

THE 5th LITHUANIAN GEOGRAPHERS' CONGRESS AND INTERNATIONAL GEOGRAPHICAL CONFERENCE

V-ASIS LIETUVOS GEOGRAFŲ KONGRESAS IR TARPTAUTINĖ GEOGRAFINĖ KONFERENCIJA

DEVELOPMENT OF RESILIENT CITIES AND REGIONS

ATSPARIŲ MIESTŲ IR REGIONŲ VYSTYMAS

Book of abstracts

Pranešimų tezių (santraukų) leidinys

17-19 September 2026

VILNIUS, LITHUANIA



ORGANISING COMMITTEE / ORGANIZACINIS KOMITETAS

PhD(c) **Danielius Jurčiukonis** (Chair / Pirmininkas)

President of Lithuanian Geographical Society, Vilnius Gediminas Technical University (VILNIUS TECH)

Dr. **Simona Balčaitė**

Lithuanian Geographical Society

Assoc. Prof. dr. **Giedrė Godienė**

Vilnius University, Lithuanian Geographical Society

Prof. dr. **Zoltán Kovács**

EUGEO president, HUN-REN CSFK Geographical Institute

Prof. dr. **Dovilė Krupickaitė**

Vilnius University, Lithuanian Geographical Society

Dr. **Gintarė Pociūtė-Sereikienė**

Lithuanian Centre for Social Sciences, Lithuanian Geographical Society

CONGRESS ORGANISERS / KONGRESO ORGANIZATORIAI



The book was compiled by / Leidinį sudarė:

D. Jurčiukonis, E. Rimkus, G. Godienė, G. Pociūtė-Sereikienė, S. Balčaitė

Book design and layout / Leidinio maketavimas ir dizainas:

S. Balčaitė

The abstracts have not been language-edited

Pranešimų santraukų kalba netaisyta

ISBN: 978-609-96679-0-4

SCIENTIFIC COMMITTEE / MOKSLINIS KOMITETAS

Prof. dr. **Egidijus Rimkus** (Chair / Pirmininkas)

Vilnius University, Lithuanian Academy of Sciences, Lithuanian Geographical Society

Prof. dr. **Arūnas Bukantis**

Vilnius University, Lithuanian Academy of Sciences, Lithuanian Geographical Society

Prof. dr. **Donatas Burneika**

Lithuanian Centre for Social Sciences, Vilnius University, Lithuanian Geographical Society

Prof. dr. **Pascal Chevalier**

University Paul Valéry Montpellier 3, France

Assoc. Prof. dr. **Giedrė Godienė**

Vilnius University, Lithuanian Geographical Society

PhD(c) **Danielius Jurčiukonis**

President of Lithuanian Geographical Society, Vilnius Gediminas Technical University (VILNIUS TECH)

Prof. dr. **Zaiga Krišjāne**

University of Latvia, Latvia

Prof. dr. **Dovilė Krupickaitė**

Vilnius University, Lithuanian Geographical Society

Prof. dr. **Jurgita Mačiulytė**

Vilnius University, CERCEC France

Dr. **Gintarė Pociūtė-Sereikienė**

Lithuanian Centre for Social Sciences, Lithuanian Geographical Society

Prof. dr. **Garri Raagmaa**

University of Tartu, Estonia

Prof. dr. **Daniel Schiller**

University of Greifswald, Germany

Assoc. Prof. dr. **Eduardas Spiriajevas**

Klaipėda University, Lithuanian Geographical Society

Assoc. Prof. dr. **Rolandas Tučas**

Vilnius University, Lithuanian Geographical Society

Assoc. Prof. dr. **Daiva Verkulevičiūtė-Kriukienė**

Klaipėda University, Lithuanian Geographical Society

Prof. dr. **Darijus Veteikis**

Vilnius University, Lithuanian Geographical Society

TABLE OF CONTENTS

TURINYS

Keynote speakers

Plenariniai pranešėjai

SPATIAL THINKING – SEE MORE, ACT EARLIER, BUILD RESILIENCE

ERDVINIS MĄSTYMAS – MATYTI DAUGIAU, VEIKTI ANKSČIAU, STIPRINTI ATSPARUMĄ

Rūta Ubarevičienė 9

LANDSCAPE FUTURES

ATEITIES KRAŠTOVAIZDŽIAI

Hannes Palang 9

PUBLIC GEOGRAPHICAL COMMUNICATION

VIEŠOJI GEOGRAFINĖ KOMUNIKACIJA

Massimiliano Tabusi 9

1. Geopolitical challenges and state resilience from a geographical perspective

1. Geopolitiniai iššūkiai ir valstybių atsparumas geografinių žvilgsniu

PORT OF KLAIPĖDA: GEOPOLITICAL IMPORTANCE AND LONG-WAVE HAZARDS

KLAIPĖDOS UOSTAS: GEOPOLITINĖ SVARBA IR ILGŲJŲ BANGŲ KELIAMOS GRĖSMĖS

Loreta Kelpšaitė-Rimkienė, Laura Nesteckyte, Marius Žalys 10

THE TERRITORIES OF UN PEACEKEEPING: TACKLING THE CASES OF CYPRUS AND SYRIA THROUGH VISUAL GEOGRAPHY

JUNGTINIŲ TAUTŲ TAIKOS PALAIKymo MISIJŲ TERITORIJOS: KIPRO IR SIRIJOS ATVEJŲ ANALIZĖ PASITELKIANČI VIZUALINĘ GEOGRAFIJĄ

Ernesto Martellaro 11

RESISTING BORDERS FROM BELOW: FEMINIST GEOPOLITICS AND EVERYDAY SURVIVAL AT THE COLOMBIA–VENEZUELA BORDER

PASIPRIEŠINIMAS SIENOMS IŠ APAČIOS: FEMINISTINĖ GEOPOLITIKA IR KASDIENIO IŠGYVENIMO PRAKTIKOS KOLUMBIJOS IR VENESUELOS PASIENYJE

Yvonne Riaño 12

THE MEMORY LANDSCAPES OF THE SECOND WORLD WAR IN CENTRAL EUROPEAN CAPITAL CITIES

ANTROJO PASAULINIO KARO ATMINTIES KRAŠTOVAIZDŽIAI VIDURIO EUROPOS SOSTINĖSE

Sara Stýs 13

2. Urban climate

2. Miesto klimatas

MICROCLIMATE CHARACTERISTICS OF LITHUANIAN CITIES

LIETUVOS MIESTŲ MIKROKLIMATINĖS CHARAKTERISTIKOS

Arūnas Bukantis 14

NATURAL AND CLIMATIC CONDITIONS OF LITHUANIAN RESORTS

LIETUVOS KURORTŲ GAMTINĖS IR KLIMATINĖS SĄLYGOS

Inga Dailidienė, Lolita Rapolienė, Beatričė Pargaliauskytė, Donatas Valiukas, Laurynas Klimavičius 15

URBAN RIVER RESILIENCE TO MITIGATE THE IMPACTS OF CLIMATE CHANGE IN MEDITERRANEAN CITIES: EXAMPLES FROM BARCELONA AND GRANOLLERS, SPAIN

MIESTŲ UPIŲ ATSPARUMO DIDINIMAS SIEKIANČI MAŽINTI KLIMATO KAITOS POVEIKĮ VIDURŽEMIO JŪROS REGIONO MIESTUOSE: BARCELONOS IR GRANOLJERSO (ISPANIJA) PAVYZDŽIAI

Joaquim Farguell, Albert Santasusagna 16

URBAN HEAT-STRESS RISK IN A CHANGING CLIMATE: THE CASE OF VILNIUS, LITHUANIA

ŠILUMINIO STRESO RIZIKA MIESTUOSE KINTANČIO KLIMATO SĄLYGOMIS: VILNIAUS ATVEJIS

Justina Kapilovaitė, Egidijus Rimkus 17

URBAN CLIMATE INVESTMENT FUNDS IN PRACTICE: THE "NEŠYLAM" PROJECT <i>MIESTŲ KLIMATO INVESTICIJŲ FONDŲ VEIKLOS TIKROVĖ: PROJEKTAS „NEŠYLAM“</i> Justas Kažys, Georg M. Eichler	18
COMPOUND CLIMATE EVENTS IN THE MAJOR CITIES OF LITHUANIA <i>KOMPLEKSINIAI KLIMATO ĮVYKIAI DIDŽIUOSIUOSE LIETUVOS MIESTUOSE</i> Laurynas Klimavičius	19
POLLEN GRAINS AS BIOINDICATORS OF URBAN ENVIRONMENTAL QUALITY <i>ŽIEDADULKĖS – MIESTŲ APLINKOS KOKYBĖS BIOINDIKATORIAI</i> Austė Noreikaitė, Ingrida Šaulienė	20
FACTORS AFFECTING URBAN HEAT ISLAND DEVELOPMENT DURING A HEATWAVE PERIOD IN THE BALTOPIAI REGION (VILNIUS, LITHUANIA) <i>VEIKSNIAI, LEMIANTYS MIESTO ŠILUMOS SALOS FORMAVIMĄSI KARŠČIO BANGOS METU VILNIAUS BALTOPIŲ RAJONE</i> Paulo Pereira	21
ADVANCING URBAN FLOOD RESILIENCE UNDER CLIMATE CHANGE: ESTONIAN CONTRIBUTIONS TO THE ECCO PROJECT <i>MIESTŲ ATSPARUMO POTVYNIAMS STIPRINIMAS KLIMATO KAITOS SĄLYGOMIS: ESTIJOS INDĖLIS Į ECCO PROJEKTĄ</i> Mait Sepp, Piia Post, Tiia Pedusaar, Tanel Voormansik, Kristel Uiboupin	22
URBAN CLIMATOLOGY IN ESTONIA: PROGRESS AND CHALLENGES <i>MIESTŲ KLIMATOLOGIJA ESTIJOJE: PAŽANGA IR IŠŠŪKIAI</i> Mait Sepp, Kadri Vilumaa, Hannes Tõnisson, Katre Luik	23
URBAN CLIMATE AND BIOAEROSOLS: ASSESSMENT OF AIRBORNE POLLEN VARIABILITY <i>MIESTŲ KLIMATAS IR BIOAEROZOLIAI: ORE PASKLIDUSIŲ ŽIEDADULKIŲ KINTAMUMO VERTINIMAS</i> Ingrida Šaulienė, Laura Šukienė	24
ASSESSMENT OF THE SOCIOECONOMIC RISK OF COMPOUND FLOODS IN KLAIPĖDA UNDER A CHANGING CLIMATE <i>SUDĖTINIŲ POTVYNIŲ SOCIOEKONOMINĖS RIZIKOS VERTINIMAS KLAIPĖDOS MIESTE KLIMATO KAITOS SĄLYGOMIS</i> Erika Vasiliauskienė, Inga Dailidienė	25
3. Social and demographic development of cities and regions: challenges and opportunities during turbulent times	
<i>3. Socialinis ir demografinis miestų ir regionų vystymasis: iššūkiai ir galimybės sudėtingais laikais</i>	
DIFFERENTIATED SOCIO-DEMOGRAPHIC CHANGE: MAPPING URBAN SHRINKAGE AND REGIONAL RESILIENCE IN LATVIA <i>SKIRTINGI SOCIODEMOGRAFINIAI POKYČIAI: MIESTŲ MAŽĖJIMO IR REGIONŲ ATSPARUMO LATVIJOJE KARTOGRAFINĖ ANALIZĖ</i> Edwards Jurgis Auzāns, Māris Bērziņš, Niks Stafeckis	28
FROM SEASONAL RHYTHMS TO GEOPOLITICAL UNCERTAINTY: VISUAL STORYTELLING IN LATVIA'S PERIPHERAL REGIONS <i>NUO SEZONINIŲ RITMŲ IKI GEOPOLITINIO NEAPIBRĖŽTUMO: VIZUALUS PASAKOJIMAS APIE LATVIJOS PERIFERINIUS REGIONUS</i> Sindija Balode-Kraujina, Elina Apsīte-Beriņa, Zaiga Krišjāne	29
TRAJECTORIES OF POPULATION AGEING IN LATVIA, 2016–2025: A FINE-SCALE SPATIAL SEQUENCE ANALYSIS FOR REGIONAL RESILIENCE <i>GYVENTOJŲ SENĖJIMO TENDENCIJOS LATVIJOJE 2016–2025 m.: DETALI ERDVINĖ SEKŲ ANALIZĖ REGIONŲ ATSPARUMO KONTEKSTE</i> Māris Bērziņš, Zaiga Krišjāne, Edwards Jurgis Auzāns, Niks Stafeckis	30
THE SECOND HOME OWNERS AS AGENTS OF CHANGE IN SHRINKING REGIONS OF LITHUANIA <i>ANTRŲJŲ NAMŲ SAVININKŲ ĮTAKA PERIFERINIŲ KAIMIŠKŲ REGIONŲ RAIDAI</i> Donatas Burneika, Barbara Jaczewska, Edis Kriaučiūnas, Viktorija Baranauskienė	31
CHALLENGES TO RESILIENT REGIONAL DEVELOPMENT OF BULGARIA: INCOME INEQUALITY, LABOUR-MARKET VULNERABILITY, AND SOCIAL EXCLUSION <i>ATSPARIO REGIONINĖS PLĖTROS IŠŠŪKIAI BULGARIJOJE: PAJAMŲ NELYGYBĖ, DARBO RINKOS PAŽEIDŽIAMUMAS IR SOCIALINĖ ATSKIRTIS</i> Dessislava Dimitrova Poleganova, Velimira Asenova Stoyanova, Nadezhda Borisova Ilieva, Vasil Pandurski	31
SKILLED BUT APART: CONCEPTUALISING THE SOCIO-ECONOMIC SEGREGATION OF NON-EU MIGRANTS IN LITHUANIAN CITIES IN UNSTABLE TIMES <i>KVALIFIKUOTI, TAČIAU ATSKIRTI: NE ES ŠALIŲ MIGRANTŲ SOCIOEKONOMINĖS SEGREGACIJOS LIETUVOS MIESTUOSE SAMPRATA</i> Nestabilumo laikotarpis Özge Nur Erdem	32

INVESTMENTS IN LATVIAN REGIONS AND GROWING COMPANIES OUTSIDE RIGA: TRENDS AND CASE STUDIES <i>INVESTICIJOS LATVIJOS REGIONUOSE IR AUGANČIOS ĮMONĖS UŽ RYGOS RIBŲ: TENDENCIJOS IR ATVEJŲ STUDIJOS</i> Māris Fogelis	33
DO WE MEET THEIR EXPECTATIONS? EXPECTATION-EXPERIENCE GAPS AMONG INTERNATIONAL STUDENTS IN LATVIA <i>AR IŠPILDOME JŲ LŪKESČIUS? TARPTAUTINIŲ STUDENTŲ LŪKESČIŲ IR PATIRČIŲ ATOTRŪKIS LATVIJOJE</i> Ieva Jegermane	34
SMARTSTORES IN RURAL REGIONS OF GERMANY – REESTABLISHMENT OF FOOD SUPPLY OPERATIONS BY DIGITIZED SOLUTIONS <i>IŠMANIOSIOS PARDUOTUVĖS VOKIETIJOS KAIMO REGIONUOSE: MAISTO PRODUKTŲ TIEKIMO PASLAUGŲ ATKŪRIMAS PASITELKiant SKAITMENIZUOTUS SPRENDIMUS</i> Ulrich Jürgens	35
AGE STRUCTURE, WORKING-AGE POPULATION AND EMPLOYMENT DYNAMICS IN BULGARIA – REGIONAL ANALYSIS <i>AMŽIAUS STRUKTŪRA, DARBINGO AMŽIAUS GYVENTOJAI IR UŽIMTUMO DINAMIKA BULGARIJOJE: REGIONINĖ ANALIZĖ</i> Boris Kazakov, Aleksandra Ravnachka, Marina Raykova, Poli Roukova	36
FORMER CENTRAL FARM SETTLEMENTS IN RURAL LITHUANIA: HISTORICAL LEGACY, CURRENT STATE, AND DEVELOPMENT PERSPECTIVES <i>BUVUSIOS CENTRINĖS ŪKIŲ GYVENVIETĖS LIETUVOS KAIME: ISTORINIS PAVELDAS, DABARTIS IR RAIDOS PERSPEKTYVOS</i> Edis Kriaučiūnas	36
SCALING DOWN TO THE LOCAL LEVEL: HOUSEHOLD STRATEGIES AND MOBILITY PRACTICES IN NON-METROPOLITAN LATVIA <i>VIETOS LYGMENS PERSPEKTYVA: NAMŲ ŪKIŲ STRATEGIJOS IR MOBILUMO PRAKTIKOS NEMETROPOLINĖJE LATVIJOJE</i> Zaiga Krišjāne, Māris Bērziņš, Maija Rozīte	38
EXPLORING SPATIAL PATTERNS OF INTERNAL MIGRATION IN LATVIA THROUGH SPATIAL AUTOCORRELATION ANALYSIS <i>VIDINĖS MIGRACIJOS ERDVINIŲ DĖSNINGUMŲ LATVIJOJE TYRIMAS TAIKANT ERDVINĖS AUTOKORELIACIJOS ANALIZĘ</i> Jānis Krūmiņš, Māris Bērziņš, Zaiga Krišjāne, Niks Stafeckis	39
LITHUANIA – A COUNTRY OF IMMIGRATION? TERRITORIAL FEATURES OF THE DISTRIBUTION OF IMMIGRANTS IN LITHUANIA <i>LIETUVA – IMIGRACIJOS ŠALIS? TERITORINIAI IMIGRANTŲ SKLAIDOS LIETUVOJE YPATUMAI</i> Dovilė Krupickaitė, Viltė Kesminaitė	40
MEDIUM-SIZED LITHUANIAN CITY IN TRANSITION: IMMIGRATION, CHALLENGES, AND DEVELOPMENT PROSPECTS <i>KINTANTIS LIETUVOS VIDUTINIO DYDŽIO MIESTAS: IMIGRACIJA, IŠŠŪKIAI IR RAIDOS PERSPEKTYVOS</i> Gintarė Pociūtė-Sereikienė, Rūta Ubarevičienė, Donatas Burneika, Simona Ščerbinskaitė, Dovydas Vidzbelis, Viktorija Baranauskienė ...	41
MEASURING SOCIOECONOMIC DEPRIVATION IN AIR POLLUTION EXPOSURE: A SCOPING REVIEW OF METHODOLOGICAL APPROACHES <i>SOCIOEKONOMINIO NEPRITEKLIUS VERTINIMAS ORO TARŠOS POVEIKIO KONTEKSTE: METODOLOGINIŲ PRIEIGŲ APŽVALGA</i> Catarina Isabel Relvas Ferrão	42
SPATIAL, SOCIO-DEMOGRAPHIC AND ECONOMIC TRANSFORMATIONS OF LITHUANIA’S COASTAL AND LAGOON-SIDE SETTLEMENTS <i>LIETUVOS PAJŪRIO IR PAMARIO GYVENVIEČIŲ ERDVINĖS, SOCIODEMOGRAFINĖS IR EKONOMINĖS TRANSFORMACIJOS</i> Eduardas Spirajėvas, Erika Sklema	43
TRANSFORMATION OF THE INDUSTRIAL ZONE IN BUDAPEST THROUGH NEW HOUSING CONSTRUCTION <i>BUDAPEŠTO PRAMONINĖS ZONOS TRANSFORMACIJA VYSTANT NAUJŲ BŪSTŲ STATYBĄ</i> Balázs Szabó, Zoltán Kovács	45
THE ROLE OF RURAL COMMUNITY-BASED ORGANIZATIONS IN TODAY'S CONTEXT: CAN THEY REDUCE SPATIAL INEQUALITIES AND ENHANCE THE WELL-BEING OF LOCAL COMMUNITIES? <i>KAIMO BENDRUOMENINIŲ ORGANIZACIJŲ VAIDMUO ŠIANDIENINIAME KONTEKSTE. AR JOS PAJĖGIOS SUMAŽINTI ERDVINIUS SKIRTUMUS IR PRISIDĖTI PRIE VIETOS GYVENTOJŲ GEROVĖS?</i> Simona Ščerbinskaitė, Viktorija Baranauskienė	46
SOCIAL PROXIMITY AND PUBLIC SERVICE PROVISION IN LOW DENSITY NEIGHBORHOOD OF VILNIUS <i>SOCIALINIS ARTUMAS IR VIEŠOSIOS PASLAUGOS MAŽO UŽSTATYMO TANKUMO VILNIAUS KAIMYMYSTĖJE</i> Simona Ščerbinskaitė, Rūta Ubarevičienė, Donatas Burneika	47
ACROSS CONTINENTS, BEYOND HISTORY: HISTORICAL GOVERNANCE LEGACIES IN RURAL DEVELOPMENT <i>PERŽENGIANT ŽEMYNŲ IR ISTORIJS RIBAS: ISTORINIO VALDYMO PALIKIMO REIKŠMĖ KAIMO PLĖTRAI</i> Greta Šimkienė	48

TERRITORIAL DIFFERENTIATION OF VOTER TURNOUT IN LITHUANIA ACROSS DIFFERENT GENDER AND AGE GROUPS, 2014–2024 <i>RINKIMINIO AKTYVUMO TERITORINĖ DIFERENCIACIJA LIETUVOJE SKIRTINGOSE LYTIES IR AMŽIAUS GRUPĖSE 2014 – 2024 m.</i>	
Dovydas Vidzbelis	49

4. Geography and geographers in spatial planning

4. Geografija ir geografai erdviniam planavime

PERI-URBAN LANDSCAPES OF TIMIȘOARA: MEMORY, IDENTITY, AND TRANSITIONAL REGENERATION <i>TIMIȘOAROS PRIEMIESTINIAI KRAŠTOVAIZDŽIAI: ATMINTIS, TAPATYBĖ IR PEREINAMOJO LAIKOTARPIO REGENERACIJA</i>	
Titus Gabriel Almajan	51
IMMERSIVE VIRTUAL REALITY FOR GEOGRAPHY EDUCATION: EXPLORING SMART CITY FUTURES THROUGH SPATIAL LEARNING AND DECISION-MAKING <i>JTRAUKIANTI VIRTUALIOJI REALYBĖ GEOGRAFIJOS UGDYMU: IŠMANIŲJŲ MIESTŲ ATEITIES TYRINĖJIMAS PER ERDVINĮ MOKYMĄSI IR SPRENDIMŲ PRIĖMIMĄ</i>	
Dennis Edler, Katrin Reichert, Devon Klör, Julian Keil, Frank Dickmann	52
PUBLIC SPACES IN THE POSTMODERN CITY: THE CASE OF FAST FOOD (KEBAB SHOPS) PHENOMENON IN LITHUANIA <i>VIEŠOSIOS ERDVĖS POSTMODERNIAME MIESTE: GREITOJO MAISTO ĮSTAIGŲ (KEBABINIŲ) FENOMENAS LIETUVOJE</i>	
Adomas Gedvilas, Dovilė Krupickaitė	53
CHILDREN'S SENSORY PRACTICES IN HISTORIC CITY CENTRES: AN ETHNOGRAPHIC STUDY FROM ČESKÝ KRUMLOV <i>VAIKŲ SENSORINĖS PATIRTYS ISTORINIUOSE MIESTŲ CENTRUOSE: ETNOGRAFINIS TYRIMAS ČESKY KRUMLOVE</i>	
Daniel Kaplan	54
URBAN GAPS AS A DISTINCTIVE FORM OF VACANCY: SPATIAL PATTERNS AND VISUAL IMPACTS IN GERMAN SMALL TOWNS <i>URBANISTINĖS TUŠTUMOS KAIP SAVITA APLEISTŲ TERITORIJŲ FORMA: ERDVINIAI DĖSNINGUMAI IR VIZUALINIS POVEIKIS VOKIETIJOS MAŽUOSE MIESTUOSE</i>	
Bernhard Koeppen, Jonas Birke	54
AN ANALYSIS OF SETTLEMENT PATTERNS FOLLOWING THE POST-SOCIALIST TRANSITION IN POLAND BASED ON MULTI-TEMPORAL GLOBAL HUMAN SETTLEMENT LAYER DATA <i>GYVENVIČIŲ RAIDOS PO POSOCIALISTINĖS TRANSFORMACIJOS LENKIJOJE ANALIZĖ REMIANTIS SKIRTINGŲ LAIKOTARPIŲ „GLOBAL HUMAN SETTLEMENT LAYER“ DUOMENIMIS</i>	
Katarzyna Krasnodębska, Przemysław Śleszyński, Andrzej Affek	55
PRINCIPLES FOR APPLYING GEOGRAPHICAL CONCEPTS IN SPATIAL PLANNING TO OPTIMIZE AGROECOSYSTEM USE <i>GEOGRAFINIŲ KONCEPCIJŲ TAIKymo PRINCIPAI ERDVINIAME PLANAVIME OPTIMIZUOJANT AGROEKOSISTEMŲ NAUDOJIMĄ</i>	
Julius Mačiulaitis, Jonas Volungevičius	56
ADAPTIVE REUSE OF BUCHAREST'S INDUSTRIAL HERITAGE: POST-EVALUATION, INTEGRATED PLANNING AND STAKEHOLDER ENGAGEMENT <i>BUKAREŠTO PRAMONĖS PAVELDO PRITAIKYMAS NAUJOMS REIKMĖMS: REZULTATŲ VERTINIMAS, INTEGRUOTAS PLANAVIMAS IR SUINTERESUOTŲJŲ ŠALIŲ ĮTRAUKIMAS</i>	
Florentina-Cristina Merciu, Cornel Păunescu, George-Laurențiu Merciu, Bogdan Suditu	57
MIDDLE-SIZED PORT CITIES, TERRITORIAL RECOMPOSITION AND SUSTAINABILITY: RESIDENTS' REPRESENTATIONS OF THE PORT-CITY INTERFACE IN LE HAVRE <i>VIDUTINIO DYDŽIO UOSTAMIESČIAI, TERITORINĖ PERTVARKA IR TVARUMAS: GYVENTOJŲ POŽIŪRIS Į UOSTO IR MIESTO SĄVEIKĄ HAVRE</i>	
Arnaud Serry	58
IMPLEMENTATION OF SMART CITY INITIATIVES IN LITHUANIA <i>IŠMANIŲJŲ MIESTŲ INICIATYVŲ ĮGYVENDINIMAS LIETUVOJE</i>	
Daiva Verkulevičiūtė-Kriukienė	59
WHEN MOBILITY BECOMES A RISK: LESSONS FROM THE CARACAL REGION FOR TERRITORIAL PLANNING AND SOCIAL COHESION <i>KAI MOBILUMAS TAMPA RIZIKOS VEIKSNIU: KARAKALO REGIONO PATIRTYS TERITORIJŲ PLANAVIMUI IR SOCIALINEI SANGLAUDAI</i>	
Sorina Voiculescu, David Marian Chasciar, Ionel-Florin Palaghia, Alexandru Rusu, Octavian Groza, Daniel Luchș, Margareta Amy Lelea, Ioan Sebastian Jucu, Anamaria Dalea	60
PLACE-MAKING FOR SAFETY: LESSONS FROM THE CARACAL REGION FOR TERRITORIAL PLANNING AND SOCIAL COHESION <i>VIETOKŪRA SAUGUMUI: KARAKALO REGIONO PAMOKOS TERITORIJŲ PLANAVIMUI IR SOCIALINEI SANGLAUDAI</i>	

