



# BOOK OF PROCEEDINGS

**INTERNATIONAL CONFERENCE**  
**13<sup>th</sup> - 14<sup>th</sup> October 2023**

ISSUES OF HOUSING,  
PLANNING, AND  
RESILIENT DEVELOPMENT OF  
THE TERRITORY

**Towards Euro-Mediterranean  
Perspectives**

ISBN (print) 9789928352286

ISBN (e) 978-9928-352-29-3

DOI 10.37199/c41000100



# **Issues of Housing, Planning, and Resilient Development of the Territory Towards Euro-Mediterranean Perspectives**

## **Conference Theme and Rationale**

Albania, along with other Western Balkan countries, has undergone significant economic, social, and political changes in recent years. As a result, housing, planning, and the resilient management of territorial development have emerged as critical issues. This is because these regions face significant challenges in providing affordable housing, addressing the impact of urbanization on the environment, fostering evidence-based decision-making on the territory, and bringing forth the commitments towards climate neutrality.

The organizers use the term “multi-modality” to define complex situations (in matters of territorial planning, management, architecture, housing, public space, technology, etc.) that have historically encompassed Western Balkans and Mediterranean cities in a logic of coexistence and value co-creation. A combination of knowledge and heritage that throughout time and history have given life to civilization in this region of Europe. The active involvement of Albania in the existing network of the Mediterranean Basin and the EU, through a joint action plan with UN / UNECE, and the Albanian and regional authorities, including reputable scientific bodies such as the Academy of Sciences of Albania, makes this conference even more intriguing to explore fascinating areas of research. The conclusions, to be considered as a stage for open innovation, will include recommendations for further scientific and applied research, projects, and events.

The geographical focus of the conference covers three dimensions: i) Albania; ii) the Western Balkans; iii) Euro-Mediterranean countries. POLIS University aims to focus on the above-mentioned research areas that are of common interest to both Western Balkans and Mediterranean cities, including, but not limited to: housing policies, urban history and architecture typology, innovation and digitalization in urbanism, energy efficiency, resilience and environmental sustainability, governance and smart technologies for city management, education and gender aspects in urban planning research.

In this regard the main aim of this international conference is to bring together scholars, policy-makers, and practitioners to examine the pressing issues of housing, planning, and land development in these regions, in a context of transition fatigue, climate challenges and post-pandemic realities.

# **Issues of Housing, Planning, and Resilient Development of the Territory Towards Euro-Mediterranean Perspectives**

## **Conference Aim**

The main aim of this international conference is to bring together researchers, policy makers and practitioners to examine the urgent issues of housing, planning and land development in these regions, in a context of transition, climate challenges and post-pandemic realities.

## **Objective**

- Consolidation of the cooperation network between Albanian and non-Albanian researchers, lecturers, managers, with the aim of participating in joint research projects at the regional and international level;
- Support of local authorities with contemporary data, on the state of housing issues, planning and sustainable urban and environmental management, as well as representatives of public and private institutions operating in this field.

The conference is organized by POLIS University (U\_POLIS) in cooperation with the Academy of Science of Albania, and supported by other local and international partners.

In the framework of resilience, the main conference theme is devoted to Issues of Housing, Planning, and Resilient Development of the Territory from a Euro-Mediterranean Perspective, including Albania, Western Balkans and the Mediterranean Basin. This event aims to bring together academics, policymakers, researchers, experts, practitioners, and stakeholders from diverse backgrounds to discuss and address critical challenges related to housing, urban planning, and the development of resilient territories.

## **Scientific Committee**

Prof. dr. Sherif Lushaj;  
Polis University

Prof. dr. Besnik Aliaj;  
Rector of Polis University,

Prof. dr. Tamara Luarasi;  
Polis University

Prof. dr. Gjergj Ikonimi;  
Polis University

Akad. Adrian Civici;  
Academy of Sciences

prof. dr. Neritan Shkodrani;  
Polytechnic University of Tirana

Prof. dr. Perikli Qiriazi.  
Academy of Sciences

## **Organizing Committee**

Prof. assoc. dr. Xhimi Hysa;  
Polis University

Dr. Sotir Dhamo;  
Polis University

Dr. Elona Karafili;  
Polis University

Sadmira Malaj;  
Polis University

Akad. Kosta Barjaba;  
Academy of Sciences

Akad. asoc. Gëzim Hoxha;  
Academy of Sciences

Akad. Jorgaq Kaçani;  
Academy of Sciences

Akad. Neki Frashëri.  
Academy of Sciences

# Table of Content

## HOUSING

Affordable Housing in Albania: Challenges and Effective Strategies. Case study Tirana, Albania. Eneida MUHAMUÇI	8
Dealing with the future of the emergent settlements in the absence of full property recognition. The case of Kashar and Astiri in Tirana, Albania. Dr. Artan KACANI	15
Aspects of legal-civil legislation on the impact of housing and the real estate market in Albania and the countries of the Western Balkans. Prof.Ass.PhD. Saimir SHATKU, Grejdi JANI, Antonela MERSINI,	33
Problems of Sustainable and Strategic Environmental Planning of the Industrial (Non-Residential) Sector in Albania. Kleant SEMEMA, Neritan SHKODRANI	41

## MANAGEMENT, TECHNOLOGY,SUSTAINABILITY

Management roots back to the city walls. History, present, and future. Prof. Ass. Xhimi HYSA, Dr. Shefqet SUPARAKU	67
Economic and social rights enjoyment in Albania: Literature Review and Conceptual Framework. Dr. Emi HOXHOLLI, Prof. Dr. Donika KËRÇINI	74

## PLANNING & ARCHITECTURE

'Decustering' decision-makings on cultural heritage Tirana's historic centre during urban development. Dr. Doriana MUSAJ	87
Exploring the dialectic between permanence and change. The case of Epidamn Bulevard in Durrës Iden BUKA, Marsela Plyku DEMAJ, Dr. L Lazar KUMARAKU,	103
Exploring the balance between common and private spaces. A case study from Tirana. Hera MARJANAKU, Marsela Plyku DEMAJ, Dr. L Lazar KUMARAKU	116
The Architecture of Hospitals. Learning From the Past. Franklind JESKU	126
Concept of heritage Materialization and Modernity Interaction between modernity. Kristiana MECO	137
Contructive elements of planned capitals; "Tirana Spine" and Ankara Atatürk Boulevard. Assist. Prof. Dr Zeki Kamil Ülkenli, Attila Gürsel	144
The peripheral areas, a new classification for Tirana. Ema MEÇOLLARI	173
Unveiling the Post-Digital Paradigm Cultural Implications in a Post-Human Design Ecology. DR. Valerio PERNA	184
A GIS-based analysis of the urban green space accessibility of Tirana, Albania. Case Study: Administrative Area No.6 MSc. Leonora HAXHIU, Francesca KORANCE,	196

Innovative Soft Planning Tools and the Concept of Positive Energy Districts. Experience from Slovakia. Milan HUSAR, Matej JASSO, Sila Ceren VARIS HUSAR, Vladimir ONDREJICKA	204
The challenges of applying Big Data in the urban planning practices for the developing countries. Case study in Albania. Dhurata SHEHU, Dr. Lucca LEZZERINI,	211
A Preliminary Investigation into a Variable Section Beam Using Algorithm-Aided Design as a way to Facilitate the Structural Design Process. Drafting Automation. Albi ALLIAJ, Flogerta KROSI,	219
Human Agency, Knowledge and Space in Bratislava Socio-spatial analysis of innovation in a capital city. Sila Ceren VARIS HUSAR, Milan HUSAR, Vladimir ONDREJICKA,	226
Examining the Use of VR Technologies to Improve Architectural Visualization and Immersive Design Experiences Virtual Reality for Architectural Visualization. Andia VLLAMASI, Anxhela ASIMI	234
Issues of the Territorial-Administrative Reform in Albania. A comparative analysis on the progress of reform with other formerly-centralized economies: Estonia and Moldova. Prof. Dr. Besnik ALIAJ, Dr. Ledio ALLKJA,	242
Planning for disaster risk management: the perspective of Greece and Albania on envisioning resilient futures. Varsami (Ersi) ZAFEIRIOU, Prof. Dr. Besnik ALIAJ, Prof. Dr. Pantoleon SKAYANNIS,	262
The influence of climate change on drought occurrences and the measures taken to alleviate drought in Albania. Sherif LUSHAJ, Anira GJONI, Enkelejda KUCAJ,	278
The Smart Tourist Spanish Destination Program. Critical Success Factors. Carmen DE-PABLOS-HEREDERO, Miguel BLANCO-CALLEJO, Rey Juan Carlos	289
Evaluating Ecosystem Services Through Cross-cutting Methods Case Study: Kune-Vain Lagoon, Assessment of Carbon Storage and Sequestration Ecosystem Service Rea MUKA,	299
Disaster Risk Reduction within Complex Urban Systems. The importance and challenges of holistic approaches Endri DURO	311
Air Quality Status of Tirana. Temporal effects of COVID-19 restrictions on the decrease of urban air pollution. Rodion GJOKA	319

# **Affordable Housing in Albania: Challenges and Effective Strategies**

## **Case study Tirana, Albania**

Ph.D. Candidate. Eneida MUHAMUÇI,  
*Polis University, Albania*

DOI: 10.37199/c41000101

### **Abstract**

Affordable housing stands as a pressing global issue, influenced by political, climatic, and economic shifts. This challenge is acutely felt in developing nations, and Albania, undergoing a protracted transition since 1991, is no exception. Previously, housing in Albania was government-provided, owned solely by the state. However, owning a house has become a cherished aspiration for Albanians, highlighting the critical shift in housing dynamics.

Albania's housing landscape has witnessed an alarming trend – the escalating cost of housing to the point where it becomes a near-impossible dream for many. As of 2023, Albania ranks third in Europe for having the most expensive apartment prices relative to income, as reported by Numbeo, a leading global data source.

This mounting housing affordability crisis isn't isolated; it catalyzes a cascade of societal, economic, and political issues in Albania. Official statistics from Instat reveal a significant decline in Albania's population, primarily driven by the steady emigration of young people over the past five years. Simultaneously, informal construction has emerged as a means for some Albanians to secure shelter, although it comes at a significant cost to urban environments and the nation as a whole. This research paper seeks to delve into effective and beneficial policies tailored to Albania's unique context, with a particular focus on Tirana, its capital. Through an in-depth case study, we scrutinize the impact and applicability of key policies. These include minimizing fees for lower-priced housing, streamlining development approval and permitting processes, identifying suitable parcels for affordable and accessible development, remediating brownfields, providing targeted tax and fee discounts, addressing neighborhood concerns, enhancing building design and resource efficiency, improving affordable transportation options, discouraging rental restrictions, and implementing maintenance and rehabilitation programs for affordable housing.

The research findings illuminate the effectiveness of these policies within the Tirana context, offering insights into their potential to alleviate the housing affordability crisis.

Keywords:

Affordable Housing, Housing Policy, Tirana, Albania, Developing Countries, Housing Affordability, Policy Effectiveness.



## **Introduction**

### ***Background and Context***

Between 1989 and 2011, Albania experienced significant demographic and urbanization changes. The overall population decreased by 12%, with a remarkable rural population decline of 36.3% and a simultaneous urban population increase of 31.7%. This urbanization trend was accompanied by a 55.1% increase in residential buildings, with urban areas experiencing a staggering 189.3% growth in residential buildings. A substantial portion (21.7%) of housing units remained vacant, primarily in rural areas, and some regions, such as Vlora and Gjirokastra, had a particularly high vacancy rate. The government introduced social housing programs to address housing affordability issues, focusing on groups facing economic and social challenges. (Social Housing Strategy 2016-2025).

Albania's housing programs, governed by Law no. 9232, aim to assist individuals and families facing economic and social challenges who cannot afford housing in the free market or mortgages. Three primary social housing programs exist: social rented housing, low-cost housing, and land equipped with infrastructure. Additionally, the government provides housing subsidies, subsidized loans, small grants, and immediate grants targeted at specific groups.

According to Law 8652, the responsibility for housing provision is shared between central and local governments. Local governments, including municipalities and communes, are responsible for urban planning, land management, and housing, among other functions. The central government's responsibilities include designing long-term housing programs, allocating funds, setting rules for low-cost housing, collecting housing application data, determining building costs, and overseeing social housing investments. Local authorities are tasked with evaluating housing requirements, formulating housing initiatives, offering land, soliciting financial support from the central government, constructing and overseeing social rented housing properties, as well as keeping records on housing programs and their effectiveness. Additionally, they hold the responsibility of identifying priority groups and crafting comprehensive, enduring housing strategies.

The social housing programs undertaken by the central government and at the local level are not sufficient to influence the housing affordability situation, especially in the capital of Albania, Tirana. According to the data of the World Bank, the affordability of a house today in Tirana is almost impossible for families with average income.

