of rural settings, fostering a mutually beneficial relationship for long-term success. Also contribute to the vibrancy of the local community. Visitors experience the genuine charm of rural settings, fostering a mutually beneficial relationship for long-term success.

Rethinking the concept of small-scale mining for a European social context *Olga Sydd (University of Eastern Finland)*

Global mining industry is heavily weighed towards large-scale business. Large mining companies account for the lion's share of global metal production, possessing most of the giant ore deposits of the world. The tendency to larger scales also defines the selection of mining deposits. Large-scale mining of proven reserves may last decades ensuring steady

rates of production and return on investment. In contrast, small-scale mining has barely received attention of large mining companies and mining investors. Due to high exploration and infrastructure costs, it was not previously perceived economically viable. The idea of development of small high-grade deposits in Europe is now subject to renewed attention in European industry and policy circles. With the growing demand for critical and technological metals which are generally produced in smaller quantities, small-scale mining has the potential to enter the sector. Especially, in Europe which geological map contains numerous small deposits included in databases of known and predictable mineral resources in Europe, small-scale mining may support the domestic supply of critical metals. This study reports the research done in four mining communities experiencing small-scale mining in Serbia and Bosnia and discusses possible challenges for its social sustainability.

The transformation of Finnish forest-based companies through collaborative business models *Annukka Näyhä (University of Jyväskylä) & Venla Wallius (European Forest Institute)*

Companies with their business strategies, models and related actions are important actors in societal transitions. Continual restructuring of company business models enables firms to survive and remain successful in rapidly changing business environments that are composed of various societal actors and factors. Collaborative business models are closely linked to or known as community, cross-ecosystem, and networked models. All of these contain elements of inclusivity, shared value creation and a multi-actor approach, and they are important ways to promote the sustainability transition. Instead of focusing solely on economic value creation, collaborative business models can provide social and environmental benefits and shared value through the involvement of diverse societal actors and their needs. In Finland, forests and forest utilization are important to a range of societal groups. This means forests are also the target of numerous goals and hopes from a variety of stakeholders, often leading to disagreements on acceptable ways of utilizing forests. Still, there remains a lack of knowledge on how shared value is currently created and how it could, and should, be promoted in forest-based sector companies in Finland. This study explores the collaborative relationships of various Finnish forest-based sector companies with their stakeholders at a time when the business environment is rapidly changing: Which societal stakeholders do FBS companies collaborate with and how do they define the key reasons for these collaborative relationships? Do collaborations promote the achievement of the firms' sustainability goals? What plans do the companies have for the future regarding collaboration? Overall, this study examines the interplay of the companies with their key stakeholders and the potential influence of these interactions on company change as well as on societal transition. The study is based on semi-structured interviews conducted from May to November 2023. The data will ultimately consist of around 25 interviews with representatives from various forest-based sector firms. The aim is to include as many different types of firms as possible, meaning the firms will vary in terms of business models, product portfolios, maturity, size and networks. The interviews are in progress, and the preliminary findings will be presented at the conference.

Resilience of peripheral forest industry in time of crises *Maija Halonen (University of Eastern Finland)*

The development of forest industry can be crucial for resource regions and smaller localities which economic development and livelihood of citizens are dependent on the sector. This presentation explores the resilience of forest industries located in peripheries that are remote from the societal and economic centres, and are often associated with weaker and lower position in value chains and power hierarchies. First, the economic structures and flows are described by the statistics and then contrasted with the discourses on sectoral adaptation strategies and development by the local actors in forest industry and public organisations in eastern Finland. Resilience is here understood as an ability to recover, maintain, or improve the core functions during and after shocks or pressuring conditions, which can require different forms of adaptation and transformation. Global market flows and competition, and requirements regarding the sustainable use of natural resources manifest shocks that necessitate short- and long-term resilience. The combination of global crises (climate change, COVID-19, war in Ukraine), and uncertain direction of green transition have created both the pressuring shocks (availability and costs of production parts, forest resources, energy, transportation) and windows of opportunity (increase in demand or value by new products, production, or technologies). From relatively small-scale actors, the adaptation calls for preparedness and tolerance towards many shocks, ability to turn dependencies, industrial heritage and restructuring into advantages, and skills to act as part of the sector that they have limited power to impact.

Session 6 Using and perceiving nature in the urbanized society

Chairs: Riikka Puhakka (University of Helsinki), Kati Pitkänen (Finnish Environment Institute) & Nora Fagerholm (University of Turku)

Auditorium M108, Thursday 09 November 2023

Outdoor recreation and connection with nature among young people in Finland *Riikka Puhakka (University of Helsinki), Ann Ojal, Marjo Neuvonen, Joel Manner & Seija Tuulentie (Natural Resources Institute Finland)*

Adolescents' decreasing contact with nature has raised concerns in urbanized societies, including Finland. Meanwhile, the well-being and health benefits of nature are increasingly recognized. Previous studies have shown that interaction with nature increases self-esteem and mood, reduces stress, and improves concentration. Natural settings motivate to exercise, and exposure to a diverse microbiota enhances immune regulation. Nature experiences are also positively associated with environmental attitudes and behaviors. In this study, we examine 1) do Finnish young people spend time in nature during their leisure time and 2) how the COVID-19 pandemic has affected it, 3) in which outdoor environments young people spend their leisure time, and 4) how is their connection with nature and environmental

concern. The presentation is based on two data sets collected as a part of the Children and Youth Leisure Survey 2022. First, the national data was collected from respondents between the ages 7 and 29 (n=1401). Second, the special sample was collected from respondents aged 10–19 living in the sub-region of Northern Lapland (n=329), including respondents that identify with the Sámi community. The results show that around 90% of young people spend time in nature. During the COVID-19 pandemic, most spent more time in nature than previously. The most popular outdoor environments include natural environments such as nearby forests and water environments. Spending time in nature and feeling connected with nature is positively associated with life satisfaction and environmental concern. Meanwhile, the results indicate that a small part of young people seems to be not interested in nature. Especially during the adolescent years, outdoor recreation and connection with nature may decrease, but they often return in adulthood. The results highlight the importance of recognizing the role of nature as part of young people's everyday lives. While mental health problems have increased during the pandemic, it is important to consider how nature-based solutions could be used in enhancing well-being. Especially in adolescence, support is needed to maintain nature connection and gain well-being benefits from nature. The results also indicate the importance of understanding different conceptualizations of nature when doing research in different living environments.

Nature's role in the eudaimonic wellbeing – creative nature writings from people who use mental health association's services *Johanna Jämsä (University of Turku)*

I study nature's role in the eudaimonic wellbeing of people who use mental health associations open services. Eudaimonic wellbeing is long-term, value-based wellbeing that is many times gained via the thought processes that go beyond immediate emotional reactions. I have used psychology Dr. Carol Ryff's categorization to six eudaimonic dimensions, to formulate a creative writing workshop to gain more understanding how nature contributes to the focus group's 1) self-acceptance, 2) autonomy, 3) positive relations with others, 4) environmental mastery, 5) personal growth and 6) purpose in life. The creative method helps people to go beyond the customary nature discourses. From the eudaimonic dimensions, environmental mastery and positive relationships are emphasized in the data. Beyond eudaimonia, accessibility is emphasized. Due to lack of energy, illness or disability, the word "nearby nature" is frequent in the writings. People choose nature places on bus routes, or walking distance from their homes. Due to the public discussion on the "special Finnish relationship to nature", and media coverage of nature's wellbeing effects some of my participants felt they didn't have the "supposed" feelings towards nature. They stated very clearly that they know how they "should" feel in nature, but they don't. Related to this, one participant described a hospital period, where she felt awkward and anxious about the mandatory nature visits. In this research, I also focused on the occasions when nature doesn't help or makes things worse. Eudaimonic values of nature are central in people's motivation to act for the benefit of the environment as they are deep laying, relatively stable values. Understanding them is central to motivating people towards ecological behavior.

Not in my leisure area! (NIMLA): Mining-related disputes associated to tourism and second homes in Finland from the geosystem services perspective *Toni Eerola (Geological Survey of Finland)*

Not in my backyard' (NIMBY) is a well-known phenomenon related to opposition against any proposed project by residents. Parallel to that, Finland has seen the development of a new phenomenon that is related to tourism and second homes (cottages) alleged to be threaten by any proposed project, called as 'not in my leisure area' (NIMLA). NIMLA was initially mentioned regarding wind farms, mining, and mineral exploration projects in regions of tourism destinations and cottages, such as Kuusamo and Kolari in northern Finland, but the green energy transition with its battery minerals boom has expanded it recently to Saimaa Lake region with cottages of southeastern Finland. Within this context, the cottage owners have become as an influential stakeholder group. They are mostly from the Uusimaa Province, where opposition for mining is strongest even without mines. They represent several liberal professions and spread their influence on local mining debate in rural municipalities all over Finland through the cottage culture. The paper defines the NIMLA and describes it through concrete cases related to mining and mineral exploration disputes in the mentioned contexts in Finland. The phenomenon will be spatially observed from the geosystem services perspective, which is an abiotic correspondent of ecosystem services. During billions of years of Earth history, geosystem services have generated mineral deposits, lithologies, reliefs, soils, water systems, landscapes, and habitats for endangered species. Such products of geosystem services are focus of diverse interests which may conflict when they overlap in a certain area. Such situations may cause disputes between social and economic interests. Better and responsible consideration of diverse products of geosystem services by a comprehensive land use planning may avoid and alleviate such controversies. Companies are recommended to take associated land use and sensitive contexts in account when planning activities and applying for licenses for mineral exploration and mining. Similarly, property and real estate purchasers, and tourism entrepreneurs are recommended to consult open online geological maps on mineral deposits and mineral potential to be aware of such features close by and to not be surprised by potential mineral exploration and mining projects close by in the future.

Session 7 Beyond the pretty picture: Remote sensing for biodiversity and ecosystem condition monitoring

Chairs: Miguel Villoslada & Topi Tanhuanpää (University of Eastern Finland)

Auditorium M 103, Thursday 09 November 2023

Foliar chlorophyll and carotenoid contents of European aspen assessed with airborne hyperspectral imaging *Sarita Keski-Saari, Markku Keinänen (University of Eastern Finland), Janne Mäyrä, Arto Viinikka (Finnish Environment Institute), Laura Poikolainen, Topi Tanhuanpää, Sonja Kivinen (University of Eastern Finland), Petteri Vihervaara (Finnish Environment Institute) & Timo Kumpula (University of Eastern Finland)*

The ongoing biodiversity decline highlights the need to monitor terrestrial biodiversity to support the land-use planning and nature conservation actions. Remote sensing tools suitable for covering large land areas in a quantifiable, repeatable, and comparable manner to monitor biodiversity indicators in both spatial and temporal dimensions are needed. European aspen (*Populus tremula*) is a keystone species, and its presence indicates a living environment for many other species. The aim of this study was to evaluate the applicability of airborne hyperspectral imaging in the estimation of foliar chlorophyll and carotenoid contents in individual aspen trees in a study area of 83 km² that contained both protected and non-protected forest areas in southern Finland. We analyzed the concentrations of chlorophyll and carotenoids in the upper canopy leaves by traditional laboratory methods and compared them with the upper canopy spectral reflectance of aspen trees. The results showed that 1) chlorophyll and carotenoid contents had a high variability among aspen trees, 2) the accuracy of foliar chlorophyll and carotenoid content estimation in aspens by airborne hyperspectral imaging was reasonably good, 3) the red edge range was informative in estimation of chlorophyll content in aspen.

UAV- and handheld-hyperspectral imaging for Sphagnum discrimination and vegetation modelling *Franziska Wolff (University of Eastern Finland), Sandra Lorenz (Helmholtz-Zentrum Dresden-Rossendorf), Anette Eltner (Universität Dresden), Pasi Korpelainen & Timo Kumpula (University of Eastern Finland)*

Sensor development promotes the understanding of spectral characteristics of vegetation. In mires Sphagnum mosses cover a broad range of colours as a function of water table, sun, and nutrient exposure. Modelling these over a larger, spatial scale gives insight into ecosystem dynamics as certain moss species indicate fen-bog transitions, and thus shifts in ecological processes in aapa mires. This study investigates if hyperspectral imaging provides reliable data for Sphagnum species discrimination. We built a multi-source and multi-scale library from hyperspectral images captured from Ilajansuo mire, an aapa mire in North Karelia. A handheld device (Specim IQ) recorded species and plot-level, whereas and the corresponding UAV-sensor (Specim AFX 10) recorded the plot level at 120 m altitude. Both devices cover a spectral range of 400-1000 nm. These libraries were used as input for the Spectral Angle

Mapper classifier to model Sphagnum moss distribution in Ilajansuo and a test mire nearby (Viitasuo mire). We linked the vegetation modelling outcomes and uncertainties to the prevailing hydrological conditions by calculating a Water Index (WI) from the UAV data as a proxy. Preliminary results show that (Sphagnum moss) species can be discriminated, yet varying moisture conditions affect the spectral reflectance. Highest UAV-image classification accuracies were reached for Ilajansuo mire when all libraries were included in the process. Applying the library on Viitasuo mire showed less accurate results but the algorithm correctly recognized only the species present there, and correctly excluded those, which only existed in Ilajansuo mire. The results show that species were mapped correctly in those areas with higher moisture according to the WI. This fits to the finding of fen-bog transitions in peat mires and calls for more library entries across mires, species, and along the hydrological gradient. Our results show the spectral response of species to the hydrological conditions, and with a larger dataset simulating vegetation distribution under different hydrological scenarios might be possible. For further studies, we recommend targeting at a UAV-resolution of at least 0.05 m and the inclusion of shortwave infrared (SWIR).