Sorina Voiculescu, Ionel-Florin Palaghia, David Marian Chasciar, Alexandru Rusu, Octavian Groza, Ioan Sebastian Jucu, Daniel Luchea, Margareta Amy Lelea, Anamaria Dalea	61
FIGHTING FOR GREEN: GRASSROOTS ACTIVISM AND ENVIRONMENTAL JUSTICE IN POLISH CITIES <i>KOVA UŻ ŻALIĄSIAS ERDVES: PILIETINIS AKTYVIZMAS IR APLINKOSAUGINIS TEISINGUMAS LENKIJO MIESTUOSE</i> Daria Zozulia, Katarzyna Gorczyca, Łukasz Fiedor	62

5. Landscape horizons 2026: A Landscape Approach

5. Kraštovaizdžio horizontai 2026: kraštovaizdžio požiūris

DIALOGUE BETWEEN CITIES AND PROTECTED AREAS: FROM COMPETITION FOR SPACE TO SHARED GOALS <i>MIESTŲ IR SAUGOMŲ TERITORIJŲ DIALOGAS: NUO KONKURENCIJOS DĖL ERDVĖS LINK BENDRŲ TIKSLŲ</i> Laima Dabregaitė	63
A CENTURY OF TERRITORIAL TRANSFORMATIONS: COMPARATIVE MODELLING OF SPATIAL SYSTEMS IN SCANIA AND THE COASTAL ZONE OF KLAIPĖDA (1915, 1975 AND 2025) <i>TERITORINIŲ TRANSFORMACIJŲ ŠIMTMETIS: ERDVINIŲ SISTEMŲ LYGINAMASIS MODELIAVIMAS SKONĖJE IR KLAIPĖDOS PAKRANTĖS ZONOJE (1915, 1975 IR 2025 M.)</i> Thomas Gloaguen, Sébastien Gadal, Kęstutis Zaleckis	64
BURIED UNDER THE MUD OF URBAN EXTRACTIVISM: TRANSFORMATION ON KENJERAN COASTAL COMMUNITIES' LANDSCAPE AND IDENTITY <i>PALAI DOTI PO URBANISTINIŲ EKSTRAKCIJŲ PURVU: KENJERAN PAKRANTĖS BENDRUOMENIŲ KRAŠTOVAIZDŽIO IR TAPATYBĖS TRANSFORMACIJA INDONESIA</i> Rusydhan Hadid	65
GARDENS IN THE GAPS: VALLEYS, FORTRESS BUFFERS AND THE PERSISTENCE OF INFORMAL URBAN GARDENING IN VILNIUS AND KAUNAS <i>DARŽAI SPRAGOSE: NEFORMALI MIESTO DARŽININKYSTĖ UPĖS SLĖNYJE IR FORTO TERITORIJOJE VILNIUJE IR KAUNE</i> Gabrielė Janilionytė	66
INTENDED LANDSCAPES OF RESILIENCE: INVERSE LANDSCAPES, SOLASTALGIA, AND THE SIDE EFFECTS OF TRANSFORMATION <i>NUMATYTIJI ATSPARUMO KRAŠTOVAIZDŽIAI: INVERSINIAI KRAŠTOVAIZDŽIAI, SOLASTALGIJA IR ŠALUTINIAI TRANSFORMACIJOS EFEKTAI</i> Olaf Kühne, Karsten Berr	68
IMMERSIVE LANDSCAPES: VIRTUAL REALITY (VR), NEOPRAGMATIST CARTOGRAPHY, AND THE REDESCRIPTION OF LANDSCAPE EXPERIENCE <i>IMERSINIAI KRAŠTOVAIZDŽIAI: VIRTUALIOJI REALYBĖ (VR), NEOPRAGMATISTINĖ KARTOGRAFIJA IR NAUJAS KRAŠTOVAIZDŽIO PATIRTIES INTERPRETAVIMAS</i> Olaf Kühne, Dennis Edler	68
LANDSCAPE POLARIZATION AS AN APPROACH FOR ANALYSIS OF ECO-SPATIAL STRUCTURE IN EUROPEAN REGIONS <i>KRAŠTOVAIZDŽIO POLIARIZACIJA KAIP EKOLOGINĖS ERDVINĖS STRUKTŪROS ANALIZĖS PRIEMONĖ EUROPOS REGIONUOSE</i> Julius Mačiulaitis, Darius Veteikis	69
WHAT COUNTS AS AN URBAN FOREST? CONCEPTUALIZATIONS OF URBAN FORESTS IN EUROPEAN PLANNING AND MANAGEMENT DOCUMENTS <i>KAS LAIKOMA MIESTO MIŠKU? MIESTO MIŠKŲ SAMPRATOS EUROPOS PLANAVIMO IR TVARKYMO DOKUMENTUOSE</i> Ieva Misiūnė, Anna Codemo, Melania Michetti	71
GEOHERITAGE OF THE MIDDLE REACHES OF THE NEMUNAS RIVER (SOUTH LITHUANIA) AND ITS USE FOR EDUCATION <i>NEMUNO VIDURUPIO GEOPAVELDAS IR JO PANAUDOJIMAS VISUOMENĖS ŠVIETIMUI</i> Violeta Pukelytė	72
THE DEFORESTATION OF THE WESTERN CARPATHIAN REGION IN ROMANIA <i>MIŠKŲ NYKIMAS RUMUNIJOS VAKARŲ KARPATŲ REGIONE</i> Daniel-Vasile Rădulescu, Mihai Bogdan	74
THE ROLE OF STATE PARKS IN REGIONAL DEVELOPMENT: THE CASE OF KURTUVĖNAI REGIONAL PARK <i>VALSTYBINIŲ PARKŲ REIKSMĖ REGIONŲ VYSTYIMUI: KURTUVĖNŲ REGIONINIO PARKO PAVYZDYS</i> Darius Ramančionis	74
DIDŽIOSIOS TRANSFORMACIJOS BANGOS LIETUVOS KRAŠTOVAIZDYJE: KAS LIKO IR KAS IŠLIKS? <i>MAJOR WAVES OF TRANSFORMATION IN THE LITHUANIAN LANDSCAPE: WHAT HAS REMAINED AND WHAT WILL ENDURE?</i>	

Darius Veteikis, Ričardas Skorupskas	76
GOVERNANCE TRANSFORMATION OF EUROPEAN PROTECTED AREAS TOWARD SPATIAL AND SOCIO-ECONOMIC INTEGRATION <i>EUROPOS SAUGOMŲ TERITORIJŲ VALDYMO PERTVARKA ERDVINĖS IR SOCIALINĖS-EKONOMINĖS INTEGRACIJOS LINK</i>	
Piotr Węgrzynowicz	78

6. EUGEO seminar: The importance of Geographical communication

6. EUGEO seminaras: *Geografinės komunikacijos svarba*

GEOGRAPHICAL COMMUNICATION AS A BRIDGE BETWEEN SCIENCE AND SOCIETY: THE EXPERIENCE OF THE LATVIAN GEOGRAPHICAL SOCIETY <i>GEOGRAFINĖ KOMUNIKACIJA KAIP TILTAS TARP MOKSLO IR VISUOMENĖS: LATVIJOS GEOGRAFŲ DRAUGIJOS PATIRTIS</i>	
Elina Apsīte-Beriņa, Zaiga Krišjāne	80
LITHUANIAN ‘GEONIGHT’ IN 2019 – 2026: CITIZEN SCIENCE AND POSSIBILITIES FOR GEOGRAPHY PROMOTION <i>„GEOGRAFIJOS NAKTIS“ LIETUVOJE 2019–2026 M.: PILIEČIŲ MOKSLAS IR GEOGRAFIJOS SKLAIDOS GALIMYBĖS</i>	
Giedrė Godienė	81
IF GEOGRAPHY HAS NEVER BEEN MORE RELEVANT, WHY ARE GEOGRAPHERS LESS VISIBLE? COMMUNICATING GEOGRAPHICAL KNOWLEDGE IN THE AGE OF AI <i>JEI GEOGRAFIJA DAR NIEKADA NEBUVO TOKIA AKTUALI, KODĖL GEOGRAFAI TAMPA MAŽIAU MATOMI? GEOGRAFINIŲ ŽINIŲ KOMUNIKACIJA DIRBTINIO INTELEKTO AMŽIUJE</i>	
Federico Martellozzo, Matteo Puttilli	82
FROM MAPS AND BOOKS TO WORD BALLOONS: COMICS AS A BRIDGE FOR SCHOOL STUDENTS VISITING THE ITALIAN GEOGRAPHICAL SOCIETY <i>NUO ŽEMĖLAPIŲ IR KNYGŲ IKI KOMIKSŲ DIALOGŲ: KOMIKSAI KAIP GEOGRAFIJOS PAŽINIMO TILTAS ITALIJOS GEOGRAFŲ DRAUGIJĄ LANKANTIEMS MOKSLEIVIAM</i>	
Nicolò Matteucci	83
PUBLIC ENGAGEMENT IN GEOGRAPHY – INSIGHTS FROM GEOGRAPHY NIGHT 2026 <i>VISUOMENĖS ĮTRAUKIMAS Į GEOGRAFIJĄ: „GEOGRAFIJOS NAKTIES 2026“ ĮŽVALGOS</i>	
Ana Pejdo, Jadranka Brkić-Vejmelka	84
WHY PODCASTING GEOGRAPHY TO REACH THE COMMUNITY? THE EVIDENCE FROM THE CZECH GEOGRAPHICAL SOCIETY <i>KODĖL VERTA SKLEISTI GEOGRAFIJOS ŽINIAS TINKLALAIĐEMIS SIEKANT PASIEKTI BENDRUOMENĘ? ČEKIJOS GEOGRAFŲ DRAUGIJOS PATIRTIS</i>	
Jiří Preis	85
THE COOPERATION OF GEOGRAPHERS IN A CONTEXT OF ENVIRONMENTAL SUSTAINABILITY <i>GEOGRAFŲ BENDRADARBIAVIMAS APLINKOS TVARUMO KONTEKSTE</i>	
Rūta Zabitenė	85

Keynote speakers

Plenariniai pranešėjai

SPATIAL THINKING – SEE MORE, ACT EARLIER, BUILD RESILIENCE

*ERDVINIS MĄSTYMAS – MATYTI DAUGIAU, VEIKTI ANKSČIAU,
STIPRINTI ATSPARUMĄ*

Dr. Rūta Ubarevičienė

Lithuanian Centre for Social Sciences,
Delft University of Technology, Netherlands

Presentation language / Pranešimo kalba: Lithuanian / *Lietuvių*



LANDSCAPE FUTURES

KRAŠTOVAIZDŽIO ATEITYS

Prof. Dr. Hannes Palang

Tallinn University (Estonia)

Presentation language / Pranešimo kalba: English



COMMUNICATING SCIENTIFIC GEOGRAPHY: HOW, WHY, AND FOR WHOM?

GEOGRAFIJOS MOKSLO KOMUNIKACIJA: KAIP, KODĖL IR KAM?

Prof. Dr. Massimiliano Tabusi

EUGEO Secretary General
University for Foreigners of Siena (Italy)

Presentation language / Pranešimo kalba: English



THEMATIC SESSION 1

Geopolitical challenges and state resilience from a geographical perspective

1 TEMINĖ SESIJA

Geopolitiniai iššūkiai ir valstybių atsparumas geografinių žvilgsniu

► PORT OF KLAIPĖDA: GEOPOLITICAL IMPORTANCE AND LONG-WAVE HAZARDS

KLAIPĖDOS UOSTAS: GEOPOLITINĖ SVARBA IR ILGŲJŲ BANGŲ KELIAMOS GRĖSMĖS

Loreta Kelpšaitė-Rimkienė, Laura Nesteckyte, Marius Žalys
Klaipėda University, Lithuania

Presentation language / Pranešimo kalba: English

Port of Klaipėda is one of the largest ports in the Baltic Sea region and the only ice-free port on the eastern Baltic coast, ensuring year-round navigability. These geographical characteristics make it not only Lithuania's principal maritime gateway but also a critical logistics hub supporting regional trade, energy security, and military mobility. In the context of increasing geopolitical tensions in the Baltic Sea region, maintaining uninterrupted port operations has become a strategic priority for both national and regional resilience.

However, the geopolitical significance of the Port of Klaipėda is closely linked to a largely overlooked geographical vulnerability. The geometry of the port basins, the morphology of the Klaipėda Strait connecting the Curonian Lagoon with the Baltic Sea, and the port's exposure to open-sea wave energy create favourable conditions for long-wave (infragravity wave) resonance. These waves, with periods ranging from several minutes to several hours, are generated by storm-wave groups, atmospheric pressure disturbances, and basin-scale seiches. When their periods coincide with the natural oscillation periods of the harbour basins, resonant amplification may occur, producing significant water-level oscillations.

Based on in situ observations and hydro-numerical modelling, this study identifies the dominant resonant frequencies of the Port of Klaipėda and determines the hydrometeorological conditions under which hazardous oscillations develop. The results demonstrate that resonance events can compromise moored vessel safety, interrupt cargo-handling operations, and increase loads on port infrastructure, potentially leading to partial or complete operational shutdowns. This study argues that long-wave-induced harbour resonance should be recognized not only as a hydrodynamic

phenomenon but also as an underappreciated geopolitical risk. As the strategic importance of the Port of Klaipėda continues to grow, understanding and managing resonance hazards becomes essential for safeguarding critical maritime infrastructure and strengthening the resilience of regional supply chains under both natural and geopolitical stress.

Keywords: port of Klaipėda, long waves, marine hazards

▶ THE TERRITORIES OF UN PEACEKEEPING: TACKLING THE CASES OF CYPRUS AND SYRIA THROUGH VISUAL GEOGRAPHY

JUNGTINIŲ TAUTŲ TAIKOS PALAIKymo MISIJŲ TERITORIJOS: KIPRO IR SIRIJOS ATVEJŲ ANALIZĖ PASITELKIANT VIZUALINĘ GEOGRAFIJĄ

Ernesto Martellaro

Italy

Presentation language / Pranešimo kalba: English

The United Nations have the faculty to establish peacekeeping missions in disputed territories and along ceasefire lines, deploying the contingents of member states. Relevant examples range from Jammu and Kashmir to Cyprus, from Golan to Sudanese Abyei. Such cases are the result of periods of armed conflict, which have produced ambiguous geopolitical transformations and brought, at a local level, hardship and displacement to the civilian populations.

The hybrid spatiality of ceasefire lines and disputed areas patrolled by the UN is often represented cartographically through dotted lines. This is the case of both Cyprus' "Buffer Zone", which keeps Turkish-Cypriots and Greek-Cypriots apart, and Syria's "Area of Separation", that prevents the advancement of Israeli forces into the Golan region. However, dotted lines keep territories and their dwellers in a geopolitical "limbo", where state integrity is seriously questioned. It is geography's task to widen the interpretive scope for approaching such territories, so as to better understand what have been the effects of UN presence in Cyprus and in Golan, how it has evolved throughout more than fifty years and in which ways it has contributed to the resilience of civilians who inhabit the hybrid landscapes of disputed areas.

In order to fulfil this task, my contribution delves into the visual material published by the United Nations since 1974 about UNFICYP (the peacekeeping mission in the Buffer Zone) and UNDOF (the mission in the Area of Separation), available on the digital archives of the UN (which include over 4000 photographic records related to peacekeeping). The particular use of photography to answer the research questions mean to adopt the perspective of UN peacekeepers, namely those who produced the images. As Gillian Rose suggests, it is important to conceive visual material not as objective images of the world, but rather as interpretive tools.

Keywords: United Nations, disputed territories, visual geography, Cyprus, Golan

RESISTING BORDERS FROM BELOW: FEMINIST GEOPOLITICS AND EVERYDAY SURVIVAL AT THE COLOMBIA–VENEZUELA BORDER

PASIPRIEŠINIMAS SIENOMS IŠ APAČIOS: FEMINISTINĖ GEOPOLITIKA IR KASDIENIO IŠGYVENIMO PRAKTIKOS KOLUMBIJOS IR VENESUELOS PASIENYJE

Yvonne Riaño

University of Neuchâtel, Switzerland

Presentation language / Pranešimo kalba: English

The territorial conflicts in Norte de Santander, a region in northern Colombia bordering Venezuela, are among the most complex, violent, and least understood geopolitical phenomena in contemporary geography. Historically limited state presence has enabled illegal armed groups, including guerrillas and paramilitaries, to consolidate territorial control through coca cultivation, making the region Colombia's largest coca-producing area. Competition among these groups has displaced thousands of peasants through intimidation, sexual violence, and massacres of rural communities. Consequently, Colombia faces one of the world's largest internally displaced person (IDP) crises, with more than 7 million people forcibly uprooted. At the same time, the Venezuelan government's protection of guerrilla groups has intensified geopolitical tensions between the two countries. Many Colombians who sought refuge in Venezuela in the early twenty-first century were later arbitrarily expelled after being accused of collaborating with paramilitary groups seeking to overthrow the Venezuelan regime. Venezuela subsequently closed the international border, severely restricting cross-border mobility and trade. Despite the significance of these intertwined geopolitical and territorial conflicts, relatively little attention has been paid to how border populations respond to them. This paper addresses this gap through a feminist geopolitical perspective that shifts attention from states and supranational actors to the everyday agency of local communities in resisting, surviving, and reimagining international borders. It examines the spatial strategies developed by Colombian and Venezuelan border communities to circumvent border closure and sustain cross-border livelihoods. Drawing on a two-year participatory research project and collaborative documentary with forcibly displaced women ("Weaving Threads Across Borders"), this paper shows how border populations actively remake geopolitical space through informal cross-border trade and social support networks. By foregrounding local agency, it demonstrates that states do not simply impose international borders but that these borders are continuously negotiated and reconfigured from below.

Keywords: feminist geopolitics, Colombia–Venezuela border, everyday resistance, forced displacement, cross-border mobility

THE MEMORY LANDSCAPES OF THE SECOND WORLD WAR IN CENTRAL EUROPEAN CAPITAL CITIES

ANTROJO PASAULINIO KARO ATMINTIES KRAŠTOVAIZDŽIAI VIDURIO EUROPOS SOSTINĖSE

Sara Stys

University of Warsaw, Poland

Language: English

Presentation language / Pranešimo kalba: English

This paper examines the memory landscapes of the Second World War in Central European capital cities through the perspectives of collective memory, places of memory and landscapes of memory. Drawing on the concept of lieux de mémoire, it explores how urban space functions as a medium through which collective memories are materialized and contested. Rather than treating memorials, monuments, and other sites of remembrance as isolated objects, the paper conceptualizes them as interconnected elements of memory landscapes that reflect evolving interpretations of the past and shape contemporary public memory.

The study adopts a comparative perspective, focusing on selected Central European capital cities – Berlin, Prague, Warsaw, and Vienna, whose twentieth-century histories were marked by war, occupation, regime change and post-socialist transformation. Particular attention is paid to the ways in which commemorative landscapes embody changing memory politics and national narratives of the Second World War while simultaneously revealing both shared regional patterns and locally specific forms of remembrance.

Empirically, the research is based primarily on fieldwork conducted in the selected capitals, including systematic documentation, spatial observation, photographic recording, and mapping of commemorative sites. The collected material is analysed using thematic analysis, allowing commemorative sites to be classified according to the historical themes and narratives they represent. This thematic categorization makes it possible to identify dominant commemorative motifs, such as military sacrifice, civilian victims, resistance movements, the Holocaust and political repression – as well as to examine their spatial distribution and visibility within the urban landscape.

Keywords: memory landscapes, Second World War, historical geography, Central Europe

THEMATIC SESSION 2

Urban climate

2 TEMINĖ SESIJA

Miesto klimatas

▶ MICROCLIMATE CHARACTERISTICS OF LITHUANIAN CITIES

LIETUVOS MIESTŲ MIKROKLIMATINĖS CHARAKTERISTIKOS

Arūnas Bukantis

Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Changes in climate indicators – including temperature, precipitation, and heatwave duration – significantly affect the functioning of cities, the quality of the living environment, and energy consumption. Compared with surrounding rural areas, densely built-up parts of cities form urban heat islands, exposing residents to greater heat stress. This effect is particularly pronounced during periods of anticyclonic circulation in summer, when air exchange between the city centre and the countryside is reduced.

Climate projections indicate that these impacts will intensify, making it especially important to consider them in urban planning. To assess the effects of climate indicators on urban environments, this study analysed the microclimates of Lithuania's three largest cities – Klaipėda, Kaunas, and Vilnius – and projected changes in selected climate indicators under RCP scenarios.

Keywords: microclimate, urban heat island, RCP

Klimato rodiklių, įskaitant oro temperatūrą, kritulius ir karščio bangų trukmę, pokyčiai daro didelį poveikį miestų funkcionavimui, gyvenamosios aplinkos kokybei ir energijos vartojimui. Palyginti su aplinkinėmis kaimo vietovėmis, tankiai užstatytose miestų dalyse susidaro miesto šilumos salos, dėl kurių gyventojai patiria didesnį karščio stresą. Šis poveikis ypač ryškus vasarą, vyraujant anticikloninei cirkuliacijai ir susilpnėjus oro apykaitai tarp miesto centro ir užmiesčio.

Klimato projekcijos rodo, kad šis poveikis stiprės, todėl planuojant miestų aplinką ypač svarbu jį atsižvelgti. Siekiant įvertinti klimato rodiklių poveikį miesto aplinkai, šiame tyrime išanalizuotas trijų didžiausių Lietuvos miestų – Klaipėdos, Kauno ir Vilniaus – mikroklimatas ir pagal RCP scenarijus sudarytos pasirinktų klimato rodiklių pokyčių projekcijos.

Raktiniai žodžiai: mikroklimatas, miesto šilumos sala, RCP scenarijai

NATURAL AND CLIMATIC CONDITIONS OF LITHUANIAN RESORTS

LIETUVOS KURORTŲ GAMTINĖS IR KLIMATINĖS SĄLYGOS

Inga Dailidienė¹, Lolita Rapolienė¹, Beatričė Pargaliauskytė¹, Donatas Valiukas², Laurynas Klimavičius³

¹Klaipėda University, Lithuania

²Lithuanian Hydrometeorological Service, Lithuania

³Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Historically, health resorts around the world have developed primarily in areas rich in exceptional natural and climatic resources. Lithuania is endowed with abundant natural assets, including forests, surface waters, thermal and widely utilized mineral waters, as well as peatlands. The country's territory is particularly favourable for health and wellness activities due to its temperate climate zone, which offers significant climatic diversity, including both maritime and continental influences, four distinct seasons, and sufficient humidity and precipitation to sustain a dense hydrographic network, replenish groundwater resources, and support the formation of wetlands and peat bogs.

Climate change is becoming an increasingly important factor in the development of resilient cities and regions, including health resorts. The climatic, natural, and tourism resources of Lithuanian resorts are unique, providing opportunities to experience outstanding natural landscapes, enjoy high-quality recreation, and benefit from integrated tourism, leisure, and wellness services. A geographical perspective helps to highlight the specific characteristics of these locations and provides recommendations for the future development of rehabilitation centres, considering climate dynamics and ongoing climate change.

Acknowledgements: We thank the Lithuanian Hydrometeorological Service (LHMT) for providing the data. This project has received funding from the Research Council of Lithuania (LMTLT), grant agreement No S-REP-26-8.

Keywords: Lithuanian health resorts, natural resources, climate

Istoriškai visame pasaulyje kurortai kūrėsi vietovėse, kurios visų pirma buvo turtingos išskirtiniais gamtiniais ir klimatiniais resursais. Lietuva yra turtinga natūraliais gamtiniais resursais – miškais, paviršiniais vandenimis, terminiais ir plačiai panaudojamais mineraliniais vandenimis bei durpynais. Lietuvos teritorija yra išskirtinai palankaus klimato sveikatinimui, nes būdama vidutinių platumų klimato juostoje, turi pakankamą įvairovę – jūrinį ir žemyninį klimatą, keturis sezonus, pakankamą drėgmės ir kritulių kiekį tankiam hidrografiniam tinklui susiformuoti ir papildyti požeminius vandenį, susidaryti šlapžemėms (pelkėms) ir durpynams.

Klimato kaita tampa vis aktualesnė atsparių miestų ir regionų vystymesi, tame tarpe kurortų. Lietuvos kurortų klimatiniai, gamtiniai ir turistiniai ištekliai yra unikalūs ir suteikiantys galimybę pasigerėti įstabia gamta, kokybiškai pailsėti derinant turizmą, poilsį ir gaunamas sveikatinimo

paslaugas. Geografinis požiūris leidžia išryškinti vietovių specifiką ir pateikti rekomendacijas ateities reabilitacijos centrų plėtrai atsižvelgiant į klimato dinamiką ir kaitą.

Padėka: Dėkojame Lietuvos hidrometeorologijos tarnybai prie Aplinkos ministerijos (LHMT) už suteiktus duomenis. Finansavimą skyrė Lietuvos mokslo taryba (LMTLT), sutarties Nr. S-REP-26-8.

Raktiniai žodžiai: Lietuvos kurortai, gamtiniai resursai, klimatas

URBAN RIVER RESILIENCE TO MITIGATE THE IMPACTS OF CLIMATE CHANGE IN MEDITERRANEAN CITIES: EXAMPLES FROM BARCELONA AND GRANOLLERS, SPAIN

MIESTŲ UPIŲ ATSPARUMO DIDINIMAS SIEKiant MAŽINTI KLIMATO KAITOS POVEIKĮ VIDURŽEMIO JŪROS REGIONO MIESTUOSE: BARCELONOS IR GRANOLJERSO (ISPANIJA) PAVYZDŽIAI

Joaquim Farguell, Albert Santasusagna
University of Barcelona, Spain

Presentation language / Pranešimo kalba: English

Mediterranean climate conditions are characterized by high intensity rainfall and severe flood events. In a climatic change scenario, such events tend to become more frequent. In addition to this, urban growth in many urban and metropolitan areas has occupied floodplains, and rivers have been constrained by means of grey infrastructures such as channelization and river stabilization. Under this scenario, cities like Barcelona or others in the metropolitan area, have initiated adaptation measures to reduce flood risk using different techniques. Mediterranean urban rivers are undergoing resilience mechanisms, consisting in recuperating fluvial processes and floodplains by means of “de-constructing” previously occupied prone-to-flood urbanized areas and trying to give more space to traditionally constrained river channels. River renaturalization and rehabilitation have been introduced to mitigate climatic change impacts and reduce flood risk and damage to buildings. This policy, combined with additional techniques such as the construction of underground stormwater storage facilities or SuDS implementation in parks and streets, are mechanisms designed to increase urban water infiltration and reduce the amount of water flowing on streets and entering into the sewage system, and allow the rivers to overflow safely and reduce water volume and velocity. Despite this, differences in how river restoration or rehabilitation should be approached is an ongoing debate. The aim of this presentation is to show how Mediterranean urban areas are tackling urban and metropolitan rivers and how such measures may mitigate climate change threats within Mediterranean cities such as Barcelona and the smaller metropolitan city like Granollers, both located in Spain.

