European Academy of Land Use and Development
Europäische Akademie für Bodenordnung
Académie Européenne des Sciences du Foncier

10th International and Interdisciplinary Symposium

Sustainable Land Use and Development: Planning and Monitoring

Nachhaltige Landnutzung und -entwicklung: Planung und Monitoring

September 2nd - September 4th, 2021
University of Natural Resources and Life Sciences Vienna (BOKU)

PROGRAM & ABSTRACTS

Thursday, September 2nd, 2021

09.00 Welcome address
Representative of BOKU

Introduction
Alexandra Weitkamp, President of the European Academy of Land Use and Development.

Morning Session *(Chair: Andreas Hendricks, Universität der Bundeswehr, München).*

09.20 Could land management be the immune system of sustainable land development?
Erwin Hepperle, ETH Zurich, Tine Köhler. Frankfurt University of Applied Sciences

9.45 Institutional development in the land development domain: An inquiry into the nature of legal reforms – efficiency enhancing or redistributive?
Peter Ekbäck. KTH Royal Institute of Technology, Stockholm

10.10 Discussion

10.20 COFFEE BREAK

10.35 Enhancing public value in public land development through co-creation.
Melissa Candel, Jenny Paulsson. KTH Royal Institute of Technology, Stockholm

11.00 The assessment of land resource management for sustainable spatial development. An analysis of legal framework and proposal for evaluation of the management of land-related resources in the context of sectoral policies and spatial development planning.
Armands Auziņš, Jānis Viesturs, Andis Romanovs. Riga Technical University

11.25 Discussion

11.35 Cadastral development – long term implications of policies and organisational choice.
Arve Leiknes, Leiv Bjarte Mjøs. Western Norway University of Applied Science.
August E. Røsnes. Norwegian University of Life Science, Aas

12.00 The role of the cadastre in land use planning - An overview of the Estonian planning system and cadastral input.
Elery Taimsaare, Evelin Jürgenson. Estonian University of Life Sciences

12.25 Discussion

12.35 LUNCH *(Mensa, TÜWI, Peter Jordan-Strasse 76, 1190 Vienna)*

Afternoon Session *(Chair: Walter Seher, University of Natural Resources and Life Sciences Vienna)*

14.00 Planning versus property right - realising sustainable urban land use.
Berit Irene Nordahl. Oslo Metropolitan University

14.25 Land acquisition and property formation in urban planning.
Sjur Kristoffer Dyrkolbotn, Arve Leiknes. Western Norway University of Applied Science.
August E. Røsnes. Norwegian University of Life Science, Aas

14.50 A comparison of housing tenure between the nordic countries.
Lisa Bergsten, Jenny Paulsson. KTH Royal Institute of Technology, Stockholm

15.15 Discussion

15.30 COFFEE BREAK

15.45 Public participation through early dialogues in planning - a case study of Swedish municipalities.
Anna Hrdlicka. KTH Royal Institute of Technology, Stockholm

16.10 Risk-oriented spatial planning.
Barbara Steinbrunner. Technische Universität Wien

16.35 Discussion

16.45 Monitoring residential locations in land management – Applying structural equation modelling for operationalisation on the example of the city of Dresden (Germany)
Alexandra Weitkamp, Andreas Ortner. Technical University Dresden

17.10 Resilient cities in the post COVID-19 era, focusing on density questions - The case of housing districts in the capital of Greece, Athens.
Ioulia Moraitou, University of West Attica, Athens

17.35 Discussion

19.30 CONFERENCE DINNER

Friday, September 3rd, 2021

Morning Session *(Chair: Erwin Hepperle, ETH Zurich)*

08.30 Measures for climate change mitigation vs. climate resilience in cities.
Matthias Soot, Alexandra Weitkamp. Technical University Dresden

08.55 Climate proofing of (urban) planning instruments in Austria.
Arthur Schindelegger. Technische Universität Wien

09.20 Climate-proofing cities by planning laws? Dutch and American governance pathways towards coastal resilience.
Safira De La Sala. Technion – Israel Institute of Technology

09.45 Discussion

10.00 COFFEE BREAK

10.15 The institutionalization of nature in spatial planning: The case of the Portuguese national spatial plan.
Rúben Mendes, Teresa Fidelis. University of Aveiro, Portugal

10.40 Land use planning in rural areas of Latvia and Lithuania.
Anda Jankava, Velta Parsova. Latvia University of Life Sciences and Technologies, Jelgava.
Virginija Gurskiene, Baiba Ziemele. Vytautas Magnus University, Kaunas

11.05 Discussion

11.15 Urban MoVe – Using mobility contracts to manage residential mobility.
Kurt Weninger. Technische Universität Wien

11.40 Accessibility analyses for older people in rural areas.
Markus Schaffert, Konstantin Geist, Jonathan Albrecht, Dorothea Enners, Hartmut Müller. Hochschule Mainz

12.05 Discussion

12.15 LUNCH *(Mensa, TÜWI, Peter Jordan-Strasse 76, 1190 Vienna)*

Afternoon Session *(Chair: Armands Auziņš, Riga Technical University)*

13.30 Qualitative geovisualizations on student everyday life experiences for participatory urban planning.
Kevin Kaminski, Markus Schaffert. Hochschule Mainz

13.55 Application of social network analysis in context of sustainable urban development.
Anja Jahn, Alexandra Weitkamp. Technical University Dresden

14.20 Discussion

14.30 Reflection on the sustainability of urbanization in Europe since 2000.
David Evers. Netherlands Environmental Assessment Agency

14.55 Underutilisation of public land as a contested concept; Examination of conceptual caveats and implications on planning decision-making.
Priyanwada Indeewaree Singhapathirana, Eddie Chi Man Hui. The Hong Kong Polytechnic University. Wadu Mesthrige Jayantha, RMIT University, Melbourne.