Hyperspectral UAV imagery adds marginal value to characterizing tundra

vegetation *Pauli Putkiranta, University of Helsinki, Aleksi Räsänen (Natural Resources Institute Finland), Rasmus Erlandsson (Stockholm University), Tiina H.M. Kolari, Pasi Korpelainen (University of Eastern Finland), Yuwen Pang (University of Helsinki), Miguel Villoslada, Franziska Wolff, Timo Kumpula (University of Eastern Finland) & Tarmo Virtanen (University of Helsinki)*

Detecting the vegetation patterns of Arctic tundra requires high-spatial-resolution remote sensing data due to the spatial heterogeneity of these landscapes. Such data can be collected, for instance, with uncrewed aerial vehicles (UAVs), a common platform for multispectral imaging for vegetation mapping. However, the benefits of increased spectral resolution, as provided by hyperspectral imaging, have not been explored. Here, we assess the impacts of spectral resolution in modelling plant communities in low-growth oro-arctic tundra heaths by comparing three different spectral data types: 4-channel airborne images, 5-channel UAV images and 112-channel UAV images. Based on field observations, we estimate biomass, leaf area index, species richness, Shannon's biodiversity index, and fuzzy community cluster membership. Employing random forests, we then model these with spectral data and topographic information. Leaf area index and biomass are best estimated of the response variables, with R² values of 65% and 60%, respectively, with multispectral data proving the most important explanatory dataset. Biodiversity metrics are best estimated with R² values of 46-51% with the most important explanatory variables being topographical and hyperspectral, and community clusters with R² values of 26-50%, with the importance of various explanatory variables depending on the cluster being estimated. Overall, our results indicate that hyperspectral UAV data increase the detectability of tundra vegetation characteristics marginally when compared to multispectral data. These results can help choose a suitable close-range remote sensing approach for modelling plant communities in similar conditions.

Time Series Assessment of Anthropogenic Pressures on Natural Vegetation Cover – A Case study of the Zambezi Region *Alfred Colpaer & Augustine-Moses Gaavwase Gbagir*
(University of Eastern Finland)

Land degradation (terrestrial and aquatic) are challenges that are recognized globally. There are many complex interacting factors driving land degradation. However, anthropogenic pressures and natural resources have been recognized as a major driver of land degradation. To address this issue of land degradation, several environmental monitoring initiatives are put in place to collect and analyze data to assess the trend and current state of natural resources utilization. Namibia is a dry and semi-arid country where land degradation has been identified as a major threat. Particularly, anthropogenic activities have been identified as the main driver of land degradation. The study case here is the Zambezi region which is an important area for agricultural farming because of good soil quality and high amounts of rainfall. The region is also an important location and forms an important migratory route for wildlife. With the region are three large wildlife National Parks. The region contains the largest savannah woodland cover in the whole of Namibia. In the region, conversion of these woodlands to small and large-scale farmlands is a common practice. The data used were MODIS 250 m, ERA 0.25o x 0.25o, elephant GPS-collared information, and drone images. We combined residual time series and geostatistical methods to characterize the vegetation changes in the previous two decades (2002 to 2021). The results indicated that anthropogenic wood removal, increasing population, and the expansion of subsistence farming were the primary drivers of land degradation in the Zambezi region. Also, the presence of large herbivores like elephants was a secondary factor contributing to land degradation in the region.

Input data resolution affects the conservation prioritization outcome *Topi Tanhuanpää*
(University of Eastern Finland)

The on-going biodiversity crisis calls for efficient means for spatial allocation of conservation and restoration actions. In the short term, it is paramount to direct the limited resources in the ecologically most important areas. Spatial conservation prioritization is a tool built for finding these areas. The method uses a diverse set of spatially explicit environmental data, whose spatial resolution defines the attained level of detail. The spatial resolution of these input data varies from source to source, which affects the quality of prioritization outcome. In our study, we used Zonation 5 spatial prioritization software to inspect the effects of input data resolution on the prioritization outcome. The study was conducted in Evo area, Southern Finland, where our study area consisted of a mosaic of managed forests and forests with conservation status. First, we produced object-based maps of living trees and deadwood for the entire study area, including species and size information. We then combined the data with site type information and processed it into raster layers in six different resolutions ranging from 16 m to 96 m. The finest 16 m resolution represented the best available data, i.e., the baseline of the analysis. We ran the spatial prioritization for all six cell sizes and studied the overlap with the baseline for the top ranked 2 % and 10 % areas. Finally, the effect of

resolution was reported through spatial error of omission and conservation error. The latter was determined as feature sums within the top ranked areas. Decreasing the resolution had a dramatic effect on the location of the top ranked areas. The increase of cell size from 16 m to 32 m resulted in misplacing 55 % of the top priority cells. Similarly, the conservation errors of rare and ecologically significant features increased with cell sizes larger than the baseline. On the other hand, the share of common forest features related to the dominant tree species even increased in the larger cell sizes. Our results show that using coarse resolution datasets in spatial conservation prioritization favors the common forest features and thus leads to suboptimal prioritization results.

How different reindeer grazing practices effect on land cover and ecosystem carbon exchange in a sub-arctic high-elevation peatland *Timo Kumpula, Henni Yläanne (University of Eastern Finland), Sari Juutinen (Finnish Environment Institute) Liang Chen (University of Eastern Finland), Oliver Sonnentag (University of Montreal), Natascha Kljun (Lund University,) Pasi Korpelainen, Frank Berninger & Miguel Villoslada (University of Eastern Finland)*

Border between Finland and Norway in Eastern Enontekiö have been used many times as a clear example of overgrazed reindeer pastures in Finnish site and “good pasture” management in Norwegian side. Is there really grounds for overgrazing narrative, usually overgrazing discussion is focusing on abundance of reindeer lichen in winter pastures. Lichen has been used as key factor on evaluation of quality and condition of reindeer herding districts pastures. Previous studies exploring the impacts of reindeer grazing on ecosystem carbon balance, have focused on tundra heaths and forest ecosystems, while the impacts on sub-arctic peatlands have not been quantified. Our objective is to disentangle the impacts of reindeer grazing on the vegetation and ecosystem-atmosphere exchange of carbon (C) in a Fennoscandian tundra wetland.

Novel herbivore outbreaks in Northern Finland *Henri Wallen & Sari Stark (University of Lapland)*

During the summer of 2022, reindeer herders operating in the Ounastunturi region of Pallas-Yllästunturi National Park observed extensive regions of deceased surface layer vegetation. Subsequently, a collaborative field work involving the Arctic Centre, the Natural Resources Institute, and local reindeer herders was organized to investigate these sites in June 2023. During this investigation, an outbreak of moths was noted in the area. Specifically, the species was identified as the common heath (*Hypomecis atomaria*). A preliminary literature review revealed no documented instances of outbreaks involving this species. In addition to the outbreak zones in Ounastunturi, analogous areas with dead shrubs were found in other locations, including Lokka, Kemihaara, UKK National Park, Ivalo, and Kaldoaivi (macaria fusca outbreak). Additionally, reports were received concerning comparable areas in the Varanger Peninsula in Norway. So far, a timeline of events within the study areas has been constructed, a rudimentary model for detecting these areas has been devised and validated, and the plant

species impacted have been identified. In our presentation, we shall show preliminary findings and discuss the work in progress, specifically emphasizing the utilization of satellite imagery for change detection and classification. could possibly be improved with further RF model fine-tuning.

Insights into the synergistic use of Unoccupied Aerial Vehicles and satellite images to model above ground biomass fractions and topsoil moisture in the Arctic

Miguel Villoslada (University of Eastern Finland), Logan Berner (Northern Arizona University), Timo Kumpula (University of Eastern Finland), Sari Juutinen (Finnish Meteorological Institute) & Henni Ylännö (University of Eastern Finland)

In the context of a rapidly changing climate, documenting and monitoring aboveground biomass (AGB) and topsoil moisture in the Arctic is essential to better understand the spatial dynamics ecosystem processes and functions. For instance, the expansion of tall, deciduous shrubs throughout the Arctic and Subarctic regions entails complex effects in tundra wetlands, where shrub encroachment could potentially result in microclimatic alterations, changes in carbon uptake and decomposition, and peat accumulation. A large body of literature has focused in combining plot-level data with satellite data at various resolutions to model AGB and, to a lesser extent, topsoil moisture in the Arctic. However, the scale mismatches between in-situ plot data and satellite imagery leads to low representativity of training datasets, low accuracies, and high model uncertainties. Recent advances in Unoccupied Aerial Vehicles (UAVs) allow to bridge the gap between local-scale data collection and the coarse GSD of most satellite platforms. However, it is still unclear whether UAVs could be used in combination with satellite data to accurately model above ground biomass fractions and topsoil moisture. In this work, we combined in-situ measurements, UAV, and satellite images to model woody, leaf and total AGB, as well as topsoil moisture. We explored the effect of ground sampling distance (GSD) of two satellite missions (Sentinel 2 and Landsat 8) on the accuracy and uncertainty of the upscaled predictions. We further assessed whether phenology metrics and land surface temperature improve the accuracy of the models. Finally, we compare model uncertainty between response variables (AGB fractions and topsoil moisture) and propose a framework to increase model stability.

Boreal tree species classification and standing deadwood detection based on UAS approach

Anton Kuzmin (University of Eastern Finland)

In boreal environments, old deciduous trees, particularly European Aspen, contribute to a rich and resilient ecosystem, providing unique ecological niches that support various wildlife, including cavity-nesting birds, insects, and mammals, and promoting overall forest health. Due to a low economic value and relatively sparse and scattered occurrence of aspen in boreal forests, there is a lack of information on the spatial and temporal distribution of aspen, which hampers efficient planning and implementation of sustainable forest management practices and conservation efforts. Additionally, standing dead trees play a significant role in maintaining biodiversity in a boreal forest, offer essential habitats for numerous species and

serve as indicators of forest health. Accurate identification of tree species and standing dead trees detection is thus essential not only in forest resource mapping but also for monitoring of biodiversity in boreal forests. New unmanned aerial systems (UAS) based remote sensing proved to be very efficient in providing ultra-high spatial and temporal resolution imagery for detailed forest properties assessment at reasonable costs. Flexibility, accessibility and customizable sensor payload enable rapid and cost-efficient data acquisition in forested regions that may be challenging using manned aircraft. In this study, our objective was to assess the accuracy of different UAS-based sensors and their combinations in classifying Scots pine (*Pinus sylvestris*), Norway spruce (*Picea abies*), birches (*Betula pendula* and *Betula pubescens*), European aspen (*Populus tremula* L.) and standing dead trees at tree level using spectral and structural features derived from LiDAR, high-resolution RGB and multispectral photogrammetric point clouds.

Application of Random Forest regression for modelling spatial distribution of the active layer thickness in palsas *Mariana Verdonen, Miguel Villoslada, Pasi Korpelainen, Tiina Kolari, Teemu Tahvanainen & Timo Kumpula (University of Eastern Finland)*

Maximum seasonal thaw depth referred to as active layer thickness (ALT) is one of the key parameters used to monitor permafrost conditions as the Arctic is rapidly warming due to climate change. Changes in the active layer affect hydrological and biogeochemical processes of areas underlain by permafrost. ALT maps based on interpolation of point measurements or derived from satellite data with coarse spatial resolution often hinder small-scale spatial variations in thaw depth resulting from differences in surface characteristics and microtopography. To accurately model and predict changes in hydrological and biogeochemical processes in permafrost areas, high resolution remote sensing-based estimations of ALT are needed. Therefore, we applied Random Forest (RF) regression on a set of topographical and spectral vegetation indices derived from optical Unoccupied Aerial Systems data, Landsat 8 land surface temperature (LST) data, and field measurements to estimate thaw depths in palsas at three mires in north-west Finland. The RF models resulted in low RMSEs (2.4 cm – 5.7 cm) between predicted and observed thaw depths and the R²-values of 0.57–0.96. Height and LST were the most important variables in thaw depth models. Although, the inclusion of the LST improved the model RMSEs and R²-values, it negatively affected the modelled ALT maps as the edges of the 30 m Landsat pixels are clearly visible in the results. Artifacts in the modelled ALT maps could also be found in higher dome-shaped palsas. The results indicate that ALT maps with good accuracy and high spatial resolution can be achieved with RF regression. However, the resulting ALT maps could possibly be improved with further RF model fine-tuning.

Session 8 The capacity for regional renewal in a world of crises / Alueiden uudistumisen kapasiteetti kriisien maailmassa
Chairs: Heli Kurikka, Jari Kolehmainen & Markku Sotarauta (Tampere University)
Auditorium M103, Friday 10 November 2023

Ilmaa kevyempi paikallinen elinvoima? *Jari Kolehmainen (Tampereen yliopisto)*

Kansainvälisesti nopeasti kehittyvä vetytalous on yksi osa käynnissä olevaa kestävyys siirtymää. Suomessakin vetytalous on noussut voimakkaasti julkiseen keskusteluun. Kyse ei ole vain vedyntuotannosta itsestään, vaan laajemmasta arvoketjusta tai -ketjusta. Merkittävä ajuri kokonaisuudelle on lisääntynyt tuuli- ja aurinkovoima, jota voidaan käyttää nimenomaan vihreän vedyn tuotannossa. Vetyä puolestaan hyödyntää teollisuudessa korvaamaan fossiilisia raaka-aineita tai niistä voidaan jalostaa vaikkapa uusia liikennepolttoaineita. Vetytalouden kehittyminen on yksi vastaus globaaliin ilmastokriisiin. Aluekehityksen ja -kehittämisen näkökulmasta on kiinnostavaa, että vetytalouden nähtävissä olevat investoinnit kohdistuvat suurelta osin sekä vanhoihin teollisuuskaupunkeihin että hyvinkin maaseutumaisiin alueisiin. Ne ovat tyypillisesti sellaisia alueita, joiden elinvoiman kehittyminen ei viimeisinä vuosikymmeninä ole ollut mitenkään itsestään selvää. Tässä paperissa tarkastellaankin sitä, kuinka "vetytalouden lupausta" tulisi tarkastella erilaisten alueiden elinvoiman näkökulmasta. Millaisia edellytyksiä vaaditaan sille, että globaaliin ilmastokriisiin vastaaminen tuottaa erilaisille alueille uudenlaista paikallista elinvoimaa? Lähtökohdaksi otetaan laaja elinvoiman käsite, joka kiinnittää taloudellisen menestyksen lisäksi huomiota paikallisyhteisön kokonaisyhyvinvointiin. Tässä mielessä oleellista on kiinnittää huomiota myös paikalliseen toimijuuteen suhteessa vetytalouden mahdollisuuksiin ja haasteisiin.