### ***Research objectives***

Main Research Objective:

- To investigate and analyze the effectiveness of various affordable housing policies and approaches in Tirana, Albania, and provide recommendations for improving housing affordability in the city. To identify and classify affordable housing policies and approaches, distinguishing between ineffective, effective but costly, and most effective strategies, with a focus on those most suitable for the Tirana context. The primary aim of this research is to conduct a comprehensive investigation into the effectiveness of diverse affordable housing policies and approaches implemented in Tirana, Albania. By employing rigorous analysis and empirical research methods, this study seeks to discern the impact of these policies on the city's housing landscape. Through an examination of their outcomes, challenges, and successes, the research endeavors to provide evidence-based recommendations for enhancing housing affordability in Tirana.

## Literature review

According to Habitat for Humanity's, affordable housing can be described in many ways, depending on the quantitative or qualitative perspective we decide to analyse. In many researches, the term is used to define a specific type of housing, made available by governments to those unable to afford one, also known as social housing. More generally speaking, housing can be considered affordable if its cost (mortgage or rent) is below the 30 percent of the household income. The World Health Organization defined Housing as a "residential environment which includes, in addition to the physical structure that man uses for shelter, all necessary services, facilities, equipment and devices needed or desired for the physical and mental health and social well-being of the family". In Europe alone, the housing crisis sparked by the 2008 global financial meltdown is far from over. An in-depth look at the region in Habitat for Humanity's Housing Review show this 'silent emergency' is getting worse and at a faster rate.

"Unbalanced economic growth can therefore easily lead to overinvestment or underinvestment in housing, depending on apparent profitability rather than on housing needs. Housing market bubbles as in the United States or Spain before the global financial crisis are typical examples of over-investment, while a chronic shortage of appropriate housing as is the case in Poland is an example of underinvestment. On the micro level, households will typically overconsume or underconsume housing in line with their institutional surroundings." HOUSING REVIEW 2015

At the household level, individuals tend to adjust their housing consumption in accordance with their surrounding economic conditions and institutional factors.

Figure 1. Property Prices in Tirana, Albania

<b>Rent Per Month</b>		<b>Range</b>
Apartment (1 bedroom) in City Centre	49,008.32 Lek	36,000.00 - 74,659.09
Apartment (1 bedroom) Outside of Centre	32,332.39 Lek	25,000.00 - 40,000.00
Apartment (3 bedrooms) in City Centre	96,818.75 Lek	60,000.00 - 200,000.00
Apartment (3 bedrooms) Outside of Centre	53,109.32 Lek	40,000.00 - 80,000.00
<b>Buy Apartment Price</b>		
Price per Square Meter to Buy Apartment in City Centre	248,110.57 Lek	180,000.00 - 400,000.00
Price per Square Meter to Buy Apartment Outside of Centre	124,261.83 Lek	95,990.26 - 160,000.00
<b>Salaries And Financing</b>		
Average Monthly Net Salary (After Tax)	56,910.76 Lek	
Mortgage Interest Rate in Percentages (%), Yearly, for 20 Years Fixed-Rate	5.46	3.50 - 9.00

Source: The World Bank, 2023

The passage emphasizes the risks of fully integrating the housing sector into the broader economy, as well as the challenges of completely separating “social” or “affordable” housing from market dynamics. It points out that heavily state-subsidized rental housing in former communist countries, while initially providing affordable options, had detrimental long-term effects on the housing sector. Rushed privatization became the predominant approach for managing loss-generating housing stock during the transition period.

Habitat for Humnity’s argues that separating housing finance from the overall financial market is not only unfeasible, but also would be an irrational expectation after decades of development in the opposite direction. It instead would be advisable to create mechanisms that allow households some delay to react to market forces. The most important reason households and their policy and market environment fall out of balance is ignoring externalities both in terms of affordability and sustainability: long-term objectives are generally sacrificed for short-term gains. While creating a protective buffer between housing finance and the general financial markets, housing funding will become slower, but households may have a transitory period to adapt to market changes.

Housing policies have ranged from direct state control of housing quality to the suspension of market mechanisms through rent controls, leading to the emergence of non-market social housing sectors. Some countries have supported low-income homeowners through subsidies and enabling measures, while others have taken a more market-oriented approach. Additionally, social housing has transitioned from building-focused subsidies to household-focused support, targeting resources to disadvantaged households within the sector. These various instruments, including demolition, quality standards, rent controls, social housing, support for homeowners, and income-related housing assistance, have been used to promote better and more affordable housing for low-income individuals and families. The effectiveness and focus of these policies have varied across countries and time periods.

## **Methodology**

Both types of techniques, quantitative and qualitative, will be used in this study to gather information about the situation of housing affordability, in Albania. This study will include an extensive review of existing literature, encompassing academic research, government reports, and publications from esteemed international organizations such as the United Nations Human Settlements Programme (UN-Habitat) and the World Bank.

Additionally, quantitative data analysis is conducted using official sources, such as the Institute of Statistics (Instat), to assess demographic trends, urbanization rates, and housing supply and demand dynamics in Tirana. This quantitative analysis enables the identification of key trends and patterns over time.

Furthermore, qualitative data is gathered through semi-structured interviews with local government officials, housing experts, and stakeholders involved in housing programs. These interviews aim to provide insights into the implementation and effectiveness of social housing policies and strategies. The qualitative data is then subjected to thematic analysis to extract meaningful patterns and themes.

By combining quantitative and qualitative methods, this research aims to offer a comprehensive and nuanced understanding of the policies and approaches that impact affordable housing in Tirana, providing valuable insights for policymakers, urban planners, and stakeholders striving to enhance housing affordability in the city.

## Affordable Housing Policies in Tirana, Albania: A Case Study

Numerous policies are designed to enhance housing affordability in developing nations like Albania, but their effectiveness can vary significantly. While some approaches succeed in genuinely reducing housing costs, others may simply shift the burden without addressing the core issues.

According to Litman there are many possible ways to increase housing affordability. Some strategies are better than others overall because they reduce rather than shift costs, and support other strategic objectives such as reducing traffic problems and sprawl. Strategies are classified in 3 main categories:

- Ineffective and sometimes harmful
- Effective but costly policies
- Most Effective and Beneficial policies

Figure 2. Affordable-Accessible Housing Strategies

Strategies	Impacts
<b>INEFFECTIVE AND SOMETIMES HARMFUL</b>	
Urban blight	Reduces housing costs but harms communities and concentrates poverty
Cheap suburban development	Reduces housing costs but increases transport and sprawl costs
Rent control	Benefits existing residents but reduces lower-priced housing development
Preserve older, affordable housing	Preserves old, cheap housing but may reduce new, denser development
Restrict rental-to-owner conversions	Benefits existing residents but reduces lower-priced housing development
<b>GENERALLY EFFECTIVE BUT COSTLY</b>	
Support housing development and purchase	Primarily benefits affluent homebuyers. May do little to increase affordability
Social housing	Increases affordable housing supply
Inclusionary zoning (affordability mandates)	Subsidizes housing for some households but increases costs to others
Targeted housing subsidies	Benefits people who receive subsidies, but may displace others
Subsidize urban fringe transportation	Is costly and exacerbates traffic problems
Sweat equity and volunteer construction	Potential is generally small compared with total affordable housing needs
<b>MOST EFFECTIVE AND BENEFICIAL</b>	
Increase allowable densities and heights	Allows more affordable, compact, infill development
Allow and support compact housing types	Allows more affordable, compact, infill development
Minimize & prorate fees for inexpensive housing	Reduces costs of inexpensive, infill housing development
Reduce development regulations	Reduce building approval time, expense and uncertainty
Expedite affordable housing approval	Reduces costs and time for lower-priced housing approvals
Density bonuses and requirements	Encourages developers to build more affordable housing
Lending reforms and incentives	Reduces development financing costs
Identify parcels suitable for infill	Helps developers build infill housing
Provide free or inexpensive land	Helps developers build affordable housing
Brownfield remediation	Makes contaminated land available for development
Land value tax and undeveloped land surtax	Encourages more compact urban development, reduces land speculation
Encourage turnover of used houses	Increases the supply of used (and therefore lower-priced) housing
Reform development and utility fees and taxes	Encourage more compact and affordable housing development
Reform lending policies	Correct lending rules that favor sprawled and automobile-dependent housing
Affordable housing targets and requirements	Encourages or requires communities to accept affordable housing
Favor accessible locations for public housing	Increases accessible-affordable housing supply and demand.
Allow smaller lots and urban parcel subdivision	Increases the supply of smaller urban lots
Dynamic zoning	Allows communities to respond to increased affordable-accessible housing demand
Address community concerns	Reduces community opposition to affordable infill development
Improve building design	Reduces neighborhood opposition to affordable infill development
Improve building efficiency	Reduces operating costs, which increases long-term affordability
Address specific market distortions	Correct market distortions that reduce affordable housing
Smart growth reforms	Encourages more compact development and reduces infill development costs
Traffic and parking management	Reduces traffic and parking problems, and therefore opposition to infill development
Unbundle parking	Reduces development costs and vehicle ownership
Reduced & more accurate parking requirements	Reduces costs and increases land supply for affordable infill housing
Allow development on parking lots	Often provides excellent sites for affordable-accessible housing
Improve affordable transportation options	Improves accessibility, reduces household transport costs, reduces traffic impacts
Discourage or prohibit rental restrictions	May increase the number of rental units available in a community
Affordable housing maintenance programs	Preserves existing affordable housing stock

Source: Litman, T. 2023 *Affordable-Accessible Housing in a Dynamic City*

This paper is going to explore some of the MOST EFFECTIVE AND BENEFICIAL policies that can be applied in Tirana, like:

“Identify Parcels Suitable For Affordable-Accessible Development Governments or private organizations can maintain a database of lots suitable for affordable infill housing. Provide Free or Inexpensive Land for Affordable Housing Governments often control various land parcels, including outdated public facilities and land acquired through unpaid taxes. They can donate or sell at a discount appropriate parcels to affordable housing development, particularly for social housing to accommodate people with special needs. Density Bonus and Requirements Allow higher densities and greater heights than normal in exchange for more affordable housing units. This supports compact, affordable, infill development while preventing land value increases that would result if increased density were allowed for higher priced housing units.

#### Expedite Lower-Priced Development Approval and Permitting

Expedite the development approval and permitting process for lower-priced housing in order to reduce their costs and uncertainty, and make such projects more attractive to developers. This can include, for example, eliminating traffic and parking impact studies (justified because affordable-accessible development tends to generate far less traffic and parking than standard models predict), and shorter planning review and permitting periods for developments that meet affordable-accessible housing guidelines.

#### Brownfield Remediation

Brownfields are sites whose development potential is constrained by perceived or real environmental contamination, including many in urban areas suitable for affordable housing. Cleaning up these sites by enforcing legal requirements on past owners or through subsidies can make them suitable for development.” Litman 2023. Affordable-Accessible Housing in a Dynamic City.

### **Conclusions and Recommendations**

In conclusion, the escalating housing affordability crisis in Tirana, Albania, demands immediate attention and effective policy interventions. Based on the research material presented, the following recommendations are offered:

**Comprehensive Database:** Establish a comprehensive database of suitable land parcels for affordable and accessible housing development. This database should be regularly updated and made accessible to developers and policymakers.

**Land Allocation:** Promote the allocation of free or discounted land for affordable housing projects, particularly for social housing targeting vulnerable populations.

**Density Bonuses:** Encourage the implementation of density bonuses and requirements that allow for higher densities in exchange for the inclusion of affordable housing units in developments.

**Streamlined Approvals:** Expedite the development approval and permitting process for lower-priced housing projects, reducing costs and uncertainty for developers.

**Brownfield Remediation:** Prioritize the remediation of brownfields, making them suitable for affordable housing development and contributing to urban revitalization.

These recommendations aim to address the critical need for affordable housing in Tirana, offering a pathway towards alleviating the housing affordability crisis. Moreover, the findings and policy insights from this research can serve as valuable references for policymakers in other developing

countries facing similar challenges. The adoption and adaptation of these strategies hold the potential to catalyze significant progress in addressing affordable housing needs in Tirana.

## References

Instat. (2022). Population Statistics of Albania. [Website]. Retrieved from [<https://www.instat.gov.al/en/statistical-literacy/the-population-of-albania/>]

Litman, T. (2015). Affordable Accessible Housing in a Dynamic City: Why and How to Support Development of Affordable Housing in Accessible Locations. Victoria Transport Policy Institute.

Ministry of Urban Development and Tourism, Albania. (2016). Social Housing Strategy 2016-2025. Retrieved from [<https://www.undp.org/albania/publications/social-housing-strategy-2016-2025>]

Numbeo. (2023). Cost of Living Comparison Between Tirana, Albania, and Other European Cities. [Website]. Retrieved from [<https://www.numbeo.com/cost-of-living/in/Tirana>]

Republic of Albania Ministry of Urban Development. (2016). Social Housing Strategy 2016-2025.

Rosten Woo. (2009). The Next American Dream: Creating a Rental Housing Landscape that Works for All. Right to the City Alliance.

Smith, J. (Year). Informal Housing Construction and Its Impact on Urban Development: Case Study of Tirana, Albania. *Journal of Urban Studies*, 20(3), 321-339.