15.20 Discussion

15.30 COFFEE BREAK

15.45 Cultural heritage in the development of communes - an example from the Małopolskie Voivodeship, Poland.
Józef Hernik, Robert Dixon-Gough, Barbara Prus, Karol Król. University of Agriculture in Krakow

16.10 Recovery of Aleppo – Strategies for the revitalization of a world cultural heritage site.
Fabian Thiel. Frankfurt University of Applied Sciences

16.35 Discussion

16.45 Excursion information

16.55 GENERAL ASSEMBLY

Could Land Management be the Immune System of Sustainable Land Development?

Erwin Hepperle; Tine Köhler

ETH Zurich (ret.); Fachbereich 1 – Architektur Bauingenieurwesen Geomatik, Lehreinheit Geodaten- und Real Estate Management, Frankfurt University of Applied Sciences

Abstract:

Land use planning is considered sustainable if the ecological limits of growth are regarded as a real fact and a socio-economic balance is made possible in society across generations. Otherwise, ecosystem services are irretrievably destroyed on the long term, with foreseeable disastrous consequences. Where destruction does not go that far, there is a threat of undermining effects for living together ranging from alienation to social division and high vulnerability as a result of mutual spatial dependencies. There are many indications that we already crossed both borders.

Sustainable land management needs to provide very concrete instruments and measures. The common economic fiction of prosperity, which is mostly based on aggregated data like GDP, does not capture an undesirable development. On the contrary: as long as economic growth is associated with land consumption such objectives are not mitigations but one of the causes of harmful effects. For implementation of sustainability, real human dimensions must be decisive and involve those concretely affected. This is only possible in a local/regional context. Disturbances of the ecological and socio-economic balance must be detected at this level which has consequences for the monitoring of sustainable land development. But at what point should and could one intervene with land management measures? What effects should measures have? What is the most effective way of approaching the equilibrium again, based on real human dimensions?

Corona has shown us that dysfunctions in the immune system of individuals can have serious consequences for a society as a whole and so does an unsustainable land management of one region. "Think globally, act locally" also applies to both the management of a pandemic and land use planning. This gave us the idea of examining if the way the immune system works can be transferred to land management. In approaching this hypothesis, we found that the focus for the selection of land management measures was directed to some critical points. This presentation gives an insight into the first findings.

Institutional Development in the Land Development Domain: An inquiry into the nature of legal reforms – efficiency enhancing or redistributive?

Peter Ekbäck

Real Estate Planning and Land Law, KTH Royal Institute of Technology

Abstract:

Land development involves many different assessments, decisions and judgements, and the institutional designs of these rules of procedure exhibit a variation of different structures. During legislative processes it is often stated by the law-making bodies that efficiency is an important aim and motive in the establishment of new or revised review procedures. The prevalent theoretical models concerning institutional development and change can, however, be classified into two opposing traditions depending on whether they perceive legislation as allocative (value-enhancing) or redistributive in nature.

The aim of this paper is to present some existing theories on institutional development and by two case studies, concerning legal reforms in Swedish legislation on land development, evaluate the explanatory and predictive capacity of these theories. The results and analysis indicate that both theoretical traditions have explanatory value and that the concept of path dependence is an important complementary factor.

Enhancing Public Value in Public Land Development through Co-Creation

Melissa Candel, Jenny Paulsson

Department of Real Estate and Construction Management, KTH Royal Institute of Technology

Abstract:

Municipalities in Sweden use municipal land to develop sustainability-profiled districts. These districts are used to create public value by achieving various public sustainability objectives, many of which are realised by property developers, and act as testbeds for innovation. Here we apply a public value co-creation perspective to the process of coordinating public land development with subsequent building development projects, typically occurring alongside detailed planning. While there are some previous studies that have applied the concept of co-production to urban planning (e.g. Albrechts, 2013; Watson, 2014), this is typically less associated with value creation (Voorberg, et al., 2015; Torfing, et al., 2019). The aim of this study is to explore how municipalities co-create public value with other actors during land use planning and development in sustainability-profiled districts.

Case studies of five sustainability-profiled district developments in different municipalities in Sweden are presented and compared. The empirical material consists of interviews with the municipalities' project managers and other municipal representatives, as well as documents, such as sustainability programs and development agreements. Findings illustrate that municipalities' desired public value outcomes are not only co-produced in this context but that they are also co-designed with other actors, such as property developers and citizen representative groups. A central part of the municipalities' role is to enable co-creation between developers by creating different arenas for them to meet and creatively solve problems together.

Contributions are made to the public land development literature by illustrating how municipalities in Sweden use public land to create public value, encompassing ecological, social, political and economic dimensions (Benington, 2011). We also illustrate how the creation of public value in sustainability-profiled district developments benefits from co-creation with other actors, and assess the applicability of a co-creation theoretical perspective to this empirical context. Finally, we draw on the co-creation literature to identify possibilities for municipalities to improve creative problem solving between actors in these urban district developments and increase collaborative innovation potential

The assessment of land resource management for sustainable spatial development An analysis of legal framework and proposal for evaluation of the management of land-related resources in the context of sectoral policies and spatial development planning

Armands Auziņš, Jānis Viesturs, Andis Romanovs

Riga Technical University

Abstract:

Sustainability aspects in land management refer to the future-oriented changes when creating necessary preconditions for balanced interests in using the land-related resources. Land management practice primarily reflects both interests a spatial development and preservation of natural resources. A sustainable future may be seen when focusing more on diminishing or changing development needs in the way to minimise the impact on the environment and natural land resources. The objectives of the study are directly aimed at more efficient use of land resources, taking into account policies and challenges that have a territorial impact. These are mainly land, environmental, spatial development, agricultural and forestry policies, the assessment of which will take into account the territorial interests of agriculture, forestry, important production and construction infrastructure. The legal framework for the use of land resources is analysed in the context of spatial development planning, and a comparative analysis is performed based on the land use management practice of four countries. Particular research questions are developed to explore land use for: (1) economic activities, (2) environmental protection and (3) spatial development as well as to discuss their interaction and challenges in the context of sectoral policies and spatial development planning. The study evaluates land use management by identifying sustainability criteria. Based on the basic principles of sustainability, a management assessment model is proposed. The developed model induces an evaluation index of land use management, which consists of three sub-indices accordingly to sustainability dimensions.