Regional allocation of public expenditure in Finland: Equity or efficiency? *Teemu Makkonen, Olli Lehtonen (University of Eastern Finland) & Tommi Inkinen (University of Turku)*

The contemporary polycrisis has created huge pressures for decisionmakers balancing between the higher need for public expenditure to tackle the crises and the harsh reality created by budget constraint and lack of resources. Indeed, decisions where the state spends its public expenditure (including consumption, investment, and transfer payments) are anything but trivial. In regional context, these (exogenous) financial flows can have important inducement effects for endogenous development. This is because public expenditure creates externalities: due to increased private spending, local multiplier effects and spillovers the overall socio-economic benefits generally surpass the initial public expenditure and can, thus, trigger virtuous cycles of regional development. Therefore, public expenditure is among the most critical factors determining regional development – not to mention its impact on internal cohesion and social stability discussed in the "geography of discontent" literature – and, thus, also of key interest to researcher and policymakers. The key question addressed here with regional data from Finland is: whether public expenditure

in Finland is allocated to regions, such as rural regions, with higher need for such support (i.e., according to an “equity principle”) or to the core regions that can be expected to be in the best position to turn the expenditure into further regional development (i.e., according to an “efficiency principle”)?

Perceived regional opportunity spaces and social filters shaping regional development. *Heli Kurikka (Tampere University)*

Globally uncertain times have impacts on regional developmental paths. Simultaneously, long-term developments, like ageing, are challenging many regions. Currently it is easy to see mainly risks around us. However, windows of opportunity often open during times of crises. Unstabilized systems are forced to look for something new, and these choices often have far-reaching consequences (Mitleton-Kelly 2003). "Opportunity space" is a concept originally introduced by Grillitsch and Sotarauta (2020). "Region-specific opportunity space" refers to what is possible considering regional preconditions, such as industrial structures and formal institutional environment (e.g. innovation support systems), but also informal institutions like entrepreneurial climate. Identifying opportunities for development and innovation is in many respects a regional collective process. Regional developers, business and local decision-makers view opportunities through their "social filters", which are partly derived from history. The importance of these informal institutions is often mentioned but less studied (Rodríguez-Pose 2013). Social filters guide attention to what is preferable, profitable and possible in different regions. Kurikka et al. (2022) have identified several dimensions of social filters framing regional opportunity spaces: 1) The logic of growth, 2) specialization, 3) spatial scale, 4) time horizon, 5) scale of progress, 6) mode of action, and 7) opportunity type. Finnish regional opportunity spaces and the social filters framing them will soon be studied with a survey. Regional developers and decision-makers will answer what kind of economic development they prefer, e.g. large scale efforts vs. incremental steps, endogenous growth like SME's vs. extra-regional investments or sharp specializing vs. keeping all the possibilities open. They will also describe economic opportunities they see as most significant for their region. Grillitsch, M., & Sotarauta, M. (2020). Trinity of change agency, regional development paths and opportunity spaces. *Progress in Human Geography*, 44(4), 704–723. Mitleton-Kelly, E. (2003). Ten principles of complexity and enabling infrastructures. *Complex systems and evolutionary perspectives on organisations: The application of complexity theory to organisations*, 1, 23-50. Kurikka, H., Kolehmainen, J., Sotarauta, M., Nielsen, H., & Nilsson, M. (2023). Regional opportunity spaces—observations from Nordic regions. *Regional Studies*, 57(8), 1440-1452. Rodríguez-Pose, A. (2013). Do Institutions Matter for Regional Development? *Regional Studies*, 47(7), 1034–1047.

Assessing the Impact of Halting Hydropower Dam Operations on Downstream Flow Characteristics Using State-of-the-Art Modelling Approach *Sadeqi Amin (University of Turku)*

Only one-third of Europe's rivers currently meet the criteria for achieving 'good ecological status' defined by the EU Water Framework Directive (WFD), highlighting the pressing need to restore human-impacted rivers back to their natural state. While previous studies have primarily focused on the downstream effects of dams during operation period, with an emphasis on flow hydrodynamic, morphological changes, and ecosystem impacts, the specific changes in flow characteristics resulting from the cessation or removal of dams in downstream river channels have been largely understudied. This study aims to bridge the research gap by utilizing state-of-the-art field-based data measurements, encompassing bathymetric surveys, direct flow measurements, and airborne laser scanning. These data sources will enable the acquisition of a highly accurate seamless 3D map of the river channel and floodplain. This 3D map will be utilized in the application of advanced hydraulic model to comprehensively analyse hydraulic processes and assess flow characteristics following the planned halting of the Kuusinkijoki dam in the boreal region of northern Finland. The decision to select this site was driven by its unique potential to explore the impact of dam cessation on downstream flow characteristics and gain valuable insights into river restoration dynamics. The study aims to accomplish the following objectives: i. Evaluate the spatio-temporal variability of downstream flow in three distinct study sites: (a) an unused natural channel alongside the dam, (b) a man-made channel downstream, and (c) a natural channel downstream, including the riverine lake along the course of the Kuusinki River. ii. Investigate the influence of various flow scenarios on downstream river flow characteristics: peak flow, normal flow and drought situation. iii. Analyse the spatio-temporal trends in flow dynamics and identify any significant changes in response to the cessation of dam operations. iv. Evaluating the influence of releasing the previously unused natural channel on downstream in terms of restoring the ecological functioning of the downstream river. Through its utilization of advanced data collection methods and modelling approaches, this study contributes to our understanding of the dynamics and restoration of downstream dam impacted river systems, providing valuable insights for effective river management strategies.

Near-bed flow characteristics under varying ice covers in a meander bend *Karoliina Lintunen (University of Turku)*

Currently in the northern hemisphere, ice cover forms annually on rivers situated in the high latitudes. However, in the context of future climate changes, this natural phenomenon may undergo alterations, resulting in later ice formation and earlier ice breakup compared to historical patterns. Changes affect the flow characteristics of the rivers and therefore affect

river environments, especially sediment transport, nutrient transport, and aquatic habitats. While there has been an increase in field measurement-based studies since the 2010s, our understanding of the effects of river ice cover on flow dynamics within natural environments remains constrained. Specifically, the influence of ice cover on near-bed flow characteristics has been relatively underexplored due to the difficulties in obtaining accurate data in such conditions. When ice cover forms into a river, it creates an additional roughness layer compared to open-channel conditions. This roughness layer alters the flow conditions by creating an asymmetrical flow configuration. Under a fixed ice cover, flow velocity increases, and maximum velocities might be higher than under similar discharge conditions in an open channel. The flow gradient near the river bed is significantly different in an ice-covered channel than in an open one. In this study, we 1) detect the impacts of ice cover on near-bed flow direction and velocity and 2) compare near-bed flow conditions of an open channel and an ice-covered channel. The aim is to assess how ice cover alters the flow characteristics and quantify the effects that occur when ice is not present in a similar form to before. The study site is a meander bend of the sub-arctic Pulmanki River. River undergoes annual freezing, with the ice-covered season typically extending from October through May. Field measurements have been conducted during the low-flow open channel periods and ice-covered from 2016 to 2023. The near-bed flow characteristics are analyzed based on the comparison of different field measurements. Statistical analysis of the effects of different ice conditions on flow characteristics is conducted. The results of this study contribute to the understanding of river ice processes and therefore help to improve the management of river systems.

Nature-based solutions for watershed management in human impacted peri-urban watersheds *Aino Saarinen (University of Turku)*

Water management needs renewing in order to increase climate resilience and adaptation. Floods and excessive nutrient load are an issue in agriculture dominated peri-urban environments, and climate change will increase these issues in the future. Nature-based solutions (NBS) are increasingly seen as a solution for climate change adaptation in water management in urban and peri-urban settings. NBS can solve these issues as they retain water, slow down the water flow and also absorb nutrients as a side benefit. NBS are seen as a possible solution, and still traditional grey infrastructure is often chosen over nature-based alternatives. Local actors are in a key position when planning water management solutions in peri-urban areas. Local decision-making, knowledge and information about available solutions directs the use of different water management solutions. NBS suitability, decision-making and stakeholder attitudes needs to be studied in order to understand obstacles for implementing the NBS. This doctoral thesis 1) examines decision-making process to identify how the process acts towards and against NBS, 2) evaluates the suitability of NBS in peri-urban watershed using watershed modelling and 3) analyses the effects of participatory planning process and NBS representation on stakeholders' attitudes towards NBS.

Impact of anthropogenic and climate change on river dynamics - utilizing digital twins and geoinformatics *Asfand Tehseen (University of Turku)*

The effects of both climate change and human activities on rivers are well documented. Due to the complexity of systems, high resolution data sets are usually required to investigate the implications of these changes to rivers. Although, our capacity to obtain high-resolution subaqueous data regarding water bodies has always been limited. Recent advancements in cutting-edge laser scanning technology have made it feasible to obtain detailed topographical and subaqueous information. With the application of laser scanning using three wave lengths and combining it with multi-beam sonar data, we can produce seamless digital surface models, digital elevation models, and three-dimensional (3D) catchment mapping. Through this unique dataset we will be able to setup different models with great precision in results and calibration, eventually refining our understanding of catchment processes and their interaction. We are currently collaborating with the Finnish Geospatial Research Institute (FGI) on two supersites in Finland, Tana River and Oulanka River. Our principal objective is to collect this unique dataset from these study areas and assess the impacts of anthropogenic and climate change on river dynamics employing the newly introduced concept of digital twin along with the hydrological and hydrodynamic modelling.

Knowledge on river-sea interactions and delta processes in the sub-arctic Tana River (Teno) delta for better climate change adaptation *Tua Nylén (University of Helsinki), Mikel Calle, Harri Tolvanen (University of Turku) & Tapio Suominen (University of Helsinki)*

Tana River (Sámi: Deatnu, FI: Teno, NO: Tana) is one of the largest rivers in Fennoscandia, an important part of the indigenous Sámi people's homeland, and a natural habitat of the vulnerable Atlantic salmon. The river forms a large tidal delta at the Barents Sea fjord coast. It has high international value for biodiversity, and has been awarded a nature reserve status (Tanamunningen Ramsar site). Despite the importance of the Tana River delta, scientific knowledge of its physical, chemical, and ecological processes is still sparse and scattered. A more comprehensive understanding of the delta processes would be needed, to mitigate the impacts of climate and land use changes. The complex interaction between river and sea in the Tana delta is affected by the global sea level rise, post-glacial land uplift, intensification of extreme weather phenomena, distinct spring flooding, river ice processes, and human activities. Our own preliminary analyses have been the first to quantify the planform (two-dimensional) changes of the delta during the past 40 years and the interaction of river discharge and tidal influence. The initial results reveal dramatic changes in the delta's shape, localized stabilization of sediment, and decreasing stability of certain riverbanks. From water level measurements, we can see the diminishing impact of the spring flood and the increasing tidal impact in the downstream direction. The water level time-series can be associated with ecological and geomorphological zones in different parts of the delta. We have also been able to demonstrate that saline water penetrates to the middle parts of the delta already today in specific conditions: during spring tide when the discharge of the river is low. The salt water impact is expected to increase with rising sea level. Our findings on local shoreline stability, flood frequency and flood extent, their visible consequences on the river banks, and salt

water intrusion may be of high importance for adapting human activities to the changing environment.

Temporal shift of hydroclimatic regime and its influence on migration of a high latitude meandering river *Linnea Blåfield (University of Turku), Hannu Marttila (University of Oulu), Elina Kasvi & Petteri Alho (University of Turku)*

Climate change alters high latitude hydrological cycle from snow-dominated to rain-dominated and these changes strongly influence geomorphological processes in fluvial environments, leading to alterations in sediment transport, erosion, accumulation, and landscape changes. We conducted comprehensive analysis of hydroclimatic and geomorphological shifts of a boreal Oulanka River system, spanning over the past five decades. A strong signal of warming temperatures (+ 0.61 Celsius/decade), reduced winter conditions and warmer summers (+ 0.41 Celsius/decade) was detected. The spring flood magnitude diminished 7%, but high discharge peaks during other seasons increased 10% together with the annual minimum discharge which increased 28%. Simultaneously, precipitation intensity increased during summer. The meander migration rate (mean 0.91 or 2.47 m/year) and bank erosion volume were interconnected to high snow sum, high discharge, and ground frost, but no significant long-term trends were observed. Our findings underscore that climate is the first-order control on fluvial geomorphology and emphasizes the complex interplay between various hydrological and climatic factors that shape the dynamics of river systems. In near future, we expect to see changes in the spatial-temporal distribution of high latitude rivers sediment yield. Based on the results, more attention should be addressed to the thaw seasons controlling the sediment, as majority of the shifts took place in these months.

Session 10 Rural geography in times of the polycrisis – drifting without a direction?

Chairs: Olli Lehtonen (University of Eastern Finland)

Auditorium M106, Thursday 09 November 2023

Co-producing sustainable energy practices in rural North Karelia *Jani Lukkarinen (Finnish Environment Institute)*

The energy crises of winter 2022-23 revealed how energy poverty and energy vulnerability are a real phenomenon in Finland. Energy vulnerability emerges as a dynamic phenomenon in the interplay of exposures and adaptive capacities (Thomas et al., 2018). In the rural areas vulnerability has geographically uneven dynamics that can be mitigated from two complementary directions. On the one hand, this calls for targeted policy interventions to protect the most vulnerable social groups. On the other hand, it leads to emergence of local adaptive capacities to reconsider the material infrastructures and practices related to energy. In this paper, I present lessons from a knowledge co-production process to identify pathways

for more just and sustainable energy practices in the context of North Karelian villages (Lukkarinen et al., 2023a; 2023b). The 2-day transition arena invited 12 stakeholders with diverse expertise and deep understanding on local communities, energy system and policy developments to abrogated municipality of Korpiselkä near Russian border. The arena produced five pathways on the role of policy development, regional planning, community engagement, citizen energy literacy and technological implementation in developing the adaptive and transformative capacities of rural communities in the diverse crises and the unfolding energy transitions. Overall, the recent policy discontinuities and incoherence form a challenge for consistent agency in the rural context. However, regional planning and energy counselling have opportunities in navigating the transformations by enabling emergence of local energy communities and co-learning of novel energy practices.