United Nations Human Settlements Programme (UN-Habitat). (2019). Housing and Slum Upgrading: Albanian National Report.

UNECE. (2021). #Housing2030 Effective policies for affordable housing in the UNECE region. Retrieved from [[https://unece.org/sites/default/files/2021-10/Housing2030%20study\\_E\\_web.pdf](https://unece.org/sites/default/files/2021-10/Housing2030%20study_E_web.pdf)]

World Bank. (2021). Albania Economic Update: Building the Foundations for Sustainable Growth. Retrieved from [<https://documents1.worldbank.org/curated/en/099845001312232607/pdf/P1752090e8141b05a08afc06ea6bc385da3.pdf>]

Habitat for Humanity. (2015). Housing Review 2015: Affordability, Livability, Sustainability.

# **Dealing with the future of the emergent settlements in the absence of full property recognition. The case of Kashar and Astiri in Tirana, Albania.**

Dr. Artan KACANI,  
*POLIS University, Albania*

DOI: 10.37199/c41000102

## **Abstract**

Intro: According to the National Cadastre, In Tirana, more than half of the built environment lies in informal areas, approximately 2506 ha from 4100 ha of the total urban area. The more we go outside the city, the more it would be the absence of property recognition. However, this condition, of being informal, without proper property recognition, has not stopped the process of property substitution. From an orchard land to a highly densified area, the Kashar and Astiri areas are the best examples to represent and show the substitution process.

Research Question and Objectives: The research aims to identify the substitution process, in Kashar and Astiri neighbourhoods, measure it, and get into the primary factors of the bargaining process of the substitution processes. The comparative methodology used in this paper speaks about the partial development of the agricultural land made by 200x200 meters, with a fast process of substitution along the existing pathways and a slower process inside the agricultural land. In this substitution process, three actors play an important role: the primary inhabitants (single family), the investor with multi-family buildings, and the public administration.

Results: The substitution process from the primary inhabitants has happened informally, in common understanding and over a long period. These common forms of understanding and sharing consist of signs (communication), resources (construction materials), and development rules (distances). The substitution process by the private investors has happened there where there was a higher degree of property recognition. Instead, the public administration has set in a process of eradicating the informal settlements, without understanding the two processes of substitution mentioned above and by interfering in the substitution process.

Conclusions: Both inhabitants, the first, and the new struggle for primary urban rights, such as water, mobility, and energy access and the substitution have not changed radically the property recognition situation - on the contrary, it has complicated it.

Keywords

Emergent Settlements, Comparative Methodology, Housing Transition, Substitution, Housing Rights

## **Introduction.**

This article deals with key questions and aspects concerning the development of Tirana in the last 30 years. It does so through the thematic lens of emergent urbanism and the tension between statutory planning activities, informality, and loose property rights. Though its relevance is not limited to the contextual case of Tirana, it provides insights into the issue of emergent urbanism and possible ways to formally deal with it without hampering its beneficial spontaneous forces.

With the fall of the communist regime in 1992, after almost 50 years, Albania opened the development of its territory to market logic and the recognition of private property rights. This transition gave rise to a rapid urban expansion process and, according to many, a chaotic development that often generated grey legal situations. Such a transition was based on two main reforms. Firstly, the Law n. 7501 (1991), allocated and distributed national land to farmers for agricultural purposes at a “family scale” (around 2 ha). Secondly, a national program, (2005), for the “legalization, urbanization and integration of the informal settlements”. Since then, a series of planning issues are still largely unresolved, and deeply contrasting development forces are in place. On the one hand, several informal, emergent settlements built in the last decades, still lack formal recognition and are unprotected by the State. On the other, several urban development projects promoted by the municipality are taking place often in substitution for the already existing informal settlements. Such a process of substitution cannot but raise important ethical concerns, and constitutional. Existing households are often displaced but not fully reimbursed, neither physically (with a new apartment) nor financially. Also, some neighbourhoods are going through a process of demolition and reconstruction via large-scale projects which seem not to fit into the longstanding spirit and spontaneously generated character of the place. Under these conditions, important ethical questions arise concerning the future of these settlements (not the research question, ethical questions): How is it possible to govern the process of substitution and densification of these settlements? How should planners treat the already existing households despite their loose property regime?

This article proposes an evolutionary approach in the analysis and exploration of two relevant case studies – namely, the Kashar neighbourhood and “Astiri”. The goal is to unfold the complexity of these settlements by investigating their morphology, and the property regime process in substitutions under (spontaneous) rules, architectural types, and main social aspects. The ambition is to critically reflect on this phenomenon and come up with strategies that can effectively deal with existing tension from the substitution process.

### **The problem: informal urbanism and property rights.**

Before the XX century, most settlements were “emergent”. While today emergent urbanism is associated with informality, in the past emergent development processes were the normality: within a frame of simple rules (urban codes), small initiatives took place and gave rise to incremental and organic urban tissue. Emergent urbanism, however, must be intended not as an illegal or informal practice per se, but as the development process that happens within a certain statutory framework (such as planning rules and land-use planning, as well as the design of collective spaces) or, in certain cases, in the absence of it.

The role of background conditions in the absence of statutory planning activities is essential in emergent practices. To generate emergent forms of urbanism, (spontaneous) orders, the local community should share certain common rules for the maintenance and construction of their houses, as well as find ways to produce certain collectively relevant spaces and infrastructures (streets, etc.). These rules or procedures are not always agreed upon by the local community. Of-



ten, they emerge spontaneously over time from the stratification of local practices. These rules start to take the status of habits, traditions, and norms. Their peculiarity is that although they are not protected by the state, the local community voluntarily obeys and complies with them. These rules indeed are somehow self-emerging, self-imposed, and self-surveilled by its local community. An important aspect of emergent forms of urbanism is the role played by time. The process corresponds to an incremental juxtaposition of new actions, one after the other, where the first “structures/influences” the second which, in its turn, will structure/influence the third, and so on. In this development process, nobody can anticipate or know the final state of affairs, but like in all trial-and-error processes in society, the outcome will be the unintentional results of the stratification of multiple small actions, altogether generating an order which was not designed by anyone specifically. This type of development has some main advantages: bottom-up approach, human scale of the developments, and the ability to get to any cultural dimension and use of the spaces. But it can also give rise to some problems if the minimal background conditions are not respected: lack of infrastructure and services (streets, sanitation, garbage, etc.), disrespect of other people’s rights (accessibility to houses, views, privacy, etc.) and a loose and vulnerable property rights configuration.

The loss of property rights, or housing tenure, is a process that has happened continuously from early 1990 to today with the substitution processes. This process has taken place in the urban peripheries of the cities, where the emergent urbanism occurred, and in the substitution process. In some cases the property right was unclear from the beginning, with the first inhabitants, in other cases, the substitution process created new inhabitants without a property right – those living in the multi-family buildings. As estimated by the National Cadastral Office, more than 2/3 of 320,000 informal buildings cannot be legalized – and this represents the first layer of inhabitants without a property right. Instead, the substitution process has created new inhabitants without property rights. Many of these inhabitants live in apartments without a property certificate. In most cases, this is attributed to the nonaccomplishment of the building standards of the municipal planning codes - although single apartments have been sold in the real estate market. The loss of property rights affects more than 1 million inhabitants in Albania, see (ALUIZNI Agency, 2016). From this national perspective, half of the population is considered secondary citizens, without basic human rights, such as water supply and sanitation, energy, heating, and cooking, or the recognition of the workplace. The loss of property rights affects not only the human rights on the individual scale, listed above but also the ability of the municipalities to keep territorial equity of the wealth distribution, such as education, health, workplaces, and other primary services on the local scale.

The loss of property has negative effects, i) on individual human rights, ii) on the institutional level for the delivery of territorial equity by primary services, and iii) has negative effects on the social and economic terms of the substitution process. The loss of the property has negative effects also the capital invested in the territory, iv). Our research will focus on the capital invested in the territory and its effect that has loos the property rights and try to find good practices of substitution that have occurred in the neighbourhoods of “Kashar” and “Astiri”. In some territorial areas of “Kashar” and “Astiri” the fast substitution process has encouraged the inhabitants toward a continuous, but slow, process of upgrading settlement. Some of the reasons stand on the desire to get into a better bargaining process in case of substitution. Although the new buildings lack standards and consequently a non-recognition of the property, 15 years of emergent transformation shows that the bargaining process between the first informal settlers and the new building has occurred

massively in the neighbourhood.

Now, the key question is? Of what nature, and form, are the bargaining process regarding the invested capital in the territory when the substitution happens? (Research Question). “Kashar” and “Astiri” neighbourhood shows that the substitution has occurred by financial means, and by design issues on the landscape. These last forms of communication and bargaining are the focus of our research. Some are made by signs in the territory and on the landscape others are common rules created by the inhabitants.

### The case study.

#### *Main key policies and laws since the transition from a communist regime.*

Emergent urbanism took place outside the “yellow line”, in an institutional vacuum of planning practices. The state was the only owner of the land. Although the agricultural reform of property transfer was occurring in early 1990, the process never saw a full recognition process of the property transfer for agricultural issues. Law 7501 will distribute the land at a family scale for the only purpose of agricultural production. This first reform can be considered a first attempt to stimulate the inhabitants in the rural areas after the fall of the communist regime. The reform didn't give the desired purpose, agriculture, and it paved the road of the informal market of land – mainly for urban purposes.

In the second half of 1990, the process of property transfer became the driving force of the new economy that was taking form after a long period of state control over the property. Informal prac-

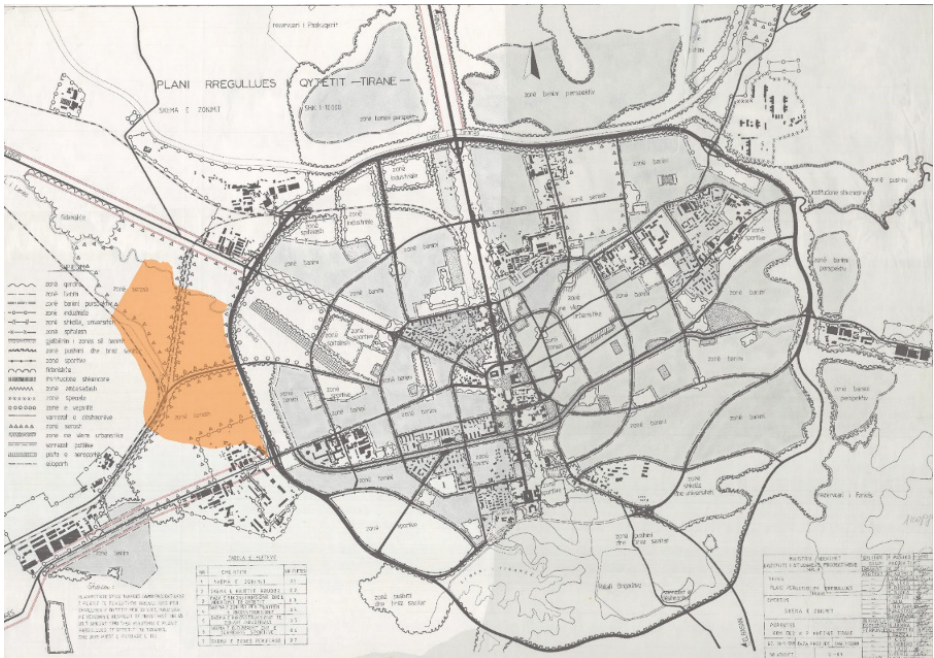


Figure 1 The land use from the Regulatory Plan of Tirana, 1990. (font: Polis University Digital Archive).

tices of land and building purchases will occur among citizens interested in the new housing solutions on the outskirts of the main cities. Nowadays we can find on agricultural land different owners by documents and different inhabitants, or farmers in reality for the same parcel of land. This is what in Albania is commonly known among inhabitants as “property superposition”. The case of “Kashar” and “Astiri” shows that the transition from agricultural use to urban passed through the Orchard Agricultural Cooperative operating in the area. Figure 1, shows the Regulatory Plan of Tirana in 1990, and the future land use for the area of “Kashar” and “Astiri” - surrounded by dots on the left side of the map.

While in some informal areas planning practices will take place with new pilot projects, following participatory and communicative tools, new informal practices will occur outside the informal areas declared by law, getting spread into the consolidated areas and in the city centres as well. Emergent urbanism will spread all around the cities of Albania and will become an economic and housing reality not only for single families but also for building developers – raising informal high-density buildings and selling apartments out of the regular market. Soon these two informal housing realities, the single-family housing, and the builder of the multi-family dwellings will get into bargaining conditions for the property transfer. Different cases of early 2000 speak out that in some cases single families have received high percentages of reimbursement in apartments for the property transfer from the building developers, respectively at 40% - the highest degree till nowadays. (References from the Field Interviews).

In 2005, the new right-wing government will open a long institutional process toward a full recognition of the informal settlements, called legalization. In the beginning, it started only with single-family dwellings, and only in 2014, the law included also the multifamily dwellings. With this new process of legalization and the opening process for ‘building permission’ beyond the “yellow line”, the housing market will face a shock in real estate value. Dwelling built without ‘building permission’ will be under-evaluated in the real estate market and from housing agencies.