Keywords: Mediterranean rivers, urban rivers resilience, flood risk reduction

► URBAN HEAT-STRESS RISK IN A CHANGING CLIMATE: THE CASE OF VILNIUS, LITHUANIA

ŠILUMINIO STRESO RIZIKA MIESTUOSE KINTANČIO KLIMATO SĄLYGOMIS: VILNIAUS ATVEJIS

Justina Kapilovaitė, Egidijus Rimkus
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: English

Climate change is altering the frequency, intensity, and spatial distribution of extreme weather conditions, creating growing challenges for densely populated urban areas. Assessing these challenges requires an integrated perspective that considers climate hazards alongside the distribution of exposed elements and their vulnerability. This study applies the open-source CLIMADA impact-modelling framework to investigate current and future urban heat-stress risk in Vilnius, Lithuania.

Heat hazard is represented using the Humidex index, which combines air temperature and relative humidity. Historical conditions are evaluated using meteorological observations, while future changes are assessed with an ensemble of five CMIP6 climate models under intermediate- and high-emission pathways for mid-century and end-of-century periods. The ensemble represents a range of plausible future climate conditions and allows uncertainty in climate projections to be considered. The modelling framework integrates spatially resolved heat-stress intensity, gridded population exposure, and age-dependent vulnerability functions. Expected annual impact and population-normalised indicators are used to examine how heat-stress burden varies across the city and among demographic groups. The results indicate that heat-stress conditions are becoming more frequent and are expected to intensify further, particularly under the high-emission pathway. Spatial differences in impact are evident across Vilnius, and older residents are identified as especially vulnerable. The study demonstrates the value of combining climate projections, exposure data, and vulnerability relationships within a consistent spatial framework. The resulting risk maps support the identification of priority areas and can inform targeted climate adaptation, urban planning, and long-term resilience strategies.

Keywords: climate risk assessment, heat-stress, urban areas, Humidex, population exposure, vulnerability functions, spatial risk mapping

URBAN CLIMATE INVESTMENT FUNDS IN PRACTICE: THE "NEŠYLAM" PROJECT

MIESTŲ KLIMATO INVESTICIJŲ FONDŲ VEIKLOS TIKROVĖ: PROJEKTAS „NEŠYLAM“

Justas Kažys¹, Georg M. Eichler²

¹Vilnius University, Lithuania

²International Project Management Agency Klagenfurt on Lake Wörthersee, Austria

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Cities are among the areas most vulnerable to climate change, yet they are also actively seeking ways to become climate-neutral. The EU Mission for Climate-Neutral and Smart Cities brings together 112 selected cities, including Vilnius, which serve as innovation hubs for testing cross-sectoral solutions and helping all European cities become climate-neutral by 2050. Climate funding available to cities is usually very limited; therefore, most cities rely on grants and struggle to secure private co-financing. The CF4Cities (Climate Funding for Cities) project is a multi-city pilot initiative of Klagenfurt (Austria), Gozo (Malta), and Vilnius (Lithuania) that aims to overcome financial and social barriers by testing and implementing localized, innovative strategies for rapid urban decarbonization. Climate funds could operate independently of short-term political developments and municipal budget constraints, thereby increasing resilience and continuity. Within the CF4Cities project, Vilnius City Municipality launched the neŠYLAM climate-neutrality programme and project competition to finance initiatives by communities and legal entities that reduce greenhouse gas (GHG) emissions and help build a climate-neutral community. The neŠYLAM initiative has been implemented for two years (2025 and 2026). The competition encourages residents and small businesses to propose creative solutions for reducing GHG emissions through small-scale community projects. Good practice examples from local communities include waste reduction, sustainable mobility, energy solutions, and nature-based initiatives. The presentation also introduces the Klagenfurt initiative, in which the climate fund operates as a voluntary association.

Keywords: climate fund, "neŠYLAM" project, sustainable urban transformation, Climate-Neutral Vilnius center, EU-Cities Mission

Miestai yra vieni labiausiai pažeidžiamų klimato kaitos, tačiau jie taip pat ieško būdų, kaip tapti klimatui neutraliais. ES „Klimatui neutralių ir išmaniųjų miestų“ misija įtraukia 112 atrinktų miestų, įskaitant Vilnių, kaip inovacines erdves, kuriose testuojami tarpsektoriniai sprendimai padedantys visiems Europos miestams iki 2050 m. tapti klimatui neutraliais. Klimato kaitos finansavimas miestams dažniausia yra labai ribotas, todėl dauguma miestų pasikliauja dotacijomis, sunkiai užsitikrindami privačių lėšų kofinansavimą. CF4Cities („Klimato neutralumo finansavimas miestams“) projektas yra kelių miestų – Klagenfurto (Austrija), Gozo (Malta) ir Vilniaus (Lietuva) – pilotinė iniciatyva, kuria siekiama įveikti finansines ir socialines kliūtis, išbandant ir įgyvendinant lokalias, novatoriškas strategijas spartinsiančias miestų klimato neutralumą. Klimato kaitos fondai gali veikti nepriklausomai nuo trumpalaikių politinių pokyčių ir savivaldybių biudžeto apribojimų, taip jie didina miestų atsparumą ir veiklų tęstinumą. Įgyvendindama CF4Cities projektą, Vilniaus miesto savivaldybė įsteigė klimato neutralumo skatinimo programą ir projektų konkursą „neŠYLAM“,

skirtą finansuoti bendruomenių ir juridinių asmenų projektus, kuriais mažinamas šiltnamio efekto sukeliančių dujų (ŠESD) išmetimas ir kuriama klimato neutrali bendruomenė. „neŠYLAM“ iniciatyva jau įgyvendinama dvejus metus (2025 ir 2026 m.). Konkursas skatina gyventojus ir smulkųjį verslą teikti kūrybiškus sprendimus, kaip sumažinti ŠESD išmetimus ir sumaniai išnaudoti bendruomenių veiklą rėmimo projektus. Gerosios praktikos pavyzdžiai iš vietos bendruomenių apima atliekų mažinimą, darnų (eko-)mobilumą, tvarius energijos sprendimus ir gamta grįstas iniciatyvas. Taip pat, pristatoma Klagenfurto miesto iniciatyva, kurioje klimato fondas jau veikia kaip visuomeninė organizacija.

Raktiniai žodžiai: klimato fondas, „neŠYLAM“ programa, darni miesto pertvarka, Neutralus Klimatui Vilnius, ES miestų misija

COMPOUND CLIMATE EVENTS IN THE MAJOR CITIES OF LITHUANIA

KOMPLEKSINIAI KLIMATO ĮVYKIAI DIDŽIUOSIUOSE LIETUVOS MIESTUOSE

Laurynas Klimavičius

Vilnius University, Lithuania

Presentation language / Pranešimo kalba: English

Due to climate change, extreme weather events have become more frequent over the past few decades. The negative impacts of these events are often amplified in urban areas, posing risks to human health and infrastructure. Historically, individual weather and climate extremes were studied separately. However, in recent years, it has been found that a greater negative socioeconomic impact occurs when multiple phenomena interact. Such cases are referred to as compound climate events. The aim of this study is to assess the frequency of different compound climate events in the major cities of Lithuania (Vilnius, Kaunas, Klaipėda) from 1972 to 2024. Three types of CCEs arising from interactions among meteorological phenomena were analysed: compound drought and heatwave events (CDHEs), compound heatwave and heavy rainfall events (CHHRs), and compound wind and precipitation extremes (CPWEs). Data from Vilnius, Kaunas, and Klaipėda meteorological stations, provided by the Lithuanian Hydrometeorological Service, were used. During May–September, CDHEs were most frequent in the 1990s; however, no significant long-term changes in their occurrence were detected. The highest frequency of CDHEs was recorded in Klaipėda (14 events per decade). CHHRs occurred most frequently in Kaunas (3.4 events/decade), and more than half of all CHHRs at the three stations were recorded after 2010. During the cold season (October–March), CPWEs were most common in Klaipėda (5.3 events/decade), whereas during the warm season (April–September), the highest frequency was recorded in Kaunas (6.0 events per decade). CPWE frequency increased slightly at all three stations over the study period.

Keywords: compound climate events, drought, precipitation, heatwave, wind

▶ POLLEN GRAINS AS BIOINDICATORS OF URBAN ENVIRONMENTAL QUALITY

ŽIEDADULKĖS – MIESTŲ APLINKOS KOKYBĖS BIOINDIKATORIAI

Austė Noreikaitė, Ingrida Šaulienė
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: English

Urbanization, industrial activity, and climate change are altering the composition of the atmosphere and increasing concentrations of air pollutants, thereby exerting a significant impact on bioaerosol components. Pollen grains are not only plant reproductive units but also biologically active elements of bioaerosols that can absorb atmospheric pollutants and respond to environmental changes at morphological, biochemical, and molecular levels. Owing to the complex ornamentation and lipophilic properties of the exine, pollen grains can accumulate various pollutants on their surfaces, making them promising bioindicators of environmental quality.

The aim of this study was to evaluate the morphological characteristics of alder (*Alnus* spp.) pollen in areas exposed to different levels of anthropogenic impact using scanning electron microscopy (SEM).

Pollen samples were collected from a natural forest ecosystem and from an area affected by anthropogenic activities. SEM analysis was used to assess pollen morphometric parameters, surface ornamentation, signs of deformation, and the presence of foreign particles on the pollen surface.

Preliminary results indicate differences between pollen grains formed under contrasting environmental conditions. Pollen grains collected from the anthropogenically affected area more frequently exhibited foreign particles on their surfaces and more pronounced alterations in surface structure than those collected from the natural forest ecosystem. These changes may be associated with the effects of atmospheric pollutants and their interactions with pollen surfaces.

The findings contribute to research on urban climate and environmental quality by demonstrating the sensitivity of bioaerosol components to anthropogenic impacts and supporting the potential use of pollen as a bioindicator in studies assessing environmental quality and ecosystem services.

Keywords: alder pollen, scanning electron microscopy (SEM), air pollution, bioindication

FACTORS AFFECTING URBAN HEAT ISLAND DEVELOPMENT DURING A HEATWAVE PERIOD IN THE BALTUPIAI REGION (VILNIUS, LITHUANIA)

VEIKSNIAI, LEMIANTYS MIESTO ŠILUMOS SALOS FORMAVIMĄSI KARŠČIO BANGOS METU VILNIAUS BALTUPIŲ RAJONE

Paulo Pereira

Mykolas Romeris University, Lithuania

Presentation language / Pranešimo kalba: English

An urban heat island (UHI) forms when urban areas are warmer than the surrounding rural areas. These differences can be amplified during heat waves due to interactions among high temperatures, topography, and urban characteristics. Here, we assessed the factors affecting UHI development in a small district located in Vilnius (Baltupiai) during a heatwave day (29-06-2026).

Temperature, relative humidity, and air pollutants were measured using a portable device along an approximately 6 km route crossing urban and forested areas (6398 data points collected) during the late afternoon. To understand the factors that can affect UHI development, we considered covariates such as latitude, longitude, particulate matter 2.5 (PM2.5), relative humidity, tree cover density, imperviousness, slope, and aspect. For statistical analysis, the data values were standardised using the min-max normalization. To assess the factors that affected UHI, an ordinary least squares (OLS) regression was applied.

The results showed that, on average, the temperature measured was 39.11 °C, with a maximum of 42.22 °C and a minimum of 33.3 °C. The OLS regression yielded an adjusted R^2 of 0.82, indicating that the covariates were a good proxy for temperature. None of the covariates was redundant (variance inflation factor <7.5). The best temperature predictors were the relative humidity (-0.87), followed by PM2.5 (-0.17) and the slope (-0.14). The standardised residuals followed the normal distribution, showing that the model is not biased.

Overall, and as expected, densely built-up areas had higher temperatures than forested areas, with differences of up to 9 °C – a substantial contrast given the small size of the study area. Another important aspect is that the street's orientation influenced the temperature. In east-west oriented streets, the temperature was higher than in those oriented north-south.

Keywords: urban heat island, heatwave, urban fabric, forest

▶ ADVANCING URBAN FLOOD RESILIENCE UNDER CLIMATE CHANGE: ESTONIAN CONTRIBUTIONS TO THE ECCO PROJECT

MIESTŲ ATSPARUMO POTVYNIAMS STIPRINIMAS KLIMATO KAITOS SĄLYGOMIS: ESTIJOS INDĖLIS Į ECCO PROJEKTĄ

Mait Sepp, Piia Post, Tiia Pedusaar, Tanel Voormansik, Kristel Uiboupin
University of Tartu, Estonia

Presentation language / Pranešimo kalba: English

The overall objective of the Enhancing Resilience in a Changing Climate through Comprehensive Urban Flood Design (ECCO) project is to strengthen climate adaptation by developing design metrics and values relevant to heavy precipitation, urban flooding, and compound flood events under current and future climate conditions. To achieve this objective, a consortium of researchers from Norway, Denmark, Latvia, and Estonia was established. The project runs from 2024 to 2027 under the coordination of Anita Verpe Dyrørdal and is co-funded by the EU Water4All Partnership. Estonia is represented in ECCO by the University of Tartu's Centre for Climate Research, which contributes to all five work packages (WPs), including WP1 (Stakeholder Engagement and Communication) and WP5 (Project Management and Coordination).

WP2, Precipitation Statistics, aims to provide high-resolution spatial and temporal statistics on extreme precipitation events relevant to urban flooding. The University of Tartu contributes by developing weather-radar-based methods to identify areas of exceptionally high rainfall intensity from weather radar observations. A key objective is the creation of a reliable database of heavy rainfall events to support the estimation of rainfall return periods.

Within WP3, Hydrological Modelling, the Mähe Stream in eastern Tallinn was selected as a case study. The Distance Distribution Dynamics Model (Skaugen and Onof, 2014) was applied to assess hydrological characteristics and flood risks. The results demonstrate that the model performs well in a highly modified urban catchment. The analysis further indicates that extreme hydrometeorological conditions may generate flood risks along the historical stream channel, which is currently a densely populated area.

WP4 focuses on Compound Events. In Estonia, research activities concentrate on coastal flooding in Narva-Jõesuu and Pärnu. Flooding at both locations results from combinations of several relatively rare drivers and therefore provides characteristic examples of compound events.

Keywords: ECCO project, urban climate, extreme precipitation, urban flooding, compound events

▶ URBAN CLIMATOLOGY IN ESTONIA: PROGRESS AND CHALLENGES

MIESTŲ KLIMATOLOGIJA ESTIJOJE: PAŽANGA IR IŠŠŪKIAI

Mait Sepp, Kadri Vilumaa, Hannes Tõnisson, Katre Luik
Tallin University, Estonia

Presentation language / Pranešimo kalba: English

One of the earliest known Estonian studies to highlight the warming effect of urban environments was published by Kaarel Kirde in 1939. The urban heat island effect in Tallinn was later investigated in the 1970s and 1980s by climatologist Andres Tarand, who found winter temperature differences of up to 8 °C between the city and its surroundings. These studies remain among the few historical examples of urban climate research in Estonia. During the Soviet period, microclimatic research was conducted almost exclusively to support agriculture.

Over the past decade, however, interest in urban climatology has grown significantly. A turning point came with the preparation of the National Climate Change Adaptation Action Plan, launched in 2014. Today, all major Estonian universities, together with several private companies, have expertise in urban climatology, including satellite-based urban heat island analysis, urban climate modelling, and the development of automatic weather station networks.

Despite this progress, research remains sporadic and largely dependent on small-scale projects and student theses. The main reason is the limited public awareness of the health risks associated with heat waves and their amplification in urban areas, resulting in weak societal demand for systematic urban climate research.

One recent example is the KUUMUS (HEAT) project, funded by Tallinn University and running from 2025 to 2026. The project investigates microclimatic conditions in several urban environments, including major traffic corridors, children's playgrounds, and the Tallinn University campus, using a monitoring network of 14 weather stations equipped with more than 50 sensors.

Preliminary results reveal considerable heat-related risks. On sunny days, playground surfaces temperatures can reach 70 °C. A pronounced urban heat island has also been detected around the university campus, where air temperatures remain at hazardous levels for several hours longer than at the official weather station outside the city.

Keywords: urban climatology, Estonia, Tallinn, urban heat islands, children's playgrounds

URBAN CLIMATE AND BIOAEROSOLS: ASSESSMENT OF AIRBORNE POLLEN VARIABILITY

MIESTŲ KLIMATAS IR BIOAEROZOLIAI: ORO PASKLIDUSIŲ ŽIEDADULKIŲ KINTAMUMO VERTINIMAS

Ingrida Šaulienė, Laura Šukienė
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Airborne pollen is typically considered in the context of allergenic exposure. However, in urban environments, it can also act as a biological indicator of climate impacts. Urban plants are exposed to the city's specific thermal regimes, altered humidity, wind fields, precipitation patterns, air pollution, and management-driven vegetation changes. Urban plants respond to these environmental factors, potentially affecting flowering, pollen release, and the presence of pollen in the atmosphere. Consequently, aerobiological records collected during flowering seasons can provide a complementary perspective on urban climate dynamics that is rarely captured by conventional monitoring alone.

The variability of airborne pollen in an urban environment was assessed using more than two decades of continuous observations from a volumetric pollen trap. Daily pollen data spanning 2005–2025 were integrated with key meteorological variables. A Random Forest modelling framework was selected to explore relationships between weather conditions and pollen concentrations, to identify the relative importance of meteorological predictors, and to evaluate the potential of weather and pollen variables for detecting atypical episodes.

Results demonstrate that airborne pollen records constitute a unique and underutilised archive of urban environmental change. These findings support the development of climate-sensitive urban greening strategies and strengthen the role of bioaerosol data in assessing and anticipating the impacts of the urban climate.

This study was conducted within the framework of Contract No. (1.57) 15600-SU-4166.

Keywords: aerobiological observations, meteorological drivers, machine learning, allergenic pollen, flowering

Ore pasklidusios anemofilinių augalų žiedadulkės dažniausiai tiriamos siekiant įvertinti jų keliamą alergeninį krūvį ir nustatyti jo mažinimo galimybes. Tačiau miesto aplinkoje jos taip pat gali būti naudojamos kaip biologinis klimato poveikio indikatorius. Miesto augaliją veikia miestui būdingas šiluminis režimas, pakitusios drėgmės sąlygos, vėjo laukai ir kritulių režimas, oro tarša bei želdinių priežiūros lemiami augalijos pokyčiai. Augalai reaguoja į šiuos aplinkos veiksnius, todėl gali kisti jų žydėjimas, žiedadulkių išsiskyrimas ir žiedadulkių kiekis atmosferoje. Vegetacijos metu surinkti aerobiologiniai duomenys gali suteikti papildomos informacijos apie miesto klimato dinamiką, kurios vien įprastinėmis stebėsenos priemonėmis neįmanoma gauti.

Ore pasklidusių žiedadulkių kintamumas miesto aplinkoje vertintas remiantis 2005–2025 m. vykdytais nepertraukiamais stebėjimais, naudojant tūrinę žiedadulkių gaudyklę. Kasdieniai žiedadulkių duomenys buvo susieti su pagrindiniais meteorologiniais kintamaisiais. Atsitiktinių miškų (angl. Random Forest) metodas pasirinktas siekiant ištirti meteorologinių sąlygų ir žiedadulkių koncentracijos sąsajas, nustatyti santykinę meteorologinių elementų svarbą bei įvertinti meteorologinių ir žiedadulkių kintamųjų tinkamumą netipiniams epizodams nustatyti.

Rezultatai atskleidžia, kad žiedadulkių stebėjimų duomenys sudaro vertingą, tačiau iki šiol nepakankamai naudojamą miesto aplinkos pokyčių duomenų archyvą. Gauti rezultatai sudaro prielaidas kurti į klimato sąlygas atsižvelgiančias miestų želdinimo strategijas ir pagrindžia platesnį bioaerolių duomenų naudojimą vertinant bei numatant miesto klimato poveikį.

Tyrimas atliktas įgyvendinant sutartį Nr. (1.57) 15600–SU–4166.

Raktiniai žodžiai: aerobiologiniai stebėjimai, meteorologiniai veiksniai, mašininis mokymasis, alergizuojančios žiedadulkės, žydėjimas

► ASSESSMENT OF THE SOCIOECONOMIC RISK OF COMPOUND FLOODS IN KLAIPĖDA UNDER A CHANGING CLIMATE

SUDĖTINIŲ POTVYNIŲ SOCIOEKONOMINĖS RIZIKOS VERTINIMAS KLAIPĖDOS MIESTE KLIMATO KAITOS SĄLYGOMIS

Erika Vasiliauskienė, Inga Dailidienė
Klaipėda University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Sea-level rise and the growing frequency of extreme hydrometeorological events associated with climate change are increasing both the likelihood and potential consequences of compound flooding in coastal cities. Compound floods occur when two or more flood-generating drivers interact simultaneously or within a short period of time, producing a combined effect that may exceed the impact of each driver acting independently. In Klaipėda, compound flooding in the lower reaches of the Danė River results from the interaction between high river discharge and wind-driven extreme water levels in the Klaipėda Strait. Over the longer term, this process is further intensified by sea-level rise in the Baltic Sea. Therefore, it is essential to identify climate change adaptation measures in advance to reduce vulnerability of urban areas, strengthen urban resilience, and prevent potential socioeconomic losses. The aim of this study was to assess the socioeconomic risk posed by an extreme compound flood in residential districts of Klaipėda and to identify priority areas for adaptation measures.

An extreme compound flood scenario was developed using the HEC–RAS hydrodynamic model. In this scenario, a projected long-term sea level rise of 1 m was added to the water level in the Klaipėda Strait

corresponding to a 1% annual exceedance probability, resulting in a modelled water level of 3 m. The simulated flood extent was analysed in the ArcGIS Pro environment using spatial data on residential districts, buildings, road infrastructure, population, business entities, and cultural heritage assets. Socioeconomic risk was assessed across five domains: buildings, road infrastructure, population, business entities, and cultural heritage assets. A separate risk sub-index was calculated for each domain, incorporating both the magnitude of impact and relative exposure. Overall risk levels were determined using a composite socioeconomic risk index developed according to four priority-setting scenarios.

The highest composite socioeconomic risk was identified in central Klaipėda, where the largest concentrations of residents, infrastructure, economic activity, and cultural heritage assets are found along the banks of the Danė River. The spatial distribution of risk remained consistent across all analysed scenarios, indicating that these areas can be reliably prioritized for the implementation of climate change adaptation measures. The composite index enables urban areas to be compared according to their overall socioeconomic risk and can support decisions on long-term urban development, infrastructure protection, and the reduction of socioeconomic losses.

Keywords: compound floods, socioeconomic risk, climate change, climate change adaptation, composite risk index

Klimato kaitos sąlygomis kylantis jūros lygis ir dažnėjantys ekstremalūs hidrometeorologiniai reiškiniai didina sudėtinių potvynių tikimybę ir galimų jų padarinių mastą pakrančių miestuose. Sudėtiniai potvyniai susidaro tuomet, kai vienu metu arba artimu laikotarpiu sąveikauja du ar daugiau potvynį lemiančių veiksnių, o jų bendras poveikis gali būti didesnis nei kiekvieno veiksnio atskirai. Klaipėdoje tokių potvynių formavimąsi Danės žemupyje lemia padidėjusio upės debito ir vėjo sukeltų ekstremalių vandens lygio pakilimų Klaipėdos sąsiauryje sąveika, kurią ilgalaikėje perspektyvoje sustiprina Baltijos jūros lygio kilimas. Todėl svarbu iš anksto numatyti prisitaikymo prie klimato kaitos priemones, kurios mažintų teritorijų pažeidžiamumą, stiprintų miesto atsparumą ir padėtų išvengti galimų socioekonominės rizikos nuostolių. Tyrimo tikslas – įvertinti ekstremalaus sudėtinio potvynio socioekonominę riziką Klaipėdos miesto gyvenamuosiuose rajonuose ir nustatyti prioritėtines teritorijas prisitaikymo priemonėms.

Ekstremalaus sudėtinio potvynio scenarijus sudarytas taikant HEC-RAS hidrodinaminį modelį. Pagal šį scenarijų prie 1 % metinės viršijimo tikimybės Klaipėdos sąsiaurio vandens lygio pridėtas galimas 1 m ilgalaikis kilimas, todėl modeliuotas vandens lygis siekė 3 m. Sumodeliuota potvynio zona analizuota ArcGIS Pro aplinkoje pagal gyvenamuosius rajonus, pastatų, kelių infrastruktūros, gyventojų, verslo subjektų ir kultūros paveldo objektų erdvinius duomenis. Socioekonominė rizika vertinta penkiose srityse: pastatų, kelių infrastruktūros, gyventojų, verslo subjektų ir kultūros paveldo objektų. Kiekvienai sričiai apskaičiuotas atskiras rizikos subindeksas, apimantis poveikio mastą ir santykinį poveiktumą, o bendras rizikos lygis nustatytas taikant kompleksinį socioekonominės rizikos indeksą pagal keturis prioritetų scenarijus.

Didžiausia kompleksinė socioekonominė rizika nustatyta centrinėje Klaipėdos dalyje, kur Danės upės pakrantėse sutelkta daugiausia gyventojų, infrastruktūros, ekonominės veiklos ir kultūros paveldo objektų. Rizikos pasiskirstymas išliko nuoseklus visuose analizuotuose scenarijuose, todėl

nustatytos teritorijos gali būti pagrįstai išskiriamos kaip prioritetinės įgyvendinant prisitaikymo prie klimato kaitos priemones. Sukurtas kompleksinis indeksas leidžia palyginti miesto teritorijas pagal bendrą socioekonominės rizikos lygį ir gali būti taikomas pagrindžiant ilgalaikės miesto plėtros, infrastruktūros apsaugos bei socioekonominių nuostolių mažinimo sprendimus.

Raktiniai žodžiai: sudėtiniai potvyniai, socioekonominė rizika, klimato kaita, prisitaikymas prie klimato kaitos, kompleksinis rizikos indeksas

THEMATIC SESSION 3

Social and demographic development of cities and regions: challenges and opportunities during turbulent times

3 TEMINĖ SESIJA

Socialinis ir demografinis miestų ir regionų vystymasis: iššūkiai ir galimybės sudėtingais laikais

▶ DIFFERENTIATED SOCIO-DEMOGRAPHIC CHANGE: MAPPING URBAN SHRINKAGE AND REGIONAL RESILIENCE IN LATVIA

SKIRTINGI SOCIODEMOGRAFINIAI POKYČIAI: MIESTŲ MAŽĖJIMO IR REGIONŲ ATSPARUMO LATVIJOJE KARTOGRAFINĖ ANALIZĖ

Edvards Jurgis Auzāns, Māris Bērziņš, Niks Stafeckis
University of Latvia

Presentation language / Pranešimo kalba: English

Urban shrinkage has emerged as a significant research focus in Europe over recent decades, primarily due to demographic changes such as ageing populations, low fertility rates, and internal migration towards economically robust regions. Although there is extensive literature addressing the causes, consequences, and policy responses associated with urban shrinkage, the research predominantly concentrates on metropolitan areas and large cities. Consequently, second-tier and small towns remain underexplored. This research gap is particularly pronounced in the countries of the Baltic Sea Region, where demographic decline coincides with economic restructuring, challenging the resilience of cities and regions. Latvia, which has undergone profound demographic and socioeconomic change since the post-socialist transition, offers a relevant context for examining spatially differentiated shrinkage patterns and the uneven capacity of urban areas to adapt. The study analyses urban shrinkage across Latvian urban areas using demographic, economic, and social indicators reflecting population change, labour market conditions, and urban functions. Principal Component Analysis (PCA) was applied to identify the key dimensions underlying shrinkage processes and to reduce data complexity, after which cluster analysis grouped urban areas with similar characteristics, enabling a typology of urban shrinkage. The results reveal pronounced spatial heterogeneity across Latvia: PCA identifies multiple dimensions associated with demographic decline and economic restructuring, while cluster analysis distinguishes several groups of urban areas with differing shrinkage intensities.

and trajectories, ranging from severe multidimensional decline to more moderate or selective forms. These patterns highlight uneven development and resilience within the Latvian urban system. Urban shrinkage in Latvia is therefore a differentiated and multidimensional process shaped by demographic and economic factors, and the proposed typology underscores the need for context-sensitive, place-based policies that strengthen the resilience of shrinking cities and regions, while providing a foundation for future comparative research across Europe.