The withdrawal of the state: Spatial distribution of central government jobs in Finland in 1987–2021 *Simo Rautiainen (University of Eastern Finland)*

Personnel costs compose a large part of government spending. In 2022, 80,000 people worked in the Finnish state administration, with personnel costs of 5.2 billion euros (8% of government costs). Reducing personnel costs is a key part of the government's savings programs. Consequently, the state withdraws from the countryside and small towns and centralizes its operations in the capital region and regional centres. This research is part of the 'Allocation of Public Cash Flows to Rural and Urban Areas' (RAVIT) project, where I examine the spatial distribution of central government sector jobs and related cash flows in Finland. The study creates an overview of the trajectory of central government jobs since 1987 and analyses more closely the spatial distribution of the sector's branches of business and salaries in 2015–2021. The research is based on Statistics Finland's employment statistics and the financial statements of the central government units, which allowed me to allocate the central government salaries by municipality. The results show central government's decades-long withdrawal from the countryside and the centralization of state operations in central cities. During the recession in the early 1990s, the number of government jobs declined by 78,000 (-35 %) in a few years. Since then, the number of jobs in the central government sector has increased slightly in central cities, but in rural areas and small towns the decline has been continuous. Jobs in administration, higher education and administration of justice are concentrated in central cities. The state has withdrawn completely from many rural municipalities, but some central government units, such as the Defence Forces, are significant employers locally.

Distilling priorities for municipal development via researcher-practitioner collaboration: a map-based survey and future workshop in rural community in Northern Finland *Salla Eilola (University of Eastern Finland), Sirpa Rasmus (University of Lapland) & Nora Fagerholm (University of Turku)*

In 2021 we set up to study local knowledge on environmental changes and future preferences in a subarctic community in Northern Finland. It turned out that local concerns over these

changes and multiple other pressures on the socioeconomic conditions in the community opened a door to collaborate more concretely on a municipal strategy to address the changes. Arctic and subarctic communities face particularly fast environmental change while often times they lay in a periphery of regional and national decision-making. We used a map-based survey to gain better understanding of the relevant changes and concerns affecting local life and livelihoods. In addition to observed changes the survey revealed three distinct and contradictory future visions for the municipal development among the community. These visions had been partly reflected in the municipal strategy 2022-2025, which had recently been published. The strategy offered another insight into the local socio-economic and political challenges. Together with the municipality we tailored a workshop for municipal leaders and residents to discuss practical actions, blind spots and responsibilities of various actors in implementing the strategy. While the workshop participants represented the three different future visions, addressing and reconciling these contradicting views remains to be solved. In the presentation, we outline the local priorities and our researcher-practitioner collaboration. We also reflect on the value of finding shared objectives with local knowledge holders in a research project which aims to address the polycrisis.

Rural housing markets during COVID-19 - Mapping changes with Etuovi.com dataset *Olli Lehtonen (University of Eastern Finland) & Olli Voutilainen (Natural Resources Institute Finland)*

Structural changes in society pose various challenges to housing and housing construction around Finland. The effects of these long-term changes on the housing market are well-known. On the other hand, less research has been done into the effects of crises on the housing market, and it is not known, for example, why some rural municipalities performed well in net migration during the corona pandemic. The development of the housing market is related to population development, as the housing stock of municipalities losing their population becomes oversized as the population, jobs and services decrease, which leads to the emptying of buildings and facilities. Lack of use of the housing stock often leads to falling prices. This study examines the development of the housing market by utilizing Etuovi.com housing advertisement data, which offers a new way to study the development of the housing market instead of traditional housing price data. The aim is to analyse the effects of recent crises on the rural housing market and explain the changes taking place in them through the demographic development of municipalities and the housing policy of municipalities. The study asks what kind of changes the crises have caused in the housing market and what factors explain the changes. The study will also consider how Etuovi.com data can be used in research and what added value it can provide for research. The presentation introduces preliminary results and evaluates the possibilities of Etuovi.com data in housing market research. The presentation is part of a new research project that extensively examines housing policy in shrinking municipalities.

Session 11 Geography of Sustainability Transition Governance / Kestävyyismurroksen hallinnan maantiede

Chairs: Petri Kahila & Juha Halme (University of Eastern Finland)

Auditorium M106, Friday 10 November 2023

Enabling Sustainable Transitions in European Rural Areas *Petri Kahila & Juha Halme (University of Eastern Finland)*

The RUSTIK-project is driven by the urgent need to empower rural communities, actors, and policy makers to craft strategies, initiatives, and policies that facilitate the transition to sustainable rural areas. This initiative seeks to achieve a comprehensive understanding of rural areas' diverse characteristics, functionalities, and future prospects, thereby identifying their potentials and challenges. Central objectives encompass the development of (1) a robust methodological framework for functional rural areas, (2) integrated databases spanning various data types and sources, (3) enhanced strategies and governance models for rural decision makers and stakeholders, and (4) improved methodologies for rural impact assessment and decentralized rural proofing. RUSTIK aspires to make a substantial contribution to the enhancement of existing European policy tools and approaches, with a primary focus on bolstering the European Green Deal, European Digital Strategy, European Pillar of Social Rights, and the EU Long-Term Vision for Rural Areas. The project delves into three pivotal transitions within rural areas: socio-economic, climate change and environmental, and digital. RUSTIK adopts a five-fold classification of rural functions as the basis for characterizing the diversity of rural regions and their ability to respond to these transitions. In conclusion, the RUSTIK-project represents a groundbreaking endeavour to catalyse sustainability transitions in rural areas across Europe by amalgamating in-depth analyses of rural functionalities, characteristics, and transition dynamics with innovative policy and governance approaches. This initiative has the potential to significantly advance European rural development, aligning with key European policy priorities and fostering a more resilient and sustainable future for rural communities.

Governing “Anomalies”: The Challenges of Translating and Governing Multiple Forest Hazards *Uula Saastamoinen (Finnish Environment Institute Syke)*

Standardising phenomena to measurable and simplified subjects to make them “legible” (after James C. Scott) is a key step in governing them. This study looks into climate change induced hazards affecting natural resources governance, particularly forest fires, pests, and droughts. These natural phenomena, when interacting with human-controlled (standardised and managed) forests, evolve into "hazards" requiring active governance. By making these natural phenomena measurable, a way is opened up for governing their impacts and increasing resilience. In other words, hazard governance is a way of translating natural phenomena into something which is compatible with societal norms and structures (Smith, 1984). However, the intricacy and inherently material nature of these phenomena pose

obstacles to effective governance. Utilising the material produced in a research project, the paper wishes to illustrate how natural phenomena are translated into governable units and attempted to be integrated into the environmental governance of the state. Through this multidimensional framework, the study aims to contribute to the discourse on environmental governance by blending aspects of governmentality, political ecology, and entrepreneurial state theories with theories on transition governance. The administrative challenges of “multi-hazard governance” highlight the ways in which governing natural hazards requires broad and cross-sectoral coordination and cooperation, not dissimilarly from governing a wider sustainability transition. While policy frameworks seek to integrate a wide variety of interests, the study’s results indicate that the resulting prioritisations are in line with the idea of continuous economic growth, and the continued use of forestry resources. At the same time, contradictions and contentious matters relating to environmental protection are obscured. Reflecting the work done in the project to the existing policy frameworks regarding the governance of natural hazards, the paper aims to not only show the shortcomings of making natural hazards governable but also illuminate how governance structures must adapt in order to respond to challenges put forth by the sustainability transition paradigm.

Measuring sustainable urban development in residential areas of the 20 biggest Finnish cities *Sanna Ala-Mantila, Antti Kurvinen & Aleksi Karhula (University of Helsinki)*

As a result of the ongoing urbanization megatrend, cities play an increasingly critical role in the search for sustainability. To create sustainable strategies for cities and to follow up if they induce desired effects proper metrics on the inter and intra-urban development is needed. We analyze the sustainability development in the 20 largest cities in Finland through a GIS-based residential area classification framework, that focuses on building types and their characteristics. We create a classification system comprising seven different types of residential classes: centers, block of flats from 1950s and before, block of flats from 1960s and 1970s, block of flats from 1980s and 1990s, block of flats from 2000s, low-rise residential areas built before 2000s, and low-rise residential areas built after 2000.

With this classification, we tracked the development of several key indicators of urban sustainability between 2000 and 2018, including population growth, residential density, employment rates, and motorization rates. The results based on high-quality register data show concerning trends in some sustainability measures, and divergent trends between cities and residential areas within. Overall, while densities have increased modestly, we see no clear signs of decreasing car ownership rates. Further, also manifestations of social sustainability seem to be insufficient in many locations—especially in residential mid-rise areas from the '60s and '70s, and '80s and '90s. These kinds of rising differences can be potentially creating tensions and undermining social sustainability.

We believe classification and its potential local applications should be also very usable for both research and practice, and that employing a detailed monitoring of different residential area types and their specific developments will significantly help urban policy and implementation processes in addressing challenges of urban sustainability.

Session 12 Maps in crises / Kartat kriiseissä: kartografia yhteiskuntakritiikkinä ja kanssatutkimuksena

Chairs: Tuomo Alhojärvi (University of Eastern Finland) & Johanna Hohenthal (University of Helsinki)

Auditorium M108, Friday 10 November 2023

1323 attitude and the regime of ambiguity *Joni Vainikka (University of Helsinki)*

Cultural divides run through Finland. The urban-rural, the capital region-provinces, Finnish-Swedish, North-South, and especially East-West divides create distinctions within the state space that are employed to explain political, attitudinal, and other differences. These divides are sometimes flexible and malleable to account for the explanations at hand. However, this 'regime of ambiguity' can turn into historical myopia. The now 700-year-old 1323 Nöteborg treaty line, argued to explain cultural, developmental, and genetic differences within Finland, has been pushed to explain more than it should. Media and researchers alike have been inspired more by the 'plasticity' or ambiguity of the boundary or have explained the difference without having a bearing on the actual whereabouts of the boundary. Part of this process relates to unfamiliarity with the ceded Karelia, but also the national habit of pushing the sense of Karelia to the outside forgetting the Topelian observation that the treaty line was foremost a dividing line through Karelia. Explaining contemporary differences with the 'original' boundary imposed by the outside and forgetting the 'process' of boundary changes is in itself problematic, but also the ambiguity and vagueness in mapping the relict line in media and research pushes to question the logic of separation within and from outside. The presentation based on two different papers seeks to do three things. 1) Map how the treaty divided Karelia and what is known of the boundary and its 'descendants,' 2) chart how the boundary has been used to explain things it should not, 3) Related to a geocoded survey on climate attitudes and housing, exemplify whether the relict boundary has any purchase in explaining attitudinal differences. Taking a note from Latour on the 'fabrication of objectivity', the presentation argues that critical historical mapping must take stock of the processual circumstances through which regional legacies are read and why researchers fail to see alternative explanations. Moreover, the presentation brings up the indifference to actual cartography and the intention to stay up with societal truism created not in the 700-long history but as part of more recent national reimagining.

Nuorten geomediataidot ja osaamisen tasot maantieteen opetuksessa *Panu Lammi, Virpi Hirvensalo, Tua Nylén, Laura Hynynen, Markus Jylhä & Petteri Muukkonen (Helsingin yliopisto)*

Kartat, digitaalinen paikkatieto sekä maantieteellistä tietoa sisältävät taulukot, diagrammit, uutiset ja valokuvat ovat esimerkkejä geomediasta – median muodosta, jolla voidaan kerätä, tallentaa, käsitellä tai välittää maantieteellistä, sijaintiin sidottua tietoa. Nuoret kohtaavat geomediaa laajasti arkielämässään esimerkiksi käyttäessään erilaisia karttapalveluita tai nähdessään uutisissa ja sosiaalisessa mediassa karttoja tai kuvia maailman tapahtumista.

Kuten muillakin median muodoilla, geomedian avulla voidaan helposti välittää vääristeltyä tietoa ja johtaa geomedian käyttäjiä harhaan. Tähän haasteeseen vastatakseen nuoret tarvitsevat riittäviä kriittisiä taitoja lukea ja käyttää geomedialla. Yksi keskeisimmistä geomediataidoista on kriittinen kartanlukutaito. Geomediataidot ovat tulleet mukaan maantieteen opetukseen viime vuosina. Opettajia on kuitenkin hämmentänyt, mitä taitoja nuorille tulisi opettaa ja millä tasolla heidän osaamisensa tulisi olla. Tässä esityksessä esittelemme havaintojamme tutkimuksestamme, jossa selvitämme nuorten geomediataitoja ja osaamisen tasoja eri koulutusasteilla sekä näiden taitojen opettamiseen ja oppimiseen liittyviä haasteita. Aineistomme koostuu maantieteen opettajien haastatteluista (n=20) sekä maantieteen ylioppilaskokeiden geomediataitoja mittaavien kysymysten vastausten (n=300/kysymys) analysoimisesta. Opettajien haastatteluiden mukaan nuorten geomediataidot kehittyvät varsinkin yläkoulussa ja lukiossa, mutta kaikilla koulutusasteilla nuorten välillä oli suuria yksilöllisiä eroja. Nämä erot olivat sitä suurempia, mitä korkeammasta koulutusasteesta oli kysymys. Sekä haastatteluiden että ylioppilaskokeiden vastausten perusteella monet nuorista oppivat koulussa varsinkin mekaanisia geomediataitoja, kuten geomeedia-aineistojen yksinkertaista tulkintaa ja tuottamista. Monet opettajat jakoivat puolestaan huolen siitä, että lukion päätteeksi monien nuorten taidot analysoida ja arvioida kriittisesti eri geomeedia-aineistoja jäävät helposti melko pinnallisiksi ja tulkinnat suoraviivaisiksi. Geomeediaopetuksen haasteiksi opettajat mainitsivat useita niin opetussuunnitelmiin, aika- ja aineistoresursseihin, opettajien osaamiseen kuin nuorten opiskelumotivaatioon liittyviä asioita.