Nowadays the real estate market is made totally of multi-family dwellings with ‘building permissions’, although various forms of informal renting and owner-ships are present. Most of the single-family dwellings built informally nowadays are out of the real estate market – which makes them more vulnerable to future transformations. The “open possibility” for the informal single-family dwelling to get into a financial bargaining process with future urban developers is no longer possible, since 2014. What remains to do is to see on the territory there where are the problems deriving from the substitution by bringing out the urban practices and common rules, and solutions that reduce the conflict.

## **Overview of Tirana.**

1) an overview of the development process of Tirana.

Nowadays, in 2021, the urban area of Tirana has tripled since 1991, and so happened for the number of the population. Figure number 2 shows in mid-grey colour the urban area before 1991, and in light grey what happened after, till to today. The division of these two colours signifies not only a historical point toward the private market but also an administrative limit. Deep is also the division of the territory created from the “Great Western City Ring”, which is planned and projected with the aim of connecting the south part of Tirana with the exit toward the city of Elbasan. This last area, marked with dark grey in Figure 2, developed in the last 15 years, represents a unique form of housing in the Albanian territory. With a price of up to 1200 euros for a meter square these

apartments have additional monthly costs for the maintenance of the collective spaces, such may be gardens, pools, and other forms of amenities. Seen from the big scale there are three patterns; i) the first, historical and administrative role, in the city centre; ii) the second, developed in the northern part of the city as an urban extension from the first pattern in an informal way, and iii) the new pattern developed in the south last years, imposing a modernist grid and architecture. The existence of three big agglomerations in housing stock by different characteristics of the development, mixed with big interventions by the state and municipality, by policies and projects, has increased further the social tension. The difference between these three housing agglomerations consists of; housing tenure status, affordability degree of the housing costs, materials of construction, accessibility, and different cultural activities of the economic sphere, social and demographic. The first lesson coming from these readings by patterns is that the geographic conflict is not only social, and economic but also spatially distributed in the urban continuity of Tirana. The primary factor of this spatial distribution is not only the political factor, which has passed in various periods in shock conditions – such as the loss of property rights but the factors are rooted in the urban morphology of the city and its historical development.

Till 2014, with the introduction of law 107/2014, and government changes, the process of property transition was an ‘open will’ of the stakeholders to bargain the price and the retribution – mainly



Figure 2 Urban expansion of Tirana. Layers of the social and economic tension on housing affordability in Tirana. (font: Google Maps. Map illustration: by the author).

with apartments. In the middle of 2000, the retribution was 40% of the new development, over the years this percentage dropped to 20%. Nowadays this informal practice, of 'open will' among actors to bargain, is impossible due to the intervention of the state with the Inspectorate created to track, stop or demolish where informal settlements have been raised. The construction of the "Great Western City Ring" is one of the examples that show this historical transition of the property transition process. As the two case studies show in the "Astiri" area process of property transition has occurred with an open will to bargain with the stakeholders the future developments, in the urban area of Kashar the urban transition with the intervention of the state and the Municipality of Tirana.

2) The ongoing macro-urban issues.

The change of the bargaining conditions by state rules and interventions has left little possibility for the inhabitants to get into a peaceful substitution. However, there are cases, urban forms, practices and common rules that exist in the territory that contribute toward a softer substitution process, by reducing the conflict and adding communication among the inhabitants. Some rules stand on the exchange of material means, beyond financial, while others stand on common rules and communications. The exchange of material means is often a neglected issue by the institutional planning system but is very evident in the territory. It affects mostly those material means that are denied to the inhabitants by the state, such as alternative land use, the common wells, common materials of construction, common semi-private roads and squares, common lightening by night, common parking, and many other forms shaped in the territory and that in certain circumstances are even co-managed. In other cases, the bargaining conditions that make the urban substitution stand not on material means but rather in communicative practices and urban shapes: such are the bricks thrown in the land lots, showing that there's an interest expressed in the urban development even before building in, or for example the hidden economic activities showing arrows and other forms communication to the local inhabitants.

### **The two areas: Kashar and "Astiri".**

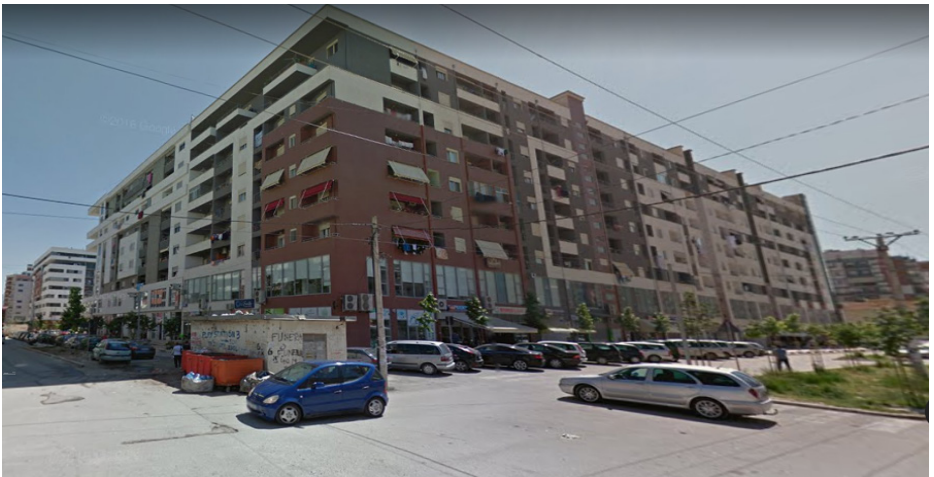
1) Presentation of the area.

The area of "Kashar" and "Astiri" is one of the last neighbourhoods added to the city administration of Tirana Municipality after the territorial reform of 2014. Our focus in Kashar and "Astiri" is going to that urban area that is continuous and attached to the city, intending to look at the deep territory of the west that brings to the agricultural land. In this perspective, the limits of our territorial focus are the Great Western Ring and the city edges. Our area, in the northern part, is confined to the Lana River, and in the south Rruga e Kavajës. In 2002 the new Mayor of Tirana pushed the building interest of the city outside the administrative borders, to Kashar Commune. From 2002 to 2004, more than half of the empty agricultural land will be filled with big building blocks. Most of these building constructions will be settled on the primary road, following the old agricultural lands, without a regular permit. Slowly new processes of bargaining processes will take place, singular informal family houses will be substituted by multi-family dwellings - big urban blocks. In many cases, these territorial substitutions have configured the land partitions, occupied, fully by those actors, and inhabitants engaged in a financial agreement. In other cases, the land configuration has happened partially. For a better understanding of the substitution process that has taken place, we should look at different property regimes and not only. In some cases, the substitution process has occurred also in the infrastructural network, in some partially, and in others. Figures number 3 and number 4 show two different pictures, each of which focuses on the extreme contradiction of the substitution process. Figure 3, shows two different forms of housing

typology, in the same neighbourhood, co-existing at the same time and with different land configurations. Figure 4, shows the main boulevard in the Kashar area, where in the middle of the crossroad there is an electricity supply cabin. The substitution process, from a water canal, into a path, and later to a paved and designed process from the top down gives a complex and different result on the territory and land configuration.



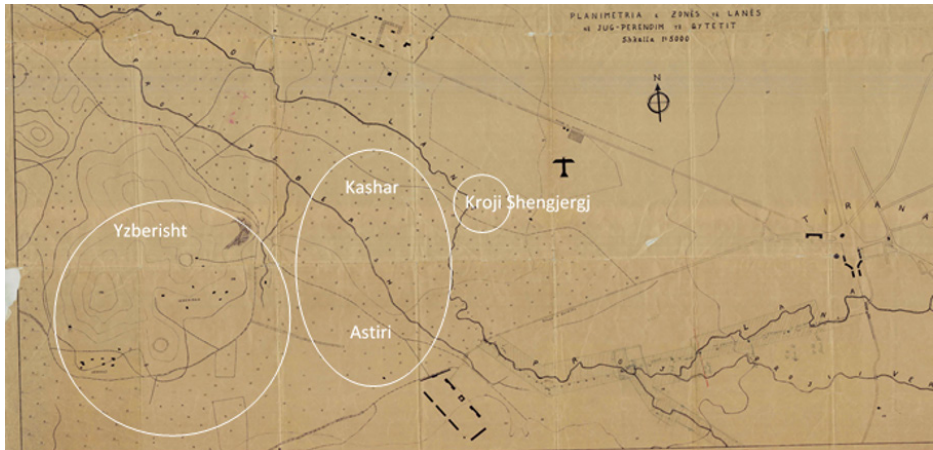
*Figure 3 Kashar area, two different housing typologies inside the same urban block. (font: Picture by the author).*



*Figure 4. Kashar area, two different housing typologies inside the same urban block. (font: Picture by the author).*

## 2) Why these two areas?

Beyond the territorial contradictions, the area of “Kashar” and “Astiri” keeps many forms of common rules that make the process of substitution from top-down to bottom-up initiatives. A historical village named Yzberisht has been on the feet of the hill, west part of Kashar, and the downfield with Lana River was used since the middle ages for agricultural purposes. Only after 1990, the area will be affected by the first settlements as a continuity with the city of Tirana. A historical church named “Kroji I Shengjinit”, destroyed during the communist regime, was one of the only buildings in the area in that period. Some of the water canals were following the direction of that building. The area of “Astiri”, brings the name of one of the first shops in 1990 selling colours and varnishes for the new buildings in the neighbourhood. Since that day locals, and not only, call the southern part of Kashar that name, “Astiri”. Both areas share the same history as many other informal neighbourhoods developed after 1990 in many big cities. See Figure 5. The similarity of these neighbourhoods is the primary factor that brings our territorial focus research to Kashar and Astiri. The other factor stands on the maturity degree of the area with the informal settlements, which are dated by historical moments of being the first areas to be developed informally.



**Figure 5. River Lana in 1928, and the case study identification. (font: Polis University Digital Archive. Map illustration: by the author).**

One of the last reasons that explain our focus area in the Kashar and Astiri neighbourhood stands on external properties of the area, such as the geographic position. The area is limited on the north and the south from two main boulevards that connect the city centre with the interurban network, such as the SH2 highway with its extension, Rruga Durrësit, to the city centre, and the southern SH56 with its extension, Rruga e Kavajës, to the city centre. Being in the middle of these two infrastructural networks put the area of Kashar and Astiri under high mobility pressure. The area shows a high appeal to have various forms of land use and property configuration.

## 3) Research Limits.

The research focus is on a spatial configuration, considering forms and common rules that shape the territory. The research is not going to focus on transaction planning from the substitution process, but rather on communication tools, formal a not formal. As emergent urbanism happens, the substitution process flourishes. The area of “Kashar” and “Astiri” shows that the process of

substitution which has occurred between two housing typologies, and less on the infrastructural network, has created various forms of land configuration. Most of these new land configurations are a product of common rules. Our research focuses on these conditions in “Kashar” and “Astiri”, in the section “voice from the field” with various urban forms and architectural dimensions that explain better the situation when common rules shape the substitution process. The methodological limit is the historical developments of each condition, shown in the last section. The substitution process will be described on the neighbourhood scale but without showing the detailed substitution process for each condition in different stages.

### **Description/analysis**

The first historical building in the Kashar and Astiri neighbourhood had a mono-function of land use – that of housing. Even though mono-function land use the area shows various configurations of property regimes. Figure 6 shows our area of interest, in 2002, approximately 160ha. The black marks the buildings, spread following the water canals and the pathways on the side. The water canals had a standard distance of 200x200 meters following Lana River, coming from the city centre, as Figure 5 shows, toward the vast agricultural field of west Tirana. Most of these buildings will be settled in the middle of the agricultural land, others right on the crossroads of the pathways along the water canals. Later these different positions will lead to complex use of the land and the property regime but also the accessibility issues toward the houses built in the depth of the agricultural land. These new complex conditions in most cases are made of common rules among the inhabitants. The land occupied and fenced, signed with dark green in Figure 6, is a static factor of the property use, but what makes more complex the property configuration is what remains outside the built and occupied land. Some of these areas speak about partial development of the agricultural land made by 200x200 meters, with a fast process of substitution along the existing pathways and a slower process inside the agricultural land. In another case the process of substitution has changed the property regime of the householders, transforming the area from a complex configuration of property regime made by the single-family houses into rational planning of multifamily dwellings.

For a total of 36 agricultural lots, made of 200x200 meters each, in 2002 there were 10 lots with few or no buildings in them, all the other land lots were filled by single-family houses, see Figura 7. In 2021, see Figure 8, four of these land lots, will be transformed from agricultural areas to multi-family dwellings, respectively lots nr 10, 15, 27, and 31. The other 6 lots will remain till nowadays for agricultural purposes. The rest of the land lots that were built in 2001 were 26. The total substitution process of the housing typology will occur in only 6 of these land lots, and partially in 20 of them. The land lots involved in the substitution process are closer to the Great Western City Ring and less on the edges of the city. From this perspective, we understand that the multi-family dwelling has been located partially on agricultural land and partially on the existing urban layer of single-family houses.