Keywords: urban shrinkage, regional resilience, PCA, cluster analysis, Latvia

► FROM SEASONAL RHYTHMS TO GEOPOLITICAL UNCERTAINTY: VISUAL STORYTELLING IN LATVIA'S PERIPHERAL REGIONS

NUO SEZONINIŲ RITMŲ IKI GEOPOLITINIO NEAPIBRĒŽTUMO: VIZUALUS PASAKOJIMAS APIE LATVIJOS PERIFERINIUS REGIONUS

Sindija Balode-Kraujiņa, Elīna Apsīte-Beriņa, Zaiga Krišjāne
University of Latvia

Presentation language / Pranešimo kalba: English

Non-metropolitan "left-behind" areas are routinely framed through narratives of decline, yet residents actively negotiate structural disadvantage and sustain meaningful local lives. Drawing on the Horizon Europe Re-Place project, this study compares two Latvian localities – Roja, a coastal settlement in Kurzeme, and Rogovka, a rural village in Latgale – to examine how place is experienced, represented, and continuously reconfigured through everyday practice, seasonal rhythms, and geopolitical uncertainty.

We employ qualitative fieldwork prioritizing visual methodologies to document landscapes, infrastructures, and human mobility across time. Visual methods move beyond recording physical environments to illuminate the social and symbolic dimensions of place, capturing ephemeral lived experiences through multisensory documentation and metaphorical storytelling. This approach treats place identity as dynamic and relational, acknowledges the researcher's interpretive presence, and transcends both language barriers and conventional academic confines by fostering affective audience engagement with geographic theories.

Comparing the two sites reveals distinct temporalities shaping place attachment and belonging. In Roja, seasonality fundamentally structures social life: cycles of tourism and migration produce recurring transformations between summer vitality and winter quietness, through which local identities are negotiated via rhythms of departure and return. In Rogovka, a longstanding image of rural peacefulness has been sharply disrupted by the proximity of war in Ukraine; drone incursions into Latvian airspace have introduced new landscapes of insecurity, prompting residents to reassess mobility, belonging, and long-term settlement.

The findings demonstrate that visual storytelling is a powerful analytical lens for revealing the interplay between seasonal rhythms, geopolitical rupture, and lived experience. In doing so, they offer a richer, more grounded account of how peripheral places are continuously produced and reimagined – one that resists reduction to dominant narratives of decline.

Keywords: visual methods, left-behind areas, Latvia, place identity

▶ TRAJECTORIES OF POPULATION AGEING IN LATVIA, 2016–2025: A FINE-SCALE SPATIAL SEQUENCE ANALYSIS FOR REGIONAL RESILIENCE

GYVENTOJŲ SENĖJIMO TENDENCIJOS LATVIJOJE 2016–2025 m.: DETALI ERDVINĖ SEKŲ ANALIZĖ REGIONŲ ATSPARUMO KONTEKSTE

Māris Bērziņš, Zaiga Krišjāne, Edvards Jurgis Auzāns, Niks Stafeckis
University of Latvia

Presentation language / Pranešimo kalba: English

Population ageing is transforming the demographic foundations of urban areas and regions. However, it is often represented by singular, static indicators that fail to reveal the processes through which these areas have developed their current age structure. This study offers a process-based, spatial reading of ageing in Latvia, one of Europe's fastest-depopulating states, across the past decade. Ageing is conceptualised not as a cross-sectional level but as a trajectory through successive age states, operationalised by sequence analysis at fine territorial resolution. The prevailing pattern reveals a pronounced disparity between the Rīga metropolitan region and the non-metropolitan regions. The capital and its surrounding commuter belt maintain a youthful demographic profile due to continuous in-migration. In contrast, the non-metropolitan regions, particularly the eastern Latgale periphery and peripheral areas of Kurzeme and Vidzeme, exhibit older and more rapidly ageing populations. Two key observations emerge from this analysis. Firstly, localities that currently exhibit similar levels of ageing may have reached this stage through distinct developmental pathways. Consequently, the geography of ageing should be interpreted as a series of trajectories rather than a static gradient, thereby incorporating a life-course perspective into regional demographic studies. Second, at a fine scale ageing operates below conventional administrative units, so that even within non-metropolitan regions neighbouring localities diverge and aggregate readings conceal heterogeneity. Framing ageing as processual and scale-sensitive bears directly on regional-resilience theory and place-based policy, and offers a transferable framework generalisable to other shrinking regions.

Keywords: population ageing, demographic change, spatial trajectories, sequence analysis, regional resilience, Latvia

▶ THE SECOND HOME OWNERS AS AGENTS OF CHANGE IN SHRINKING REGIONS OF LITHUANIA

ANTRŲJŲ NAMŲ SAVININKŲ ĮTAKA PERIFERINIŲ KAIMIŠKŲ REGIONŲ RAIDAI

Donatas Burneika¹, Barbara Jaczewska^{1,2}, Edis Kriaučiūnas¹, Viktorija Baranauskienė¹

¹Lithuanian Centre for Social Sciences, Lithuania

²University of Warsaw, Poland

Presentation language / Pranešimo kalba: English

The research seeks to understand how the multi-local life of urban residents can affect the development of those rural areas where their second homes are located. This will help to understand the direction in which rural regions of Lithuania can develop, where depopulation processes are particularly threatening. Residents with second homes in peripheral areas, as micro-level actors, can have a significant impact on the development trajectories of small communities. Such places are characterized by a lack of human resources, leadership fatigue, and a lack of active community members. So far, the impact of second-home residents was studied in several European countries, but results were rather ambiguous and place-specific. The research will aim to determine the extent of multi-local lifestyle and the role of such residents, and the conditions under which this role may increase. We hope to increase an understanding of the complex relationships between people and different places and to find the right solutions for future regional and local policies.

Keywords: second-homers, multilocality, Lithuania, shrinking region

▶ CHALLENGES TO RESILIENT REGIONAL DEVELOPMENT OF BULGARIA: INCOME INEQUALITY, LABOUR-MARKET VULNERABILITY, AND SOCIAL EXCLUSION

ATSPARIOS REGIONINĖS PLĖTROS IŠŠŪKIAI BULGARIJOJE: PAJAMŲ NELYGYBĖ, DARBO RINKOS PAŽEIDŽIAMUMAS IR SOCIALINĖ ATSKIRTIS

Dessislava Dimitrova Poleganova¹, Velimira Asenova Stoyanova¹, Nadezhda Borisova Ilieva¹, Vasil Pandurski²

¹National Institute of Geophysics, Geodesy, and Geography-Bulgarian Academy of Sciences, Bulgaria

²South-West University 'Neofit Rilski', Bulgaria

Presentation language / Pranešimo kalba: English

Constantly widening spatial inequalities have become increasingly important challenges for resilient regional development in Bulgaria, especially in the context of persistent demographic decline, dynamic labour market restructuring, and increasing risk of social exclusion. Although productive employment is usually considered a key mechanism for reducing poverty, recent trends in the country

show that participation in the labour market does not always guarantee adequate living standards, particularly in economically weaker or peripheral regions and households with low work intensity and educational attainment.

The paper analyses the current challenges to resilient regional development of Bulgaria by examining the complex interrelations between income levels and inequality, labour market performance, educational attainment, social deprivation, and the effectiveness of social transfers. The study investigates the spatial disparities dynamics on the NUTS 3 level (districts) by applying cluster analysis (Ward hierarchical and k-means) based on a set of selected socioeconomic indicators (for 2020 and 2024), which are conceptually related but capture different dimensions of the uneven spatial development of the country. Spearman's rank correlation is used as a supplementary tool to strengthen the methodological justification of the clustering and to examine the internal relations among the indicators and assess whether the chosen framework captures the overlapping or complementary aspects of territorial disparities.

The paper argues that the regional inequalities in Bulgaria should be understood not only as a result of insufficient income but also as an outcome of unequal access to employment and public services, educational disadvantages, and lack of effective social protection. As the socioeconomic disparities in Bulgaria have a clear spatial pattern (capital vs. periphery), the policy for combating them requires integrated and territorially sensitive measures, which encompass quality employment, skills development, legislative changes, successful economic transformation into a green and smart economy, and improved access to public facilities.

Keywords: regional development, labour market, socioeconomic disparities, poverty, Bulgaria

► SKILLED BUT APART: CONCEPTUALISING THE SOCIO-ECONOMIC SEGREGATION OF NON-EU MIGRANTS IN LITHUANIAN CITIES IN UNSTABLE TIMES

KVALIFIKUOTI, TAČIAU ATSKIRTI: NE ES ŠALIŲ MIGRANTŲ SOCIOEKONOMINĖS SEGREGACIJOS LIETUVOS MIESTUOSE SAMPRATA NESTABILUMO LAIKOTARPIU

Özge Nur Erdem

Lithuanian Center for Social Sciences, Lithuania

Presentation language / Pranešimo kalba: English

Like many countries in the region, Lithuania has recently faced declining birth rates, ongoing emigration, and an ageing population. Against this background, its labour migration policy has gradually shifted. Access has been tightened for lower-skilled workers and eased for the highly skilled, who are now exempt from the general immigration quota (OECD, 2025). Yet relatively little is known about how high-skilled non-EU migrants live within Lithuanian cities, and even defining this group remains an open conceptual question. This paper develops a framework for studying residential

socio-economic segregation of high-skilled non-EU migrants in Lithuania and asks how far existing data can support it.

The study draws on Bourdieu's theory of capital. From this perspective, segregation is not only spatial. It also reflects the unequal distribution of economic, social, and cultural capital that shapes migrants' access to housing, professional networks, and urban life. A central methodological argument concerns measurement. "High-skilled" is difficult to operationalise. The EU Blue Card is often used as a proxy but depends mainly on salary thresholds and shortage-occupation lists rather than skill itself, and captures only part of the skilled population. The paper therefore proposes defining this group through occupation (ISCO-08 groups 1-2) and tertiary education (ISCED 6-8), combining the register-based data of Statistics Lithuania, the Migration Department (MIGRIS), and Eurostat. Read together, these sources suggest the population's possible size, profile, and distribution, and reveal gaps for future fieldwork. The paper argues that segregation is both a challenge and a diagnostic for urban resilience: high-skilled migration is promoted as a remedy for population decline, yet unaddressed social distance may gradually erode retention. As a small, peripheral EU country, Lithuania offers a valuable perspective often absent from debates centred on large Western cities.

Keywords: socio-economic segregation, high-skilled migration, non-EU migrants, Bourdieu, Lithuania

▶ INVESTMENTS IN LATVIAN REGIONS AND GROWING COMPANIES OUTSIDE RIGA: TRENDS AND CASE STUDIES

INVESTICIJOS LATVIJOS REGIONUOSE IR AUGANČIOS ĮMONĖS UŽ RYGOS RIBŲ: TENDENCIJOS IR ATVEJŲ STUDIJOS

Māris Fogelis

University of Latvia

Presentation language / Pranešimo kalba: English

Most of economic activity in Latvia is concentrated in Riga and its closest satellite counties and towns. All banks and major non-bank finance companies are headquartered in the capital. However, despite geopolitically challenged environment and depopulation of peripheral regions in Latvia, recent years have seen the emergence or continuation of successful companies with headquarters and primary operations located in regional areas.

This study aims to identify and analyse trends in which industries and in which locations these companies are represented. Special attention is given to companies that have established new facilities or factories outside Riga in recent years.

The research also explores the geographic origins of their investors to identify patterns influencing capital allocation decisions, with special attention given to investments from Lithuania.

Findings indicate that regional areas attract more manufacturing and production companies compared to service-oriented firms.

Case studies of successful regional companies provide valuable insights for researchers and economic development planners what attract investment to regional areas and reveal opportunities for regional growth.

Keywords: investments, regions, Latvia

▶ DO WE MEET THEIR EXPECTATIONS? EXPECTATION-EXPERIENCE GAPS AMONG INTERNATIONAL STUDENTS IN LATVIA

AR IŠPILDOME JŲ LŪKESČIUS? TARPTAUTINIŲ STUDENTŲ LŪKESČIŲ IR PATIRČIŲ ATOTRŪKIS LATVIJOJE

Ieva Jegermane

University of Latvia

Presentation language / Pranešimo kalba: English

International student mobility is increasingly extending beyond traditional study destinations, creating a growing need to understand how students evaluate their experiences in emerging host countries. While student satisfaction has been widely studied, less attention has been paid to the relationship between students' pre-arrival expectations and their post-arrival experiences. This study examines expectation-experience gaps among international students in Latvia and explores how these gaps vary by country of origin and field of study.

The analysis is based on survey data from 1,809 international students enrolled in HEI in Latvia. The study explores whether students' experiences in Latvia meet their initial expectations and examines differences across countries of origin and fields of study.

The findings reveal considerable variation in expectation-experience gaps across student groups. While some groups report experiences that exceed their initial expectations, others demonstrate negative gaps, indicating unmet expectations. Differences are evident not only across countries of origin but also across fields of study, suggesting that a combination of geographical, educational, and social factors shapes international student experiences. The results further indicate that international students should not be treated as a homogeneous population, as both national background and academic specialisation influence how study destinations are evaluated.

Keywords: international student mobility, expectation-experience gap, student experiences, non-traditional study destinations, Latvia

▶ SMARTSTORES IN RURAL REGIONS OF GERMANY – REESTABLISHMENT OF FOOD SUPPLY OPERATIONS BY DIGITIZED SOLUTIONS

IŠMANIOSIOS PARDUOTUVĖS VOKIETIJOS KAIMO REGIONUOSE: MAISTO PRODUKTŲ TIEKIMO PASLAUGŲ ATKŪRIMAS PASITELKiant SKAITMENIZUOTUS SPRENDIMUS

Ulrich Jürgens

University of Kiel, Germany

Presentation language / Pranešimo kalba: English

Digitization in retail beyond e-commerce has triggered innovative advances. A prime example of this is the development of autonomous stores and vending machines, which are expanding in number in rural regions of Germany or other European countries and opening up new opportunities for providing basic supplies to the population in peripheral areas. The latter are increasingly subject to the effects of demographic aging and the decline of infrastructure, not only in Germany.

This gives rise to opportunities and risks,

- a) Whether the store format, which is often operated as a cooperative model, will find social acceptance at the governance level of a rural community.
- b) What problems mayors face at the government level in attracting providers of autonomous stores.
- c) Whether this store format will find lasting acceptance and loyalty among customers.

The data collection is based on expert interviews with mayors, planners, politicians, and entrepreneurs, as well as focus group discussions with local citizens in Schleswig-Holstein, Germany's northernmost state. The interviews were conducted in 2025 and 2026 in 15 rural communities that have experience with so-called smartstores or have focused their plans on opening a smartstore to secure their local food supply.

Experience to date shows that, in contrast to earlier village shops with sometimes limited loyalty to the village shopkeeper and limited opening hours, new forms of flexible and spontaneous shopping have become established. 24/7 opening hours and accelerated checkout through technical and cashless solutions are perceived positively across generations. These experiences are already being observed by other rural communities and may lead to the reestablishment of village shops, some of which have not existed for decades. The latter are evolving into pilot stores with the aim of introducing technological innovations into established supermarkets in urban areas, thereby radically transforming traditional forms of local grocery shopping.

Keywords: retail, digitization, rural areas, local supply, governance

AGE STRUCTURE, WORKING-AGE POPULATION AND EMPLOYMENT DYNAMICS IN BULGARIA – REGIONAL ANALYSIS

AMŽIAUS STRUKTŪRA, DARBINGO AMŽIAUS GYVENTOJAI IR UŽIMTUMO DINAMIKA BULGARIJOJE: REGIONINĖ ANALIZĖ

Boris Kazakov¹, Aleksandra Ravnachka², Marina Raykova¹, Poli Roukova¹

¹National Institute of Geophysics, Geodesy, and Geography - Bulgarian Academy of Sciences

²Institute for Population and Human Studies - the Bulgarian Academy of Sciences

Presentation language / Pranešimo kalba: English

The paper analyses the dynamics of several indicators related to the labour market in Bulgaria, such as age structure, working-age population, number of employed, employment coefficient, and economically active population, in recent years. The study is based on National Statistical Institute data on the selected indicators, which have been statistically analysed in order to establish the ongoing trends and the regional disparities across the 28 NUTS 3 regions of Bulgaria. The results show that several groups of regions can be outlined: regions where the employment coefficient increases; regions where the employment coefficient decreases; regions where the working-age population decreases quicker than the number of employed; regions where the number of employed decreases quicker than the working-age population; regions where both the employment coefficient and the share of economically active population increases, etc. An analysis of all groups of regions has been done in terms of factors and conditions which cause the observed trends. In conclusion, it can be argued that only a few regions in the country exhibit actual improvement of the labour market conditions, whereas in many seemingly improved regions, that improvement is a mere statistical effect of demographic decline.

Keywords: regional analysis, employment coefficient, labour market, working-age population

FORMER CENTRAL FARM SETTLEMENTS IN RURAL LITHUANIA: HISTORICAL LEGACY, CURRENT STATE, AND DEVELOPMENT PERSPECTIVES

BUVUSIOS CENTRINĖS ŪKIŲ GYVENVIETĖS LIETUVOS KAIME: ISTORINIS PAVELDAS, DABARTIS IR RAIDOS PERSPEKTYVOS

Edis Kriaučiūnas

Lithuanian Centre for Social Sciences, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Following the restoration of Lithuania's independence, the country inherited a rural settlement system that had been developed during the Soviet period and adapted to the needs of collective farming. At

that time, rural development was primarily focused on central farm settlements, of which there were 1,110 in Lithuania by the end of the Soviet era. These central settlements served as the backbone of rural development, concentrating most essential public services and community facilities. Their demographic and social development during the Soviet period followed specific patterns, which will be briefly discussed in this presentation.

The collapse of the Soviet agricultural system had a more profound impact on rural residents than on urban populations. While unemployed city dwellers could seek new employment without changing their place of residence, rural inhabitants lost not only their jobs in collective farms but also the opportunity to find work within their settlement or its immediate surroundings. This situation triggered significant outmigration from rural areas, the scale of which approximately corresponded to the loss of jobs in the agricultural sector (Kriaučiūnas & Burneika, 2019).

The public service infrastructure that had existed in former central farm settlements declined rapidly. The first facilities to disappear were those directly associated with collective farms, including canteens, kindergartens, and cultural centers. Subsequently, post offices, medical stations, and schools were closed, while public transport services were gradually reduced. This process of decline was particularly evident in peripheral regions (Baranauskienė & Daugirdas, 2017; Baranauskienė, 2021; Kriaučiūnas et al., 2024). The presentation will discuss the key features of the socioeconomic and demographic development of former central farm settlements and examine their future prospects.

Keywords: Lithuania, rural development, central farm settlements, settlement geography

Atkūrus nepriklausomybę Lietuva paveldėjo sovietmečiu kurtą ir kolhoziniam ūkiui pritaikytą kaimo gyvenviečių sistemą. Pagrindinis dėmesys vystant kaimo apgyvenimą anuomet buvo skiriamas centrinėms ūkių gyvenvietėms, kurių sovietmečio pabaigoje Lietuvoje buvo 1110. Būtent centrinės ūkių gyvenvietės buvo kaimo vystymo pagrindas, jose buvo sukoncentruota dauguma būtinųjų viešųjų paslaugų tinklo įstaigų. Centrinį ūkių gyvenviečių demografinė ir socialinė raida sovietmečiu turėjo savo specifikos, kuri bus trumpai aptariama pranešime.

Sovietinio ūkio griūtį kaimo gyventojai priėmė skausmingiau nei miestų gyventojai. Jei miesto gyventojai netekę darbo galėjo jo ieškoti mieste nekeisdami gyvenamosios vietos, tai kaimo gyventojai neteko ne tik darbo kolhoze, bet ir galimybės jį susirasti savo gyvenvietėje ar artimiausioje aplinkoje. Tokia padėtis paskatino emigraciją iš kaimo vietovių, kurios mastai maždaug atitiko darbo vietų žemės ūkio sektoriuje praradimus (Kriaučiūnas, Burneika, 2019).

Buvusiose centrinėse ūkių gyvenvietėse sparčiai nyko buvusi viešųjų paslaugų infrastruktūra. Pirmiausia išnyko visa kas buvo susiję su kolhozais: kolhozų valgyklos, vaikų darželiai, kultūros namai. Po to imti uždarinėti pašto skyriai, medicinos punktai, mokyklos, mažėjo viešojo transporto maršrutų. Visas šis traukimas ypač buvo pastebimas periferijoje (Baranauskienė, Daugirdas, 2017; Baranauskienė, 2021; Kriaučiūnas et al., 2024). Buvusių centrinių ūkių gyvenviečių socio-ekonominės ir demografinės raidos ypatybės bei ateities perspektyvos bus aptariamoms pranešime.

Raktiniai žodžiai: Lietuva, kaimo raida, centrinės ūkių gyvenvietės, gyvenviečių geografija

SCALING DOWN TO THE LOCAL LEVEL: HOUSEHOLD STRATEGIES AND MOBILITY PRACTICES IN NON-METROPOLITAN LATVIA

VIETOS LYGMENS PERSPEKTYVA: NAMŲ ŪKIŲ STRATEGIJOS IR MOBILUMO PRAKTIKOS NEMETROPOLINĖJE LATVIJOJE

Zaiga Krišjāne, Māris Bērziņš, Maija Rozīte
University of Latvia

Presentation language / Pranešimo kalba: English

Non-metropolitan areas, despite differences in geography, institutional frameworks, and migration histories, share several common characteristics, including sustained population loss and ageing, limited and weakly diversified local labour markets, the progressive erosion of essential services in healthcare, education, and transport, and widespread dependence on extra-local systems for basic livelihoods. Against this backdrop, the paper presents a comparative analysis of household strategies and mobility practices in two case study areas located in eastern and western Latvia. Drawing on findings from the REPLACE project, the analysis examines how mobile and immobile households navigate structural peripherality, demographic decline, and the contraction of essential services through everyday economic, social, and spatial practices. Based on more than 80 interviews with migrants, returnees, non-migrants, and incoming newcomers, the study identifies the principal challenges facing households and maps the micro-strategies they deploy across economic, spatial, social, and political domains.

The findings demonstrate that households are not passive recipients of structural decline but active agents who mobilise a diverse repertoire of strategies to sustain their presence in place and manage the consequences of peripherality. Income diversification through a combination of paid employment, farming, seasonal work, self-employment, and remote work emerges as the norm rather than the exception. Commuting and multi-local household arrangements enable access to higher-value labour markets while preserving the advantages of lower-cost rural residence and maintaining family stability. Spatial mobility also plays a crucial role in securing access to services that are increasingly unavailable locally.

Housing conditions reveal important differences between population groups. Non-migrants generally occupy a more secure position, often benefiting from inherited housing and reduced exposure to market pressures. By contrast, migrants, particularly returnees and newcomers, face limited and expensive housing options and frequently rely on adaptive or informal arrangements, with some groups experiencing significant housing precarity.

Keywords: Non-metropolitan areas, mobility, demographic decline

▶ EXPLORING SPATIAL PATTERNS OF INTERNAL MIGRATION IN LATVIA THROUGH SPATIAL AUTOCORRELATION ANALYSIS

VIDINĒS MIGRACIJOS ERDVINIŲ DĒSNINGUMŲ LATVIJOJE TYRIMAS TAIKANT ERDVINĒS AUTOKORELIACIJOS ANALIZĒ

Jānis Krūmiņš, Māris Bērziņš, Zaiga Krišjāne, Niks Stafeckis
University of Latvia

Presentation language / Pranešimo kalba: English

Over the last decade, changes in population distribution have attracted growing scholarly attention, particularly in rapidly expanding metropolitan areas and in rural and peripheral regions facing population decline. Within countries, internal migration has increasingly become the key demographic process influencing how populations are distributed across space, surpassing the effects of fertility and mortality. Although this trend is observed worldwide, its scale and characteristics differ considerably between national contexts.

A substantial body of research has examined migration intensity, composition, and movement flows, yet less attention has been devoted to understanding the spatial structure of internal migration. Spatial autocorrelation techniques offer valuable tools for identifying and assessing spatial patterns, but their use in migration studies remains relatively limited, especially when investigating changes in spatial clustering over time. While recent research has started to incorporate these methods into migration analysis, few studies have explored the temporal evolution of spatial autocorrelation patterns.

This study investigates the spatial dimensions of internal migration in Latvia by applying selected spatial autocorrelation measures. Using Latvia as a case study, the analysis examines three census years (2000, 2011, and 2021) and employs a regular hexagonal grid framework to assess migration patterns at both national and metropolitan scales. The findings contribute to a better understanding of how the spatial organisation of internal migration has changed over time and demonstrate the potential of spatial autocorrelation methods for migration research.

Keywords: internal migration, spatial autocorrelation, census, metropolitan and non-metropolitan regions, Latvia

LITHUANIA – A COUNTRY OF IMMIGRATION? TERRITORIAL FEATURES OF THE DISTRIBUTION OF IMMIGRANTS IN LITHUANIA

LIETUVA – IMIGRACIJOS ŠALIS? TERITORINIAI IMIGRANTŲ SKLAIDOS LIETUVOJE YPATUMAI

Dovilė Krupickaitė, Viltė Kesminaitė
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Since 2019, more people have been arriving in Lithuania than leaving, and since 2022, foreign citizens have made up a larger share of those arriving. Although there are many discussions on incoming migration in the public sphere, studies on the integration of foreigners are being conducted, and the Migration Department under the Government of the Republic of Lithuania provides statistics on general flows of migrants, so far very little attention has been paid to the analysis of the distribution of arrivals. As is known, the issues of integration and public security of arrivals from third countries, especially from more remote countries with different cultures, usually arise due to the territorial concentration of foreigners, usually in major cities. Unfortunately, there is little data that allows for a detailed analysis of the territorial distribution of foreigners in Lithuania. This study is an attempt to combine direct and indirect data to conduct a primary study on the territorial distribution of foreign citizens. The first part of the report discusses the general flows of migrants to Lithuania from different countries, the second discusses the general trends in the distribution of migrants, and the third searches for patterns in the territorial distribution of foreigners in Lithuania.