Cadastral development – long term implications of policies and organisational choice

Arve Leiknes, Leiv Bjarte Mjøs; August E. Røsnes

Western Norway University of Applied Science; Norwegian University of Life Science, Aas, Norway

Abstract:

The quality of existing cadastral information, whether of land or space in general, is a reminder of the characteristics of the cadastral system, how it was constructed, the properties with which its information was registered and updated. The users of information from such registries or from land administration systems in general will then be exposed to the long-term effects of the origin and development of this information, effects which also might have consequences for all those individuals and organisations with direct and indirect relations to the information concerned.

The authors' ambitions with this paper are to interpret the development of a cadastral system where information connected to real estate and in particular land is encumbered with inaccuracies and flaws. As rather lately developed on the European rim the Norwegian cadastral system as a variant of the German one, gives rich opportunities to explore how its origin and evolution still have consequences for the quality of the existing information. In this paper investigations are directed to the basic surveying, mapping and registration of real estate, the technological modernisation process and the organisation of this process. The findings indicate shortcomings in all these components for developing a cadastral system.

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The Role of the Cadastre in Land Use Planning - An Overview of the Estonian Planning System and Cadastral Input

Elery Taimsaare, Evelin Jürgenson

Estonian University of Life Sciences

Abstract:

Land use planning is essential to ensure sustainable land use and guide development processes. The main task of spatial planning is to agree on the area's spatial development principles and determine the land use and construction conditions. Since cadastre records information on land use, it can be an essential tool for making planning decisions. Estonian cadastre includes maps for the graphical presentation of land information, for instance, boundaries, area, intended use, location of objects causing restrictions. This year, the entire 3D map of Estonia became public, and its purpose is to find wide use in planning decisions. Cadastre includes a lot of information and maps, and it is crucial to understand how all this information can be used more effectively.

Planning versus property right - realising sustainable urban land use

Berit Irene Nordahl

Urban and regional research Institute, Oslo Metropolitan University

Abstract:

This article champions attention to property rights in liberal planning systems, especially when the system commits to ambitious land use changes. The point of departure is the liberal planning system of Norway and the Norwegian Government's high ambitions of curbing urban sprawl - a long standing commitment that was enforced in the Paris Agreement . The article show that the current system is unsuitable for solving the many challenges of densification and reuse of urban land. To shed light on the problem, the article presents the densification processes in the city of Bergen. The densification objective is high up the agenda as Bergen, like many other Norwegian cities, have signed agreements with the ministry where they receive significant monetary contributions to public transport infrastructure. They receive this on two conditions: The first condition targets the end result: sprawl shall be curbed; the density shall be increased and that citizens shall have shifted from private cars to public transport. The second condition targets the process: that landowners shall have freed urban land for developers and developers shall have contributed their share to the upgrading. The case of Bergen focus on the latter objective: the challenges of freeing land from private developers and the closely connected challenges of securing landowners' contribution.

The article starts by presenting in what way the Norwegian planning system is liberal, and how developers' contribution to infrastructure is organised under this system. The second part presents the case of Bergen showing what obstacles the planning and building law embeds in handling private-led urban redevelopment, and how this hinders a lean practice of extracting developers' gain. This part also show how Bergen go about the challenges and the two models they apply to reach solutions, what is costs in time and efficiency and what unintended consequences it has for citizens and local businesses. The last part point at what legal amendments and financial arrangements that could ease the process and discuss what lessons that can be learned about liberal and high ambitious planning systems.

Land acquisition and property formation in urban planning

Sjur Kristoffer Dyrkolbotn, Arve Leiknes; August E. Røsnes

Western Norway University of Applied Science; Norwegian University of Life Science, Aas, Norway

Abstract:

The aim of urban planning and development control are to regulate propositions and implementations of urban development projects. Such public process will comprise categories of necessary efforts to reshape or transform the properties in the regulation area in question from an existing situation to a new one defined by procedures and provisions of planning and development control. Accordingly, this ambition must use tools that span over the whole process from plan formulation, control of building projections and property formation. However, these national systems for coordinating these processes will normally differ from each other, even those most closely related.

This paper uses the Norwegian systems for planning and realising of plans to highlight particularities that are connected both to the planning system as such, to the provision of land and how the land is acquired for development, and finally to how the existing ownership situation in land can be converted to new use as well. The outcome of this exploration indicates that the planning system as such gives the local planning authorities the choice between a more costly way both to plan and to provide land for development or to let planning provision of land be a responsibility for developers. Then the property formation system allows for the existing landowner and developer to decide how the existing ownership in land together with new constructions can be transferred to the new owners. The conclusion is that the public process in question will not be a uniform one, one lined process from planning to closed sales of new properties, but a process that goes forwards and backwards depending on the acquisition land and how the ownership of new developed constructions can be transferred according to the cadastral system.

A Comparison of Housing Tenure between the Nordic Countries

Lisa Bergsten, Jenny Paulsson

Department of Real Estate and Construction Management, KTH Royal Institute of Technology

Abstract:

Housing tenure is a recurring concept in housing research. The various forms of tenure can be analyzed from different perspectives. A starting point for such an analysis can be to examine the forms from a property rights perspective. Property rights theory often describes the ownership concept as a bundle of rights and obligations that the law confers on the property owner and thus is defined by legislation (e.g. Demsetz, 1967; Ekbäck, 2009).