The substitution process happened there and the legalization process was unclear for the inhabitants. These areas were close to the great western city ring but less in the internal consolidated area on single-family houses – such as lot number 1, 2, 3, 4, 5, 8, 19, and 21 – this last located along the Lana River basin at the north. For a better understanding of the uncertainty that the inhabitants of the informal areas face regarding tenure rights, we should see the size of the land and the dimensions of the building, see (Kacani, 2018). On some land, these configurations and



building dimensions are designed and used by various local practices and voluntary actions of the inhabitants shared and accepted commonly. Figures number 6 and 7 show on the map not only the land occupied by the single-family houses but also those land parcels shaped for common use and access. These land parcels cannot be legalized but at the same time are a common resource for the inhabitants living in these lots – respectively 1, 2, 5, 8, 9, 12, 13, 17, 21, and 23. These land lots are also those where the substitution process did not occur. In the next session, voices from the field, we will find out that the common resources and rules have maintained these settlements consolidated for more than 30 years.



Figure 6 Kashar and Astiri in 2002. (font: Google Maps. Map illustration: by the author).



Figure 6 Kashar and Astiri in 2002. (font: Google Maps. Map illustration: by the author).  
26



Figure 7 Kashar and Astiri in 2021. (font: Google Maps. Map illustration: by the author).

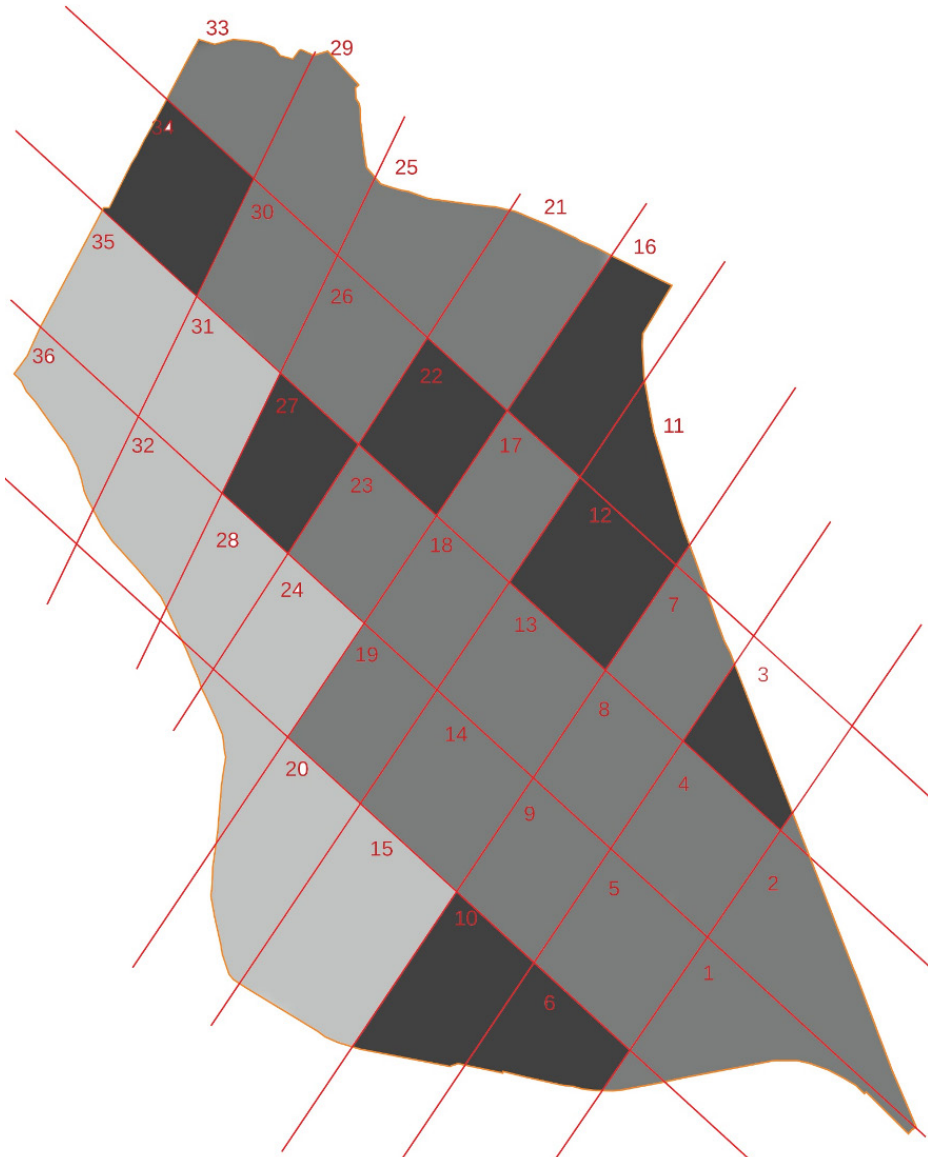


Figure 8 Reading the urban transformations and substitution processes in the "Kashar" and "Astiri" neighbourhoods. (font: Google Maps. Map illustration: by the author).

## The ongoing process of substitution

In this part, the new developments in the substitution of the old urban tissues should be presented analytically. We could also select 2 or 3 relevant examples for each case

Lot number 1, 5 and 23 are the most significant areas where the substitution process had occurred partially, but not and the centre of it – where single-family houses are consolidated. These lots are significant because they are a good representation of the spatial substitution process, what we are looking for, and at the same time areas where common resources and rules are shared among inhabitants.

## Voices from the Field

Starting from the map, and the identification of the lots in substitution, the pictures below show how the cases in which inhabitants have shared common resources and rules. Figure 9 shows how land is used for common purposes, such as a long pathway passing through the land occupied by single-family houses. The two rocks at the beginning of the street signify common rules of reference. The other case shows that land has been preserved for trustworthy newcomers, such as relatives of local inhabitants.



Figure 9 Kashar and Astiri in 2021, Signs and community references from Lot 23 in Figures 6, 7, and 8. (font: Picture by the author).

The other cases below, from lots 8 and 9 in Figures 6, 7 and 8, show that common resources, such as land and local materials of construction are a reality for future constructions and houses. The first case shows how soil consolidation happens before new constructions will take place. It's local knowledge based on the common rules and acceptance degree. Happens that when inhabitants do not accept the new practice the bricks are removed. This case shows the beginning of the process of land occupation. The other case shows local materials, saved from the previous constructions for new ones. The next cases from lots 1 and 5 show that common rules give the possibility to create different economic activities and mobility networks. Sometimes hidden to nonlocal inhabitants these places offer the needed affordable service and the ability to move into the private land occupied. The first case shows a shop covered by the main street but opened if you follow the left entrance. This design issue permits the shop owner to maintain common rules and a certain selection of his clients. The second case shows a corridor 15 meters long created by the inhabitants



Figure 10 Kashar and Astiri in 2021. Common resources from Lot 23 in Figures 6, 7 and 8. (font: Picture by the author).

to pass through the single-family houses to the urban block of multi-family dwellings and later to the western city ring.



Figure 11 Kashar and Astiri in 2021. Common rules and services from lot 3 in Figures 6, 7 and 8. (font: Picture by the author).

## **Discussion: main problems and what should be improved.**

Beyond the existence of alternative common resources for the inhabitants, more affordable, and more connected to the local solutions and knowledge, the area of Kashar and Astiri misses a broader scale of management of the common spaces. Many are the “urban pockets” where the common land is seen not as a resource – this due to low accessibility or omniscient design from the top down created by the real estate market of the multifamily dwellings. Missing a larger scale of management means at the same time losing the ability to be recognized institutionally – which might mean getting primary needs and services, such as water sanitation, adequate energy consumption, education, and health. Although some of these needs and services are commonly created and shared among the inhabitants the area remains not integrated with the rest of the city.

What remains to be done is to understand further the complex common rules and resources that have been created in the territory find out whether they exist or not in the other informal areas and prevent the social tension created by the substitution process.

For more than 20 years, the spatial transition of Kashar and Astiri has generated financial and spatial substitutions. The financial substitution process has generated a competitive situation to get into better situations of bargaining. Instead, the spatial substitution has generated common rules, resources and territorial signs and identifications for better mobility and more affordable economic activities. However, the informal situation, coming with the new transformations the substitution has created a neighbourhood without primary services and with a low degree of housing adequacy.

## **Bibliography**

- Akbar, J. (1988). *Crisis in the Built Environment*. Concept Media.
- Aliaj, B. (2008). *Misteri i Gjashte. Cili është kurthi që mban peng zhvillimin dhe integrimin e ekonomise Shqipëtare në botën moderne*. (A. Kacani, Trans.) Tiranë: CoPlan.
- Aliaj, B., Shutina, D., & Dhamo, S. (2010). *Between energy and the vacuum*. Tiranë: CoPlan.
- ALUIZNI Agency. (2016). *raportestatistika*. Retrieved from aluzni: <http://www.aluizni.gov.al/wp-content/uploads/2016/10/Raportimi-ne-Kuvend-tetor-2016.pdf>
- Bertaud, A. (2018). *Order without Design: How Markets Shape Cities*. The MIT Press.
- Dhamo, S., Thomai, G., & Aliaj, B. (2017). *Tirana Qyteti i munguar*. Tirane: Polis Press.
- Hakim, B. S. (2014). *Mediterranean Urbanism: Historic Urban / Building Rules and Processes*. Amsterdam: Springer Netherlands.
- Kacani, A. (2018). *Defining the hindering factors of the informal settlements in the General Regulatory Plan of Shkoder Municipality - Projecting Shkodër*. Tirana: Operative fragments in-between lake, river and sea. Observatory of Mediterranean Basine.
- Kostof, S., & Castillo, G. (1992). *The City Assembled: The Elements of Urban Form Through History*. Little Brown.
- Ligj Nr. 111/2018 “Për kadastrën” (2018). Tiranë: Kuvendi i Republikës së Shqipërisë.
- Ligji 107 “Për Planifikimin dhe Zhvillimin e Territorit”. (2014). Tiranë: Kuvendi i Republikës së Shqipërisë.
- Ligji 9482. (03.04.2006). *Per legalizimin, urbanizimin dhe integrimin e ndertimeve pa leje*. Tiranë.
- Ligji Nr. 10 119 “Për Planifikimin e Territorit” . (23.4.2009). Tiranë: Kuvendi i Republikës së Shqipërisë.
- Ligji Nr.8405 “Për Urbanistikën”. (17.9.1998). Tiranë: Kuvendi i Republikës së Shqipërisë.
- Moroni, S., & Cozzolino, S. (2019). *Action and the city: Emergence, complexity, planning*. *Cities. The international journal of urban plicy and planning* .

## **List of Figures**

Figure 1 The land use from the Regulatory Plan of Tirana, 1990. (font: Polis University Digital Archive).

Figure 2 Urban expansion of Tirana. Layers of the social and economic tension on housing affordability in Tirana. (font: Google Maps. Map illustration: by the author).

Figure 3 Kashar area, two different housing typologies inside the same urban block. (font: Picture by the author).

Figure 4 Kashar area, view from the new boulevard. (font: Picture by the author).

Figure 5 River Lana in 1928, and the case study identification. (font: Polis University Digital Archive. Map illustration: by the author)

Figure 6 Kashar and Astiri in 2002. (font: Google Maps. Map illustration: by the author).

Figure 7 Kashar and Astiri in 2021. (font: Google Maps. Map illustration: by the author).

Figure 8 Reading the urban transformations and substitution processes in the “Kashar” and “Astiri” neighbourhoods. (font: Google Maps. Map illustration: by the author).

Figure 9 Kashar and Astiri in 2021, Signs and community references from Lot 23 in Figures 6, 7, and 8. (font: Picture by the author)

Figure 10 Kashar and Astiri in 2021. Common resources from Lot 23 in Figures 6, 7 and 8. (font: Picture by the author).

Figure 11 Kashar and Astiri in 2021. Common rules and services from lot 3 in Figures 6, 7 and 8. (font: Picture by the author).



# **Aspects of legal-civil legislation on the impact of housing and the real estate market in Albania and the countries of the Western Balkans**

Prof.Ass.PhD. Saimir SHATKU<sup>1</sup>, Grejdi JANI<sup>2</sup>, Antonela MERSINI<sup>3</sup>

<sup>1</sup>Faculty of Law, Albania

<sup>2</sup>Broker in Centary21 Albania, ,Albania

<sup>3</sup>Adviser in IEKA, Tirana, Albania

DOI: 10.37199/c41000103

## **Abstract**

The real estate market represents a very important sector of the economy of a legal state, which is realized by a combination of factors and objects that in combination with each other ensure the functioning of the market and affect the implementation of one of the main rights of the individual, which is the right of ownership and related property rights. If we have not created the necessary conditions for the existence of a real estate market, we can no longer talk about the protection of the fundamental rights of the individual, as well as about the free market economy in a legal state of law, which is realized through its close cooperation with the market of goods, capital, services, or even labor. According to statistics, 35% are foreign citizens who buy in our country. And 65% are Albanian citizens.