Keywords: immigration, third-country citizens, territorial dispersion of foreigners, integration of foreigners

Nuo 2019 m. į Lietuvą atvyksta daugiau žmonių negu išvyksta, nuo 2022 m. tarp atvykusiųjų didesnę dalį sudaro užsienio šalių piliečiai. Nors diskusijų dėl atvykstančios migracijos viešojoje erdvėje yra labai daug, atliekami užsieniečių integracijos tyrimai, Migracijos departamentas prie LRV pateikia statistiką apie bendrus migrantų srautus, tačiau iki šiol labai mažai dėmesio skiriama atvykusiųjų pasiskirstymo analizei. Kaip žinia, atvykusių iš trečiųjų, ypač iš atokesnių, skirtingos kultūros šalių integracijos ir visuomenės saugumo temos dažniausiai kyla dėl atvykusiųjų teritorinės koncentracijos, dažniausiai didžiuosiuose miestuose. Deja, duomenų, leidžiančių atlikti išsamią užsieniečių teritorinės sklaidos analizę yra mažai. Šis tyrimas – tai bandymas derinant tiesioginius ir netiesioginius duomenis atlikti pirminį užsienio šalių piliečių teritorinės sklaidos tyrimą. Pirmojoje pranešimo dalyje aptariami bendri migrantų į Lietuvą iš skirtingų šalių srautai, antrojoje aptariamos bendros migrantų sklaidos tendencijos, trečiojoje ieškoma užsieniečių Lietuvoje teritorinės sklaidos dėsningumų.

Raktiniai žodžiai: imigracija, trečiųjų šalių piliečiai, užsieniečių teritorinė sklaida, užsieniečių integracija

MEDIUM-SIZED LITHUANIAN CITY IN TRANSITION: IMMIGRATION, CHALLENGES, AND DEVELOPMENT PROSPECTS

KINTANTIS LIETUVOS VIDUTINIO DYDŽIO MIESTAS: IMIGRACIJA, IŠŠŪKIAI IR RAIDOS PERSPEKTYVOS

Gintarė Pociūtė-Sereikienė, Rūta Ubarevičienė, Donatas Burneika, Simona Ščerbinskaitė, Dovydas Vidzbelis, Viktorija Baranauskienė
Lithuanian Centre for Social Sciences, Lithuania
Lithuanian Geographical Society

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Over the past three decades, the development of Lithuania's medium-sized cities has been shaped by deindustrialization, population decline, and intensive emigration. However, since 2020, new demographic processes have emerged in some of these cities. These changes have been driven by Brexit, the COVID-19 pandemic, return migration, and particularly by the war in Ukraine that began in 2022 and the resulting increase in immigration. Consequently, population decline has slowed, stabilized, or even reversed in some cities that had been losing residents for a prolonged period. At the same time, the social and demographic structure of these cities, their labor markets, demand for public services, and relationships within local communities have been undergoing transformation. The aim of this presentation is to examine the role of third-country immigrants who have arrived in Lithuania's medium-sized cities since 2020 and to assess their potential impact on urban development. The first part of the presentation analyzes recent trends in international migration based on statistical data.

The second part presents preliminary findings from a qualitative study based on semi-structured interviews conducted in one selected medium-sized city. The interview data are used to characterize the emerging profile of immigrants settling in the city, explore the perceptions of local stakeholders toward newly arrived residents, and assess their potential impact on the local labor market, public services, community relations, and the city's long-term development prospects.

The presentation is based on data from the project *"The Lithuanian Urban System: the Impact of Immigration from Third Countries on Development Prospects"* (Contract No. S-LISm-25-27, 29 August 2025), funded by the Research Council of Lithuania.

Keywords: third-country immigrants, medium-sized cities, international migration, urban demographic change, impact of migration on urban development

Lietuvos vidutinio dydžio miestų raidą pastaruosius tris dešimtmečius formavo deindustrializacija, gyventojų skaičiaus mažėjimas ir intensyvi emigracija. Vis dėlto nuo 2020 m. dalyje šių miestų pastebimi nauji demografiniai procesai. Juos paskatino Brexit, COVID-19 pandemija, sugrįžtamoji migracija, o ypač 2022 m. prasidėjęs karas Ukrainoje ir išaugusi imigracija. Dėl šių procesų kai kuriuose ilgą laiką gyventojų netekusiuose miestuose gyventojų skaičius stabilizavosi ar net

pradėjo didėti. Kartu kinta miestų socialinė ir demografinė struktūra, darbo rinka, paslaugų poreikis bei vietos bendruomenių santykiai.

Pranešimo tikslas – atskleisti po 2020 m. į Lietuvos vidutinio dydžio miestus atvykusių trečiųjų šalių imigrantų vaidmenį ir galimą poveikį miestų raidai. Pirmojoje pranešimo dalyje, remiantis statistiniais duomenimis, analizuojamos naujausios tarptautinės migracijos tendencijos.

Antrojoje dalyje pristatomi pirminiai kokybinio tyrimo rezultatai, pagrįsti viename iš pasirinktų vidutinio dydžio miestų atliktais pusiau struktūruotais interviu. Interviu duomenys pasitelkiami siekiant apibūdinti mieste susiformuojantį imigranto profilį, atskleisti vietos veikėjų požiūrį į naujai atvykusius gyventojus ir įvertinti jų galimą poveikį miesto darbo rinkai, viešosioms paslaugoms, bendruomeniniams ryšiams bei ilgalaikėms raidos perspektyvoms.

Pranešimas parengtas Lietuvos mokslo tarybos finansuojamo projekto „Lietuvos miestų sistema: imigracijos iš trečiųjų šalių įtaka raidos perspektyvoms“ (sutarties Nr. S-LISm-25-27 2025-08-29) duomenimis.

Raktiniai žodžiai: trečiųjų šalių imigrantai, vidutinio dydžio miestai, tarptautinė migracija, miestų demografinė kaita, migracijos poveikis miestų raidai

MEASURING SOCIOECONOMIC DEPRIVATION IN AIR POLLUTION EXPOSURE: A SCOPING REVIEW OF METHODOLOGICAL APPROACHES

SOCIOEKONOMINIO NEPRITEKLIUS VERTINIMAS ORO TARŠOS POVEIKIO KONTEKSTE: METODOLOGINIŲ PRIEIGŲ APŽVALGA

Catarina Isabel Relvas Ferrão

University of Coimbra, Portugal

Presentation language / Pranešimo kalba: English

Air pollution is a major environmental and public health concern, contributing substantially to the global burden of disease. However, its effects are not experienced equally. Growing evidence indicates that socioeconomically disadvantaged populations tend to face both higher levels of exposure and greater susceptibility to associated health impacts. These disparities are shaped not only by environmental conditions but also by broader structural factors that influence vulnerability and the capacity to respond. This scoping review aims to synthesise existing evidence on the relationship between socioeconomic deprivation, air pollution, and health outcomes, with a particular focus on identifying recent methodological approaches and limitations in the literature.

The review includes 36 studies published between 2015 and 2025. Most of the studies were conducted in Europe and North America. Across the literature, the definition and measurement of socioeconomic deprivation vary considerably depending on the conceptual frameworks adopted, leading to differences in the spatial scales, domains, indicators, and weighting approaches used to construct

deprivation indices. Additionally, several recurring methodological challenges have been reported: limitations in exposure assessment (often based on place of residence), reliance on aggregated data, and a lack of individual-level data. These factors limit the interpretation of results and may lead to errors and distortions in the conclusions. The findings of this review provide a methodological overview of current practices in constructing and applying deprivation indices within air pollution and health research. By identifying commonly used indicators, methodological choices, and recurring challenges, this review may help researchers select, adapt, or develop deprivation indices better aligned with their study contexts while improving transparency and comparability in future environmental health research.

Keywords: deprivation indices, environmental inequalities, air pollution exposure, scoping review, health determinants

► SPATIAL, SOCIO-DEMOGRAPHIC AND ECONOMIC TRANSFORMATIONS OF LITHUANIA'S COASTAL AND LAGOON-SIDE SETTLEMENTS

LIETUVOS PAJŪRIO IR PAMARIO GYVENVIEČIŲ ERDVINĖS, SOCIODEMOGRAFINĖS IR EKONOMINĖS TRANSFORMACIJOS

Eduardas Spiriajevas, Erika Sklema
Klaipėda University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / *Lietuvių*

Lithuania's coastal and lagoon-side territories are characterized by uneven territorial and structural development, intensive suburbanization processes, increasing built-up development, and the concentration of economic activities in locations distant from major urban centres. Shrinking population and changes in demographic structure, as well as transformations in both public infrastructure and private service networks, are being determined. In coastal resorts and lagoon-side areas, recreational and tourism functions are becoming increasingly important, the significance of second homes is growing, and other settlement functions are also changing. These processes result in complex spatial transformations, the analysis of which requires a comprehensive approach in geographical studies of Lithuania's coastal and lagoon-side settlements. A holistic assessment of these transformations is important from both geographical and spatial planning perspectives, as it contributes to a better understanding of territorial disparities, settlement development processes, and possible future development scenarios.

In scientific literature, spatial transformations are frequently examined through the concepts of urbanization, peripherality, population migrations, recreational specialization of territories, and differentiation of regional development. Research conducted by Lithuanian geographers has addressed processes such as population change, suburbanization, regional disparities, peripherality, and economic transformations.

However, there is a lack of comprehensive studies that examine the spatial, socio-demographic, and economic transformations of Lithuania's coastal and lagoon-side settlements at the territorial level. Existing research is often fragmented, highlighting the need for an integrated assessment. Territorial development trends shape the coastal region. Lithuania's regional policy does not recognize the coastal region as a separate territorial unit (taxon). Therefore, comprehensive studies integrating population geography, settlement geography, demography, and spatial planning are particularly relevant for identifying future development scenarios for coastal and lagoon-side settlements.

Keywords: coastal and lagoon-side territories, settlements, population, transformations

Lietuvos pajūrio ir pamario teritorijoms būdingas netolygus teritorinis ir struktūrinis vystymasis, vyksta intensyvūs suburbanizacijos procesai, pakrančių teritorijų užstatymai, ekonominių veiklų koncentracija nuo miestų nutolusiose vietovėse. Dalyje pajūrio ir pamario gyvenviečių stebimas gyventojų skaičiaus mažėjimas, visuomenės demografinės struktūros pokyčiai, viešosios infrastruktūros ir privataus sektoriaus paslaugų tinklo transformacija. Pajūrio kurortinėse teritorijose stiprėja rekreacinės ir turizmo funkcijos, didėja antrųjų būstų reikšmė, keičiasi ir kitos gyvenviečių funkcijos. Šie procesai sąlygoja sudėtingas erdvines transformacijas, kurių analizė reikalauja kompleksinio požiūrio taikymo Lietuvos pajūrio ir pamario teritorijų geografiniuose tyrimuose. Kompleksinis transformacijų vertinimas yra svarbus tiek geografiniu, tiek teritorijų erdvinio planavimo požiūriu, siekiant geriau suprasti teritorinius netolygumus, gyvenviečių vystymosi kryptis bei galimus tolesnės raidos scenarijus.

Mokslinėje literatūroje erdvinės transformacijos dažnai analizuojamos per urbanizacijos, periferiškumo, gyventojų migracijų, teritorijų rekreacinės specializacijos bei regioninės diferenciacijos konceptus. Lietuvos geografo darbuose nagrinėjami gyventojų kaitos, suburbanizacijos, regioninių netolygumų, periferiškumo bei ekonominių pokyčių procesai.

Trūksta kompleksinių tyrimų, apimančių Lietuvos pajūrio ir pamario gyvenviečių erdvines, sociodemografines ir ekonomines transformacijas teritoriniu lygmeniu, atliekami fragmentiški tyrimai, todėl būtina kompleksiskai įvertinti skirtingose pajūrio ir pamario teritorijose vykstančius procesus, jų intensyvumą bei formuojamas pakrantės regiono teritorinės raidos kryptis. Lietuvos regioninėje politikoje pakrantės regionas nėra išskirtas kaip atskiras taksonas, todėl kompleksinio pobūdžio tyrimai sąveikoje tarp gyventojų ir gyvenviečių geografijos, demografijos ir erdvinio planavimo yra aktualūs siekiant nustatyti tolesnius pakrantės teritorijų raidos scenarijus.

Raktiniai žodžiai: pakrantės, gyvenvietės, gyventojai, transformacijos

TRANSFORMATION OF THE INDUSTRIAL ZONE IN BUDAPEST THROUGH NEW HOUSING CONSTRUCTION

BUDAPEŠTO PRAMONINĖS ZONOS TRANSFORMACIJA VYSTANT NAUJŲ BŪSTŲ STATYBĄ

Balázs Szabó, Zoltán Kovács

HUN-REN Research Centre for Astronomy and Earth Sciences, Hungary

Presentation language / Pranešimo kalba: English

Within post-socialist cities, the most intensive transformation has taken place in the former industrial zone where – in contrast to the city centre – there are no areas and buildings protected by historic preservation laws. The probability of public protests against relocation of residents is low because there are hardly residents. In most cases, the local governments are eager to attract investors to the area.

In Budapest, a significant part (...) of the city belongs to the brownfield zone. It consists of large contiguous areas along both banks of the Danube and around the inner residential belt on the Pest side, and also some smaller pockets in the city's outer districts. Investors appeared as early as the 1990s, but the transformation became really intense only in the 2000s. New office buildings and residential neighbourhoods were built first, then, large public projects (e.g. sport complexes) began to appear in the 2010s.

The former industrial area is the most diverse zone of the city. Old, pre-war workers' housing estates are located here right next to new (post-1990) residential complexes. The old population and the new inhabitants have very few common characteristics.

The authors focus on the housing constructions in the brownfield area. They explore where the new neighbourhoods are located and which characteristics of the areas (e.g. public transport connections, proximity of the river or the inner city) had an impact on their location.

Another research question is how the size and composition of new residential areas changed during the last three decades, whether the new residential estates became bigger, smaller, or more diverse. Finally, the authors address the question of how and why the housing prices in brownfield residential estates differ from those in old houses and in other areas.

Keywords: Brownfield, housing, Budapest, regeneration

THE ROLE OF RURAL COMMUNITY-BASED ORGANIZATIONS IN TODAY'S CONTEXT: CAN THEY REDUCE SPATIAL INEQUALITIES AND ENHANCE THE WELL-BEING OF LOCAL COMMUNITIES?

KAIMO BENDRUOMENINIŲ ORGANIZACIJŲ VAIDMUO ŠIANDIENINIAME KONTEKSTE. AR JOS PAJĖGIOS SUMAŽINTI ERDVINIUS SKIRTUMUS IR PRISIDĖTI PRIE VIETOS GYVENTOJŲ GEROVĖS?

Simona Ščerbinskaitė¹, Viktorija Baranauskienė^{1,2}

¹Lithuanian Centre for Social Sciences, Lithuania

²Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Rural population decline is observed not only in Lithuania but also across Europe, North America, and other regions affected by industrialization. This process is driven by long-term demographic trends, urbanization, and various social and economic factors. This presentation focuses on how the structures of public and private service providers are transforming in rural areas amid demographic decline. As both population numbers and service networks shrink, particularly in peripheral regions, rural community-based organizations (RCBOs) increasingly contribute to reducing territorial exclusion by attempting to compensate for service shortages and support the well-being of local residents and communities. In this context, RCBOs are analyzed as local-level adaptation mechanisms and centres of social capital formation. However, their capacity to perform these functions depends on their level of activity.

The study is based on data from the State Enterprise Centre of Registers of Lithuania. The analysis examines both the network of RCBOs and their ability to compensate for missing services by evaluating revenues generated from various funding sources. The activity and capacity of RCBOs are assessed through a case study comprising 80 RCBOs from 16 Lithuanian municipalities. The analysis includes the strongest- and weakest-performing rural-type municipalities, selected based on municipal well-being and quality-of-life assessments conducted in Lithuania, based on those produced by the Vilnius Institute for Policy Analysis and the Ministry of Finance of the Republic of Lithuania.

The results reveal that, in Lithuania, RCBOs only partially compensate for the declining service infrastructure in rural areas by organizing activities related to social inclusion, non-formal education, health promotion, and support for vulnerable groups. Nevertheless, this potential is realized unevenly. The main reason lies in the spatial context in which these organizations operate, i.e., rural settlements experiencing unfavourable demographic and socioeconomic conditions, particularly those related to limited human resources.

Keywords: rural community-based organization, accessibility of services, territorial exclusion, well-being

Gyventojų skaičiaus mažėjimas kaimiškose vietovėse stebimas ne tik Lietuvoje, bet ir Europoje, Šiaurės Amerikoje ir kitose industrializacijos paveiktuose regionuose. Vykstančiam procesui įtakos turi ilgalaikės neigiamos demografinės tendencijos, urbanizacija ir socialiniai bei ekonominiai veiksniai. Šiame pranešime skirsime dėmesį, kaip vykstant neigiamoms demografinėms tendencijoms transformuojasi paslaugas teikiančių viešojo ir privačiojo sektoriaus struktūra kaimiško tipo vietovėse. Tad traukiantis gyventojų ir paslaugas teikiančių įstaigų tinklui dažnai periferinėse šalies teritorijose prie atskirties mažinimo prisideda kaimo bendruomeninės organizacijos (KBO), kurios bando kompensuoti paslaugų trūkumą ir prisidėti prie gyventojų ir teritorijos gerovės vystymo. Tad šiame kontekste KBO analizuojamos kaip vietos lygmens prisitaikymo mechanizmai ir socialinio kapitalo formavimo centrai, o kiek jos yra pajėgios – priklauso nuo jų aktyvumo.

Atliekant tyrimą remtasi VĮ Registrų centro duomenimis, kur analizė apima tiek KBO tinklą, tiek KBO gebėjimą kompensuoti trūkstamas paslaugas – analizuojami iš įvairių finansavimo šaltinių pritrauktų pajamų dydžiai. KBO aktyvumas ir gebėjimai vertinami pasitelkiant atvejo analizę (80 KBO iš 16 Lietuvos savivaldybių). Analizei atrinktos silpniausios ir stipriausios kaimiško tipo savivaldybės remiantis Lietuvoje sudaromais savivaldybių gerovės ir gyvenimo kokybės vertinimais (pvz., VŠĮ Vilniaus politikos ir analizės institutu bei LR Finansų ministerijos).

Atliktas tyrimas atskleidė, kad Lietuvos atveju KBO tik iš dalies kompensuoja mažėjančią paslaugų infrastruktūrą kaimo vietovėse, organizuodama veiklą, susijusią su socialine įtrauktimi, neformaliojo švietimu, sveikatos stiprinimu ir pažeidžiamų grupių parama. Nepaisant to, šis potencialas realizuojamas nevienodai. Pagrindinė priežastis slypi erdviniam kontekste, kuriame šios organizacijos veikia, t. y., kaimo gyvenvietėse, patiriančiose nepalankių demografinių, socialinių ir ekonominių sąlygų, ypač susijusių su žmogiškaisiais ištekliais.

Raktiniai žodžiai: kaimo bendruomeninė organizacija, paslaugų pasiekiamumas, teritorinė atskirtis, gerovė

SOCIAL PROXIMITY AND PUBLIC SERVICE PROVISION IN LOW DENSITY NEIGHBORHOOD OF VILNIUS

SOCIALINIS ARTUMAS IR VIEŠOSIOS PASLAUGOS MAŽO UŽSTATYMO TANKUMO VILNIAUS KAIMYMYSTĖJE

Simona Ščerbinskaitė, Rūta Ubarevičienė, Donatas Burneika
Lithuanian Centre for Social Sciences, Lithuania

Presentation language / Pranešimo kalba: English

This presentation explores everyday life in Kalnėnai, a rapidly developing neighbourhood on the outskirts of Vilnius, where many essential public and private service networks are still underdeveloped. It combines a residential survey (n = 230) with semi-structured interviews to examine how mobility,

access to services, and community participation shape everyday life in a peripheral urban setting. The survey investigates residents' travel behaviour, use of local services, perceptions of neighbourhood quality, and community engagement, while interviews with local stakeholders and municipal representatives provide insights into service provision, neighbourhood development, and governance.

While the 15-minute city provides a valuable framework for promoting sustainable urban development, its underlying assumptions may overlook the diverse ways in which suburban residents organize their daily lives, balance mobility choices, and construct a sense of place. The case of Kalnėnai demonstrates that urban sustainability depends not only on the distribution of services and the density of population, but also on residents' capacity to adapt.

Keywords: social proximity, social services, 15 minute city, Vilnius

▶ ACROSS CONTINENTS, BEYOND HISTORY: HISTORICAL GOVERNANCE LEGACIES IN RURAL DEVELOPMENT

PERŽENGIANT ŽEMYNŲ IR ISTORIJOS RIBAS: ISTORINIO VALDYMO PALIKIMO REIKŠMĖ KAIMO PLĖTRAJ

Greta Šimkienė

Vytautas Magnus University, Lithuania

Presentation language / Pranešimo kalba: English

Contemporary rural development is influenced by numerous economic, demographic, institutional and geographical factors. However, considerably less attention has been devoted to how historical political transformations continue to shape present-day rural governance. This study explores whether different socialist trajectories can lead to similar long-term consequences for rural development despite fundamentally different geographical, political and cultural contexts.

To address this question, the research compares two deliberately contrasting cases from different continents—Lithuania (Europe) and Tanzania (Africa). Lithuania experienced socialism as an externally imposed political system, whereas Tanzania voluntarily adopted African socialism through the Ujamaa policy following the 1967 Arusha Declaration. Although their historical origins differed, both countries underwent extensive state-led rural transformation. Villages were reorganised, land management systems were restructured, public services were concentrated, and rural development was largely directed through centralised planning. Consequently, while socialism was politically "chosen" in Tanzania, many transformation processes were implemented in a similarly top-down manner as in Lithuania.

The study employs a qualitative comparative research design. Empirical evidence consists of twelve semi-structured interviews with policymakers, researchers and rural development practitioners conducted in Tanzania, complemented by an analysis of Lithuania's historical and institutional

development. The analysis focuses on four governance dimensions: the role of the state, decision-making processes, community participation and the distribution of power among development actors.

The findings indicate that, despite contrasting historical trajectories and geographical contexts, both cases reveal remarkably similar consequences for rural development governance. Long-term state intervention influenced community participation, decision-making practices and perceptions of the state's responsibility for local development. The study does not suggest that historical experience is the sole explanation for contemporary rural development differences; rather, it argues that the legacy of socialist transformation should be considered as one of the factors contributing to current rural governance practices. By comparing two geographically distant yet historically comparable cases, the study demonstrates how different political pathways may produce similar governance outcomes.

Keywords: rural development, rural governance, historical governance legacies, state intervention, comparative geography

► TERRITORIAL DIFFERENTIATION OF VOTER TURNOUT IN LITHUANIA ACROSS DIFFERENT GENDER AND AGE GROUPS, 2014–2024

RINKIMINIO AKTYVUMO TERITORINĖ DIFERENCIACIJA LIETUVOJE SKIRTINGOSE LYTIES IR AMŽIAUS GRUPĖSE 2014 – 2024 m.

Dovydas Vidzbelis

Lithuanian Centre for Social Sciences, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / *Lietuvių*

The territorial divide in voter turnout that emerged in Lithuania more than two decades ago and was characterized by a West–East pattern has gradually been transforming into a centre–periphery model more typical of Western democracies. Migration, urbanization, and other socioeconomic processes are actively reshaping Lithuania's political landscape. Analysis of the territorial differentiation of voter turnout reveals pronounced spatial differences in electoral behaviour that are associated not only with place of residence but also with demographic characteristics. From a gender perspective, women demonstrated higher voter turnout than men across all types of elections, including presidential, parliamentary, and municipal council elections, and in all Lithuanian municipalities. The smallest gender differences were observed in the largest cities, Vilnius and Kaunas. In certain neighbourhoods of these cities, men even voted more actively than women. In contrast, in smaller towns and municipalities located farther from major urban centres, women's turnout significantly exceeded that of men. The largest gender gaps were identified in peripheral border municipalities. Voter turnout also varied considerably across age groups. The likelihood of participating in elections increased with age. As in many other countries, retirement-age voters constituted the most active electoral group in Lithuania, particularly in peripheral municipalities. The opposite trend was observed among younger voters, who participated more actively in Lithuania's largest cities. Consequently, differences in turnout

between age groups were smaller and electoral behaviour more stable in major urban areas and their suburban zones. Particularly large disparities between young and older voters were identified in Northern Lithuania and in several municipalities of Western Lithuania. These trends suggest a potential decline in overall voter turnout in these areas in the future if electoral participation among younger generations does not increase.

In summary, differences in voter turnout between gender and age groups were smaller in major cities, suburban areas, and resort municipalities than in peripheral regions. This suggests that areas located farther from the country's main centres experience greater social, economic, and cultural disparities among different demographic groups, which are also reflected in the territorial differentiation of voter turnout.

Keywords: elections, voter turnout, political behaviour, territorial differentiation, demography

Lietuvoje prieš daugiau nei du dešimtmečius susiformavusi rinkiminio aktyvumo teritorinės struktūros takoskyra (Vakarai – Rytai) pastaraisiais rinkimais palaipsniui transformuojasi į Vakarų demokratijoms būdingą centro – periferijos modelį. Migracija, urbanizacija ir kiti socialiniai-ekonominiai procesai aktyviai keičia Lietuvos politinį žemėlapį. Analizuojant rinkėjų aktyvumo teritorinę diferenciaciją Lietuvoje galima pastebėti ryškius erdvinius rinkėjų elgsenos skirtumus, susijusius ne tik su gyvenamąja vieta, bet ir su demografinėmis charakteristikomis. Lyties aspektu moterys buvo aktyvesnės už vyrus visuose skirtingo tipo (Prezidento, Seimo, savivaldybių tarybų) rinkimuose bei visose Lietuvos savivaldybėse. Mažiausi skirtumai tarp vyrų ir moterų aktyvumo nustatyti didžiuosiuose miestuose (Vilniuje ir Kaune). Šių miestų tam tikruose mikrorajonuose vyrai balsavo net aktyviau nei moterys. Tuo tarpu mažesniuose miestuose ir savivaldybėse, nutolusiose nuo pagrindinių centrų, moterų aktyvumas reikšmingai viršijo vyrų aktyvumą. Didžiausi lyčių skirtumai fiksuoti periferinėse pasienio savivaldybėse. Skirtingų amžiaus grupių rinkėjų aktyvumas taip pat buvo aiškiai diferencijuotas – kuo vyresni rinkėjai, tuo didesnė tikimybė, kad jie dalyvaus rinkimuose. Pensinio amžiaus rinkėjai Lietuvoje, kaip ir daugelyje kitų pasaulio šalių, buvo aktyviausia rinkėjų grupė, ypač periferinėse savivaldybėse. Priešinga situacija yra su jaunais rinkėjais – jaunimas santykinai aktyviau balsuoja Lietuvos didmiesčiuose. Todėl didžiuosiuose miestuose ir jų suburbanizuotose zonose skirtumai tarp amžiaus grupių buvo mažesni, o rinkėjų elgsena stabilesnė. Šiaurės Lietuvoje bei kai kuriose Vakarų Lietuvos savivaldybėse nustatyti ypač dideli jaunimo ir vyresnio amžiaus rinkėjų aktyvumo skirtumai. Tokios tendencijos rodo galimą bendro rinkėjų aktyvumo mažėjimą šiose teritorijose ateityje, jei jaunimo rinkiminis aktyvumas neaugs.

Apibendrinant galima teigti, kad didžiuosiuose miestuose, priemiestinėse teritorijose ir kurortinėse savivaldybėse skirtingų lyčių bei amžiaus grupių rinkėjų aktyvumo skirtumai buvo mažesni nei periferinėse teritorijose. Tai leidžia daryti prielaidą, kad nuo šalies centrų nutolusiose vietovėse egzistuoja didesni socialiniai, ekonominiai ir kultūriniai skirtumai tarp skirtingų lyčių ir amžiaus grupių, kurie atsispindi ir rinkėjų aktyvumo teritorinėje diferenciacijoje.