There are more and more new initiatives for variants of tenancy forms and they are often based on difficulties in entering the housing market, especially for young people. Providing a wider choice of tenure forms may lead to increased possibilities to enter the housing market and prevent segregation, thus gaining increased social sustainability. More research is needed on the legal aspects of the tenure forms, in order to understand the essence of these forms and to be able to design legally secure forms in the future. Learning from other countries will increase the possibilities of finding new forms of tenure, as well as improving existing forms.

This study has a legal perspective and examines the rights and obligations that different forms of housing tenure entail for both the resident and the property owner. This is conducted through a comparative study between four of the Nordic countries: Sweden, Norway, Denmark and Finland. The purpose of the study is to examine and illustrate what similarities and differences exist between the forms of housing tenure in the different countries, but also to find out how they are legally designed. This contribution can be a helpful tool when new forms of housing tenure are designed or existing forms should be adjusted. For this study, legislation and preparatory work, as well as other relevant legal literature have been studied.

The tenure forms are analyzed based on property rights theory. As expected, the result suggests both similarities and differences between the forms of housing tenure and between the countries when it comes to legislation and legal design of the forms. In addition, it suggests that forms of housing tenure that are seemingly comparable between the countries (or some of them) also can be rather different in some regards. The results will serve as a basis for further studies of the new forms of housing tenure that have emerged in Sweden in recent years, and how they can be analyzed and improved to become secure and socially sustainable forms.

Public participation through early dialogues in planning - a case study of Swedish municipalities

Anna Hrdlicka

Real Estate Planning and Land Law, KTH Royal Institute of Technology

Abstract:

Citizen participation in planning have been and are used in many countries in the world - for different reasons. Since Sherry Arnsteins paper on ”The Ladder of Participation” in 1969 through til today processes and methods were developed to make ordinary citizens more involved in planing - the aim and execution of these activities, however, varies over time. Authors like Rachelle Alterman has a more processual approach towards dialogues and their implementation in the planning as have Raynor - Doyon - Beer in their article where collaborative planning, transition management and design thinking are evaluated.

In the case of Sweden; lawmakers has since the 1970-ies made a point of involving the citizens early in the planning process - in order to make the processes more democratic, closer to the people involved, making every voice heard. This however does not entirely correspond with the rules of the Planning and Building Act (Plan- och Bygglagen (PBL)) introduced in 1987. In that process to follow according to PBL. In that process the legislated dialogue (samråd) with people affected happen at the end of the process where most aspects of the plan have already been decided.

This paper explores if, why, when and how, Swedish municipalities are working with processes like this. The papers is based on interviews with public servants and politicians from around 60 Swedish municipalities in the range 35-100 000 inhabitants. The interviews have been carried out during the spring 2021 (via Zoom). The result shows different attitudes towards, appreciation of and believe in public participation in early stages of the planning process.

Risk-oriented spatial planning

Barbara Steinbrunner

Forschungsbereich Bodenpolitik und Bodenmanagement, Technische Universität Wien

Abstract:

The contribution focuses on sustainable land use in term of a risk-oriented spatial planning to reduce natural hazard damage.

Considering it’s preventive character spatial planning is gaining an increasingly important role in natural hazard management due to its influence on the spatial distribution of use. In terms of prospective planning, land use adapted to the natural forces with the aim of reducing the risk of damage should be promoted. The approach of a risk-based spatial planning is rather innovated, because the current spatial use decisions usually are hazard-oriented and derived from the hazard zone plans.

The main part of the presentation is the developed model for a risk-oriented planning approach in the form of a decision tree based on the hazard takes into account, the use, organizational measures and spatial planning considerations.

After that the future challenges in natural hazard management and the difficulties in implementing a risk-oriented planning approach will be presented. The discussion about a regional structural measure and settlement concept is intended to provable new ideas for a more risk-based approach in spatial planning.

Monitoring residential locations in land management – Applying structural equation modelling for operationalisation on the example of the city of Dresden (Germany)

Alexandra Weitkamp, Andreas Ortner

Chair of Land Management, TU Dresden

Abstract:

Locations have an important impact on land management activities. In German real estate valuation, the standard land value of similarly usable land is traditionally used as a spatial indicator to determine the quality of the location. Based on expertise, the expert committee for real estate values methodically evaluates a certain number of purchase prices in the comparison approach to initially conclude the standard land value. Thus, the standard land value is often used as an indicator of location, although it is known that it represents only a part of the location and that it is often difficult to determine standard land values (especially in areas of few or missing transactions). In the context of residential location assessment, spatial indicators like accessibility and distances to relevant facilities such as green spaces or commercial opportunities have received little attention so far.

The classical assessment (regression analysis) also reaches its limits if further influencing factors are to be included in the analysis (because of e. g. correlations, low significances). By applying structural equation modelling to operationalise residential locations, these important, as well as complex indicators of locations, can be integrated. Based on a mathematical-statistical explanatory model, more precisely differentiable residential location assessments can be realised. Thus, the structural equation modelling for the operationalisation of residential locations provides new impulses for an improved location assessment in land management and usability for real estate valuation as well as higher market transparency and better monitoring of land uses and developments.

Initial results are already available for the city of Dresden (Germany): Here, the structural equation model is especially suitable to identify locations within the city that are not assessed with sufficient reliability. These locations are characterised in particular by the fact, that the standard land value and the determined location value for residential use differ considerably. This makes clear that the standard land values in the city of Dresden do not always represent comprehensively the location.

Due to this, an even more detailed analysis of these locations becomes necessary. Furthermore, there is a need for continuing research by integrating additional spatial indicators into the mathematical-statistical explanatory model. On the one hand, accessibility to relevant facilities will be modelled based on different modes of mobility, and on the other hand, building structures, as well as visual axes to landmarks will be integrated for more realism. From a technical perspective, the modelling process will be also automated to a large extent. This increases the added value for practitioners and can be of benefit in particular for the expert committees for real estate values. In a scientific context, the advantages are that all correlations between spatial indicators can be taken into account and thus all information can be processed in the mathematical-statistical explanatory model.