Kanssakartoitettu kaupunki: Tilallinen toimeentulo ja kartografia yhteisvaurautena *Tuomo Alhojärvi (Itä-Suomen yliopisto)*

Yhteisvauraus ('the commons'; suom. myös 'yhteinen', 'yhteiset') on kaikessa moninaisuudessaan keskeinen osa kriisinkestävien, oikeudenmukaisten ja kestävien kaupunkien ekososiaalista infrastruktuuria. Jaetut, vertaistuotetut ja yhdessä ylläpidetyt resurssit ovat keskeinen edellytys tilalliselle toimeentulolle – keinoille tulla yhdessä toimeen sekä rakentaa aineellista toimeentuloa erilaisuuden kirjomassa kaupunkitilassa. Yhteinen on kuitenkin jatkuvaa työtä – yhteistämistä – jossa neuvotellaan rajoista yksityisen ja julkisen sekä yhdessä jaetun ja erilleen jakavan välillä. Etenkin sellaisen poliittisen talouden ja kulttuurin piirissä, jota usein määrittää yksityinen ja ulossulkeva omistus, vauraus ja kulutus, yhteistämisen tehtävä on akuutti ja jokapaikkainen. Eri puolilla maailmaa työ yhteisvaurauden puolesta on viime vuosina kehittänyt avukseen kartografisia työkaluja. Etenkin aktivistiset tutkijat ja kansalaistoimijat ovat karttojen avulla pyrkineet koostamaan ja visualisoimaan yhteisvaurauden kirjoja ja näin voimistamaan muutostyötä ja kansalaisliikkeitä. Usein kartoitushankkeita ohjaa kuitenkin nippu suoraviivaisia ajatuksia, joiden mukaan yhteisvaurauden kartoittaminen on episteemisesti ja poliittisesti ristiriidatonta, kartat ovat työkaluina puolueettomia ja helposti lainattavissa yhteiskunnalliseen muutostyöhön ja yhteisen näkyväksi tekeminen rakentaa itsessään yhteiskunnallista muutosta. Esitykseni lähtee liikkeelle sitoutumisesta tähän tutkimuksen ja toiminnan kenttään ja summaa tunnistamiani (itse)kriittikin aiheita. Karttojen luonnetta ja työtä yksinkertaistava

lähestymistapa yhtäältä unohtaa yhteisvaurauden ja siihen liittyvien politiikkojen monimutkaisen ja ristiriitaisen luonteen ja toisaalta idealisoi karttojen yhteiskunnallista muutostyötä karsien itsekritiikin mahdollisuuksia. Lähden esityksessä liikkeelle tästä yhteisvaurauden karttoja koskevasta kriittisestä kirjallisuuskatsauksesta. Pääpaino on kuitenkin yrityksessä kehittää yhteisvaurauden kirjon tutkimiseksi moniulotteisempaa, kanssakartoittavaa lähestymistapaa. Sillä on neljä erityispiirrettä. Ensinnäkin lähestymistapa hahmottaa yhteisvaurauden enemmän tapana jäsentää ja syventää yhteiskunnallisia jännitteitä kuin kiirehtiä niiden ratkaisuihin. Toiseksi yhteisvaurauden kartoittaminen nähdään siinä osallisia hetkellisesti yhdistävänä prosessina, jossa voidaan moniulotteisesti käsitellä tilallisen toimeentulon kysymyksiä. Kolmanneksi kysymys on erilaisten tilallisen toimeentulon muotojen arkistoinnista – yrityksestä lukea toisin olemassa olevaa tietoa, koostaa ja kuratoida uutta sekä arkistoida sitä kekseliäästi ja tulevaisuudelle avoimesti. Neljänneksi pyrkimys on kehittää valmiuksia (itse)kriittisten geomediataitojen vahvistamiseksi niin, että yhteisen kartat näyttäytyvät juuri ristiriitaisuudessaan puntaroimisen ja työstämisen arvoisilta. Esittelen esityksessäni näitä lähtökohtia ja niiden suhdetta käytäntöön, keväällä 2024 Joensuussa alkavaan yhteisvaurauden kanssakartoitushankkeeseen.

Critical analysis of energy maps for sustainability transition *Johanna Hohenthal & Jenny Rinkinen (Lappeenranta University of Technology)*

Thematic maps of energy production, distribution, demand, and consumption are used to support infrastructure planning, impact assessments, and policy-making. Energy maps participate in constructing an image of how energy systems are organized and how much and where they need space now and in the future. However, not only do energy systems use space, but they also produce it, making energy a political geographical issue (Avila et al. 2022). It is therefore important to understand how energy maps address and communicate themes of power, representation, and social justice, and what are their potential social and environmental implications. So far, there has been relatively little critical analysis of energy maps, but there is need for it, particularly in the context of mapping sustainability transitions. Transitions in energy systems can take highly centralized or broadly distributed form – and these futures are not necessarily compatible (Lilliestam & Hanger 2016). Critical analysis of energy transition maps may challenge, for example, the absolute spatial representation (often reproducing national territorial imaginary) typical of energy maps, the representation of specific groups of people or areas on maps in relation to energy resources or infrastructure and reveal hidden impacts on human communities and the environment. Critical analysis can also highlight the more difficult-to-visualize relationality of space, for example with respect to energy cultures and lifestyles, multi-locality, conflicts, expert practices, energy governance, energy access, and interactions between energy use, infrastructure, and the built environment (Castán-Broto & Baker 2018). This presentation will outline a critical review study of Finnish sustainable (low carbon) energy maps. The study focuses on maps created by different actors involved in the energy transition, which describe the production potential and demand of different forms of sustainable energy (e.g., hydro, wind, solar, geothermal, nuclear, and biogas power) and development of transfer networks. A tentative categorization of the

data is presented and analytical questions to be asked from the data will be proposed and discussed with the audience. The potential of critical cartographic analysis and counter cartographies to support policy and planning strategies to mitigate the environmental and social impacts associated with energy transitions will also be discussed.

Session 13 Geographies of ownership / Omistamisen maantieteet

Chairs: Tuomo Alhojärvi (University of Eastern Finland)

Auditorium M107, Thursday 09 November 2023

Auton omistamisen välttämättömät tilat ja tilanteet suomalaisessa mediakeskustelussa *Juhana Venäläinen (Itä-Suomen yliopisto)*

Liikenne ja liikkuminen sosioteknisinä ja sosiokulttuurisina järjestyksinä ovat murroksessa. Käynnissä ovat muun muassa siirtymät polttomoottoreista kohti fossiilittomia käyttövoimia sekä itse ajettavista kulkuneuvoista kohti autonomisia liikkumisjärjestelmiä. Siinä missä sähköistyvän ja autonomisoituvan liikenteen ajureiksi nähdään ilmastokriisiin vastaaminen sekä koneoppimisen kehitys, on kolmannen hypoteesin mukaan käynnissä myös kulttuurinen siirtymä, jossa auton omistamisen ja oman auton käyttämisen aiempi merkitys horjuu. Vaikka orastavissa puhetavoissa on yritetty kääntää kurssia "automobiliteetin yhteiskunnasta" joustavampiin, palvelullistettuihin ja tarpeen tullen aktivoitaviin alustapohjaisiin liikkumisratkaisuihin, käsitys auton omistamisen välttämättömyydestä elää sitkeästi julkisessa keskustelussa. Tarkastelen esitelmässäni tilallisuuden, omistamisen, vapauden ja pakon keskinäisiä kytköksiä auton omistamista koskevassa suomalaisessa mediakeskustelussa 2000-luvulla. Aineisto koostuu tietokoneavusteisesti kerätyistä suomenkielisistä uutisista, uutiskeskusteluista sekä blogiteksteistä vuosilta 2015–2023. Media-aineiston kautta on mahdollista jäljittää arkisia liikkumisratkaisujen rationaliteetteja sekä myös omistamisen suhdetta liikkumisen vapauteen. Kysyn, miksi, missä paikoissa ja missä tilanteissa auton omistaminen nähdään välttämättömänä. Troopinkaltaisesti toistuvan puhettavan mukaan oma auto on välttämätön erityisesti Suomen kaltaisessa "pitkien etäisyyksien maassa". Autoilun välttämättömyyttä perusteellaan tilallisilla argumenteilla, jotka liikkuvat joustavasti erilaisissa skaaloissa: autoilu voi olla välttämätöntä esimerkiksi ihmiselle ylipäätään, kansallisesti, maakunnassa ja "maakuntien Suomessa" tai tietyissä tarkemmin rajatuissa paikoissa ja olosuhteissa, kun esimerkiksi koti, työ ja lasten harrastukset ovat kaukana toisistaan. Keskustelussa risteävät ajatukset auton yksityisomistamisesta juridisena suhteena ja oletetusti absoluuttisena käyttövarmuutena, auton käyttömahdollisuudesta laajemmin ottaen sekä autoilusta liikkumisjärjestelmänä. Auton omistamisen sotkuisia kytköksiä diskursiivisesti kartoittamalla on mahdollista ymmärtää tarkemmin liikennejärjestelmän muutokseen liittyvää hitautta ja sen sosiokulttuurisia ulottuvuuksia.

Metsän omistamisen maantieteet *Ari Lehtinen (Itä-Suomen yliopisto)*

Metsän omistamisen maantieteet Metsän omistaminen Suomessa on monitahoista. Valtionmetsiä hallinnoi metsähallitus eduskunnan ja asianomaisten ministeriöiden ohjauksessa. Jokainen suomalainen on tavallaan tätä kautta metsänomistaja. Isot metsäyhtiöt hallinnoivat metsätalouspalveluidensa ja -yhtiöittensä kautta laajoja metsäalueita maakunnissa tehtaiden puuhuoltoon varmistuakseen mutta myös monin muunlaisin kiinteistötaloudellisin tavoittein. Yhteismetsät ovat sitten omanlaisiansa tehokasta metsätaloutta edistäviä metsäkiinteistöjen omistajien yhteenliittymiä. Yksityiset (perhe)metsät ovat keskeinen omistusmuoto varsinkin eteläisessä Suomessa: noin 60 % tuottavasta metsämaasta on yksityisten ihmisten omistamaa ja Suomessa on n. 620 000 metsänomistajaa. Viime aikoina on myös (kansainvälisten) sijoittajien kiinnostus metsänomistukseen lisääntynyt Suomessa. Tässä puheenvuorossa keskityn esittelemään vastikään päättynyttä yksityismetsätalouden kestävyystutkimustamme, jossa tarkasteltiin yksityismetsien omistajien reaktioita ja vaihtoehtoja viimeaikaisten yhteiskunnallisten ja ympäristöpoliittisten muutosten keskellä. Historiallisesti yksityinen metsänomistus on ollut Suomen autonomian ajalta lähtien vahvan sääntelyn piirissä, ja yhä tänään siihen kohdistuu määrätietoista ohjausta, joka ajaa tehokkaan puuntuotannon ja -jalostuksen etuja. Omistamisen rajat ovat tulleet vastaan monin tavoin varsinkin silloin kun metsänomistajilla on ilmennyt halua metsätalouden toisintekemiseen – huolimatta monitavoitteisen metsätalouden ohjelmallisesta vahvistumisesta viime vuosikymmeninä. Tutkimushankkeemme yhtenä keskeisenä tuloksena paljastui, laajan kyselyaineiston avulla, että noin 20 prosenttia yksityisistä (perhe)metsänomistajista kaipaa alan neuvontapalveluilta tukea ekologisesti kestävä metsätalouden edistämiseksi. Ekologia- ja metsäsuunnittelun osaamista ei heidän mukaansa riittävästi löydy metsäneuvonnan kentältä, joka on tottunut edistämään metsätaloutta puuntuotantotavoitteiden ehdoilla. Tässä puheenvuorossa jäsenän ja pohdin nimenomaisesti tätä metsäpoliittista painetta, joka tuntuu hukkaavan sen ekologisen metsänomistamisen potentiaalin, jolla suomalainen metsätalous voisi vastata planetaarisiin ympäristökriiseihin.

Kuntien omistamien energiayhtiöiden omistajaohjaus energiademokratian ideaalin kautta tulkittuna *Antti Saarelainen (Itä-Suomen yliopisto)*

Käynnistä olevasta energiamurroksesta puhuttaessa keskustelu keskittyy usein murroksen vaatimiin taloudellisteknisiin ratkaisuihin tai murroksen mahdollistavaan sääntelyregiimiin. Väitöskirjatutkimuksessani aion kuitenkin keskittyä tutkimaan energiayhtiöiden omistamista, kuntaomistuksen oikeuttamista ja kunnallisten energiayhtiöiden omistajaohjausta energiademokratian käsitteen avulla. Tässä esityksessä erittelen tulevan väitöskirjani artikkeleiden kautta rakentuvia energiademokratian ulottavuuksia. Aktivistitutkijat Kunze ja Becker (2014) ovat esittäneet energiademokratialle neljä kriteeriä: 1) omistus, 2) demokratia ja osallisuus, 3) tuotettu lisäarvo ja työllisyys sekä 4) ekologisuus ja tehokkuus. Väitöskirjani tulevissa artikkeleissa olen kiinnostunut energiantuotannon ja proseduraalisen oikeudenmukaisuuden linkittymisestä ja kuntalaisten osallisuuden vahvistamisesta

päätöksenteossa (Sovacool ym. 2015; Smith 2003). Kunnallisten energiayhtiöiden tapauksessa kaupunkilaiset ovat osallisia esimerkiksi välillisesti yhtiön omistajina, kaupunkisuunnitteluun vaikuttavina kuntalaisina sekä kaukolämmityksen kautta asiakkaina. Esitän, että nykyisessä tilanteessa kuntien omistajaohjaus pelkistyy strategiatason linjauksiin ja "konserniohjedemokratiaksi". Myös nykyinen osakeyhtiölaki ja normalisoitunut tapa nähdä kuntayhtiöiden rooli haastavat demokraattista yhtiöiden ohjausta. Väitänkin, että energiayhtiöiden yhteiskunnallinen omistajuus voisi mahdollistaa puhtaasti markkinaehtoisen energiamurroksen lähtökohdista käytävän keskustelun haastamisen

Session 14 Stakeholder and policy responses to multidimensional food security challenges in diverse regions

Chairs: Erja Kettunen-Matilainen & Ayu Pratiwi (University of Turku)

Auditorium M107, Thursday 09 November 2023

A billion-euro industry? (De-)territorialisation processes of Norway's seaweed farming assemblage *Moritz Albrecht (University of Eastern Finland)*

Seaweed farming is praised in European policy narratives as a rising sector and is increasingly integrated in coastal countries' bioeconomy strategies. Norway aims to lead this European "Seaweed Revolution" with a growing set of entrepreneurs. Envisioned as a 'billion-euro industry' that provides not only food, feed and bioactive components but also entails remediation properties to combat pollution and address climate change, its development is in its infancy yet contains ambitions for upscaling as well as socio-economic credentials that promote it as a sector for green investments. Through assemblage conceptualisation, the paper unfolds the relations that connect fluid materialities of seaweed with ambitious business plans, coastal localities, calls for upscaling and complex markets to assess their potential as forces of (de-)territorialisation for sector development. Not forecasting the future of Seaweed farming in Norway, it displays the socio-spatial complexities of the Norwegian seaweed farming assemblages' components that enable or disperse currently dominant and optimistic sectoral narratives and provides a critical window to a sector aiming to attract sustainable finance.