The entire mechanism on which the real estate market is established and functions consists of real estate and legal assets released into civil circulation by economic entities operating in the market, as well as through various transactions undertaken by individuals with the aim of free disposal of these objects through the processes of creation, use and exchange of real estate objects in their market.

Among the main aspects related to ownership and real estate, the right to housing for any individual is considered as the effective implementation of their exercise and protection from any kind of encroachment. Thus, the right to housing is enshrined as a fundamental human right in a large number of international acts, such as the European Convention on Human Rights, which is directly applicable to our own legislation.

Keywords:

real estate; legislation; accommodation; market; property.

## **Introduction**

One of the most effective tools that a democratic state has for the protection and implementation of its constitutional rights is the legal framework built and used by it for the broad and complete fulfillment of its objectives. The more comprehensive this legislation is and the more aspects it foresees or touches, the more effective will be the stability and security it offers to citizens.

The right to shelter and to have a home represents and is closely related to one of the basic human rights, which is the right to property, in order to achieve an adequate standard of living and to enjoy it in full freedom as a human being. Different periods of the evolution of society have shown that the effective rights of the individual cannot be fully enjoyed and exercised if a complete legal framework does not exist, in order to regulate and effectively realize them through the restrictive mechanisms undertaken for these actions.

For this reason, our country has devoted special importance to the implementation of this right, through the sanctioning and approval of a genuine legal framework, which makes possible the implementation of rights related to ownership or housing. This framework starts from the sanctioning of this right in the most important legal act of the country, which is the Constitution of the Republic of Albania, and continues to be completed with the ratification of international conventions and acts, with the approval of specific laws, decisions or instructions approved by the responsible bodies.

In addition to the constitutional provisions and provisions, other juridical-civil aspects create favorable conditions for the implementation of this legal framework, especially in the provisions related to the system of exercising property rights, which is undoubtedly created on the principle of contractual autonomy<sup>1</sup>, a principle that permeates our Civil Code approved in 1994, related to the creation, change or extinguishment of legal ownership relations and which in this way significantly affects the effective functioning of the real estate market.

<sup>1</sup> Registration is considered the most important form of publication of legal acts, provided for by Article 192 et seq. of the Civil Code.

(ii) Aspects of legal-civil legislation on housing and the real estate market

## **Elements of real estate market functioning**

The real estate market, as a relatively new organization and in the process of continuous development, with features and social-economic character for our society, with its identifying and basic features, as well as with the implementation models, has become the object of study in recent years, especially in Albania.

The real estate market as a whole consists of a group of regional markets that differ significantly from each other in terms of the way they operate and their essential elements, such as: real estate, prices, coverage areas, risk levels, real estate investment efficiency, sales, bank loans, costs, legal documentation, buyers, development areas, infrastructure, local policies, tax level, etc. The coordination and the level of connection of all these elements with each other, influence and constitute what is called the policy of setting and functioning of the real estate market, from which the main rights of the individual related to the exercise of ownership and housing rights originate and are implemented.

Among the main procedures carried out in the real estate market we can mention:

- change of ownership – which is realized through transactions such as: purchase and sale of real estate; inheritance; donation; exchange; ensuring the fulfillment of obligations through mortgage and foreclosure;

- partial or complete change of the composition of the owners - which is realized through transactions such as: privatization; nationalization; the change in the composition of the owners, including the division of the property; bankruptcy of economic entities with the sale of the property of the owners;
- no ownership change - which is realized through transactions such as: investment in real estate; real estate development (expansion, reconstruction, new construction); liens; rent; transfer to economic management or operational management, to free use, to trust management, etc2.

In the last two decades, all these chain procedures can be realized and made concrete only through the banking system, since each procedure must be carried out in a transparent manner through the reflection of concrete transactions carried out by the banking system. The most typical case of the role played by the banking system in the real estate market is related to granting loans to individuals so that they can buy real estate (mainly apartments), as well as also granting loans to businesses, mainly construction companies, which have the opportunity to build residential buildings. So, through granting of loans by second-tier banks, according to the instructions, policies, or interest rates determined by the Bank of Albania, the entire real estate market has potential opportunities for its development. If all these factors are coordinated and create elements of cooperation, then the real estate market will create high levels of stability and efficiency for its development. In Albania, the main problems encountered in the large real estate market are mostly related to the processes of property registration from the initial stage of construction, in the most important institution created in the country for this purpose<sup>3</sup>, directly affecting or violating the right of ownership, as well as the high price of offering them for sale on the market, especially in the most urban areas or the main cities and especially more in the capital of the Republic of Albania. For this reason, the demands are great, while the offer for real estate remains smaller compared to it, being accompanied by a very high cost, almost unaffordable for the economic level of living and income of Albanian citizens. All this imbalance creates suitable conditions for lack of housing, especially for the most vulnerable categories of our society. Such issues and problems regarding the disposition of real estate, denying the right of ownership and infringing in this case all the rights and obligations that come from it, are encountered every day in our daily life and often shake the foundations for the functioning of the economy of a democratic and legal state. Among the main functions that all real estate markets exercise, we can mention the three most important ones, which are:

1. Commercial function, which relies on the realization of profit by the participating entities related to the capital invested in real estate.
2. Investment function, which makes it possible to save (so to invest means to save and not to spend) and to increase the initial invested capital over the years. It is known that over the years, the economic and financial indicators of a country increase and, as a result, so does the value of real estate in the market.
3. Social function, is to stimulate the intensity of undertaking concrete actions, or investments and economic initiatives of citizens who seek to become real estate owners<sup>4</sup>.

## **Legal-civil aspects on the right to housing in Albania**

### *The constitutional aspect in function of the right to housing*

The Constitution of the Republic of Albania is the most important legal instrument in the Albanian legislation, which has given place and expressly provided for the right to housing. In many international instruments ratified by our country, the right to housing has a special place and care has been taken to implement it<sup>5</sup>; this also related to the fact that the Constitution has provided and left enough space to directly apply international acts in our domestic legislation, for provisions and constitutional norms that practically contradict the international principles of the right to housing<sup>6</sup>.

Here we can mention the European Convention on Human Rights<sup>7</sup>, which is with immediate effect applicable to our legislation. While we dwell on the main constitutional provisions, which provide directly and indirectly the right of individuals to housing, we quote:

**Article 38** of the Constitution of the Republic of Albania provides: “1. Everyone has the right to choose their place of residence and to move freely in any part of the state’s territory ...”.

**Article 39** of the Constitution of the Republic of Albania provides: “1. No Albanian citizen can be expelled from the territory of the state. 2. ... 3. Collective deportation of foreigners is prohibited. Deportation of foreign individuals is allowed under the conditions established by law”.

**Article 40** cites: “Foreigners have the right to shelter in the Republic of Albania according to the law”.

**Article 41** provides: “1. The right to private property is guaranteed.  
2. Property is acquired by donation, by inheritance, by purchase and by any other classical method provided for in the Civil Code. 3. The law may provide for expropriations or restrictions on the exercise of the right to property only for public interests.....”.

While in the chapter where the social objectives are foreseen in the Constitution of the Republic of Albania, in article 59, point 1/b of it, it is quoted that: “1. The state, within the constitutional powers and the means at its disposal, as well as in fulfillment of the initiative and private responsibility, aims to:.....b) meet the needs of citizens for housing”;

Referring to all these above-mentioned provisions, in their literal sense, we can clearly see aspects of all legal provisions with a constitutional character, created within the framework of the realization of the rights of freedom of expression, disposition, enjoyment and protection of property and all other rights related to it, such as the right to housing, which, as evidenced by what I quoted above, also enjoys genuine legal protection with a constitutional character.

## **Juridical-civil aspects in function of the right to housing**

### **Law no. 22/2018 “On social housing”**

Given that the right to housing is a right that enjoys constitutional protection in the Albanian state, a specific legislation could not be missing that could regulate in detail all aspects and situations arising from its implementation in our country. For this reason, the legislator approved Law no. 22/2018 “On social housing”<sup>8</sup> in the Republic of Albania, where its implementation constitutes a step forward in the reforms undertaken by the Albanian state on the protection of the right to housing. Referring to the object of this law, its article 1 provides, in general terms, all functions, main roles and goals for its implementation in practice, where specifically: *‘determining the rules and administrative procedures for the ways of planning, providing, administering and distributing social programs for housing, in order to create opportunities for suitable and affordable housing, relying on the paying abilities of families in need of housing and on the assistance of responsible state institutions’*<sup>9</sup>.

Article 11 of Law 22/2018 “On Social Housing” provides for and lists the six basic social programs created for the purpose of housing, which are:

- “The social housing program for rent;
- The program for improving the conditions of existing housing, up to a new construction;
- Low cost housing program;
- The program for the development of the area for the purpose of housing;
- Program for the creation of temporary housing;
- Specialized housing program”<sup>10</sup>.

Law no. 22/2018 “On social housing” is a progressive one that includes several important aspects related to meeting the housing needs of victims of gender-based violence, such as victims of trafficking, potential victims of trafficking and victims of domestic violence, and is in accordance with new international standards that precede the fulfillment of the state’s obligations for the protection and support of social strata of Albanians, and in particular victims of violence.

The law is important in sanctioning housing support services for women victims of violence<sup>11</sup>. Considering the above, it is worth quoting the standards established by the Council of Europe Convention “On preventing and combating violence against women and domestic violence”. One of the obligations arising from this Convention is to take the necessary measures to ensure that victims have access to services such as housing, which is one of the main support services for them<sup>12</sup>.

*The entities that play an influential role in the right to social housing in the Republic of Albania are:*

- Non-profit organizations in Albania that are active in the field of social housing policies and the field of protection of victims of domestic violence and victims of human trafficking;
- Active regional/international organizations working for the same goal;
- Local government units (administrative units or mini-municipalities, municipalities, districts);
- Second level banks; as well as
- Any person interested in the implementation of the law on social housing and the status of victims of violence and trafficking in this area.

## **Local government units**

Referring to the institutional framework, which through its organization and operation makes possible the effective realization of the right to ownership or housing in the Republic of Albania, the national legislation, specifically the Constitution of the Republic of Albania, in its article 113, has defined the unit of local government, consisting of communal, municipal and district councils as competent bodies, which have the legal right to exercise property rights. As such, Article 113 of the Constitution of the Republic of Albania provides: “1. The communal, municipal and district councils:

- a) independently regulate and administer local affairs within their jurisdiction;
- b) exercise property rights, independently administer the generated income, as well as have the right to exercise economic activity”<sup>13</sup>.

Based on the principle of decentralization of power, local government units have been given full powers on how to independently regulate and administer concrete issues within the jurisdiction of exercising their power.

The functions of local self-government units listed in Article 73 of Law no. 22/2018 “On Social Housing” include aspects such as the identification of housing needs and the approval of beneficiary lists, up to the implementation of the process by planning funds, identifying construction sites, identifying housing at risk of collapse, submitting requests to the minister responsible for housing, creating and administering the database, awareness, information and publicity respecting all legal principles.

While Article 9 of Law no. 22/2018 “On Social Housing”, in point a/i, while dealing with the principle of transparency, underlines that: *‘The bodies of local self-government units must ensure: i) the type of social housing program that is implemented in that local self-government unit’.*

It also provides that: *“Local self-government units take care that families and individuals, who do not qualify as beneficiaries in one program, have the opportunity to switch and benefit from another social housing program, when they meet the legal conditions.”*<sup>14</sup>.

## **Directorate of Housing in the Ministry of Finance and Economy**

In addition to the bodies of the local government units, in order to strengthen and effectively realize the rights related to housing, in the institutional framework, the legislator has foreseen and created a specific body in the Ministry of Finance and Economy, which is the Directorate of Housing and Economy, with the aim of providing the legal, financial and institutional basis within the framework of the reforms taken by the central government and the government in the Republic of Albania, related to the improvement of living conditions, increasing access to suitable, affordable housing and the improvement or maintenance of housing and urban settlements. This goal is consistent with:

- the social objectives of the Albanian state provided for in the Constitution of the Republic of Albania,
- governing objectives for economic growth and social development, and;
- in accordance with international acts and conventions that define the right to housing.

## **The right to housing in international law**

In the international framework, the right to housing is provided for in Article 25/1 of the Universal Declaration of Human Rights, where it is underlined that: “Everyone has the right to a standard of living adequate for the health and convenience of both themselves and their family, including food, clothing, housing, medical care and necessary social services, as well as the right to be insured in case of illness, unemployment, widowhood, old age and other cases of loss of livelihood due to circumstances beyond his/her control”<sup>15</sup>.

This right has also been reaffirmed in many international instruments, such as: International Covenant on Economic, Social and Cultural Rights (ICESCR)<sup>16</sup>, which requires member countries to take all necessary measures to promote the realization of the right to adequate housing. Other acts such as: The Convention on the Elimination of All Forms of Discrimination against Women<sup>17</sup>, the Convention on the Rights of the Child (CRC)<sup>18</sup> and the Convention on the Status of Refugees also provide for the right to asylum.