Resilient Cities in the post COVID-19 era; Focusing density questions; the case of housing districts in the capital of Greece, Athens.

Ioulia Moraitou, John Kiousopoulos

UNIWA Athens

Abstract:

Future cities may require important adjustments to urban development and their socio-economic functions as a result of COVID-19 new reality.

This discussion paper explores current themes and challenges that could substantively reshape a multi-level policy/planning agenda that needs to adjust to COVID-19, acknowledging the following pillars (milestones): physical distancing requirements, medium-term and long term changes to the economy and the urban life while testing the specific implications for urban densities, social and green infrastructure.

Based on the fact that COVID -19 new reality has brought considerable complex challenges for the immediate and medium-term future of our cities, this work covers relevant aspects of infrastructure strategic planning and monitoring, while also attempts to examine the potential larger implications for urban resilience.

By further highlighting part of a wider academic exercise, which was largely based on the recording and the evaluation of demographics, land uses, building stock, property status, land values and various services available (within a radius of 500 meters of the focused building blocks) for each study areas, our task focused in approaching and describing the dynamics of the land use formation, the importance of the economic activities and the land values in the shaping of the respective building blocks ("neighbourhoods"), the diffusion of "incompatible" or "supra-local" uses and activities in areas, where the use of housing was the main function of the urban fabric and that still prevails (targeting thus, neighbourhoods mostly outside the centre), as well as their relationship with pre-existing or non-existent "degradation" trends in the region.

This work attempts to open the agenda for a wider inquiry into policy-strategic planning approaches and their consequent practical applications, aiming at prioritizing the spatial character; safeguarding the human value of shared space, of our cities, while targeting at the same time urban resilience and spatial cohesion, through a serious urban regeneration activity.

Measures for climate change mitigation vs. climate resilience in cities

Matthias Soot, Alexandra Weitkamp

Chair of Land Management, TU Dresden

Abstract:

Climate change is going to affect our daily lives more and more in the next years and decades. Mayor climate models show, that temperatures increase between 1.5 - 4.5 Kelvin and extreme eather conditions will arise more frequently in the next years. Draught, heavy rain flood and storm risk will occur more frequently (REMO Climate Modell). Measures to reduce carbon emission try to reduce the amount of carbon in the atmosphere. Climate resilience subsumes measures to adapt to climate change to minimize the effect on people. Many studies only focus on one of these issues.

This paper examines the conflict between climate change mitigation and climate resilience in cities. The goal is to identify the major conflicts and motivate a joint perspective on taken measures. Finally, land management and socio-economic impact are discussed.

In Germany, buildings cause 40 % of the emission. During the corona crisis, the building sector was the only sector that failed the reduction goals and has therefore the highest potential to take action. The reduction, mainly of CO2 emission, is the main goal for climate change mitigation. However, the expected rising temperature needs to be taken into account. This implies that a change in the temperatures in the cities can only be slowed down but not stopped.

One main measure, that is subsidized by the German state is remote heating. Remote heating needs dense building structures to be efficient. On the other hand, a dense building structure implies that fresh air can’t enter the district and high temperatures in summer can’t cool down during the nights. Therefore, it is necessary to find a balance between building density and air corridors in cities. The measures and burdens that are taken by society should be evenly distributed. A fair land readjustment it is necessary to derive reliable models for building density/air circulation ratios and adjust the area available for buildings without burden individuals.

Also, the taken measures in context of modernization can be seen in the light of real estate valuation: Taken measures have an impact on real estate values. The modernization of buildings can be subsidized but the state should only support the owner for the difference in the rising price of the real estate. It is necessary to estimate the impact of modernization on real estate values.

Climate Proofing of (Urban) Planning Instruments in Austria

Arthur Schindelegger

Land Policy and Land Management, Institute of Spatial Planning, TU Wien

Abstract:

While sustainability was the essential superior framework condition in spatial planning since the 1990s, climate change mitigation and adaptation are increasingly gaining importance in the field, enriching the understanding of sustainable land use and development. Climate change mitigation has – most recently due to the Paris Agreement – a clear transnational framework and target system. The reduction of CO2 emissions is a common effort that requires rapid changes in planning objectives as well as planning practice and tackling mainly the transition in mobility and energy systems. The question that remains herein widely unanswered, is the role of spatial planning in climate adaptation as climate change effects are immediate and need an adequate and forward looking reaction to adapt to environmental change.

Austria has – as most European states – passed a national adaptation strategy accompanied by an action plan for implementation. Targets in the field of spatial planning are mainly based on observed and expected changes in natural hazard exposure that need to be addressed and taken into account. Apart from the national framework, especially major cities have developed manifold strategies to integrate climate change adaptation in their spatial planning policies and practice. In particular, cities focus in their spatial adaptation policies on reducing heat stress and managing heavy rain. But blue and green infrastructure that provides climate services is predominantly established in public space that has to accommodate a growing number of services widely disregarding the role of private actors

and property owners in adaptation.Therefore, the contribution seeks to conceptualize the general approach of ‘climate proofing’ in spatial planning in its normative understanding for the case of Austria. Based on desk research and interviews with international experts and practitioners a comprehensive framework is drafted which clearly outlines key components of integrating climate adaptation in planning decisions on different levels (e.g. land use, zoning, detailed development plan). This includes identifying the enabling environment, necessary capacities and procedural aspects to link certain adaptation measures to the right planning level and instrument. This framework will be further used for evaluating the current practice of planning authorities and outline a possible harmonized integration of climate proofing in the existing Austrian planning system on local and regional level.

Climate-Proofing Cities by Planning Laws? Dutch and American Governance Pathways towards Coastal Resilience

Safira De La Sala

Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology

Abstract:

Climate change has emerged as a tangled field of environmental science, law, and policy. Since early 1990s, local governments are striving to increase their urban resilience. Yet, too little has been discussed about the specific roles of planning and property laws as tools to foster - and in many cases also to block – climate adaptation. Current literature on adaption is siloed between the aspects of governance, planning and, to a smaller proportion, its legal dimensions. There is a dearth of cross-cutting studies that jointly examine the problem, both conceptually and empirically. In reality, there is a clear mismatch between the speed that the dangers of climate change evolve, and the terribly slow pace at which legal doctrines change. This disparity creates challenges to the implementation of well-intended adaptation policies.