Fighting deforestation: Evaluating agroforestry networks via randomized control trials in Indonesia *Ayu Pratiwi (Turku University) & Petr Matous (University of Sydney)*

Deforestation, contributing to around 10% of global GHG emissions, is a focal issue at UN COP15. In 2023, the European Union established anti-deforestation regulations, effective by 2024, mandating companies to provide due diligence statements concerning supply chain traceability to prevent deforestation. Indonesia, a primary producer of coffee and cocoa, argues that this law unfairly burdens smallholders, emphasizing significant effort and time required to transition to sustainable technology. In Lampung province, agroforestry system

emerges as a pivotal strategy to conserve endemic tree species and sustain commercially-viable crops, with agricultural training acknowledged for enhancing smallholder farmers' skills. Conventionally, local trainings by invited experts are the norm; however, these settings restrict farmers' exposure into practical technology application and anticipated benefits of improved practices. The risks inherent in new agricultural technologies can deter adoption; yet, firsthand witnessing of potential benefits may encourage farmers to take such risks for anticipated future gains. Understanding effective information dissemination methods among farmers and leveraging local networks for more effective knowledge transmission is vital. Nevertheless, previous studies delving into social networks and desired outcomes often encountered endogeneity issues, arising from unobservable characteristics correlated with both outcomes and network variables, possibly misestimating network effects. Overcoming these limitations may be feasible through a randomized-controlled trial (RCT) experiment, which assigns randomly selected participants in a treatment group to interact with other randomly selected farmers –making network assignment exogenous. This paper explores an experiment aligned with this premise, combining the RCT method with locational effects to assess both network outcomes and the promotion of agroforestry practices among coffee and cocoa farmers in Lampung. Randomly selected farmers will be allocated to training program held in three distinct, more developed and agriculturally-advanced locations. The research questions are: (1) Does the training alter the structure of local information networks, and (2) Does the training influence the uptake of agroforestry and conservation practices? It is hypothesized that through peer influence, training will catalyze agroforestry adoption among farmers. Additionally, it is anticipated that farmers trained in more advanced locations will exhibit superior performance on agroforestry indicators, having been exposed to best practices in those regions.

Potentials and challenges for a zero-loss agriculture in Europe: the case of beef production in North Karelia *Oswald Sydd (University of Eastern Finland)*

The Farm to Fork Strategy is at the heart of the European Green Deal, which aims to make food systems fair, healthy and environmentally-friendly. Sustainable paths for all stakeholders in food supply chains bring new opportunities, new technologies and scientific discoveries, combined with increasing sustainable food demands. Therefore, reducing of food loss is an integral part of the Farm to Fork Strategy action plan. This paper addresses questions of Food Loss implementation to the beef farmers in Eastern Finland, focusing on potential implementation of the EU agricultural and circular policies in a continuous reduction of Food Loss among food supply chain stakeholders. North Karelian beef production, based on own traditional heritage in growing calves and on a multistage farming system of growing bulls, finds it challenging to further improve local practices in continuous reduction of food loss. Findings, based on current farmer's perspectives, indicate that chances to reduce the levels of Food Loss in North Karelia are challenging, if not unlikely. Nevertheless, self-positioning of Finnish farmers on the Food Loss scale expresses their ability and willingness to implement Farm-to-Fork strategy, influencing the overall level of Food Loss and assessing the means and the proportion of losses, that supposed to be improved on a farm level.

EU-Indonesia policy dialogue on palm oil amidst global food security crisis *Erja Kettunen & Ayu Pratiwi (University of Turku)*

Most of the world's palm oil is produced in Indonesia where oil palm cultivation provides a livelihood for 16 million smallholders, workers and their families. Smallholders account for over half of the total oil palm cultivating area and production has multiplied over the last few decades. Together with India and China, the EU is one of the biggest importers of palm oil from Indonesia. Palm oil is used as a food ingredient and in biofuels, and is an important part of nutrition in many developing countries. However, public debate in Europe has raised concerns about oil palm monoculture and the attaining of SDGs due to deforestation, biodiversity loss, and social problems arising from violations of human rights and indigenous land rights in Indonesia. The European parliament decided to ban the use of palm oil in biofuels, and as a response, Indonesia filed a lawsuit against the EU at the WTO dispute settlement body. The palm oil issue is thus highly contested. This paper explores the EU-Indonesia policy dialogue on palm oil from a multi-stakeholder perspective. The dialogue is understood as a process of bargaining where the opinions of the EU, the Indonesian state and other interests in Indonesia are voiced in the media. Multiple methods are used to investigate the diverse arguments with the aim to identify the "good and bad" of palm oil. Data are collected from online news archives, including 30 international news pieces in English, and 300 news articles in Indonesian compiled by using web mining techniques. Based on the materials the paper presents 1) a qualitative content analysis and a narrative on the recent development in EU-Indonesia formal opinions, and 2) a sentiment and clustering analysis on the perceived positive and negative aspects and the stance of Indonesian stakeholders. According to tentative findings, opinions have been affected by global food security concerns and supply chain disruptions due to intensifying global climate crises and Russia's attack war in Ukraine. The EU-Indonesia dialogue continues, and there are signs of interest to reevaluate opinions e.g. within the recently started EU-Indonesia-Malaysia 'task force' negotiations on palm oil.

Session 15 Health and well-being in times of crises

Chairs: Majja Toivakka (University of Eastern Finland), Eric Delmelle (University of Eastern Finland & The University of North Carolina at Charlotte), Olli Lehtonen (University of Eastern Finland)

Auditorium M105, Friday 10 November 2023

Residential Mobility in Health Geography and its Implications for Spatial Analysis *Eric Delmelle (University of Eastern Finland)*

The complexity of human mobility, disease dynamics, and privacy concerns are persistent challenges to the analysis of health data, such as cluster detection methods. The opportunity to test the consequences of these assumptions is now possible through improved access to electronic health records, individual residential histories, accurate linkage algorithms, and

advanced geospatial technologies. In this presentation, I will focus on the impact that residential mobility may have on three aspects of public health data analysis: (1) under- and overestimation on health care accessibility, (2) increase in the detection of clusters of false positives and false negatives and (3) biased associations in survival analysis. I will illustrate these issues using different simulated and real-world datasets (birth defects in Florida, sexually-transmitted diseases in Michigan).

Spatio-temporal dynamics of the last Finnish Variola epidemic, 1918–19 *Antti Härkönen*
(University of Eastern Finland)

Smallpox (*Variola major*) is one of the deadliest diseases in history with death toll of hundreds of millions. In 18th century Finland, smallpox caused up to ten per cent of all mortality and thirty per cent of childhood mortality. Large-scale vaccination campaigns began in the 18th century. In Finland, mandatory vaccination of children was ordered in 1883. Over 90 per cent of Finns were vaccinated by the year 1900. Smallpox was no longer endemic in Finland, but transmission from Russia could still start epidemics. Anti-vaccination movement also spread into Finland in the 1910s. New spatial data had to be created for mapping the epidemic. Finland was divided into 53 medical districts (*piirilääkäripiiri*), and the state medical authority collected statistics on diseases based on these districts. The number of districts did not change between 1883 and 1943, but the borders of some of these units changed, as municipal and parish borders evolved. Some parishes could also switch districts. The combination of crises related to First World War, especially collapse of the Russian empire and the Finnish civil war created good conditions for the spread of epidemics. The most famous is the Spanish flu influenza pandemic of 1918–1920, but smallpox and other diseases also increased during the spring and summer of 1918. There are two distinct waves in the Finnish smallpox epidemic of 1918–20. The first wave spread in most of the larger cities in southern Finland in the spring and summer of 1918. The second wave was notably more focused in the Eastern Finland, and less focused on the bigger cities. The spread of diseases was controlled by quarantining, vaccination, and contact tracing. Two quarantine hospitals were established in the border with Russia to quarantine and treat sick refugees from Petrograd and Ingria. The effect of proximity to the Eastern border on the smallpox incidence was confirmed with a Bayesian spatial Poisson regression model. The effect is clearly stronger in 1919 than in 1918, since the demographic crisis conditions in western Finland subsided after 1918, while the epidemic continued in the East until the autumn of 1919.

Relationship between distance to health services and multimorbidity in Kainuu, Finland *Tiina Lankila & Harri Antikainen* (University of Oulu)

Multimorbidity is defined as the co-occurrence of two or more chronic conditions, and it is associated with increased healthcare utilization and cost, poorer quality of life and premature death. Development of multimorbidity is affected by ageing, socioeconomic conditions, behavioural and psychosocial factors. Distance to healthcare services may predispose to

multimorbidity, as difficulties in accessing preventive and timely care may aggravate health problems. The Finnish healthcare system has gone through a healthcare reform that shifted the responsibility of organising health, social and rescue services from municipalities to wellbeing service counties. The lack of financial resources in many wellbeing service counties has now raised the need for cutting costs by reducing the facilities providing health services, potentially increasing the travel time to services in future. This study is part of the IMPRO project, funded by the Strategic Research Council established within the Research Council of Finland. The study population is based on healthcare use data from 2015 to 2019 in Kainuu region, obtained from the Finnish Care Register for Health Care (FCRHC). A patient is considered multimorbid when at least two chronic conditions are present according to diagnosis recorded in the FCRHC. Since the residential location of each patient is only known at the postal code area level, the travel times to the nearest health centre in a municipality are estimated as a population-weighted average drive time for the postal code areas. The incidence of becoming multimorbid during 2015-2019 in different travel time categories was studied with coxregression among working age (18-64 years) and older (65 years or older) patients. The sex of the patient was adjusted. The preliminary results indicate that among 18-64-year-old patients who have over 30 minutes travel time to health services have almost 23% higher risk of becoming multimorbid compared with those who live within 15 minutes travel time distance from healthcare. Among older patients, there is no statistically significant differences in becoming multimorbid in different travel time distances. The long travel time may pose a risk for multimorbidity, but further studies that consider more factors that may predispose to multimorbidity are needed to confirm these findings.

Mining geographical patterns of multimorbidity – experiences from Finland *Maija Toivakka, Olli Lehtonen, Tiina Laatikainen (University of Eastern Finland)*

Multimorbidity refers to a situation in which a person has at least two chronic conditions. Often multimorbidity include, among others, a combination of diabetes, hypertension, osteoarthritis or mental health conditions such as depression. Multimorbidity among the elderly population is a growing health concern, but multimorbidity also occurs among younger people, especially those living in socio-economically disadvantaged areas. Multimorbidity imposes a large economic burden on both the health system and society because it makes disease management more complicated, it increases the use of healthcare services and healthcare costs. There is a limited number of studies focusing on the geographical views of multimorbidity. In this study, in addition to the multimorbidity indicators, we utilize municipal welfare reports in our efforts to data mine the detection of the multimorbidity locally. The welfare reports represent interesting research data because the Act on the Organisation of Social Welfare and Health Care (612/2021) obliges municipalities to prepare a local welfare report and plan, as well as the factors and key measures affecting them to promote welfare. Since multimorbidity imposes a large financial burden on both the health care system and society, the aim of this study is to determine the geographical extent of multimorbidity through multidisciplinary analysis at the municipal level. In the study, we ask how multimorbidity occurs geographically in Finland and what kind of spatial

concentrations has been formed. In addition, the research focuses on the ability of municipalities to locally identify multimorbidity by examining how it has been identified in municipal welfare reports. In the presentation, we present the preliminary results of the study and reflect based on experiences from this study the benefits of the spatial data mining on health geography.