Raktiniai žodžiai: rinkimai, rinkėjų aktyvumas, politinė elgsena, teritorinė diferenciacija, demografija

THEMATIC SESSION 4

Geography and geographers in spatial planning

4 TEMINĖ SESIJA

Geografija ir geografai erdviniam planavime

► **PERI-URBAN LANDSCAPES OF TIMIȘOARA: MEMORY, IDENTITY, AND TRANSITIONAL REGENERATION**

TIMIȘOAROS PRIEMIESTINIAI KRAŠTOVAIZDŽIAI: ATMINTIS, TAPATYBĖ IR PEREINAMOJO LAIKOTARPIO REGENERACIJA

Titus Gabriel Almajan

West University of Timisoara, Romania

Presentation language / Pranešimo kalba: English

In the socio-territorial context of post-industrial transitions and uneven development, the peri-urban fringes of Romanian cities such as Timișoara contain fragile, often-abandoned spaces. These interstitial territories—former farmland, brownfields, ecological patches, and degraded heritage zones—are marginalized in planning, yet hold latent cultural, ecological, and symbolic value. This paper examines how memory embedded in material, visual, and ecological fragments can catalyse new spatial practices that contest conventional urban expansion, proposing reinterpretation, occupation, and minimal intervention in line with the European Landscape Convention and the “third landscape”.

Through the case of Timișoara’s metropolitan fringe, the study highlights tensions between speculative suburbanization and symbolic re-appropriation, analysing peri-urban areas as “spaces in motion” shaped by memory and identity. Using a multidisciplinary methodology – spatial analysis, archival mapping, photography, and participatory observation – it proposes strategies to transform overlooked spaces into drivers of resilience, advocating for planning frameworks that value continuity, ordinary heritage, and cultural landscape evolution.

Keywords: peri-urban landscape, memory and identity, third landscape, urban regeneration

IMMERSIVE VIRTUAL REALITY FOR GEOGRAPHY EDUCATION: EXPLORING SMART CITY FUTURES THROUGH SPATIAL LEARNING AND DECISION-MAKING

ĮTRAUKIANTI VIRTUALIOJI REALYBĖ GEOGRAFIJOS UGDYMUĮ: IŠMANIŲJŲ MIESTŲ ATĖITIES TYRINĖJIMAS PER ERDVINĮ MOKYMĄSI IR SPRENDIMŲ PRIĖMIMĄ

Dennis Edler, Katrin Reichert, Devon Klör, Julian Keil, Frank Dickmann
Ruhr-University Bochum, Germany

Presentation language / Pranešimo kalba: English

Immersive Virtual Reality (VR) is increasingly discussed as a promising educational technology, yet its pedagogical value depends on meaningful integration into subject-specific teaching and learning contexts. This presentation introduces a didactically grounded VR learning environment developed for geography education in secondary schools in North Rhine-Westphalia (Germany). The project combines immersive exploration with competence-oriented learning and addresses key challenges of contemporary urban development through the concept of the Smart City.

The VR environment consists of three thematic modules – Smart Mobility, Smart Retail, and Smart Living in a Smart Environment – which allow students to explore present and future urban scenarios from multiple perspectives. The learning design moves beyond visualization by fostering spatial reasoning, critical reflection, and informed decision-making. Learners engage in activities ranging from systematic observation and data collection to quest-based interaction and participatory urban planning. Through 1:1-scale representations, perspective changes and interactive scenario design, students experience urban transformation processes and evaluate alternative development pathways.

The presentation outlines the theoretical and didactic foundations of the project, highlighting how immersive environments can support geography-specific competencies such as spatial orientation, analysis, evaluation, and action competence. Particular attention is given to the integration of VR into existing (German) curricula, differentiated learning pathways, and the relationship between immersive experience and reflective learning.

Using examples from the three VR modules, the presentation demonstrates how immersive technologies can facilitate both exploratory and constructive learning processes. It argues that the educational value of VR lies less in technological novelty than in its subject-specific and pedagogically informed implementation. The project illustrates how immersive learning environments can contribute to the future development of geography education by enabling students to critically engage with issues of sustainability, digitalization, mobility, and urban transformation.

Keywords: virtual reality, smart city, spatial learning, geography education

PUBLIC SPACES IN THE POSTMODERN CITY: THE CASE OF FAST FOOD (KEBAB SHOPS) PHENOMENON IN LITHUANIA

VIEŠOSIOS ERDVĖS POSTMODERNIAME MIESTE: GREITOJO MAISTO ĮSTAIGŲ (KEBABINIŲ) FENOMENAS LIETUVOJE

Adomas Gedvilas, Dovilė Krupickaitė
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: English

The postmodern city is characterised by its indeterminacy, since cities are mainly being shaped by global, national, regional scale processes. This is reflected in the changing significance of traditional public spaces in the urban structure – new types of public spaces are emerging, which can be attributed to the global fast-food culture, for example, the kebab phenomenon, which in each country takes on a glocalization tone. Fast food spaces are dynamic and can be called as ‘everyday spaces’.

The phenomenon of kebab shops has been observed in Lithuania for the past few decades. Kebab shops may be one of the new factors shaping the public spaces of Lithuanian cities. However, there are not many studies in the world that analyse the influence of kebab shops on urban fabric.

The emergence of kebab shops in certain places was often determined by the opportunity to purchase or rent premises there. Often located in peripheral areas of the city, kebab shops frequently maintained their location, because once a stable circle of customers was created, there was no longer any need to compete for them. Currently, 3 main typologies of kebab shops have been established: 1) kiosk, 2) snack bar, 3) restaurant. This reflects the segmentation of the kebab market. Kebab shops reflect the dynamics of everyday space.

At various periods of the existence of kebab shops, their informality was determined by the change of kebab premises, environment or change of kebab shops in relation to the location. The ambiguity of kebab shops and, accordingly, the spaces they form is also created by the cyclicity of customer flows, which can be determined by both natural rhythms of life and individual or external reasons, of which the growing importance of food delivery platforms is noticed.

Keywords: kebab shops, postmodern city, public spaces, informal urbanism

CHILDREN'S SENSORY PRACTICES IN HISTORIC CITY CENTRES: AN ETHNOGRAPHIC STUDY FROM ČESKÝ KRUMLOV

VAIKŲ SENSORINĖS PATIRTYS ISTORINIJOSE MIESTŲ CENTRUOSE: ETNOGRAFINIS TYRIMAS ČESKY KRUMLOVE

Daniel Kaplan

University of Ostrava, Czech Republic

Presentation language / Pranešimo kalba: English

Historic city centres are commonly examined as spaces of heritage, representation, and tourism, from a visitor or resident-perspective. However, within this research children's experiences and everyday engagements with these environments remain largely overlooked. Yet such places are regularly visited by families and constitute an important part of children's encounters with urban space whether as a local or a tourist. Historic centres are often characterized by a high degree of conservation, representational functions, and intensive tourist use, creating specific conditions – both chances and challenges – for children's presence and practices in public space.

This paper explores how children engage with historic urban environments through sensory practices and how these interactions are shaped by the materiality of place and the social regulation of public space. Drawing on the concepts of heritage urbanism, affordances and the methodology of sensory ethnography, the study investigates the ways children appropriate, explore, and experience historic settings through touch, movement, sound, and other embodied forms of engagement. Rather than focusing on child-oriented infrastructure, the research examines how children interact with environments that were not primarily designed with their needs in mind.

The research is based on ethnographic fieldwork conducted in the historic centre of Český Krumlov, UNESCO World-heritage site and one of the Czech Republic's most visited heritage destinations. Data were collected through structured observation, field notes, photographic documentation, and short interviews with accompanying adults.

Keywords: affordance, sensory practices, historical urban centres, UNESCO

URBAN GAPS AS A DISTINCTIVE FORM OF VACANCY: SPATIAL PATTERNS AND VISUAL IMPACTS IN GERMAN SMALL TOWNS

URBANISTINĖS TUŠTUMOS KAIP SAVITA APLEISTŲ TERITORIJŲ FORMA: ERDVINIAI DĖSNINGUMAI IR VIZUALINIS POVEIKIS VOKIETIJOS MAŽUOSE MIESTUOSE

Bernhard Koeppen¹, Jonas Birke²

¹University of Koblenz, Germany

²University of Bonn, Germany

Presentation language / Pranešimo kalba: English

Building vacancy is mostly assessed in terms of overall rates and also identified via larger “problem areas.” This approach to vacancy does not always consider the specific situation in small towns. It is less a matter of scale than of location and perception, and therefore a focus on isolated cases that shaping the townscape is needed. In an empirical study with citizen science approach, we refer to vacancy surveys of four municipalities within the UNESCO World Heritage Site Upper Middle Rhine Valley in Western-Germany. We classify vacancy patterns and explain homogeneous variants including the visual impact on the townscape. Results show a strong concentration of vacancies in historic town centres, alongside hybrid configurations including isolated cases that coexist with hotspots which sometimes are of high visual impact. We conceptualize our findings as “urban gaps”. Even though the overall rate of vacant buildings of a municipality might not deem to be particularly high, prominent urban gaps do significantly impair the perception, attractiveness and urban quality. We suggest a dual strategy of management: integrated measures concerning clustered locations and larger areas with vacant buildings, and case sensitive approaches for specific urban gaps.

Keywords: vacancy, urban gaps, small towns, visual impact, citizen science

▶ **AN ANALYSIS OF SETTLEMENT PATTERNS FOLLOWING THE POST-SOCIALIST TRANSITION IN POLAND BASED ON MULTI-TEMPORAL GLOBAL HUMAN SETTLEMENT LAYER DATA**

*GYVENVIEČIŲ RAIDOS PO POSOCIALISTINĖS TRANSFORMACIJOS LENKIJJOJE ANALIZĖ
REMIANTIS SKIRTINGŲ LAIKOTARPIŲ „GLOBAL HUMAN SETTLEMENT LAYER“
DUOMENIMIS*

Katarzyna Krasnodębska, Przemysław Śleszyński, Andrzej Affek
Institute of Geography and Spatial Organization Polish Academy of Sciences, Poland

Presentation language / Pranešimo kalba: English

The aim of this study is to examine how the transition from a centrally planned to a market economy influenced the spatial morphology of built-up areas, using Poland as a case study.

We use the multitemporal 100-m resolution Global Human Settlement Layer (GHSL) data representing estimates of built-up surface to calculate a set of landscape metrics describing the configuration of built-up land, such as ‘patch density’, ‘edge density’ or ‘contagion’. We calculate these metrics for the entire area of Poland, using communes with a functional classification as the basic unit of spatial analysis. Subsequently, for the reference years 1975, 1990, 2000, 2015 and 2020, we apply the interrupted time-series analysis to examine the continuity of trends in landscape metrics over time.

The derived time series of landscape metrics reveal clear trajectories of settlement development over

the last five decades. Regional and supra-regional urban centres are characterised by a gradual consolidation of the built environment, whilst rural and suburban areas show a marked increase in landscape fragmentation linked to dispersed built-up expansion. In particular, the steady upward trend in the 'edge density' metric indicates ribbon development in communes at every functional level. Patch density, however, exhibits a different, non-linear trend, with a noticeable break after 1990. These contrasting trajectories point to a systemic reorganisation of settlement patterns in the wake of the socio-economic transformation of the early 1990s. In addition to assessing the morphological consequences of political and economic changes, the proposed framework provides a universal approach to studying the resilience and structural evolution of settlement systems using globally consistent Earth Observation data.

Keywords: settlement patterns, post-socialist transition, landscape metrics, Global Human Settlement Layer, Earth observation

► PRINCIPLES FOR APPLYING GEOGRAPHICAL CONCEPTS IN SPATIAL PLANNING TO OPTIMIZE AGROECOSYSTEM USE

GEOGRAFINIŲ KONCEPCIJŲ TAIKYMO PRINCIPAI ERDVINIAME PLANAVIME OPTIMIZUOJANT AGROEKOSISTEMŲ NAUDOJIMĄ

Julius Mačiulaitis, Jonas Volungevičius
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: English

Contemporary agricultural policy and spatial planning practice face the challenge of reconciling the needs of food production with biodiversity conservation, soil protection, and climate change mitigation objectives. Environmental and agricultural measures are not always coordinated or implemented with sufficient consideration of the natural characteristics, geoecological potential, and ecological sensitivity of different areas.

As a result, the risks of soil degradation and the weakening of ecosystem functions increase, while the ecological stability of landscapes declines. This presentation introduces a geoecologically based concept for optimising agroecosystem use by integrating the concepts of the Nature Frame, geoecological potential, ecological sensitivity, and agroecological potential.

Based on research conducted in Lithuania, the study examines how agroecosystems can be optimised through landscape structure by considering the natural characteristics of territories, the ecological functions that should be developed and maintained, agricultural objectives, and environmental priorities. Particular attention is given to the application of the Nature Frame concept in agroecosystem development and the optimisation of land-use intensity, as well as to its links with landscape planning principles.

The study demonstrates how a geographical approach can provide an integrated methodological basis for spatial planning, enabling decisions on agroecosystem development to be grounded in the principles of landscape functioning. Such an approach provides a basis for more effective integration and coordination of agricultural policy and environmental objectives, thereby contributing to the development of more sustainable agroecosystems.

Keywords: spatial planning, agroecosystems, Nature Frame, geoecological potential, landscape structure

▶ ADAPTIVE REUSE OF BUCHAREST'S INDUSTRIAL HERITAGE: POST-EVALUATION, INTEGRATED PLANNING AND STAKEHOLDER ENGAGEMENT

BUKAREŠTO PRAMONĖS PAVELDO PRITAIKYMAS NAUJOMS REIKMĖMS: REZULTATŲ VERTINIMAS, INTEGRUOTAS PLANAVIMAS IR SUINTERESUOTŲJŲ ŠALIŲ ĮTRAUKIMAS

Florentina-Cristina Merciu, Cornel Păunescu, George-Laurențiu Merciu, Bogdan Suditu
University of Bucharest, Romania

Presentation language / Pranešimo kalba: English

The adaptive reuse of industrial heritage sites represents an important spatial planning approach through which European post-socialist cities seek to valorise derelict spaces, reduce pressure on urban land, and integrate industrial memory into contemporary urban regeneration process. In Bucharest, former industrial heritage buildings and sites have followed different trajectories after 1990, ranging from abandonment and demolition to partial functional conversion or transformation into cultural, commercial, residential, and service-oriented spaces. However, the success of adaptive reuse cannot be assessed solely by the introduction of a new function, but also through the capacity of interventions to preserve heritage value, respond to community needs, and integrate coherently into the urban structure.

This paper proposes a post-evaluation analysis of the adaptive reuse of selected industrial heritage assets in Bucharest, examining the extent to which these interventions have contributed to urban regeneration, the preservation of place identity, and the creation of accessible and functional spaces. The research is based on a geographical and integrated approach, combining spatial analysis, direct observation, urban planning documentation, and the interpretation of the relationship between reused industrial sites and the surrounding urban fabric.

The results aim to highlight the main limitations of current adaptive reuse practices, including fragmented planning decisions, insufficient involvement of local communities, and the dominance of economic interests over cultural and social values. In this context, the paper argues for the need for integrated planning involving public administration, urban planners, heritage specialists, geographers, investors, owners, civic organisations, and local communities.

Improving adaptive reuse process requires clear post-intervention evaluation criteria, stronger public-private partnerships, protection of the identity-defining elements of industrial sites, and their integration into broader cultural, economic, and social networks. Thus, adaptive reuse can become a strategic instrument of spatial planning and a means of valorising abandoned industrial heritage.

Keywords: industrial monuments, post-socialist city, spatial governance, place identity, urban transformation

► MIDDLE-SIZED PORT CITIES, TERRITORIAL RECOMPOSITION AND SUSTAINABILITY: RESIDENTS' REPRESENTATIONS OF THE PORT-CITY INTERFACE IN LE HAVRE

VIDUTINIO DYDŽIO UOSTAMIESČIAI, TERITORINĖ PERTVARKA IR TVARUMAS: GYVENTOJŲ POŽIŪRIS Į UOSTO IR MIESTO SĄVEIKĄ HAVRE

Arnaud Serry

Le Havre Normandy University, France

Presentation language / Pranešimo kalba: English

This paper examines how sustainability is negotiated in a middle-sized port city through residents' representations of the port-city interface. Drawing on the case of Le Havre, the paper explores how the port remains a major identity marker and economic resource while also becoming a space of tension, selective appropriation and uneven accessibility. The study is based on a survey of 316 respondents and 205 mental maps, which reveal a hybrid and socially differentiated interface shaped by everyday practices, territorial recomposition and contrasting perceptions of port functions.

The paper argues that sustainability in port cities cannot be reduced to environmental performance alone. In Le Havre, it also includes social acceptability, spatial justice, accessibility, and the capacity to reconcile productive port functions with urban quality of life. The analysis shows that the port is widely valued as an economic asset, but that knowledge of its institutions and mediation devices remains limited, suggesting a gap between symbolic attachment and everyday understanding. This gap matters for resilient urban governance, because sustainable transition depends not only on infrastructure and planning, but also on the ability to build shared representations of the port-city future. By focusing on a middle-sized port city, the paper contributes to comparative reflection on how resilience is experienced outside the major global hubs. It highlights the specific role of intermediate port cities as territories where logistics, landscape, heritage, and urban life must be negotiated simultaneously. The Le Havre case offers an empirical basis for discussing sustainable port-city transitions in Europe, particularly in relation to governance, public mediation, and the reconfiguration of waterfront interfaces.

Keywords: sustainability, port-city, interface, middle-sized, spatial planning

IMPLEMENTATION OF SMART CITY INITIATIVES IN LITHUANIA

IŠMANIŲJŲ MIESTŲ INICIATYVŲ ĮGYVENDINIMAS LIETUVOJE

Daiva Verkulevičiūtė-Kriukienė

Klaipėda University, Lithuania

Presentation language / Pranešimo kalba: English

The development of smart cities aims to improve the quality of life of their residents and transform the environment. These processes are inseparable from smart technologies, as well as the application of geographic information systems (GIS), remote sensing and spatial data analysis. Smart city planning often uses tools such as Big Data, creates digital twins of cities, and views a smart city as a complex system in which people live in a sustainable environment, feel safe and participate in decision-making.

By addressing many environmental, technological and social challenges, smart cities improve the quality of life of people in areas such as smart lighting, traffic flow management, improving the transport system, optimizing waste collection, etc.

Although many cities have great potential to transform into smart cities, urban spaces often face unequal conditions for implementing smart technologies, optimizing transport flows, or improving environmental quality. The opportunities to deploy smart sensors, control traffic, or optimize waste collection are not the same in different parts of the city. Not all residential areas or social groups have equal access to the services provided by a smart city. As a result, inequalities in living conditions and quality of life are forming in urban areas.

Smart city projects and ideas have been implemented in Lithuanian cities for several years. They include both large and small cities. As indicated by the Ministry of Economy and Innovation of the Republic of Lithuania (EIMIN, 2024), the three largest cities in the country together form a national “network of smart centers”, where advanced transport, energy, management and environmental solution systems are being implemented. In addition, smart city social and technological systems are being planned and implemented in other cities in the country. Therefore, the task naturally arises to find out what type of smart city projects have already been implemented in Lithuania, as well as what spaces they cover. Systematizing such information helps to understand the current situation and predict the need for future projects in urban spaces.

Keywords: smart cities, Lithuania, urban space, quality of life

▶ WHEN MOBILITY BECOMES A RISK: LESSONS FROM THE CARACAL REGION FOR TERRITORIAL PLANNING AND SOCIAL COHESION

KAI MOBILUMAS TAMPA RIZIKOS VEIKSNIU: KARAKALO REGIONO PATIRTYS TERITORIJŲ PLANAVIMUI IR SOCIALINEI SANGLAUDAI

Sorina Voiculescu¹, David Marian Chasciar¹, Ionel-Florin Palaghia¹, Alexandru Rusu², Octavian Groza², Daniel Luchేశ¹, Margareta Amy Lelea^{1,3}, Ioan Sebastian Jucu¹, Anamaria Dalea¹

¹West University of Timișoara, Romania

²Alexandru Ioan Cuza University, Romania

³The German Institute of Tropical and Subtropical Agriculture, Germany

Presentation language / Pranešimo kalba: English

The 2019 disappearance of two teenage girls, Alexandra Măceșanu and Luiza Melencu, while hitchhiking to Caracal exposed not only a tragic criminal case but also deeper structural vulnerabilities in rural Southern Romania. For many young people in the region, daily travel to Caracal for education, services, shopping, or leisure depends on informal mobility practices because public transportation is limited and essential functions are concentrated in a single urban center.

This paper argues that the Caracal case should be understood as a manifestation of territorial inequality, inadequate transportation infrastructure, institutional failure, and gendered vulnerability, rather than as an isolated event. Located in one of Romania's most vulnerable areas for human trafficking, the region illustrates how peripheral rural communities, demographic decline, and limited accessibility can turn everyday mobility into a source of social risk.

The research adopts a mixed-methods approach. Quantitative analyses draw on demographic, educational, and mobility statistics and are complemented by GIS mapping of school catchment areas, commuting flows, transport accessibility, and spatial inequalities within the Caracal functional region. Qualitative evidence is drawn from student and resident questionnaires, semi-structured interviews with local stakeholders, and a content analysis of national and local press coverage examining how the case shaped public discourse on rural safety, gender, and institutional responsibility.

By integrating spatial, social, and media perspectives, the paper contributes to debates on territorial justice and rural resilience. It argues that safe mobility should be recognized as a fundamental dimension of territorial planning and social cohesion, requiring integrated transport, educational, and social policies to reduce the vulnerabilities faced by peripheral communities.

Keywords: territorial planning, rural-urban mobility, gender vulnerability, social cohesion

▶ PLACE-MAKING FOR SAFETY: LESSONS FROM THE CARACAL REGION FOR TERRITORIAL PLANNING AND SOCIAL COHESION

VIETOKŪRA SAUGUMUI: KARAKALO REGIONO PAMOKOS TERITORIJŲ PLANAVIMUI IR SOCIALINEI SANGLAUDAI

Sorina Voiculescu¹, Ionel-Florin Palaghia¹, David Marian Chasciar¹, Alexandru Rusu², Octavian Groza², Ioan Sebastian Jucu¹, Daniel Luchేశ¹, Margareta Amy Lelea^{1,3}, Anamaria Dalea¹

¹West University of Timișoara, Romania

²Alexandru Ioan Cuza University, Romania

³The German Institute of Tropical and Subtropical Agriculture, Germany

Presentation language / Pranešimo kalba: English

The 2019 disappearance of teenagers Alexandra Măceșanu and Luiza Melencu during a trip to Caracal revealed more than a tragic crime; it exposed how territorial inequalities, poor mobility systems, institutional failures, and safety neglect can turn daily movement into a risk. In Caracal's rural areas, scarce public transport and the clustering of services in the town center make informal mobility vital yet dangerous, especially for young women.

Using Jane Jacobs' "eyes on the street" (1961), Edward Relph's sense of place (1976), Oscar Newman's defensible space (1972), and Mimi Sheller's mobility justice (2018), this paper explores how place-making for safety offers a comprehensive view of how spatial planning, mobility, governance, and social cohesion interconnect. Rather than viewing the Caracal incident as an isolated crime, it is seen as the result of long-term socio-spatial dynamics in rural outskirts, where population decline, poor access, and fragmented governance heighten gendered risks.

This research combines demographic, educational, and mobility data with GIS visualizations of accessibility, school zones, and commuting trends. These findings are supported by surveys, interviews with local stakeholders, and media analysis.

The study advocates incorporating safety into territorial planning through place-making to enhance social cohesion, make daily mobility safer, and reduce vulnerabilities in rural areas—lessons applicable far beyond Romania.

Keywords: place-making for safety, territorial planning, mobility justice, sense of place, social cohesion

FIGHTING FOR GREEN: GRASSROOTS ACTIVISM AND ENVIRONMENTAL JUSTICE IN POLISH CITIES

KOVA UŽ ŽALIĄSIAS ERDVES: PILIETINIS AKTYVIZMAS IR APLINKOSAUGINIS TEISINGUMAS LENKIJOS MIESTUOSE

Daria Zozulia, Katarzyna Gorczyca, Łukasz Fiedor
Jagiellonian University, Poland

Presentation language / Pranešimo kalba: English

Rapid suburbanisation and demographic growth in Polish metropolitan areas have placed great pressure on urban green spaces, particularly in peripheral districts where planning coverage is weakest and development pressure is strongest. When formal governance fails to protect these spaces, it is residents who step in. But what does it take for local communities to defend a meadow, a wetland or a forest, and what does this reveal about the limits of participation in post-socialist cities?

This work examines four cases of grassroots activism over green areas in Polish cities: Kłyny Meadows in Kraków, Mokrzyński Forest in Wrocław, Wawer Bend in Warsaw and Redłowska Meadow in Gdynia. Drawing on interviews with activists and focus groups with local government officials, supplemented by planning document analysis, we explore how communities respond when spatial planning systems fail to protect green areas that residents depend on for everyday quality of life. Through an environmental justice framework, three problems emerge across all four cases: consultations that are formally available but effectively predetermined; community knowledge and place-based expertise that authorities consistently dismiss; and green space loss in peripheral neighbourhoods where residents have the least political visibility and fewest alternatives.

The findings suggest that activism in these contexts functions less as a supplement to well-functioning governance and more as a compensatory response to its structural failures – a burden that falls disproportionately on communities in outer city districts already bearing the social and environmental costs of rapid urban growth. The paper contributes to understanding how active communities in post-socialist cities navigate institutional gaps, and what this implies for building more resilient and socially responsive urban governance.

The research is conducted as part of the project “Social processes of shaping urban space in time of adaptation to climate change” funded by the National Science Centre of Poland, Sonata-17 programme.

Keywords: urban green spaces, environmental justice, grassroots activism, post-socialist cities

THEMATIC SESSION 5

Landscape horizons 2026: A Landscape Approach

5 TEMINĖ SESIJA

*Kraštovaizdžio horizontai 2026: kraštovaizdžio požiūris***DIALOGUE BETWEEN CITIES AND PROTECTED AREAS: FROM COMPETITION FOR SPACE TO SHARED GOALS***MIESTŲ IR SAUGOMŲ TERITORIJŲ DIALOGAS: NUO KONKURENCIJOS DĖL ERDVĖS LINK BENDRŲ TIKSLŲ***Laima Dabregaitė**

State Service for Protected Areas, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

In Lithuania, cities and protected areas are often perceived as spaces serving different purposes: cities are associated with development, investment, and urbanization, while protected areas are linked to the conservation of nature and landscapes. However, contemporary spatial planning principles increasingly emphasize the interdependence of these spaces and the need for integrated approaches to their development and management.

This presentation examines the role of cities and protected areas within Lithuania's spatial planning system and discusses their contribution to building resilient cities and regions. It explores how protected areas enhance the quality of living environments, provide recreational opportunities, preserve landscape identity, and support the provision of ecosystem services. At the same time, cities are considered not only major beneficiaries of these values but also important partners in their protection and sustainable management.