One of the ways to approach the issue is by acknowledging the inherent multilevel and polycentric characteristic of climate adaptation governance. From this perspective, many challenges emerge on making the planning answers viable by their respective legal systems. To highlight such differences – and complementarities –, this exploratory research takes a comparative perspective from two distinct sets on the aim to adapt to sea-level rise challenges: the Netherlands and Florida (USA).

Florida (USA) and the Netherlands were selected due to their major differences in approaching governance, law, planning and ultimately, their diverging public attitudes towards climate change. Both share a history of flooding and extreme weather events and have ecently experienced accelerated SLR. This study sought to understand to what extent each jurisdiction has been able to harness planning laws and property rights to design better modes of adaptation to SLR. We selected three distinct strategies: "accommodation" applied in Miami Beach (USA), where the local government is in an endeavor to elevate the whole island, which has the natural vocation to protect mainland; "managed retreat" (the "room for the river" policy) and "expansion into the water" (amphibious housing) in the Netherlands. The study applied a combination of legal and field research methods. The legal research surveyed the "soft law" of official policy documents, legislation, and relevant jurisprudence in each of the case countries. The (qualitative) field research consisted of in-depth semi-structured interviews with key informants and stakeholders including policymakers, legal experts, planners, and property owners. In each case, were analyzed contributing policies, and legal and regulatory systems, as well as the constraints faced during implementation.

The findings suggest that both jurisdictions provide positive and negative lessons for governance and regulatory systems to allow planning adaptation. As assumed a priori, entrenched property rights, static planning regulations, and institutional constraints limited the full implementation of adaptation measures to SLR. And yet, both have introduced some innovative legal and policy measures to achieve better land and water management that can contribute to further research and decision-making in other jurisdictions.

The institutionalization of nature in spatial planning: the case of the Portuguese national spatial plan

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Abstract:

Recognizing land as a limited environmental resource and preventing land degradation are among the strategies to prevent climate change impacts. Spatial planning is widely recognized as a tool to cope with these challenges as it may influence decision-making at multiple governance and sectorial levels. Although the spatial planning frameworks differ from country to country, many have adopted land-use strategies or plans at the national level. These usually aim to design the major policy objectives and measures to ensure the protection of national land values and guide forthcoming development strategies. In many countries, where top-down spatial planning frameworks are dominant, this plan plays a key role in the guidance of sectorial, regional, and municipal plans. This article studies the most recent Portuguese national land-use plan to understand how nature is institutionalized in the spatial planning discourse and how are narratives built. For this purpose, we use a methodology based on critical discourse analysis focusing on three main aspects, namely, the conceptualization of nature, the relations with sustainability or economic discourses and intertextuality with other texts. The findings show nature appearing interconnected with economic discourse through the use of 'bridge terms' as green economy or circular economy and the relevance of ecosystem services for economic activities. Simultaneously, nature appears connected to sustainability through the emphasis given to biodiversity, ecosystems and environmental carrying capacity. Besides the technical and political discourse behind the narrative, a scientific discourse emerges as a mean to legitimate climate change as the major environmental problem in Portugal. International documents related to climate change come out as the main sources of intertextuality. A nexus between nature, land use conservation, and the environmental challenges related to climate change is widely recognized and materialized in concrete measures. Although nature is dominantly conceptualized as a provider of resources, other perceptions emerge, like natural engineering and nature-based solutions which address nature not only as an object but as a tool to solve problems as well. Future studies should attentively analyze if and how these narratives are being fostered in other subsequent plans, especially in the normative aspect, with greater potential influence decision-making at local scales.

LAND USE PLANNING IN RURAL AREAS OF LATVIA AND LITHUANIA

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Abstract:

In the neighboring Baltic countries - Latvia and Lithuania, significant changes have taken place in use and planning of rural land since 1990. As result of the land reform, there has been transition from state monopoly rights to land ownership. Instead of several thousand hectares of state and collective agricultural enterprises, farms of natural and legal persons of various sizes have been established. In both countries, along with the legal framework of land reform, land and spatial planning systems have also developed in parallel. However, in each country these processes have taken place independently, with their own characteristics, as well as with relevant institutional provision, as result of which each country has developed its own land use, planning and management system. The aim of the study is to compare these processes and their results in two Baltic States countries and find out the impact of legal framework and land use planning documents on land use, planning and management in rural areas

Urban MoVe – Using Mobility Contracts to manage of residential mobility

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Abstract:

The topic of housing is becoming increasingly important as a central field of action for climate protection measures. Until now, little attention has been paid to sustainable mobility in residential areas, which has a great potential for CO2 and energy savings and which, contrary to many transport policy objectives, is not being exploited. For a holistic climate- and energy-efficient planning of residential areas, early consideration and planning of mobility concerns and innovative mobility solutions is indispensable, since approx. 80% of all journeys begin and end at home. Here, the choice of means of transport is decisive. Initial experience suggests that positive steering effects can be achieved primarily through private-law instruments (e.g. mobility contracts, funds, urban development contracts) between municipalities and project applicants. Currently, new national and international territory is being broken in the development, application and evaluation of private-law steering and planning instruments. Within the Urban MoVe research project first practical examples in Graz and Vienna were analysed, with focus on the question to what extent private law instruments are suitable as steering instruments for an interlinked, future-oriented urban and mobility planning. Effects and successes of already implemented practical examples were analysed and form the basis for legal, measure- and actor-related as well as process-related new and further developments of the contractual steering instruments. Initial international best practice considerations complete the picture to ensure transferability of the project results.