Session 16 Villages and research on villages in the 2000's / Kylät ja kylien tutkimus 2000-luvulla

Chairs: Päivi Oinas (University of Turku), Torsti Hyyryläinen (University of Helsinki) & Maarit Sireni (University of Eastern Finland)

Auditorium M105, Thursday 09 November 2023

Tulevaisuuskestävät taajamaverkostot *Emilia Rönkkö (Oulun yliopisto)*

Esityksessä pohditaan yhteiskunnan hyvinvointia ja kokonaisturvallisuutta edistäviä ratkaisumalleja maaseutukylien ja taajamien mittakaavatasoilla. Tarkastelun lähtökohtana on "Suomalainen maa-seututaajama 2010-luvulla" – tutkimushanke, jossa pyrittiin kuvaamaan ja analysoimaan maaseututaajamien muutosta verrattuna 1980-luvun alussa julkaistun "Suomalainen maaseututaajama" -tutkimuksen havaintoihin. Yhteenvetona todettiin, että maaseututaajamat ovat kasvun kaavoituksen ylimitoitettujen odotusten ja todentuneen kehityksen ristiriidan myötä pysyvän keskeneräisyyden tilassa, jossa niiden on ollut haasteellista löytää uutta rooliaan muuttuvassa yhteiskunnassa. Elinvoimaisuuden keskeisiksi haasteiksi nousevat erityisesti palveluverkoston harventuminen ja pitkät etäisyydet. Viimeisten 30 vuoden aikana Suomen kyläkouluista on lakkautettu jo yli 90 prosenttia, mitä on perusteltu säästösyillä, vaikka systeemistä vaikutuksista on vähän tutkimusta. Tämän vuoden alusta toteutetun sosiaali- ja terveystalouden hallinnollisen uudistuksen myötä hyvinvointialueilla on käynnistymässä ennennäkemätön palveluverkostomurros, jossa jopa puolet fyysisistä palvelujärjestelmän toimipaikoista on lakkautusuhan alla. Päätöksenteko tapahtuu yhä kauempana maaseutukylien ja taajamien arjesta. Maankäytön ja palveluverkoston suunnittelu tulisi nähdä paitsi maaseudun elinvoimakysymyksenä, myös keskeisenä osana poikkialueellista kokonaisturvallisuuden edistämistä. Se sisältää paitsi "kovan" turvallisuuden (security), kuten esimerkiksi rakennetun ja digitaalisen infrastruktuurin kestävyden suoraa uhkia vastaan, myös pehmeän turvallisuuden (safety), jolla voidaan viitata esimerkiksi yhteisöllisyyden ja luottamuksen ylläpitämiseen. Pieni ja hajautettu on viisasta ja kestävää niin terveys-, ruoka-, kuin energiaturvallisuudenkin näkökulmasta. Pehmeän yhteiskuntaturvallisuuden lisäämiseksi olisi tärkeää valjastaa käyttöön myöskin tietotaito, joka vanhemmalla sukupolvella yhä on hallussa esimerkiksi mikroviljelyn tai rakennusten korjaamisen osalta. Myös olemassa olevan rakennuskannan näkeminen ongelmien sijaan osana kestävyyshaasteen ratkaisua vaatisi asenteiden muuttumista. Tavoitteiden tueksi tarvitaan monihyötyisyysajatteluun pohjautuvia, luovia ratkaisuja, jotka tukevat sekä luonnon että rakennetun ympäristön diversiteettiä ja muutosjoustavuutta. Yhteiskunnan

haavoittuvuuden näkökulmasta on aiheellista pohtia keskittämisen, yksipuolistumisen ja tehostamisen seurauksia moniulotteisesti. Koronapandemia on ravistellut keskittämistä ihannoivaa kaupunkisuunnittelua ja tuonut rinnalle hyperlokaalisuuden idean, jonka mukaisesti kaikki päivittäiseen elämään tarvittava tulisi löytyä 15 minuutin kävelyetäisyydeltä. Ajatusta voisi laajentaa myösalue- ja yhdyskuntarakenteen tasolle, ja pohtia maaseudun kylä- ja taajamaverkostoa kaupungistumisen isossa kuvassa omavaraisuusasteeltaan korkeina mikrokeskuksina. Kriisit voidaan nähdä myös yhteiskuntien mahdollisuutena uudelleenorganisoidua ja uudistua kestävästi. Olisiko edelleen varsin tiheällä kirkonkylä- ja taajamaverkostollamme edellytyksiä muodostaa sitkeää ja kimmoisaa vartin taajamien verkostoa palveluiden digitalisoituessa ja työn muodonmuutoksessa?

Syrjäkylä mobiilina sommittumana *Pertti Rannikko (Itä-Suomen yliopisto)*

Koulunsa, kauppansa ja muut paikalliset palvelunsa sekä valtaosan vakituisista asukkaistaan menettäneet syrjäkylät eivät enää erotu ympäröivistä alueista erillisiksi yhteisöiksi omine instituutioineen ja identiteetteineen. Vaikka 2020-luvun syrjäkylä eivoikaan kutsua enää kyläyhteisöiksi tai paikallisyhteisöiksi, eivät ne ole sosiaalisia tyhjiöitä tai epäpaikkoja. Syrjäisen maaseudun nykyisen sosiaalisen rakenteena ja yhteiskunnallisen roolin ymmärtäminen vaatii uuden teoreettisesti perustellun termin. Puheenvuorossani ehdotan tällaiseksi syventäväksi käsitteeksi kyläsommittumaa, jonka muotoutumisen liitän osaksi syrjäisen maaseudun voimistuneita kehityssuuntia: uusproduktivismia, kulutusidylliä, omavaraista elämää ja mielen tilaa. Sommittuma on vakiintumassa Giles Deleuzen ja Félix Guattarin alun perin käyttämän ranskankielisen käsitteen *agencement* (engl. *assemblage*) suomennokseksi. Käsite soveltuu hyvin syrjäisen maaseudun nykytilan tarkasteluun, sillä se kuvaa heterogeenisten komponenttien ja ilmiöiden koonnosta, joka ei ole suunniteltu vaan pikemminkin spontaanisti muodostunut, rajoiltaan avoin ja jatkuvasti muuntuva. Kyläsommittuman käsite nostaa paikallisyhteisöstä poiketen keskeiseen asemaan maaseudun fyysisen ja materiaalisen puolen sekä alueella osa-aikaisesti liikkuvat ihmiset. Luonnon komponenttikuten maaperä, vesistöt ja kasvillisuusankkuroivat kyläsommittuman tiettyyn paikkaan. Sommittumaan kiinnittynyt ihmiset, eläimet, ajoneuvot, tavarat, tieto, ideat ja tarinat voivat kuitenkin liikkua hetkessä toiseen paikkaan ja paikkojen välillä. Heterogeenisyyden ohella sommittuman käsite korostaa mobiliteettia. Sommittuman osat ovat kukin omalla tavallaan vuorovaikutuksessa laajempiin ekologisiin, taloudellisiin ja kulttuurisiin järjestelmiin, joihin yhteydet voivat olla tiiviimpiä kuin paikalliset suhteet. Tämä tuo kyläsommittumaan erilaisia intressejä ja identiteettien pirstoutumista. Yhtenäisen kyläidentiteetin sijaan eri ryhmillä on erilaisia paikallisia ja ylipaikallisia samaistumiskohteita.

Kylät: nukkumalähiöitä vai noodeja globaaleissa verkostoissa? *Päivi Oinas (Turun yliopisto)*

Yleistykset koskien kylien kehitysmahdollisuuksia ovat lähes mahdottomia, sillä kylät poikkeavat toisistaan valtavasti. Yhteistä niille kuitenkin on se, että ne ovat tyypillisesti pieniä osia suuremmissa kunnissa ja niiden mahdollisuudet hyötyä kuntien resursseista ovat

vaatimattomia. Esimerkiksi kumppanuuspöytien kautta tuleva rahoitus on minimaalista. Kehitysstrategiat – jos sellaisia on – ja esimerkiksi LEADER-rahoituksella toteutettavat kehittämistoimenpiteet ovat kylien asukkaiden tai mahdollisesti aktiivisten asukkaiden perustamien kyläyhdistysten varassa. Usein yksilöiden rooli korostuu. Millaisia ovat nämä yksilöt ja millaiseen kokemukseen ja osaamiseen heidän ajatuksensa kylien kehittämisestä pohjautuvat? Pohdin tätä kysymystä siitä näkökulmasta, millaiseen osaamistaustaa kylien aktiiviset asukkaat edustavat: miten dynaamista ja monipuolista heidän työelämäänsä tai harrastuksiin liittyvä toimintansa on. Kyläläiset voivat olla sosiaalistuneita joko pysähtyneisiin toimintatapoihin tai olla eri tavoin mukana dynaamisissa toimintaverkoissa ja järjestelmissä, joilla voi olla kytkennät johtavaan osaamiseen globaalisti. Erilaista osaamista edustavien yksilöiden yhteistyö paikallisessa kehittämisessä voi luoda pohjan innovatiiviselle kyläkehitystyölle ja tässä suhteessa kylät ovat varsin eriarvoisessa asemassa. Näin hahmotettuna eriarvoisuus ei välttämättä perustu sijaintiin tai asemaan kunnan sisäisissä talouden tai hallinnon tuottamisissa polarisoituvissa rakenteissa vaan niissä toimivien yhteisöjen omaksumaan (Doreen Massey'n ajatuksia mukaillen) edistykselliseen tai taantumukselliseen paikan tuntuun ja suhteelliseen kykyyn luoda kylälle myönteistä imagoa ja tulevaisuuden kehitysvisiona, kehittää kylille uusia toimintoja jatoimintatapoja sekä (edellisiin pohjautuen) houkutella uusia aktiivisia asukkaita.

Kylät toimijoina ja kuntien kumppaneina kestävyysmuutoksessa *Torsti Hyyryläinen, Annamari Kiviaho (Helsingin yliopisto) & Tauno Linkoranta (Varsinais-Suomen kylät ry)*

Tarkastelumme liittyy kyliä, yhteisöjä ja osallistumista koskevaan tutkimukseen sekä kestävyysmuutosta koskevaan monialaiseen akateemiseen keskusteluun. Tarkoitus on luoda ajantasainen katsaus kehittämisorientoituneeseen yhteistoimintaan kylissä. Määrittelemme toiminnallisen kylän, ja esittelemme eri aineistoja hyödyntäen toiminnan laajuutta ja sisältöä. Kuvaamme toiminnan kytkentöjä kestävä kehityksen tavoitteiden toteuttamiseen. Luomme myös katsauksen kylien ja kuntien välisen suhteen kehitykseen Suomessa ja analysoimme sen nykyvaihetta kestävyysmuutokseen peilaten. Toiminnallinen kylä on paikallisten toimijoiden itse määrittelemä toimintapiiri ja verkosto, jossa ihmiset käytännössä toimivat yhdessä. Sille voidaan määritellä paikkaan liittyvä sijainti, mutta se on myös toiminnallisesti laajempi verkosto, johon kuuluu ihmisiä, jotka eivät vakituisesti asu kyseisellä alueella, mutta joilla on jokin suhde tuohon paikkaan. Toimintaympäristömuutosten, kuten kuntaliitosten jälkeen on syntynyt myös uusia toiminnallisia kyliä. Kattavaa ja ajantasaista tietoa toiminnallisista kylistä kerää ja rekisteriä ylläpitää Suomen Kylät ry. Se päivittää rekisterinsä maakunnallisten kyläyhdistysten (19 kpl) keräämän paikallisen tiedon kautta. Tämän mukaan Suomessa oli vuonna 2022 kaikkiaan 4375 toiminnallista kylää. Määrä on pysynyt viime vuosina suhteellisen samana, ja toimintaa on kaikkialla Suomessa. Kylien kehitys ja niiden merkitys liittyy suomalaisten kuntien kehityksen. Kylät olivat pitkään maaseudun asutuksen tärkein perusta. Seurakuntien kautta, ja myöhemmin kuntalaitoksen muotoutumisesta lähtien kylät ovat kehittyneet vuorovaikutuksessa kunnallishallinnon ja laajemmin hyvinvointivaltion kehityksen kanssa. Paikkaperustaisen hallinnan instituutioina kuntien tehtävän ytimessä on ollut paikalliset olosuhteet huomioiden edistää kuntalaisten hyvinvointia. Hyvinvointivaltion

evoluutiossa kuntien suhteet kyliin ovat kuitenkin vaihdelleet eri aikoina. Kartoitimme Etelä-Savon kuntien ja kylien välisen suhteen nykytilaa hyödyntäen kuntien strategisia asiakirjoja ja tutkimme, miten kylät niissä näkyvät ja asemoituvat. Kestävyyssuutoksen kontekstissa ja sosiaalisen kestävyuden ulottuvuudessa korostuivat kylien yhteisöllisyys, osallisuus ja kyläyhdistysten toiminnallisuus. Kylien ja kuntien välisen kumppanuuden ja yhteistyön merkitys näyttää vahvistuvan tilanteessa, jossa kuntien rooli on merkittävästi muuttumassa ja taloudelliset resurssit niukkenemassa. Tarkastelemme esimerkkitapauksina myös kylissä tehtyjä käytännön toimia kestävä kehityksen mukaisten tavoitteiden toteuttamiseksi. Vaikka toistaiseksi kansalaistoiminta kylissä ei erityisemmin näy kuntien käytännön kestävyys- tai ilmastotyössä, kylillä toteutetaan arjen hiiliviisautta ja jakamistaloutta sekä tehdään turvallisuuteen ja varautumiseen liittyviä toimia esimerkiksi kylätaloilla, jotka usein ovat uusiokäytössä kunnan omistuksen jälkeen.

Tietoteknologian paikallinen tuleminen, Sivakka ja Rasimäki *Jukka Oksa (Itä-Suomen yliopisto)*

Runsaatkymmenen vuotta sitten, jolloin edellisen kerran keräsimme aineistoja Valtimon silloisen kunnan Sivakkavaarassa ja Rasimäessä, elettiin vielä tietoyhteiskuntahankkeiden optimismin aikaa. Koska kylien läheisin kaupunki, Nurmes, oli paikallisten tietoyhteiskuntahankkeiden edelläkävijä (Oppiva Ylä-Karjala, Oppivat Seutukunnat eli OSKUT), minulla oli odotuksia, että uusi tietotekniikka näkyisivä vahvasti tutkimuskylissä. Kuitenkaan se ei juuri näkynyt. Nurmekselaisten projektien innokas touhuaminen olikaukaista ja tavoitti pääasiassa kirkonkyläläisiä. Kuitenkin hetikun tutkijat olivat poistuneet kylistä, niin siellä alkoi tapahtua. Kyliin rakennettiin valokaapeleita ja kännykkämastoja. Kymmenen vuoden aikana tietotekniikka on arkistunut ryminällä. Kännykät, läppärit, digitaalisten palvelujen mahdollisuudet ja pakot saapuivat kyliin kesäasukkaiden, käypäläisten ja vakituisten asukkaiden elämisen ehdoiksi. Sovellan teknologian yhteiskuntatieteellistä lähestymistapaa (Social Studies of Technology). Se mukaan teknologia ei ole neutraali työkalu, vaan siihen siirtyvät sen rakentajien intressit, ja teknologia toteutuu vasta sen soveltamisen käytännöissä (arjessa). Esityksessäni hahmottelen luonnosvaiheessa olevan tutkimuksenikysymyksenasetteluja kahta kautta. Ensiksi, tarkastelen teknologian kyliin tulemiseen liittyviä jännitteitä ja ristiriitoja. Toiseksi, hahmottelen tietotekniikan erikäyttäjätyyppjä kylissä.