In its General Comment No. 4 on the right to adequate housing, the United Nations Committee on Economic, Social and Cultural Rights, the United Nations structure created to monitor the implementation of the ICESCR, provides for the constituent elements of the right to housing. The CESCR also states that the right to housing must be guaranteed to all persons, regardless of their income, and must be implemented in such a way as to match their means.

## **Methodology**

The above analysis, carried out during this paper, aims to provide answers to several main issues

1. The great importance that the right to property and housing represents for any individual during the exercise of their human rights, as well as the effect that state legislation plays in the realization of this goal.
2. How effective is the existing legislation in Albania and its shortcomings in dealing with the right to housing.
3. What international acts and standards describe in terms of the right to housing?
4. How the right to housing affects the functioning of the real estate market?

## **Conclusions and Recommendations**

The Albanian state, as a legal and democratic state, has an immediate and continuous obligation throughout its independent existence to take measures for the full fulfillment of all its social objectives, which it provides for in its Constitution. In order to realize and fulfill this, the state must take measures and offer guarantees not only in the provision of legal aspects, but also of the enterprise and practical actions

In the framework of the protection of one of the most important constitutional rights, which is the right to property, the legal provisions and sufficient guarantees given for this purpose should affect all aspects related to the exercise of this right, where, in addition to the disposition of the property title, this right includes and is closely related to the right to housing.

The right to housing represents one of the main social objectives of our Albanian state and as such it is closely related to the security of the person to exercise the right of ownership. So the state must guarantee legal protection and provide a basis for the progressive realization of all aspects of the right to adequate housing.

In the Albanian legislation, the approval of the specific law no. 22/2018 “On social housing”, was a necessity for the development of the country’s economic system and also marked an extraordinary progress in the protection and exercise of rights arising from ownership. Now we can now say that

its approval and entry into force and coexistence alongside the provisions of the Civil or Criminal Code in order to regulate all aspects arising from the right of ownership, represents a significant progress for the security of citizens and what they had absent from our democratic government system for years.

In the recent years in Albania, it has been noticed that the biggest changes in the progress or economic developments of the country have been widely reflected to have occurred and have affected the real estate market in all aspects of its operation. These changes tend to have come for a number of reasons and it is evident that they have brought some consequences that have changed the conditions of its operation in contrast to the past and in progress with positive predictions.

One of the main factors that has influenced these changes and circumstances is undoubtedly the adoption of the above law, which through its provisions on the right to housing, has sanctioned the basic constitutional or international principles for the protection of individuals and categories in need, creates new legal conditions and criteria for participating entities, establishes different criteria for implementation and administration by law enforcement bodies, reflects all the necessary measures that must be taken during the housing processes, as well as clearly foresees the inevitable cases when benefiting or state intervention is required for its regulation.

The anticipation and regulation of all these aspects on housing and ownership have been necessary measures to be taken by the Albanian legislator, in order to avoid the creation of abusive cases in today's real estate market, which must be admitted to fluctuate constant in his demands and offers. In its entirety, the Albanian juridical-civil legislation on the guarantee of rights arising from ownership has been built and described by the incorporation in it of international democratic principles and has been functional. What was necessary was the creation of a more specific legislation, which would cover and, through its provisions, be updated with the new situations of the country's economic developments, especially in the real estate market.

## References

- [1].Constitution of the Republic of Albania, amended. (2017).
- [2].European Convention on Human Rights, (1950).
- [3].Convention on the Elimination of All Forms of Discrimination against Women CEDAW, (1979).
- [4].Convention on the Rights of the Child (1989).
- [5].Convention "On the protection of the rights of all migrant workers and members of their families" (1990).
- [6].Universal Declaration of Human Rights (1948).
- [7].Civil Code of the Republic of Albania, amended (2017).
- [8].Law no. 9662/2006 "On Banks in the Republic of Albania", amended by law no. 131/2016;
- [9].Zajmi, I., Tirana, 2010. "European Union Law", "Ombra" Publishing House.
- [10].Decision of the Council of Ministers No. 453, dated 03.07.2019 "On the amount of the loan interest subsidy and the procedure for granting it to families that benefit from low-cost housing".
- [11].Low no. 22/2018 " On social housing".



# **PROBLEMS OF SUSTAINABLE AND STRATEGIC ENVIRONMENTAL PLANNING OF THE INDUSTRIAL (NON-RESIDENTIAL) SECTOR IN ALBANIA**

Kleant SEMEMA<sup>1</sup>,  
Neritan SHKODRANI<sup>2</sup>

<sup>1</sup> *Department of Environmental Engineering, Faculty of Civil Engineering, Albania*

DOI: 10.37199/c41000104

## **Abstract**

The territory of the Republic of Albania, in the lack of strategies, plans, programs and projects, as well as a result of the lack of coordination and cooperation between public authorities covering the field of economic sector planning, having no interaction between existing projects, new projects and planned ones, faces today the problem of increasing pollution and environmental threats and this development is not sustainable and is not strategic.

As a result of the increasing number of polluting operators in the environment from the industrial (non-residential) sector from 2014 to 2022, the pressures on the components of the environment have been increased significantly, mainly concentrated in the north-eastern region of the territory. The main threat that comes from the industrial sector is direct discharges into the environment from separate sources in the air and from industrial discharges into water.

The lack of environmental planning of the territory has made it possible that in the municipalities of the Tirana county, the highest concentration of the industrial sector is in the UB\_Urban land use system, in the category A. Residential, mainly near the main road axes and near surface water sources.

Keywords:

industrial sector, threat, pollution, discharge, environment, planning, sustainable, strategic

## **Introduction**

Protecting the environment in its entirety and ensuring the conditions for the sustainable development of the country, is a legal requirement of the Constitution of the Republic of Albania [ ], of the special law on environmental protection [ ] and the special law on territorial planning and development [ ].

Sustainable economic, environmental and social development is promoted by public authorities through drafting, approval, revision, change, modification and implementation of normative acts, strategies, plans, programs and projects. The use of natural resources in such a way as to meet current needs and preserve the environment, without compromising the possibility of future generations to meet their needs, remains among the main policy challenges in the field of environmental protection.

During drafting and approval of territorial planning documents, public authorities, among other things, should be based on the principle of the integrated approach “preventing and/or reducing the risk to the environment, in its entirety”, taking into account, in particular, the vulnerability of the environment, the relationship between the balance and values of the natural landscape, the relationship between renewable and non-renewable natural resources, cultural heritage and material assets, the entirety of their mutual interactions, as well as interaction between existing and planned projects.

The components of the environment (air, water, soil, nature, climate change) are protected from pollution, both individually and in combination, taking into account the interactions between them.

To achieve the protection of the components of the environment, we are based on: 1- environmental protection in the planning process; 2- pollution prevention and control; 3- monitoring the state of the environment; 4- environmental information; 5- environmental responsibility; 6- instruments and tools of environmental protection policy and 7- state bodies for the environment.

In order to have a sustainable and strategic development, it is necessary to have an integrated approach from an early stage, planning stage followed by other stages of prevention, control, etc.

Among the sectors with the highest impact on the environment, threatening it, is the industrial (non-residential) sector. Pollution caused to the environment by economic operators as a result of activities, installations or technical units of installations is direct or indirect, both during the construction phase and during the operation phase.

Sustainable and strategic environmental planning of plans, programs and projects aimed at the development of productive activities, is achieved if a common denominator is found between Economy - Environment and Society.

In the last 3 (three) decades, ever-increasing demand for products from different sectors of the economy in Albania, has been followed by increased pollution and environmental threats, this as a consequence of the planning that the territory has been through, highlighting the environmental problems as a result of the interaction between existing projects, new projects and planned ones.

Protecting the environment from pollution and damage is a national priority and is mandatory for every resident of the Republic of Albania, for all state bodies, as well as for physical and legal persons, local and foreign, who carry out their activity in the territory of the Republic of Albania.

Any physical or legal person, according to the legal provisions in force for the development and planning of the territory, has the right to develop the territory of a certain environment. The development of the territory is carried out at the national and local level, which is the process of changing the territory through new constructions or changing existing constructions, divided into areas and structural units of the territory. The process of changing the territory allows different economic operators to carry out their productive activity in these areas and/or structural units.

The purpose of this study is to identify the problems that the industrial sector (non-residential) has shown in Albania, as a result of planning in the field of environmental protection.

This planning must be sustainable and strategic, based on the integrated approach in the design of strategies, national and local plans, programs and environmental projects that will be approved, revised or modified in the future in the Republic of Albania.

The objectives of this study are:

- To analyze the progress of the industrial sector in the territory of Albania
- To analyze polluting activities in the environment according to industrial sectors
- To analyze the separate sources of air emissions from the industrial sector
- To analyze the industrial sector in the region of Tirana and its compatibility with general plans and detailed local plans
- To analyze the environmental problems of the industrial sector, referring to the environmental planning that has been submitted to the territory

The methodology used and the results achieved by this material in the field of Strategic Environmental Planning and Assessment research are based on the qualitative and quantitative analysis method.

## **Material and Methods**

The methodology used for the preparation of this study and the results achieved are based on contemporary methods, qualitative and quantitative analysis.

The qualitative method used creates the opportunity for the collected and processed information to be reflected in the material in a systematic way and sorted according to the importance of the application, providing the reader with accurate, rich, accessible and easily understandable information, with well-defined references. While the quantitative method used creates the opportunity for the collected and processed information to be presented in the material in the form of statistics.

To achieve the objectives of the study, several steps were followed, as follows:

### **Collection of Information**

For the collection of information, the polluting economic operators were first identified according to the licensed industrial sector [ ] through the National Business Center [ ] for the entire terri-

tory of the Republic of Albania. The period analyzed is from 01.01.2014 to 31.12.2022. For each polluting economic operator, the data are summarized in the Excel program. The industrial sector, the polluting activity, the location of the activity, the source of the discharge into the air have been determined from the QKB data. Then the geospatial data (coordinates according to the Albanian coordinate system 1986 / Gauss-Kruger Zone 4) which are included in the act of approving environmental permits type A and B have been verified through the National Geoportal "ASIG" through which the county and municipality have been determined for each activity of the polluting operators. Also, from the verification of the acts of approval of type A and B environmental permits of the county of Tirana for each activity of the polluting operators, the technical data such as: total area (m<sup>2</sup>) and building area (m<sup>2</sup>) have been determined. The obtained geospatial data have also been verified through the geodetic e-planning platform, from which have been obtained the data of the Detailed Local Plans in which these operators have built and perform their polluting activity, generating the information: structural unit; system and land use category 1.

### **Data Analysis**

For the processing and analysis of the data, a model has been built in the Excel program in which all the collected information has been entered. The data processing is realised by verifying each polluting operator in the environment that is the holder of an environmental permit of type A or B through the official website [qkb.gov.al](http://qkb.gov.al), searching the national register of licenses and permits issued through the QKB by month and year of approval, and then, for each operator, the relevant data is entered in the excel database.

Then the geospatial data were obtained and verified through the National Geoportal "ASIG" [ ] and the geodetic platform "GIS" [ ]. The analysis of the data obtained for the period 2014 - 2022 is realised through the filter options enabled by the Excel program.

Based on the data obtained and referring to the legislation in force, the problems of the industrial sector in Albania have been identified, from environmental planning.

## **CASE STUDY: RESULTS AND DISCUSSIONS**

### **First Case: The Industrial Sector in the Territory of Albania**

Through published data in the National Registry of Licenses, Authorizations and Permits powered by the National Business Center, economic operators have been identified, which as a result of their production activity, induce direct or indirect pollution in the environment. Referring to the limit production capacity, these economic operators are holders of an environmental permit of type A or B, for the operation of the whole or part of the installation.

At the national level for the period 2014 - 2020, it results that a total of 1512 economic operators have been licensed for various industrial sectors, from which 75 operators have been provided with type A environmental permit and 1437 operators have been provided with type B environmental permit.

From the data presented in the chart below (Fig. 1) it is noticed that the industrial sector in the territory of Albania keeps growing, increasing in this way the number of polluting operators in the environment.