The presentation argues that protected areas should not be viewed solely as constraints on urban development. On the contrary, they can become an essential component of urban and regional resilience by supporting climate change adaptation, biodiversity conservation, and the strengthening of local identity. The discussion highlights how spatial planning documents and practices could foster stronger partnerships between cities and protected areas, shifting the focus from potential conflicts of interest toward a shared long-term territorial vision.

Keywords: territorial dialogue, landscape identity, quality of life, resilient regions, city-nature interaction

Lietuvoje miestai ir saugomos teritorijos dažnai suvokiami kaip skirtingus tikslus turinčios erdvės: miestai siejami su plėtra, investicijomis ir urbanizacija, o saugomos teritorijos su gamtos ir kraštovaizdžio apsauga. Tačiau šiuolaikiniai teritorijų planavimo principai vis dažniau pabrėžia šių erdvių tarpusavio priklausomybę ir būtinybę ieškoti integruotų sprendimų.

Pranešime nagrinėjama miestų ir saugomų teritorijų vieta Lietuvos teritorijų planavimo sistemoje, aptariant jų vaidmenį kuriant atsparius miestus ir regionus. Analizuojama, kaip saugomos teritorijos prisideda prie gyvenamosios aplinkos kokybės, rekreacijos galimybių, kraštovaizdžio identiteto išsaugojimo ir ekosisteminių paslaugų užtikrinimo, o miestai tampa svarbiais šių vertybių naudotojais ir kartu jų išsaugojimo partneriais.

Pranešime keliama mintis, kad saugomos teritorijos neturėtų būti vertinamos vien kaip urbanistinės plėtros apribojimas. Priešingai, jos gali tapti svarbia miestų ir regionų atsparumo dalimi, padedančia prisitaikyti prie klimato kaitos, išsaugoti biologinę įvairovę ir stiprinti vietos tapatumą. Aptariama, kaip teritorijų planavimo dokumentuose ir praktikoje galėtų būti stiprinama miesto ir saugomos teritorijos partnerystė, pereinant nuo interesų konflikto prie bendros ilgalaikės teritorinės vizijos.

Raktiniai žodžiai: teritorinis dialogas, kraštovaizdžio tapatumas, gyvenimo kokybė, atsparūs regionai, miesto ir gamtos sąveika

A CENTURY OF TERRITORIAL TRANSFORMATIONS: COMPARATIVE MODELLING OF SPATIAL SYSTEMS IN SCANIA AND THE COASTAL ZONE OF KLAIPĖDA (1915, 1975 AND 2025)

TERITORINIŲ TRANSFORMACIJŲ ŠIMTMETIS: ERDVINIŲ SISTEMŲ LYGINAMASIS MODELIAVIMAS SKONĖJE IR KLAIPĖDOS PAKRANTĖS ZONOJE (1915, 1975 IR 2025 M.)

Thomas Gloaguen^{1,2}, Sébastien Gadal², Kęstutis Zaleckis^{1,3}

¹Kaunas University of Technology, Lithuania

²Aix-Marseille University, France

³Vilnius Academy of Arts, Lithuania

Presentation language / Pranešimo kalba: English

This presentation explores the potential of spatial systems modelling for understanding long-term territorial transformations in the Baltic Sea Region. Spatial systems are approached as socio-cultural structures materialised through road networks, built-up areas, and land use/land cover patterns. Their study provides insights into the ways territories have been shaped by changing political, economic, social, and cultural contexts. The research develops a comparative framework based on historical maps and contemporary geospatial databases to reconstruct and analyse spatial systems in Scania (Sweden) and the coastal zone of Klaipėda (Lithuania) during three reference periods: 1915, 1975, and

2025. Spatial metrics are employed to characterise the configuration, morphology, and functional organisation of these systems across different spatial scales and temporal horizons.

The analysis identifies three major phases of transformation: the agrarian reforms of the nineteenth and twentieth centuries; the post-war period marked by urbanisation, industrialisation, and agricultural restructuring; and the recent dynamics of metropolisation and coastalisation driven by territorial planning. While these transformations unfolded within different historical contexts, they reflect shared organisational logics modulated by local historical legacies, resulting in broadly comparable spatial structures across both territories. This approach contributes to a better understanding of long-term territorial dynamics and highlights the role of spatial systems as an analytical framework for the study of regionalisation processes in the Baltic Sea Region.

Keywords: spatial systems modelling, territorial transformations, spatial metrics, Scania, Klaipėda coastal zone

BURIED UNDER THE MUD OF URBAN EXTRACTIVISM: TRANSFORMATION ON KENJERAN COASTAL COMMUNITIES' LANDSCAPE AND IDENTITY

PALAI DOTI PO URBANISTINIŲ EKSTRAKCIJŲ PURVU: KENJERAN PAKRANTĖS BENDRUOMENIŲ KRAŠTOVAIZDŽIO IR TAPATYBĖS TRANSFORMACIJA INDONEZIJoje

Rusydan Hadid

University of Edinburgh, Indonesia

Presentation language / Pranešimo kalba: English

Discussion on urban extractivism reveals that resource extraction not only takes place in desolated rural areas but also in urban spaces. This extractivism is shown in the commodification of urban lands resulting in the social displacement and natural ecosystems destruction. Therefore, this paper aims to investigate urban extractivism affecting traditional coastal communities in Kenjeran, Indonesia, where the development in the urban areas has resulted in socio-ecological transformations in their sea. The most notable transformation can be seen in the sea surface that has begun to shallow, covered by the mud sedimentation emergence from decades ago. Consequently, it results in the changing relationships with the sea, reshaping the identities of Kenjeran people as coastal communities. In light of this, this paper applies a more-than-human political ecology perspective, emphasizing the reciprocity and mutually constitutive of mud sedimentation as non-human inadvertent ecological processes, in responding to the sea reclamation for elite and private residential areas development.

Research in this paper will integrate geography research with artistic practice where the collected data from implementing interviews with local actors, supported by secondary data from related articles, will be embodied in documentary. This practice serves as creative intervention where the documentary then will be screened to collect feedback from intragenerational audiences of Kenjeran coastal communities, identifying the corresponding transformations between their landscape and

identities. The result of this research indicates that sea reclamation for developing residential areas has transformed both landscape and identities of Kenjeran coastal communities as their long-existing cultural heritage and place-based knowledge inherited from their ancestors are at risk. Such a transformation shows in their occupational preference where being a fisher is out of favour, as it is more preferable for them to pursue land-based careers in the city.

Keywords: urban extractivism, sea reclamation, mud sedimentation, identity, landscape

► GARDENS IN THE GAPS: VALLEYS, FORTRESS BUFFERS AND THE PERSISTENCE OF INFORMAL URBAN GARDENING IN VILNIUS AND KAUNAS

DARŽAI SPRAGOSE: NEFORMALI MIESTO DARŽININKYSTĖ UPĖS SLĖNYJE IR FORTO TERITORIJOJE VILNIUJE IR KAUNE

Gabrielė Janilionytė

Vytautas Magnus University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / *Lietuvių*

Informal urban gardens are small, self-organized plots cultivated without formal land tenure. In Lithuanian cities they persist in residual spaces bypassed by formal urban planning. This paper examines two such spaces, distinct in topography and history: the river valley of Grigiškės on the outskirts of Vilnius, and the Eighth Fort of the Kaunas Fortress in Šilainiai.

Each site was shaped by a different constraint on development. The slopes of Vokė river valley in Grigiškės are a natural terrain, which has discouraged construction. The Eighth Fort is situated on the slope of the Neris river valley terrace; its 19th century defensive role restricted building there for military reasons well into the 20th century. That restriction persists differently today: the site now holds heritage protection status and hosts the Milikonys bat reserve. Despite these different origins, both places were too steep, contested, or encumbered for formal development, construction and became fertile ground for informal cultivation instead.

Drawing on ethnographic fieldwork conducted between 2023 and 2026, including participant observation and interviews with gardeners, the paper treats these gardens as a case study in how topography and shifting restrictions, from military to heritage and ecological, jointly produce informal green space over time. Residual land, it argues, is not simply leftover space but a landscape actively shaped by physical terrain, an enduring protective status, and decades of everyday cultivation by mostly elderly residents. The valley and the fort function as two distinct spatial constraints, one set by nature and one by long-standing protection, both allowing informal gardening to persist beyond the reach of official planning.

The study contributes to research on informal green space, urban commons, and landscape studies by asking what residual landscapes reveal about the relationship between spatial structure, historical contingency, and everyday urban life.

Keywords: informal urban gardens, residual landscape, urban commons, river valley, fortress territory, post-Soviet city, landscape approach

Neformalūs miesto daržai – nedideli, savarankiškai organizuoti sklypeliai, dirbami be oficialios žemės nuosavybės ar nuomos teisės – Lietuvos miestuose išlieka konkrečiose liekamosiose erdvėse, kurių formalus urbanistinis planavimas neapėmė. Šis pranešimas nagrinėja dvi tokias erdves, skirtingas topografija ir istorija: Grigiškių Vokės upės slėnį Vilniaus pakraštyje ir Kauno tvirtovės VIII forto teritoriją Šilainiuose.

Abiejų vietovių įsavinimą daržams nulėmė skirtingas statybos apribojimas. Vokės upės slėnio Grigiškėse šlaitai ilgą laiką buvo nepatogūs statybai. VIII forto teritorija įsikūrusi Neries slėnio šlaito terasoje. Jos charakterį nulėmė XIX amžiaus Kauno tvirtovės gynybinė funkcija, dėl karinių priežasčių ribojusi statybas iki pat XX amžiaus. Šis ribojimas tęsiasi ir šiandien, tik kitu pavidalu: teritorija turi valstybės saugomo kultūros paveldo statusą, o joje įsteigtas Milikonių teriologinis draustinis, skirtas šikšnosparniams saugoti. Nepaisant skirtingo konteksto, abi teritorijos liko pernelyg stačios, ginčytinos ar teisiškai suvaržytos formaliai statybai, tačiau palankios ir derlingos neformaliai daržininkystei.

Pranešimas, remdamasis 2023–2026 m. vykdytu etnografiniu lauko tyrimu (dalyvaujamoju stebėjimu ir interviu su daržininkais), šiuos daržus traktuoja kaip atvejo studiją, atskleidžiančią, kaip topografija ir besikeičiantys teisiniai režimai – nuo karinio iki paveldosauginio bei gamtosauginio – kartu kuria neformalią žaliąją erdvę per ilgą laikotarpį. Teigiama, kad žemė, likusi už formalaus planavimo ribų, nėra tiesiog nenaudojama erdvė, o aktyviai kuriamas kraštovaizdis, kurį lemia fizinis reljefas, besitęsiantis teisinis statusas ir dešimtmečius trunkantis, daugiausia vyresnio amžiaus gyventojų vykdomas kasdienis darbas. Slėnis ir forto teritorija veikia kaip du skirtingi erdviniai apribojimai – vienas nulemtas gamtos, kitas ilgalaikio teisinio statuso – abu leidžiantys neformaliai daržininkystei tyliai išlikti šalia oficialaus miesto planavimo.

Tyrimas prisideda prie mokslinių diskusijų apie neformalias žaliąsias erdves, miesto bendruomeninius išteklius (urban commons) ir kraštovaizdžio studijas, keliant klausimą, ką liekamieji kraštovaizdžiai atskleidžia apie erdvinės struktūros, istorinės kontingencijos ir kasdienio miesto gyvenimo sąsajas.

Raktiniai žodžiai: neformalūs miesto daržai, liekamas kraštovaizdis, miesto bendruomeniniai ištekliai (urban commons), upės slėnis, forto teritorija, posovietinis miestas, kraštovaizdžio prieiga

▶ INTENDED LANDSCAPES OF RESILIENCE: INVERSE LANDSCAPES, SOLASTALGIA, AND THE SIDE EFFECTS OF TRANSFORMATION

NUMATYTIJ ATSPARUMO KRAŠTOVAIZDŽIAI: INVERSINIAI KRAŠTOVAIZDŽIAI, SOLASTALGIJA IR ŠALUTINIAI TRANSFORMACIJOS EFEKTAI

Olaf Kühne, Karsten Berr
University of Tübingen, Germany

Presentation language / Pranešimo kalba: English

Resilience, sustainability, and transformation are often described in positive terms of the future: as adaptation, renewal, future viability, or the restoration of endangered agency. From a neopragmatist perspective, however, we must ask which landscapes are made visible by such vocabularies, which are marginalized, and which are unintentionally produced. To this end, the lecture further develops the concept of inverse landscapes. Inverse landscapes refer not only to obscured or unrealized landscape possibilities, but also to the landscape-related side effects of decisions, planning, and transformation strategies. Every decision in favor of a particular resilient, sustainable, or post-fossil future simultaneously generates other landscape realities: new visibilities, new invisibilities, new losses, new conflicts, and new affective bonds.

This is where the concept of solastalgia becomes significant. Solastalgia describes the pain and alienation that can arise from changes to familiar landscapes without people leaving their place. In connection with inverse landscapes, solastalgia can be understood as an affective indication of those landscape-related side effects that are often absent or only marginally addressed in dominant vocabularies of resilience and transformation. The lecture demonstrates that resilience should not only be understood as a solution to spatial crises, but also as a producer of new landscape contingencies. The aim is to develop a neopragmatic perspective on landscape, transformation, and side effects that does not seek the one “correct” description of resilient spaces, but rather the vocabularies through which landscapes are stabilized, re-described, obscured, or experienced as loss.

Keywords: inverse landscapes, neopragmatism, solastalgia, transformation, side effects

▶ IMMERSIVE LANDSCAPES: VIRTUAL REALITY (VR), NEOPRAGMATIST CARTOGRAPHY, AND THE REDESCRIPTION OF LANDSCAPE EXPERIENCE

IMERSINIAI KRAŠTOVAIZDŽIAI: VIRTUALIOJI REALYBĖ (VR), NEOPRAGMATISTINĖ KARTOGRAFIJA IR NAUJAS KRAŠTOVAIZDŽIO PATIRTIES INTERPRETAVIMAS

Olaf Kühne¹, Dennis Edler²
¹ University of Tübingen, Germany
² Ruhr University Bochum, Germany

Presentation language / Pranešimo kalba: English

Virtual reality (VR) is increasingly used in landscape research, planning, and visualization. Yet its significance extends beyond the provision of a new technical tool. This presentation argues that VR environments should be understood not primarily as simulations of landscape, but as immersive cartographic devices that enable the experimental redescription of landscape experience. Building on landscape theory and neopragmatist cartography, it develops the concept of immersive landscapes to examine how VR reshapes the ways landscapes are presented, experienced, and interpreted.

The point of departure is a relational understanding of landscape. Landscapes are not given visual objects but emerge through the interrelation of material arrangements, embodied experiences, and socially shared patterns of interpretation. VR intensifies this relational constitution by transforming landscape from a distant image into a navigable, soma-situated, and potentially interactive environment. At the same time, immersive environments remain selective and technically mediated. Rather than representing landscape “as it is”, they offer particular vocabularies through which landscapes can be perceived and negotiated.

This perspective is linked to a neopragmatist understanding of cartography. Post-critical and neopragmatist approaches shift attention from representational accuracy to the practical and political effects of spatial representations. Maps are understood less as mirrors of reality than as devices that organize meaning, guide action, and enable alternative interpretations. From this perspective, VR can be seen as an immersive extension of the cartographic problem: a walkable and affective form of mapping that stabilizes some understandings of landscape while marginalizing others.

The presentation argues that immersive landscapes function as media of experimental redescription, enabling alternative landscape vocabularies, making contingencies perceptible, and fostering reflection on the social, affective, and political implications of landscape framings. VR thus offers a means not only of visualizing landscapes but also of examining how they are produced, negotiated and transformed.

Keywords: virtual reality, immersive landscapes, neopragmatist cartography, post-critical cartography, landscape experience

LANDSCAPE POLARIZATION AS AN APPROACH FOR ANALYSIS OF ECO-SPATIAL STRUCTURE IN EUROPEAN REGIONS

KRAŠTOVAIZDŽIO POLIARIZACIJA KAIP EKOLOGINĖS ERDVINĖS STRUKTŪROS ANALIZĖS PRIEMONĖ EUROPOS REGIONUOSE

Julius Mačiulaitis, Darius Veteikis
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Landscape polarization has long been discussed in landscape geography, yet it has rarely been investigated as an empirically delineated spatial structure. Most studies have focused on land-cover composition and pattern, whereas considerably less attention has been devoted to understanding the structural organization of landscape polarization across different European landscapes.

To address this gap, LPCs are proposed as integrated structural units for analysing ecological spatial structure in urban-rural-natural landscapes. LPCs are delineated using a GIS-based algorithm and represent spatial entities emerging from the interactions among anthropogenic nuclei, intermediate rural areas, and natural or semi-natural landscape counterparts, thereby capturing the spatial relationships among landscape components.

The proposed approach was tested across contrasting European landscape settings using reclassified land-cover information and GIS-based spatial analysis. Ten representative study areas were selected to investigate the occurrence, spatial arrangement, and morphological characteristics of LPCs under different urban-rural-natural configurations.

The analysis shows that the emergence and expression of LPCs depend on the presence and spatial configuration of urban, rural, and natural landscape components. Their structural properties vary across contrasting landscape contexts, reflecting different degrees of landscape differentiation and ecological spatial organization. LPCs are discussed as reproducible spatial proxies for interpreting broad ecological-spatial conditions. LPCs provide an additional perspective for ecological interpretation and landscape assessment by emphasizing spatial interactions among urban, rural, and natural landscape components rather than only focusing on land-cover proportions.

Keywords: landscape polarization, landscape polarization cells (LPCs), ecological spatial structure, cultural landscapes, European regions

Kraštovaizdžio poliarizacijos koncepcija kraštovaizdžio geografijoje nagrinėjama jau seniai, tačiau kaip empiriškai išskiriama erdvinė struktūra ji tirta palyginti retai. Daugumoje tyrimų daugiausia dėmesio skiriama žemės dangos sudėčiai ir jos erdviniam pasiskirstymui, o kraštovaizdžio poliarizacijos struktūrinei organizacijai skirtinguose Europos kraštovaizdžiuose analizuoti skiriama gerokai mažiau dėmesio.

Siekiant užpildyti šią tyrimų spragą, kraštovaizdžio poliarizacijos ląstelės (angl. Landscape Polarization Cells, LPCs) siūlomos kaip integruoti struktūriniai vienetai urbanizuotų, kaimiškų ir gamtinių kraštovaizdžių ekologinei erdvinei struktūrai analizuoti. Kraštovaizdžio poliarizacijos ląstelės išskiriamos taikant GIS algoritmą ir apibrėžiamos kaip erdviniai vienetai, susiformuojantys dėl antropogeninių branduolių, tarpinių kaimiškųjų teritorijų ir gamtinių ar pusiau gamtinių kraštovaizdžio komponentų sąveikos. Tokiu būdu jos atspindi erdvinius ryšius tarp skirtingų kraštovaizdžio komponentų.

Siūlomas požiūris bandomas skirtingomis kraštovaizdžio sąlygomis pasižyminčiuose Europos regionuose, naudojant perklasifikuotus žemės dangos duomenis ir GIS erdvinės analizės metodus. Atrinkta dešimt reprezentatyvių tyrimo teritorijų, kuriose analizuotas kraštovaizdžio poliarizacijos

ląstelių pasireiškimas, erdvinis išsidėstymas ir morfologinės savybės esant skirtingoms urbanizuotų, kaimiškų ir gamtinių kraštovaizdžio komponentų konfigūracijoms.

Analizė parodė, kad kraštovaizdžio poliarizacijos ląstelių susidarymas ir jų raiška priklauso nuo urbanizuotų, kaimiškų ir gamtinių kraštovaizdžio komponentų buvimo bei jų erdvinės konfigūracijos. Jų struktūrinės savybės skiriasi priklausomai nuo kraštovaizdžio konteksto ir atspindi nevienodą kraštovaizdžio diferenciacijos bei ekologinės erdvinės organizacijos laipsnį. Kraštovaizdžio poliarizacijos ląstelės gali būti vertinamos kaip erdviniai indikatoriai, padedantys interpretuoti bendrąsias ekologines erdvines sąlygas. Šis metodas suteikia papildomą perspektyvą ekologiškai interpretacijai ir kraštovaizdžio vertinimui, nes dėmesys sutelkiamas ne tik į žemės dangos proporcijas, bet ir į urbanizuotų, kaimiškų bei gamtinių kraštovaizdžio komponentų erdvines sąveikas.

Raktiniai žodžiai: kraštovaizdžio poliarizacija, kraštovaizdžio poliarizacijos ląstelės, ekologinė erdvinė struktūra, kultūrinis kraštovaizdis, erdvinė organizacija, Europos regionai

▶ WHAT COUNTS AS AN URBAN FOREST? CONCEPTUALIZATIONS OF URBAN FORESTS IN EUROPEAN PLANNING AND MANAGEMENT DOCUMENTS

KAS LAIKOMA MIESTO MIŠKU? MIESTO MIŠKŲ SAMPRATOS EUROPOS PLANAVIMO IR TVARKYMO DOKUMENTUOSE

Ieva Misiūnė¹, Anna Codemo², Melania Michetti³

¹Vilnius University, Lithuania

²University of Innsbruck, Austria

³Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy

Presentation language / Pranešimo kalba: English

Urban Forest Management Plans (UFMPs) are increasingly used across European cities, yet it remains unclear how they conceptualise urban forests and related urban green assets. Definitions shape what is included in planning, which functions are recognised, and how urban forests are managed and monitored. Thus, we ask: How are urban forests and related urban green assets conceptualised in European urban forest planning and management documents?

The analysis draws on a database of UFMPs across European cities, developed within the COST Action CA23148 (INTUF). From 219 documents, we identified the main urban green asset targeted by each plan, such as urban trees, urban forests, urban green infrastructure, urban green spaces, biodiversity, climate resilience or nature-based solutions. Explicit definitions were extracted and analysed using a deductive coding framework covering five dimensions: structural, functional, spatial, governance and socio-ecological.

Explicit definitions were identified in 141 of the 219 documents, while the remaining documents did not clearly define the target asset. The analysis reveals substantial conceptual diversity across UFMPs, with potential implications for planning consistency, monitoring and policy development across cities. Definitions most commonly included structural, spatial, functional and governance related elements, such as trees, green spaces, urban location, ecosystem services, management practices and ownership. In contrast, socio-ecological components, including human-nature interactions, cultural values, equity and accessibility, were comparatively rare. This suggests that European UFMPs still often conceptualise urban forests and green assets primarily as physical or functional green assets, while broader socio-ecological understandings remain less visible.

(This article is based upon work from COST Action CA23148 – INTUF, supported by COST (European Cooperation in Science and Technology))

Keywords: urban green spaces, document analysis, ecosystem services

GEOHERITAGE OF THE MIDDLE REACHES OF THE NEMUNAS RIVER (SOUTH LITHUANIA) AND ITS USE FOR EDUCATION

NEMUNO VIDURUPIO GEOPAVELDAS IR JO PANAUDOJIMAS VISUOMENĖS ŠVIETIMUI

Violeta Pukelytė

State Scientific Research Institute Nature Research Centre, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

The presentation highlights the significance of the Middle Reaches of the Nemunas River for geoheritage in southern Lithuania. This area preserves a large part of the Pleistocene deposits, found in palaeo-incisions up to 200–250 metres deep, contain glacial tills of various ages, as well as interglacial and interstadial sediments between them. Through lithological, geochemical, palaeobotanical, and other analyses, today researchers can distinguish weathered deposits formed during interglacial periods from those formed by river flooding during glacier advances and retreats. The flooding phenomenon, resulting from the interaction, or “duel”, between the river and the glacier, is especially evident during the retreat and deglaciation of the Last Glaciation in southern Lithuania.

Geological mapping together with geomorphological, petrographic, lithological, palaeobotanical, and other studies of outcrop sections, made it possible to reconstruct the interaction between the Last Glaciation and the Nemunas River. Particularly informative data were obtained from geoheritage objects, including the Netiesos, Balbieriškis, Škėvonys, and Ožkų Pečius outcrops. These studies made it possible to identify four flooding events in the Middle Reaches of the Nemunas River.

Southern Lithuania is also rich in cultural heritage objects. Some of them are hillforts, which are closely genetically related to the geological and geomorphological environment. There are about 50 hillforts located in the Middle Reaches of the Nemunas River Valley and its surroundings. Today, these

impressive landforms, which are also archaeological monuments, are recognized as cultural heritage sites.

The geoheritage sites are important not only for scientific research but also for public education.

Keywords: middle reaches of the Nemunas river, geoheritage, hillforts

Nemuno vidurupis – geopaveldo pažinimui ir švietimui viena reikšmingiausių teritorijų Pietų Lietuvoje. Čia 200–250 m gylio paleojėžuose slūgso svarbūs pleistoceno nuogulų kompleksai – skirtingo amžiaus ledyninės moreninės nuogulos, taip pat tarpledynmečių ir tarpstadialų nuosėdos. Atlikus litologinius, geocheminius, paleobotaninius ir kitus tyrimus galima atskirti tarpledynmečiais susiformavusias dūlėjimo paveiktas nuogulas nuo nuogulų, susidariusių dėl upės patvankų ledynų slinkimo ir atsitraukimo laikotarpiais. Šis upės ir ledyno sąveikos arba savotiškos jų „dvikovos“ reiškinyss ypač ryškiai atsiskleidžia paskutiniojo apledėjimo atsitraukimo ir stadijinių suaktyvėjimų metu.

Nemuno vidurupio slėnio ir gretimų teritorijų geologinis kartografavimas, papildytas geomorfologiniais, petrografiniais, litologiniais, paleobotaniniais ir kitais atodangų pjūvių tyrimais, sudarė prielaidas rekonstruoti paskutiniojo Pietų Lietuvą dengusio ledyno ir Nemuno upės sąveikos raidą. Ypač vertingos informacijos suteikė geopaveldo objektų – Netiesų, Balbieriškio, Škėvonių ir Ožkų Pečiaus atodangų tyrimai. Jų duomenys leido išskirti keturias Nemuno vidurupyje vykusias patvankas.

Pietų Lietuva taip pat pasižymi kultūros paveldo objektų gausa. Vieni jų – piliakalniai, glaudžiai susiję su geologine ir geomorfologine aplinka. Lietuvoje žinoma beveik tūkstantis piliakalnių, iš kurių apie 50 yra Nemuno vidurupio slėnyje ir apyslėnyje. Čia jų paplitimas dažnai siejamas su slėnio šlaitų geomorfologine raida ir erozinių procesų intensyvumu. Šlaituose likę eroziniai reljefo atlikuonys, – tarp raguvų susiformavę atragiai buvo naudojami gynybiniais įrenginiais ir statiniais. Šiandien šios įspūdingos reljefo formos, kartu esančios ir archeologiniais paminklais, pripažįstamos vertingais kultūros paveldo objektais.

Nemuno vidurupio geopaveldo ir kultūros paveldo objektai yra svarbūs ne tik moksliniams tyrimams, bet ir visuomenės švietimui. Jie sudaro galimybę integruoti geologijos, geomorfologijos, klimato kaitos, kraštovaizdžio raidos ir kultūros paveldo temas į švietėjiškas veiklas, kurios skatintų geriau pažinti ne tik Pietų Lietuvos, bet ir kitų regionų gamtinę ir kultūrinę aplinką.