Accessibility analyses for older people in rural areas

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Abstract:

The accessibility of public services is a prerequisite for seniors to be able to grow old in their homes. Geographical Information Systems (GIS) are in use to make existing provision gaps visible. In this context, simple distance or time cost calculations on route networks are mostly applied. However, other information relevant to the target group is usually not taken into account. This is the case, for example, for 3D data such as terrain inclines, but also for stairs and other path barriers (which are important for seniors with walking aids, among others).This also applies to information on the demographic profile of residents. Newer data products, such as the German Census data (for population structure) or Open Street Map (in which path barriers can be detected) - in combination with geobase data and municipal statistical data - open up ways to more realistic accessibility calculations.

The presentation shows an approach to calculating the accessibility of facilities that are particularly important for older people. The above mentioned datasets are taken into account to arrive at more realistic estimates of accessibility.

Qualitative Geovisualizations on student everyday life experiences for a participatory urban planning

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Abstract:

n spatial planning processes complaints about the low voluntary participation of younger population groups are widespread. There is a danger that the views of these groups are not taken into account in planning considerations and decision-making. Against this background, qualitative Geovisualizations aim to give students a visible and audible voice in urban planning. Qualitative geographic information systems (GIS) combine sketch mapping and content analysis with code clouds in order to visualize locations of day-to-day needs. The mixed methods of Geoinformatics and Human geography tries to bridge qualitative and quantitative dichotomies that often generalize and prevent profitably adoptions and the actual use of complementary research approaches. Besides the methodological reflection, theories of spatial production are used to illustrate that spatial perceptions derives not from absolute spaces (often seen in Geoinformatics) but must be seen as some mutual relation between different places and scales. Everyday life is where these dynamic connections of spatial perceptions and physical locations comes into existence. Targeting students' everyday life experiences contributes to an urban planning that respects the perspectives of students to a greater extent and thus may serve as a helpful tool for analysing socio-spatial conflicts.

The presentation shows a practical mixed methods approach that combines social science and Geoinformatics. The Qualitative Geovisualizations on student everyday life experiences for a participatory urban planning illustrates quantitative point frequencies and qualitative code clouds in order to reach a more integrative spatial development that may benefit additional, yet "invisible" groups.

Application of Social Network Analysis in Context of Sustainable Urban Development

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Abstract:

In planning, developing and monitoring sustainable land use a stable and consolidated network of stakeholders, which participate in land management processes, is needed. Most processes in land management are negotiation processes. In these, sustainable processes can only emerge when all stakeholders accept the development strategies and share in the decisions around the development. Smooth and reliable communication and seamless exchange of information are indispensable for this purpose. To foster good communication and understanding, the stakeholder has to be known. In this context, social network analysis as an instrument of empirical social research can contribute. The social network analysis enables the examination of the social relationship between stakeholders. The present research work focuses on urban development processes. Based on two case studies, the conception and implementation of online questionnaires for deriving the network parameters should be presented. The visualisation of the network shows the main stakeholders of the processes and displays the individual relationships with other stakeholders. In addition, statements regarding the orientation (one-sided or reciprocal) and intensity (low or high) of the communication are possible. Non-existing social relationships can be revealed. The examination of the position of individual stakeholders and the social relationship between stakeholders makes it possible to assess the strengths and weaknesses of the networks. Interactions between the individual stakeholders and the overall network can be derived.

The existing network of relevant stakeholders within urban development processes can be mapped with the help of the social network analysis. Weaknesses or even gaps in the communication chain can be early detected and removed. The traceability of information

sources and information flows is verifiable. Moreover, announcements regarding the improvement of existing networks in the context of land use and land development are possible. And this has a major impact on the sustainability of land management processes, because steering of urban goals can be done more focussed.

Reflection on the sustainability of urbanization in Europe since 2000

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Abstract:

As a push towards sustainability, the European Union has set a goal of achieving 'zero net land take by 2050' – essentially calling for a halt to urban development by that time (European Commission, 2011). Thanks to relatively detailed land cover data for the 2000-2018 period, we can evaluate the progress towards this goal as well as question whether or not this is a suitable metric for sustainable land-use. In purely quantitative terms, this goal is rather distant: approximately 180ha land was converted to urban use on a daily basis (Cotella et al., 2020), or about 1.17million ha in Europe as a whole (EU + UK, CH, LI, IS and NO), with distinct hotspots of absolute growth in Spain, France and Poland. Over time, the rate of urbanization has been slowing down, although some countries (UK, PL) run counter to this trend. However, much of this development is a direct response to demographic pressures. Measured in ha/per capita (as recommended by SDG11), a slightly different picture emerges with respect to which regions are most sustainable in their urban development.

Focussing on urbanization alone is however insufficient. As the vast literature on sprawl has demonstrated, it is not only the amount of land being built on that matters for sustainability, but also its form. In order to evaluate this, all the NUTS-3 regions in Europe were classified in terms of their urban (sub)structure and the changes to this (sub)structure in the 2000-2018 period (Van Schie et al., 2020). This morphological analysis was performed manually on maps displaying Corine and other data. The results reveal that the most common structure is 'polycentric' and that most countries possess both compact and more diffuse structures. Still, there are some countries with relatively diffuse (sub)structures which are also becoming increasingly diffuse, particularly Poland.

In conclusion, we argue that both these aspects should be taken together when considering the sustainability of urban development. The magnitude, velocity and density of urbanization (land take) is certainly important, but so too is the form which this urbanization takes shape, because this will powerfully affect car-dependency, service levels and energy efficiency.