Aineen ja tunteen kylät *Katariina Kotila (Itä-Suomen yliopisto)*

Itä-Suomen yliopistossa on tutkittu Pohjois-Karjalassa sijaitsevia Sivakan ja Rasimäen kyliä 1970-luvulta lähtien noin kymmenen vuoden välein. Tällä kertaa tutkimusryhmä lähestyy kyliä uusmaterialistisesta näkökulmasta. Esittelen työryhmäesityksessäni yhtä kylätutkimushankkeeseen kuuluvaa osatutkimusta, jossa tarkastelemme sitä, miten kyläläisten kylään liittyvät tunteet ja paikkatunne rakentuvat suhteessa kylän aineellisuuteen ja sen ajalliseen muutokseen. Sivakan ja Rasimäen kylät ja elämä kylällä ovat muuttuneet

paljon vuosikymmenien aikana. Metsätyöstä ja pienviljelystä elänyt Sivakan kylä on hiljentynyt. Rasimäki puolestaan on siirtokarjalaisten asutuskylä, jossa maanviljely näkyy edelleen kylän maisemassa. Tutkimme, miten kylien muuttuneiden elämänmuotojen aineelliset puitteet heijastuvat siihen, miten kyläläiset ymmärtävät kylänsä ja rakentavat suhdettaan siihen. Tarkastelemme kylien aineellisuutta kiinnittämällä huomiota julkisiin ja puolijulkisiin tiloihin, luontoon ja maisemiin sekä koteihin ja pihapiireihin. Uusmaterialistisen kiinnostuksen ohella nojaamme affektien tutkimukseen, erityisesti Sara Ahmedin ja Margaret Wetherellin käsityksiin, joissa tunteet ja affektit nähdään kulttuuriin sidonnaisina ja käytäntöihin ja kuvioihin kiinnittyvinä. Keräsimme aineistoa Sivakan ja Rasimäen kylissä kesäkuussa 2023 haastattelemalla ja havainnoimalla. Täydensimme aineistoa kyselyllä, jossa kyläläiset pohtivat kylän maisemien, julkisten tilojen ja kotien merkitystä. Kylät ovat osalle vastaajista menneisyyden paikkoja, jossa ei enää vierailta. Osa vierailee kylällä säännöllisesti vaikka asuu muualla, ja osa asuu kylällä edelleen tai on muuttanut sinne hiljattain. Tarkastelemme kylän muistelemista ja siellä vierailemista ja asumista toimintana, jossa tunteet kiinnittyvät kylään. Kylään kiinnittyvät tunteet muodostavat kuvioita, joissa kylän aineellisuus – kuten luonto, yhteiset paikat ja kodit – yhdessä ihmisten ja heidän toimintansa kanssa rakentavat kyläläisten paikkatunnetta, joka ilmentää suhdetta kylään ja kylän menneisyyteen ja nykyhetkeen.

Turvallinen kylä: tila, käytännöt ja tunteet *Maarit Sireni & Mari Kattilakoski (Itä-Suomen yliopisto)*

Tarkastelemme esityksessämme maaseudulla koettuja turvallisuushuolia ja paikallisyhteisöissä kehitettyjä ratkaisuja kylien turvallisuuden parantamiseksi. Pohdimme, voidaanko pääasiassa kansalaisjärjestöjen toteuttamiin hankkeisiin perustuvalla kyläturvallisuustyöllä edistää maaseudun asukkaiden arjen turvallisuutta. Jäsennämme arjen tilallisena ilmiönä, toistuviin rutiineihin perustuvina käytäntöinä sekä jokapäiväisen elämän kokemuksina ja tuntemuksina. Kiinnitämme tutkimuksessamme huomiota näihin kolmeen ulottuvuuteen. Tutkimme, miten itäsuomalaisen maaseudun erityispiirteet kuten harva asutus, pitkät etäisyydet ja Venäjän rajan läheisyys vaikuttavat kansalaisten turvattomuuden tai turvallisuuden kokemuksiin. Pyrimme tunnistamaan turvallisuuden tunnetta tuottavia tekijöitä sekä toimintoja ja käytäntöjä, jotka edistävät arjen turvallisuutta kylissä. Tutkimuksemme perustuu Pohjois-Karjalassa toteutettavan kyläturvallisuustoiminnan avainhenkilöiden teemahaastatteluihin sekä kyläturvallisuustilaisuuksien havainnointiaineistoon, jotka kokosimme Venäjän hyökkäyssodan jatkuessa Ukrainassa keväällä 2023.

Setting Objectives in Local Governance: A Collective Intelligence Approach to Citizen Participation in Three Nordic Cities *Mikko Rask (University of Helsinki)*

In growing concerns about democratic participation and citizen engagement in Europe, this paper examines the objectives and outcomes of citizen participatory processes in three Nordic cities: Helsinki, Gothenburg, and Trondheim. Drawing from an analytical model based on the collective intelligence framework, we explore how these cities navigate the complexities of participatory governance. Our model emphasizes the diversity of knowledge perspectives and the role of place in shaping participatory objectives and practices. Our early findings reveal that each city has adopted unique models of participation to balance various interests and perspectives. We particularly focus on the role of digital platforms in facilitating or hindering citizen engagement. These digital tools have implications for the emergence of collective intelligence in local governance settings. Our study suggests that adopting a collective intelligence approach can help municipalities achieve more effective, inclusive, and sustainable outcomes through citizen participation, complementing established modes of representative democracy.

The Ambivalent Roles of Place in Local Democratic Governance Processes *James Scott (University of Eastern Finland)*

The concept of Place, understood as a locus of attachment and ontological security, is of central significance to urban planning processes that specifically target community involvement and co-ownership of local development decisions. Consequently, we might assume that politically salient aspects of social and cultural identities are closely linked to a sense of belonging to specific places and communities. However, place and place identity can also be potentially exclusionary phenomena: who gets to decide what happens in "our" city? To what extent, for example, are the most vulnerable groups and newcomers to specific places involved or considered in decisions that affect place character and uses of public spaces? In this presentation, I will discuss place as an often ambivalent context for promoting more democratic decision-making processes. This has much to do with the degree of ontological security a specific place provides for different groups. A strong sense of belonging to and identification with a specific place can in many cases be associated with greater citizen involvement as well as civil society activism. On the other hand, conditions that enhance a sense of belonging and positive place attachment, including access to opportunities, often operate in highly selective ways; gentrification, for example, has emerged as a place-making process that can severely disrupt existing neighbourhoods and exacerbate marginalisation. Based on insights from the EUARENAS project, I suggest that local experiments in inclusive

governance need to be understood as community-building projects that target distributive and procedural justice.

Balancing Landscape Values and Tourism Choices: Integrating Participatory Mapping and IPBES Values Analysis *Liliana Solé, Katri Väänänen (University of Turku), Kyle Hearn (University of Navarra), Alex Lechner (Monash University) & Nora Fagerholm (University of Turku)*

The United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserves aim to exemplify the harmonious coexistence of nature and people, promoting a balanced and resilient relationship with the surrounding landscape. However, as tourism grows in these areas, landscape management becomes increasingly complex. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) emphasises the significance of understanding stakeholder values in landscape management. IPBES has introduced a specific value typology that categorises nature's significance to people into intrinsic, instrumental, and relational values, representing inherent worth, utilitarian benefits, and human-nature connexions, respectively. This research focuses on the operationalisation of the IPBES-specific value typology and tourism development preferences to assess synergies and conflicts among stakeholder groups in the context of the Archipelago Biosphere Reserve (ABR) using Public Participation Geographic Information Systems (PPGIS). A PPGIS survey conducted during the summer of 2022 gathered location-based data on landscape values and tourism preferences from locals, recreationists, and tourists, supplemented by qualitative insights through open-ended questions. With 690 participants, the study unveils the prevalence of intrinsic values, consistently prioritised by all groups, while also revealing variations in the distribution of IPBES-specific values. Locals emphasise intrinsic and relational values, recreationists lean towards relational/instrumental values, and tourists express a preference for intrinsic and relational values. These distinctions indicate varying motivations for engaging with the natural environment. The findings also demonstrate a preference for small-scale tourism development that conserves traditional landscapes, culture, and heritage. By assessing how different groups value landscapes and identifying potential conflicts or synergies with tourism development, this study confronts the complexity of harmonising values among stakeholders, particularly when tourism intersects with environmental conservation. This study illuminates the intricate interactions between people and nature, offering insights for proficient policy-making and management strategies that accommodate diverse landscape values, particularly in protected areas such as biosphere reserves.

Relying on LEADER? A place-based policy approach in the rural development of Finnish municipalities *Ella Mustakangas (Tampere University)*

In Finnish rural development, the role of municipalities has proved modest even if the place-based policy approach puts them in principle in a significant position. The essential part of municipal rural development is cooperation with LEADER groups to which municipalities give priority. In this study, I ask: what explains the current status of municipalities in the place-

based rural development, i.e. the dominance of the LEADER and the small-scale of the municipalities' own rural development? The methodology is based on critical realism. The aforementioned state of municipal rural development is called a demi-regularity forming the point of departure for the research. By utilizing a thematic analysis elaborated for critical realist research by Tom Fryer, the study suggests three causal explanations for the observation, named as the idea of responsible local communities, the development policy of a shrinking municipality, and projectification. Based on the results, the strengthened role of villages in rural development does not inevitably support the involvement of municipalities but rather the opposite. The study also shows that when municipalities are primarily seeking (economic) growth, they have difficulties in trusting the potential of rural areas, let alone exploit it. On the other hand, the challenges of projectification do not label LEADER projects in the same way as other municipal project work, making tempting to rely on LEADER in municipal rural development. Overall, the study shows how strongly and differently LEADER is rooted in place-based rural development in Finland. To bring municipalities back to the scene, a wider discussion on the actual preconditions of municipalities in place-based rural development is needed. The data consists of 31 semi-structured interviews conducted in three municipalities.

Session 19 Current challenges and practices in Finnish (urban) planning and development

Chairs: Moritz Albrecht (University of Eastern Finland), Patrik Hämäläinen (City of Joensuu) & Jani Karhu (University of Eastern Finland)

Auditorium M107, Friday 10 November 2023

Smart, sensual, safe, social, and spacious urbanism and the strategy of symmetric city centre: The case of medium-sized city of Joensuu in the periphery *Ilkka Pyy (University of Eastern Finland)*

Instead doing public tasks by themselves municipalities pursue the role of multi-purpose enabler, and instead the traditional role of local "growth machine" developer they look for broader mission of vitality policy and new visions of urbanism, and instead sectoral planning functions they favour the doctrine of corporate governance. Thus, there are needs for replacing the outdated sectoral logic in terms of societal realms (private/market, public, civil), service policies (land use planning, housing, health, education, traffic, security etc.) and decision-making (representative democracy, vertical hierarchy) to the logic of hybridity. The latter emphasizes networks, partnerships, agreements, issue-, place- and people-based development strategies, public utility, and the positions of tenant instead owner. In this paper, the main argument concerns the reconciliation of local autonomy/self-government principles and hybrid planning practises. Will local self-government remain rather the same and stable, laying on the solid ground of constitution, no matter what logics the local planning actions follow up? Or does it make a difference, when we look the interpretations of local autonomy through the alternative conceptual lenses of 'symmetric growth machine city' or 'sustainability vital city'? Here the content analysis is based upon planning documents and newspaper articles collected 2009 and onwards, when the city of Joensuu reached its current territorial shape and size after the amalgamations with four neighbouring municipalities. The special attention will focus on some disputable construction and demolition projects. The hypothetical guiding rules of analysis will ask whether hybrid development configurations as responses in an ever more complex environment are long/short sighting the range of investments, restructuring the revenue sources (taxes, fees, rents vs. loans vs. grants), clarifying/blurring the division of tasks and responsibilities, and reevaluating the priorities of municipal property.

Joensuun yleiskaavoituksen kehityslinjat 1950-luvulta 2000-luvulle *Jani Karhu (Itä-Suomen yliopisto)*

Joensuun ensimmäinen modernin kaupunkisuunnittelun mukainen yleiskaava julkaistiin vuonna 1954, tämän jälkeen kaavoitusta on uudistettu useaan otteeseen. Yleiskaavan tavoitteena on ollut toimia perustana kaupungin kasvupyrkimyksille ja keskuskaupunki aseman vahvistamiselle. Puheenvuoroni esittelee ja arvioi Joensuun yleiskaavoituksen tärkeimpiä kehityslinjoja ja ajattelutapojen muutoksia 1950-luvulta 2000-luvulle.

Land use planning in times of climate change – examples from Joensuu *Patrik Hämäläinen*
(City of Joensuu)

Cities and municipalities play an important role in climate change mitigation and adaptation. They can implement in practice the various measures or best practices that arise from international or national legislation, programmes, projects, or research. This is especially true for the sector of land use planning, which has traditionally held a “planning monopoly”, giving municipalities a significant autonomy over how planning and development is carried out via zoning and other measures. Climate change and the following phenomena, such as extreme weather events, changes in ecosystems and loss of biodiversity, are forcing to rethink the way cities are designed and planned. Cities of the future must be resilient against extreme rain, floods, or heat island effect. Concomitantly, most cities including Joensuu still maintain the goals of growing in population, which leads to expanding urban structure and more densely built neighbourhoods. What can we do together to face this multitude of challenges? This presentation highlights some recent advances and initiatives in land use planning of Joensuu. It showcases two new approaches for responding to the threat and challenges posed by climate change: the ‘green factor’ concept and the assessment tool for greenhouse gas emission impact of land use plans.