Raktiniai žodžiai: Nemuno vidurupis, geopaveldas, piliakalniai

THE DEFORESTATION OF THE WESTERN CARPATHIAN REGION IN ROMANIA

MIŠKŲ NYKIMAS RUMUNIJOS VAKARŲ KARPATŲ REGIONE

Daniel-Vasile Rădulescu, Mihai Bogdan

University of Bucharest, Romania

Presentation language / Pranešimo kalba: English

Human activities have reshaped the landscape throughout history, mainly due to the permanent need of resources for development (directly impacting the environment). The escalating global demand of natural resources has driven an increasing change in the Land Use and Land Coverage (LULC), especially when it comes to vulnerable areas. One of the most highlighted changes observed throughout time, are related to forest cover changes. While the impact of isolated deforestations might not pose a significant threat on a continental or national scale, local and even regional changes can affect the quality of life for both wildlife and human beings. Taking into account the fact that LULC changes are influenced by both economic and political decision, this study integrates multi-temporal remote sensing datasets (LANDSAT, Sentinel and Planet) with the aim of tracking, through change detection, the forest cover evolution and transformation in the Western Carpathian Region in Romania (with a focus on the Apuseni Mountains Natural Park area) from 1985 to 2025, highlighting the differences between land cover and land management policies from both the Communist/Socialist era and today.

Keywords: LULC, deforestation, environment

▶ THE ROLE OF STATE PARKS IN REGIONAL DEVELOPMENT: THE CASE OF KURTUVĖNAI REGIONAL PARK

VALSTYBINIŲ PARKŲ REIKŠMĖ REGIONŲ VYSTYMUI: KURTUVĖNŲ REGIONINIO PARKO PAVYZDYS

Darius Ramančionis

Directorate of Žemaitija Protected Areas, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

Over recent decades, Lithuania's regions have faced a range of interconnected challenges, including population decline, decreasing regional vitality, and the concentration of economic activities in major urban centers. In this context, complex protected areas, state parks expanded their role: designated for conservation of natural and cultural heritage, they became important catalysts for development, promoting economic diversification, social cohesion, and ecological stability in the regions.

Lithuanian state parks contribute to regional development through sustainable tourism, the promotion of small and medium-sized enterprises, and the strengthening of local identity. Additional economic opportunities are created in regions where traditional forms of economic activity are limited: investments in nature trails, visitor centers, the restoration of cultural heritage sites, nature schools, and educational programs increase the potential of these areas.

Kurtuvėnai Regional Park represents a significant example of regional development in the Šiauliai region. Over the past three decades, the park has evolved into one of the most important recreational destinations in northern Lithuania. This development has been supported by spatial planning documents, feasibility studies, scientific research, a sustainable tourism strategy, and projects financed through European Union funds and national programs. The restoration of the Kurtuvėnai Manor complex, the development of more than one hundred kilometers of educational hiking, cycling, and equestrian trails, the installation of outdoor information systems, the adaptation of sites for visitors, the establishment of a modern visitor center featuring the exhibition "Landscape Diversity," and active educational programs at the Jautmalkė Nature School have all contributed to a steady increase in visitor numbers. These developments have stimulated the growth of rural tourism businesses, local services, traditional crafts, and guiding activities.

At the same time, increasing visitor flows place growing pressure on sensitive ecosystems and infrastructure. Conflicts of interest have emerged between strict nature conservation requirements and the needs of local economic development.

Further opportunities for the development of the area remain underutilized, including the implementation of digital solutions such as smart routes and visitor management systems, the promotion of slow tourism, stronger partnerships with local businesses, the branding of local products, deeper integration into regional tourism networks, and the expansion of educational activities focused on landscape values and heritage.

The experience of Kurtuvėnai Regional Park demonstrates that state parks can function as integrated catalysts for resilient regional development. However, realizing their full potential requires a consistent and integrated policy framework, as well as stronger local initiatives that balance nature conservation, economic development, and community interests.

Keywords: landscape values, state parks, regional development, sustainable tourism, Kurtuvėnai Regional Park

Pastaraisiais dešimtmečiais Lietuvos regionai susiduria su kompleksiniais iššūkiais – gyventojų ir gyvybingumo mažėjimu, ekonominės veiklos telkimosi didžiuosiuose miestuose. Kompleksinės saugomos teritorijos – valstybiniai parkai – šiandien tampa ne tik gamtos ir kultūros paveldo apsaugos teritorijomis, bet ir svarbiais atsparių regionų vystymosi katalizatoriais, skatinančiais ekonominę diversifikaciją, socialinę sanglaudą ir ekologinį stabilumą.

Lietuvos valstybiniai parkai prisideda plėtojant darnų turizmą, kuriant rekreacinę infrastruktūrą, skatinant smulkųjį ir vidutinį verslą bei stiprinant vietos identitetą. Investicijos į pažintinius takus, lankytojų centrus, kultūros paveldo objektų atkūrimą, gamtos mokyklas bei edukacines programas

didina teritorijų patrauklumą ir lankytojų srautus, kuria prielaidas papildomoms pajamoms regionuose, kur tradicinės ekonominės veiklos galimybės ribotos.

Kurtuvėnų regioninis parkas yra reikšmingas Šiaulių regiono vystymuisi. Per pastaruosius tris dešimtmečius parkas tapo vienu svarbiausių rekreacinių centrų šiaurės Lietuvoje. Sąlygas teritorijos vystymui sudarė parengti teritorijų planavimo dokumentai, galimybių studijos, moksliniai tyrimai, darnaus turizmo strategija, įgyvendinti ES fondų ir nacionalinių programų finansuoti projektai. Kurtuvėnų dvaro komplekso atkūrimas, daugiau kaip šimtas kilometrų pažintinių pėsčiųjų, dviračių, žirgų trasų, lauko informacinės sistemos įrengimas, objektų pritaikymas lankymui, šiuolaikiškas lankytojų centras su ekspozicija „Kraštovaizdžio įvairovė“, aktyvios edukacinės programos Jautmalkės gamtos mokykloje, lėmė nuoseklų lankytojų skaičiaus augimą. Tai paskatino kaimo turizmo sodybų, vietinių paslaugų, amatų ir gidų veiklos plėtrą.

Didėjant lankytojų srautams kyla spaudimas jautrioms ekosistemoms ir infrastruktūrai. Pastebimi interesų konfliktai tarp griežtų gamtos apsaugos reikalavimų ir vietos ekonominės veiklos plėtros poreikių.

Neišnaudotos galimybės tolesniam teritorijos vystymui: skaitmeninių sprendimų (išmaniųjų maršrutų, lankytojų valdymo sistemų) diegimas, „lėto turizmo“, partnerystės su vietos verslu skatinimas, vietos produktų ženklavimas, stipresnė integracija į regionines turizmo grandines, edukacinės veiklos orientuotos į kraštovaizdžio vertybių pažinimą plėtojimas.

Kurtuvėnų regioninio parko patirtis rodo, kad valstybiniai parkai gali veikti kaip integruoti atsparių regionų vystymosi katalizatoriai, tačiau jų potencialo pilnam išnaudojimui būtina nuosekli integruota politika ir vietos lygmens iniciatyvų stiprinimas, derinant gamtos apsaugą, ekonominę veiklą ir bendruomenių interesus.

Raktiniai žodžiai: kraštovaizdžio vertybės, valstybiniai parkai, regionų vystymasis, darnus turizmas, Kurtuvėnų regioninis parkas

▶ DIDŽIOSIOS TRANSFORMACIJOS BANGOS LIETUVOS KRAŠTOVAIZDYJE: KAS LIKO IR KAS IŠLIKS?

MAJOR WAVES OF TRANSFORMATION IN THE LITHUANIAN LANDSCAPE: WHAT HAS REMAINED AND WHAT WILL ENDURE?

Darius Veteikis, Ričardas Skorupskas
Vilnius University, Lithuania

Presentation language / Pranešimo kalba: Lithuanian / Lietuvių

The Lithuanian landscape is a multilayered spatial structure in which natural, agricultural, urban, and infrastructural elements of different ages persist to varying degrees and for different periods of time.

This presentation interprets its development as a sequence of major waves of transformation, examining which structures have been inherited, lost, or newly created, and what natural, cultural, and economic values they have generated or diminished.

The most enduring foundations of the landscape are considered to be the glacially formed relief, the hydrographic network, and regional combinations of forests, fields, lakes, and wetlands. Historical agricultural and cultural transformation waves, including hillfort and sacred site networks, strip-field systems, street villages, and manor estates, have often survived only in fragments as markers of landscape memory. Today, they are reflected in place names, relic land-use patterns, individual cultural heritage sites, and partially preserved spatial relationships. Significant losses in landscape value are evident in the decline of wetlands and natural hydrological systems, the disruption of traditional rural settlement structures, the deterioration of manor estates and their functional territories, and the destruction of the cultural landscapes of Jewish shtetls.

The contemporary landscape is shaped by the legacy of Soviet-era land reclamation and mass constructed residential blocks, nowadays agricultural intensification, suburban expansion, transport and logistics corridors, new energy infrastructure, and the protected areas system. These structures demonstrate that landscape transformations can simultaneously generate productivity, fragmentation, ecological pressures, and new forms of conservation. Therefore, the key question for the future is not only what will survive through inertia. It also concerns what new waves of societal transformation can be created to enhance the natural, cultural, and economic value of landscapes. The Lithuanian case demonstrates that large-scale landscape memory is selective: it preserves those traces that are supported by physical resilience, institutional protection, new social functions, and society's ability to recognize their value for future generations.

Keywords: landscape transformations, landscape memory, Lithuanian landscape, cultural landscape, landscape value

Lietuvos kraštovaizdis yra daugiasluoksnė erdvinė struktūra, kurioje skirtingo amžiaus gamtiniai, agrariniai, urbanistiniai ir infrastruktūriniai elementai išlieka nevienodu mastu ir nevienodą laiką. Pranešime jo raida interpretuojama kaip didžiųjų transformacijos bangų seka, klausiant, kurios struktūros buvo paveldėtos, prarastos ar naujai suformuotos, ir kokias gamtines, kultūrines bei ekonomines vertes jos sukūrė ar sumažino.

Ilgiausiai išliekančiu kraštovaizdžio pagrindu laikomas ledyno suformuotas reljefas, hidrografinis tinklas bei regioniniai miškų, laukų, ežerų ir pelkių deriniai. Istorinės agrarinės ir kultūrinės teritorijų pertvarkymo bangos – sukurti piliakalnių ir sakralinių vietų tinklai, režiniai laukai, gatviniai kaimai ir dvarų sistema – dažnai išliko tik fragmentais, kaip kraštovaizdžio atminties ženklai. Šiandien jas žymi vietovardžiai, reliktinės žemėvaldos formos, pavieniai kultūros paveldo objektai ir fragmentiškai išlikę erdviniai ryšiai. Didelius vertės praradimus rodo pelkių ir natūralių hidrosistemų sumažėjimas, tradicinio kaimo audinio suardymas, dvarų funkcinių teritorijų nykimas ir žydų štetlių kultūrinio kraštovaizdžio sunaikinimas.

Dabartinį kraštovaizdį formuoja sovietinės masinės statybos, melioracijos palikimas, intensyvėjantis žemės ūkis, besiplečiantys priemiesčiai, transporto ir logistikos koridoriai, naujos energetikos įrenginių sistemos ir saugomos teritorijos. Šios struktūros rodo, kad kraštovaizdžio transformacijos

gali vienu metu kurti produktyvumą, fragmentaciją, ekologinę įtampą ir naujas apsaugos formas. Todėl ateities klausimas yra ne tik tai, kas išliks iš inercijos. Jis taip pat susijęs su tuo, kokias naujas visuomeninės transformacijos bangas visuomenė gebės sukurti, kad didintų kraštovaizdžio gamtinę, kultūrinę ir ekonominę vertę. Lietuvos pavyzdys rodo, kad didelio masto kraštovaizdžio atmintis yra selektyvi: ji išlaiko pėdsakus, kuriuos palaiko fizinis atsparumas, institucinė apsauga, naujos socialinės funkcijos ir gebėjimas atpažinti jų vertę ateities kartoms.

Raktiniai žodžiai: kraštovaizdžio transformacijos, kraštovaizdžio atmintis, Lietuvos kraštovaizdis, kultūrinis kraštovaizdis, kraštovaizdžio vertė

GOVERNANCE TRANSFORMATION OF EUROPEAN PROTECTED AREAS TOWARD SPATIAL AND SOCIO-ECONOMIC INTEGRATION

EUROPOS SAUGOMŲ TERITORIJŲ VALDYMO PERTVARKA ERDVINĖS IR SOCIALINĖS-EKONOMINĖS INTEGRACIJOS LINK

Piotr Węgrzynowicz

Krakov University of Economics, Poland

Presentation language / Pranešimo kalba: English

Modern nature conservation faces the critical challenge of shifting from traditional, exclusionary management models toward integrated, socio-ecological systems. This paper addresses this shift by introducing a comprehensive research framework designed to evaluate the degree of adaptation of European protected areas (IUCN categories II and V) to modern relational governance. The study focuses on analysing transformation processes and how these areas function within local socio-economic systems and spatial planning structures. The primary objective of this research is the conceptualization and structural design of an original integrated index. This index is constructed as a synthetic metric built upon four foundational pillars: social participation, economic integration, spatial cohesion, and relational culture. Methodologically, the project utilizes a sequential design employing a Multi-Criteria Decision Matrix. This approach allows for the operationalization of governance transformation, moving from a broad macro-scale evaluation of European sites to an in-depth qualitative analysis of four distinct management models: the Paradigm Leader, Close Neighbour, Economic Innovator, and Participatory Success.

The paper outlines the theoretical assumptions of the integrated index and addresses three fundamental research hypotheses explaining the directions of transformation: the expected positive correlation between spatial planning integration and relational culture, the role of private landownership in stimulating economic innovation, and the specific institutional heritage of post-socialist states acting as a barrier to participatory governance. By shifting the analytical focus toward a multi-criteria diagnostic tool, this approach demonstrates how geographers can effectively support the integration of ecological imperatives with local development. The developed index serves as a robust framework for comparative spatial analysis and spatial policy optimization across different European administrative regimes.

Keywords: protected areas, governance transformation, integrated index, spatial planning, socio-economic systems

THEMATIC SESSION 6 / EUGEO SEMINAR

The importance of Geographical communication

6 TEMINĒ SESIJA / EUGEO SEMINARAS

Gegrafinēs komunikācijas svarba

► **GEOGRAPHICAL COMMUNICATION AS A BRIDGE BETWEEN SCIENCE AND SOCIETY:
THE EXPERIENCE OF THE LATVIAN GEOGRAPHICAL SOCIETY**

*GEOGRAFINĒ KOMUNIKĀCIJA KAIP TILTAS TARP MOKSLO IR VISUOMENĒS: LATVIJOS
GEOGRAFU DRAUGIJOS PATIRTIS*

Elīna Apsīte-Beriņa, Zaiga Krišjāne

University of Latvia

Latvian Geographical Society

Presentation language / Pranešimo kalba: English

Geography provides a unique perspective on spatial relationships and human-environment interactions. Its scientific and societal impact depends on effectively communicating research findings, educational initiatives, and professional activities to diverse audiences. Geographical communication is fundamental to strengthening the relationship between geographical science and society. Social media, interactive mapping, geographic information systems (GIS), and online platforms offer new ways to spread geographical knowledge and engage broader audiences. By increasing geography's visibility and accessibility, these tools also promote citizen participation in environmental observation and place-based initiatives. Fostering academia-society dialogue, geographical communication helps build resilient communities, support sustainable spatial development, and strengthen appreciation for geography's role in an interconnected world.

The Latvian Geographical Society was established in 1923. Society has become an active platform for communication among researchers, educators, students, and the public. Beyond supporting scientific conferences and the publication of *Folia Geographica*, the Society has expanded its communication through public lectures, annual regional conferences with the field excursion, Scientists Night, cooperation with schools, and an increasingly active digital and social media presence. The Latvian Geographical Society shows how established scientific organisations can blend traditional scholarship with modern communication, raising geography's visibility and societal relevance. Effective geographical communication should be valued not just for sharing knowledge, but as a strategic tool for strengthening geography's societal role and fostering informed civic participation.

Keywords: Latvian geographical society, communication, geography teachers

LITHUANIAN ‘GEONIGHT’ IN 2019 – 2026: CITIZEN SCIENCE AND POSSIBILITIES FOR GEOGRAPHY PROMOTION

„GEOGRAFIJOS NAKTIS“ LIETUVOJE 2019–2026 M.: PILIEČIŲ MOKSLAS IR GEOGRAFIJOS SKLAIDOS GALIMYBĖS

Giedrė Godienė

Vilnius University, Lithuania

Presentation language / Pranešimo kalba: English

In 2022 the Survey on the perception of geography by public of the GeoNight was initiated, still we're lacking the global analysis of the events took place and participants attended, this research is seeking to contribute this.

Lithuanian geographical society, LGS, joined the initiative of GeoNight in 2019 performing it as participatory citizen science project: communicating geography, organizing events, collecting and analyzing the data using qualitative and quantitative methods. The national review of GeoNight in 2019–2026 demonstrates: this initiative significantly expanded, Lithuania took position among the leading countries. Annually collected data on event locations, organizers, content and participants shows: 2019–2026 193 geo-events over 10000 participants were held; the event number increased 5, participant number – 6.3 times, spatial distribution of locations became more balanced across the country.

78% of events are organized in educational institutions, strong partnerships are with State Service of Protected Areas, Vilnius and Klaipėda universities and local cultural organizations. The most popular forms of outdoors activities are excursions, hikes, orientation walks; indoors – quizzes, exhibitions, creative presentations, lectures, also large-scale geo-festivals attracting hundreds of participants and integrating diverse educational tools such as ArcGIS, Kahoot, and Actionbound, etc. and arts. Citizen science, experiential learning projects coordinated by LGS “Geographical Window” (2020), “Lithuania – the Country of Nemunas River” (2021), and “Lithuanian Look” (2023) produced free access interactive maps which visualized public contributions. These projects combined education, GIS and participatory socio-geographical research on Public Landscape perception.

GeoNight in Lithuania has evolved into lively tradition. It contributes to the increased visibility of multifaceted geography, fosters spatial and contextual thinking and public involvement. The citizen science perspective enriches the initiative generating both quantitative and qualitative data, which are crucial not only for academic dissemination but also for empowering communities, fostering behavioral change, and supporting long-term decision-making in an increasingly complex world.

Keywords: GeoNight in Lithuania, geography, event, citizen science

IF GEOGRAPHY HAS NEVER BEEN MORE RELEVANT, WHY ARE GEOGRAPHERS LESS VISIBLE? COMMUNICATING GEOGRAPHICAL KNOWLEDGE IN THE AGE OF AI

JEI GEOGRAFIJA DAR NIEKADA NEBUVO TOKIA AKTUALI, KODĖL GEOGRAFAI TAMPA MAŽIAU MATOMI? GEOGRAFINIŲ ŽINIŲ KOMUNIKACIJA DIRBTINIO INTELEKTO AMŽIUJE

Federico Martellozzo, Matteo Puttilli
University of Florence, Italy

Presentation language / Pranešimo kalba: English

Contemporary society is increasingly shaped by challenges that are inherently geographical, from climate change and territorial inequalities to migration, geopolitical tensions, and digital transformations. Yet, despite the growing relevance of spatial thinking, geography and geographers often appear to play a limited role in broader public debates, where territorial issues are frequently interpreted through the perspectives of other disciplines or increasingly mediated by digital platforms and artificial intelligence.

Starting from this apparent paradox, this presentation offers some reflections from the perspective of the Italian geographical community, drawing on the experience of the Società di Studi Geografici. Rather than proposing a comprehensive assessment, it aims to stimulate discussion on how geographical societies can contribute to making geographical knowledge more visible and accessible beyond academia.

The presentation briefly considers some of the opportunities and challenges associated with communicating geography today, including changing public audiences, digital communication, interactive geospatial technologies, and the growing influence of AI in producing and disseminating spatial information. These developments raise broader questions about the role of geographical societies in supporting geographical literacy, promoting informed public dialogue, and maintaining the relevance of geographical perspectives in rapidly evolving communication environments.

By sharing reflections grounded in the Italian experience, the presentation seeks to contribute to a wider European conversation on how geographical societies may continue to foster the communication of geographical knowledge while adapting to new societal and technological contexts.

Keywords: geographical communication, geographical societies, public geography, science communication, artificial intelligence

FROM MAPS AND BOOKS TO WORD BALLOONS: COMICS AS A BRIDGE FOR SCHOOL STUDENTS VISITING THE ITALIAN GEOGRAPHICAL SOCIETY

NUO ŽEMĖLAPIŲ IR KNYGŲ IKI KOMIKSŲ DIALOGŲ: KOMIKSAI KAIP GEOGRAFIJOS PAŽINIMO TILTAS ITALIJOS GEOGRAFŲ DRAUGIJĄ LANKANTIEMS MOKSLEIVIAMS

Nicolò Matteucci

Italian Geographical Society

Sapienza University of Rome, Italy

Presentation language / Pranešimo kalba: English

How can we communicate the evolution of geographical discourse emerging from the activities of the Italian Geographical Society to school students coming to visit it? How can a historic and academic institution be transformed into an accessible, vibrant and engaging space for younger generations?

This intervention explores the potential of comics as a fundamental vehicle for communicating geographic knowledge and complex geographies to visiting school groups, ranging from primary to upper secondary education. Often perceived by younger generations as a dusty museum filled with ancient maps, books and photographs, the Italian Geographical Society actually safeguards centuries of explorations, travels, heritages and geographical imaginations that hold immense narrative potential. In an era when it is becoming increasingly difficult to maintain focused attention, traditional communication methods often fail to attract young and non-specialist audiences. By breaking down institutional history into comic panels and word balloons – through the use of irony and the obvious simplifications that come with it – the language of graphic storytelling may translate complex geographical concepts into age-appropriate visual and graphic narratives (Mezzapelle, Simone, Tabusi, 2023, see also <https://www.geovisum.com/2025/03/03/geonauti-unavventura-allaccademia-dei-fisiocritici/>).

This presentation attempts to offer methodological guidelines demonstrating how comics, understood as a scientific method for disseminating knowledge (Fall, 2025) and a research practice (Peterle, 2021), can transform students from passive visitors into active co-explorers, making geographical heritage (and knowledge) relevant and understandable to contemporary youth. Various geographical societies (e.g., the Royal Geographical Society's institutional guidelines, Graphic Geographical Research and Geography Superheroes) are increasingly interested in adopting comics within their communication forms. This approach could activate innovative and creative (Sou, Hall, 2023) pathways for archives, libraries and research centres, while simultaneously reshaping the trajectory of geography as a discipline at a national and international level.

Keywords: comics, geography, communication, Italian Geographical Society

PUBLIC ENGAGEMENT IN GEOGRAPHY – INSIGHTS FROM GEOGRAPHY NIGHT 2026

VISUOMENĖS ĮTRAUKIMAS Į GEOGRAFIJĄ: „GEOGRAFIJOS NAKTIES 2026“ ĮŽVALGOS

Ana Pejdo, Jadranka Brkić-Vejmelka

University of Zadar, Croatia

Presentation language / Pranešimo kalba: English

The 2026 Geography Night, held at the University of Zadar, brought together students, teachers, researchers, and the general public to celebrate geography through an engaging educational program. Organized by the Croatian Geographical Society – Zadar and the University of Zadar's Department of Geography, the event was part of an international initiative promoting geography as an interdisciplinary science that helps explain environmental, social, and spatial processes.

Visitors participated in numerous workshops, exhibitions, and interactive activities designed for all age groups. The program covered topics such as climate change, sustainable development, marine conservation, island geography, geological processes, digital mapping, and geospatial technologies. Participants also explored astronomy through telescope observations, viewed astrophotography exhibitions, and learned about Mediterranean biodiversity and scientific research. Educational games, virtual travel experiences, and photographic exhibitions further encouraged curiosity and active learning.

As part of the research conducted during the event, interviews were used as a qualitative scientific method to obtain deeper insights into participants' motivations for attending Geography Night and their opinions on the role of geography in the Croatian education system. The interviews revealed that visitors primarily participated because of their interest in geography, opportunities for interactive learning, and the chance to gain new knowledge in an informal environment. They also highlighted positive attitudes toward geography as a subject that develops environmental awareness, critical thinking, and spatial understanding. At the same time, many participants emphasized that geography deserves a stronger position within the Croatian education system because of its importance in addressing contemporary global challenges, including climate change, sustainable development, and responsible resource management.

Overall, Geography Night successfully promoted geographical literacy, strengthened cooperation between educational institutions and the local community, and demonstrated that geography extends far beyond the classroom by helping people better understand the complex relationships between society, the environment, and space.

Keywords: geography, education, Geonight, Croatia

WHY PODCASTING GEOGRAPHY TO REACH THE COMMUNITY? THE EVIDENCE FROM THE CZECH GEOGRAPHICAL SOCIETY

KODĖL VERTA SKLEISTI GEOGRAFIJOS ŽINIĄS TINKLALAI DĖMIS SIEKANT PASIEKTI BENDRUOMENĘ? ČEKIJOS GEOGRAFŲ DRAUGIJOS PATIRTIS

Jiří Preis

Czech Geographical Society, Czech Republic

Presentation language / Pranešimo kalba: English

Since January 2025, the Czech Geographical Society (CGS) has been producing its own podcast, which is considered a tool for reaching young people, the broader public, and all those interested in geography. After almost 1.5 years, we evaluate our efforts.

How difficult is it to penetrate cyberspace and create an audience from zero? What topics are usually well-received? How to measure impact? And why do we think that podcasting is a promising pathway to communicate geography?

This presentation aims to share our good and bad practices and to open a discussion about similar experiences in communicating geography through podcasts across Europe.

Keywords: podcast, science communication, geography, media, Czechia

THE COOPERATION OF GEOGRAPHERS IN A CONTEXT OF ENVIRONMENTAL SUSTAINABILITY

GEOGRAFŲ BENDRADARBIAVIMAS APLINKOS TVARUMO KONTEKSTE

Rūta Zabitiienė

Klaipėda University, Lithuania

Presentation language / Pranešimo kalba: English

The title of presentation arises from intensive demand of cooperation between geographers, as it is crucial today as never before. Everyday we face spatial challenges – like climate change, urbanization, and geopolitics – require translating complex geographic data into clear, actionable stories. Geographers bridge natural and social sciences; effectively communicating these findings is essential for public awareness and informed policymaking.

Geographers play a key role in spatial analysis and modelling, utilizing geographic information systems (GIS) and remote sensing to assess greenhouse gas emissions, vulnerability, and mitigation potential. They identify emission hotspots, evaluate areas suitable for renewable energy deployment, and assess the effectiveness of various mitigation strategies. Moreover, geographers contribute to

sustainable land use planning and management, identifying opportunities for carbon sequestration through reforestation, improved land management practices, and resilient urban planning. Geographers also play a critical role in understanding the social dimensions of climate change mitigation. Geographers also communicate about climate change science and mitigation strategies to policymakers, stakeholders, and the public, raising awareness and fostering engagement.

The cooperation of geographers in environmental sustainability provides critical tools, spatial modelling, and cross-sector insights to tackle global challenges. This collaboration helps translate complex environmental data into tangible, actionable policies – such as optimizing green infrastructure, managing water resources, and driving climate-smart agriculture at both local and global scales.

Keywords: geographers, cooperation, environment, sustainability