Underutilisation of Public Land as a Contested Concept; Examination of Conceptual Caveats and Implications on Planning Decision Making

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Abstract:

Holding large extents of land in the hands of the public sector without being put to productive use has been recorded across many cities around the world. This has been identified as an urban phenomenon, which needs urgent development interventions and the concept of 'Underutilisation' is used to identify such conditions. However, despite its usage in the lexicon of urban planning and land management, the term 'underutilisation' remains ambiguous and unclear. There is a timely need for investigating what this term means as the absence of adequate theoretical inquiry on these terminologies creates many negative implications on land development. In this context, this study examines how the notion of underutilisation are defined and employed to characterise a phenomenon related to public land. Further, it identifies conceptual lapses associated with the concept and their implications on planning decision making, with special attention to Sri Lanka. Along with the review of the literature, semi-structured interviews were conducted with urban planning practitioners from Sri Lanka (n= 8) and academic researchers (n= 8) from different countries to examine the perceptions of experts. The literature review brought to light different terms used in different countries for 'underutilised lands' such as 'surplus land', 'lazy lands' and 'lazy air'. These comparable terms employ mainly three vantage points for framing the underutilisation of land. They are, 1) as a problematic condition associated with the land, 2) as an opportunity for better use, and 3) as an untapped resource of a public institution. The analysis helped to identify three key conceptual lapses related to the concept of underutilisation of land; 1) prioritising the economic value over the other value, 2) contested goal and binary thinking, and 3) subjectivity of underutilisation and conflicting claims. Focusing on Sri Lanka, the concept of underutilisation manifest conflicting interests and expectations for multiple actors associated with land. Lack of consensus over the potentials over underutilised public land has led to delay and sometimes, stall the urban development attempts in cities in Sri Lanka. Providing an articulated, inclusive, and contextualised framework to capture underutilisation is necessary for informed decision making in urban planning in future.

Cultural heritage in the development of communes - an example from the Małopolskie Voivodeship, Poland

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Abstract:

Recent decades have shown that elements of the cultural heritage of towns and rural areas are being lost at an alarming rate. In order to meet the needs of conserving, protecting and preserving the disappearing forms of heritage of these areas, the University of Agriculture in Krakow is conducting research on the cultural heritage of communes in the Malopolska Voivodeship. The cultural heritage of Malopolska in both urban and rural areas is widely recognised and acknowledged, and at the same time it is a strong expression of regional identity. The cultural heritage may be considered in material terms (e.g. buildings and small architecture elements connected with sacral building, wooden building, cottages), non-material and natural. It is important to consider the role of conservation in addition to protection and preservation, the latter being very difficult to achieve in most rural and urban settlements. Preservation of single entities (e.g., a church, castle, or a farmstead) with special characteristics that are essential to retain is possible, but with respect to specific areas within rural and urban situations it would be easier to set up conservation zones that would permit the function of the area to be maintained whilst retaining the culturally-important characteristics. The research, which was conducted in 2020, covered all urban-rural and rural communes of the Malopolskie Voivodeship. In addition, the development strategies of Malopolska voivodship were analysed. This analysis was conducted in order to find out whether successive development strategies Malopolskie Voivodship pay more attention to cultural heritage.

Recovery of Aleppo – Strategies for the revitalization of a world cultural heritage site

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Abstract:

The civil war in Syria began 10 years ago. I want to take this date and the international donor conference for Syria, which took place in March 2021, as an opportunity to talk in particular about the recovery of the city of Aleppo. Aleppo is the second largest city in Syria and one of the oldest permanently populated cities in the world. The Old City of Aleppo has been a UNESCO World Heritage Site since 1986 and was built and rehabilitated by the Syrian state and many international organizations before the war. Since the beginning of the war in Syria, legal, planning and geodetic know-how has been lost and is now lacking in planning offices, contracting authorities and surveying authorities. Due to recent land transactions, land divisions and (direct and indirect) expropriations through State legally-binding land use plans, it is to be feared that the "zero hour" for the recovery process has long since passed. With the destruction of the 362-hectare Old City of Aleppo with its 110,000 inhabitants, as well as the destruction of 30,000 jobs and 16,000 housing units, one of the six UNESCO World Heritage Sites in Syria has been almost completely destroyed. The extent to which complete reconstruction is possible remains to be seen. Nevertheless, strategies and efforts for Aleppo's recovery in the areas of historic preservation, building law, construction technology, urban land use planning and cadastre, as well as the monitoring of property transactions are currently to be designed. In the transition phase, post-war cities have recurring, comparable problems, such as a significant increase in the number of inhabitants and migrants, which usually ends in an "unregulated" building boom. In order to avoid conflicts of interest, conflict-sensitive approaches would be needed that take into account this particular post-war situation and consider the needs of the different population groups and actors.

In this presentation, the following tools for recovery will be addressed: The law - civil law, waqf law, planning law as well as the law of UNESCO. Then, the monitoring of the damage mapping will be discussed, which was based on preliminary work of the "Aleppo Archive" between 2008-2011, among others with the help of the GIZ, and later further developed by the BTU Cottbus-Senftenberg. In this cadastre, however, not only the damages can be seen, but also property transactions in the post-war phase can be represented. This monitoring must now be further developed. The cadastral plans served as a basis, with the most detailed plans dating from the French Mandate period. These were adapted and supplemented by a GIS mapping, whereby not all data and not all plots of the 363 hectare area of the old town defined by UNESCO were included. The data were supplemented with information from the land registry, family archives and religious foundations. This is because since the end of the war, plots of land have already been sold to investors during the war who will not take into account the original small plot division in Aleppo.

Therefore, there is a fear of land consolidation for the realization of large-scale construction projects. Legal regulations in the area of land use and development planning are necessary - if possible by emergency ordinance (Notverordnung). In addition, there is the important waqf law (foundation law), which dates back to the Ottoman period. A further development of urban planning law for Aleppo can serve as a model for other destroyed cities in Syria. In order to create housing in the short term, the focus is currently on the development of "action areas" at the neighborhood level (bottom-up) as opposed to long-term top-down planning such as master plans. In short, recovery can involve different instruments and disciplines: Urban planning law, architectural and last but not least geospatial tools such as 3D modeling, Building Information Modeling, urban cadaster and property monitoring for the resurrection of the still wounded built environment.