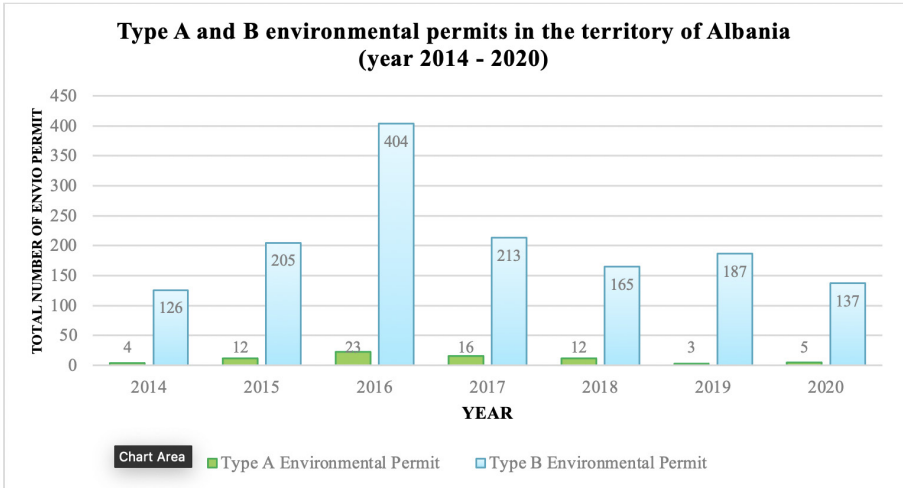


Figure 1: Type A and B Environmental Permits In the Territory of Albania (Year 2014 – 2020)

Based on the data of economic operators throughout the territory, for the same time period in the chart below (Fig. 2) shows the distribution of industrial sectors according to the counties, from which it results that the highest number of polluting operators of type B is the county of Tirana with 291, followed by Durres county with 197, while the lowest number is held by the Gjirokastra county with 37 type B permits. Regarding polluting operators holding a type A permit, Elbasan county has the highest number with 17 permits, followed by Fier county with 15 and Durres county with 14 type A permits, while the lowest number is held by Diber, Gjirokaster and Kukes county with 1 permit each.

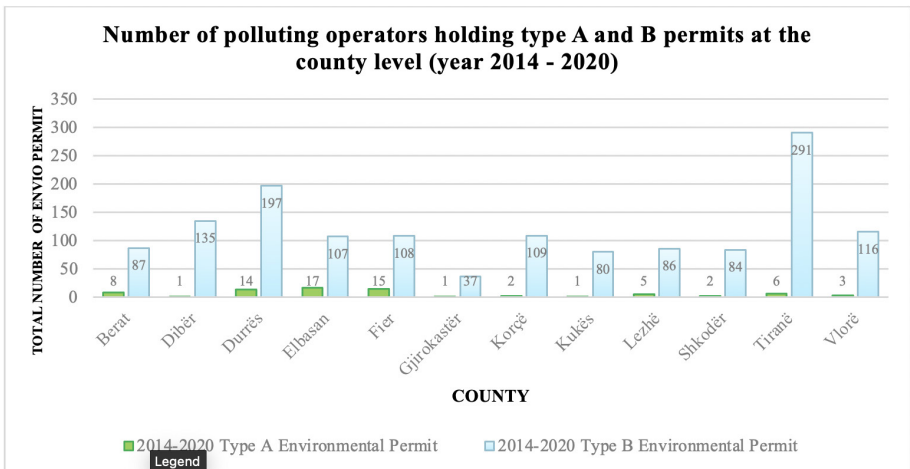


Figure 2: The number of polluting operators holding type A and B permits at the county level for the period 2014-2020

The legislation on environmental permits gives the right to the economic operator who is the holder of an environmental permit type A and B, operate several polluting activities (industry) in the same location, so we have operators who operate 2, 3, 4 or 5 polluting activities in the same location.

From analyzing the data of the chart below (Fig.3 and Fig.4) it results that for the period 2014 - 2020 at the national level, we have 60 operators operating with 1 polluting activity of type A and 15 polluting activities integrated in type A permits (6 operators with 2 polluting activities each, 4 operators with 3 polluting activities each, 4 operators with 4 polluting activities and 1 operator with 5 polluting activities), as well as 1187 operators operating with 1 polluting activity of type B and 250 polluting activities integrated in type B permits (190 operators with 2 polluting activities each, 42 operators with 3 polluting activities each, 14 operators with 4 polluting activities and 4 operators with 5 polluting activities each).

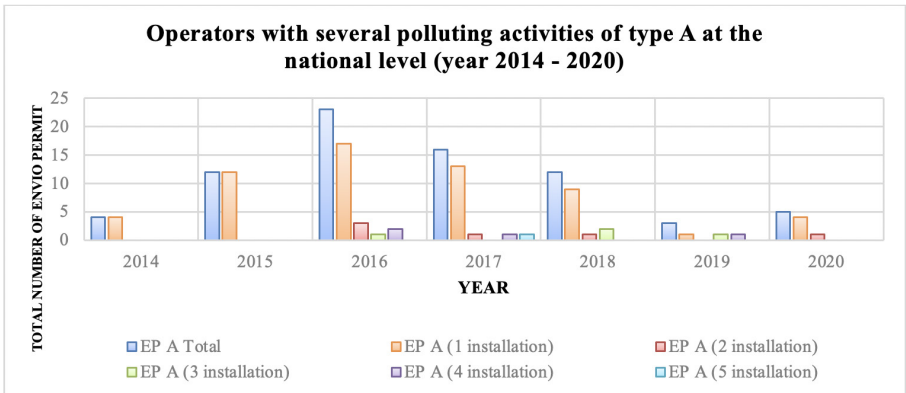


Figure 3: The number of operators with several polluting activities of type A at the national level for the period 2014 - 2020

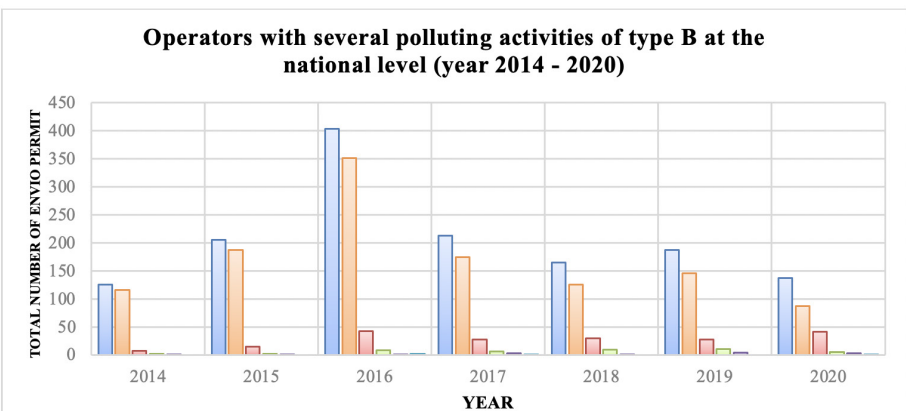


Figure 4: The number of operators with several polluting activities of type B at the national level for the period 2014 - 2020

While in the charts below (Fig.5 and Fig.6) is given the number of operators with several polluting activities of type A and B at the county level for the period 2014-2020, where it results that the highest number for polluting activities of type A is held by Elbasan county with 7 operators who have several activities and for the activities of type B pollutants is held by Tirana county with 69 operators who have several activities.

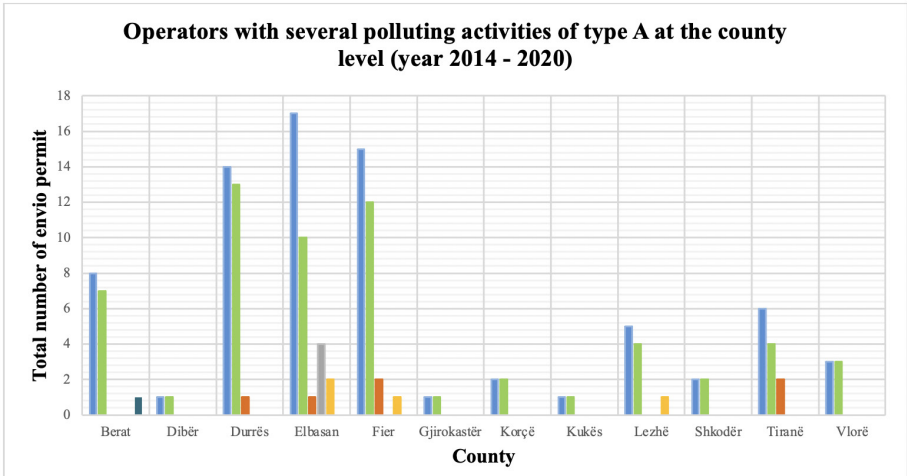


Figure 5: The number of operators with several type A polluting activities at the county level for the period 2014 - 2020

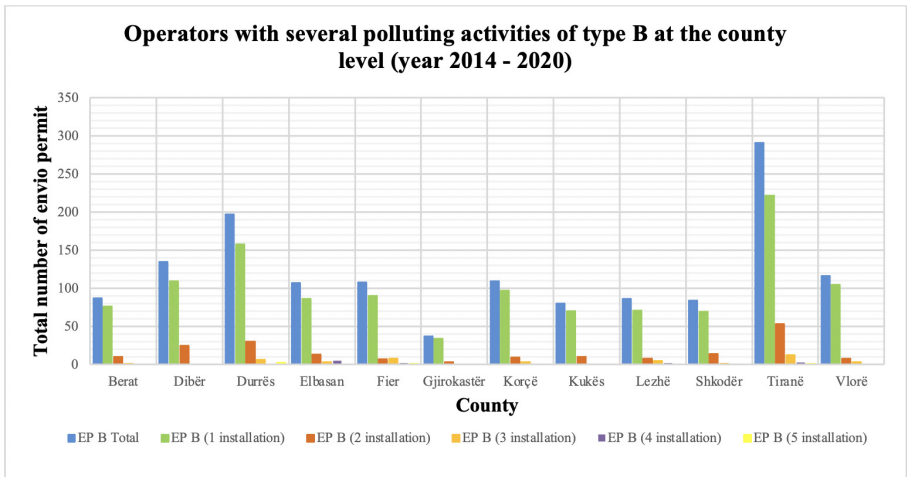


Figure 6: The number of operators with several polluting activities type B at the county level for the period 2014 - 2020

Analyzing the data of the charts (Fig.7 and Fig.8) it results that the highest number of polluting activities (industrial sector) of type A is for 1 – the energy industry issued in 2016, which coincides with 10 polluting operators, while the highest number of B-type polluting activities is for 3 – the mining industry issued in 2016, which coincides with 203 polluting operators.

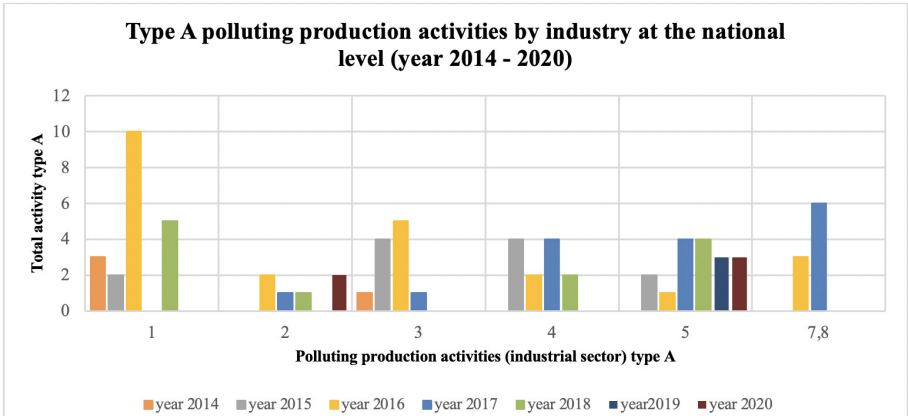


Figure 7: Type A polluting production activities by industry at the national level for the period 2014 - 2020

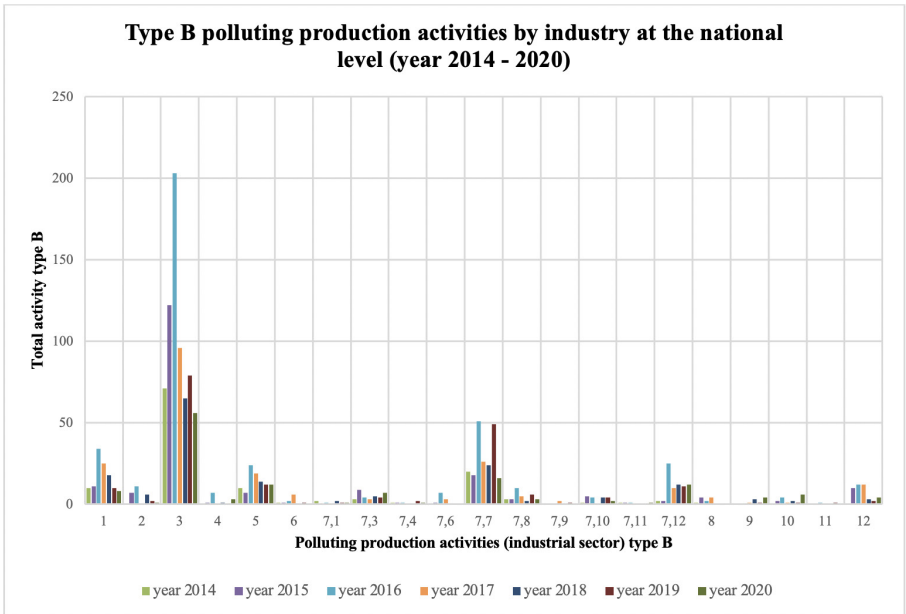


Figure 8: Type B polluting production activities by industry at the national level for the period 2014 - 2020



While in the chart below (Fig. 9) it is clearly shown that the highest number of type A polluting activities is held by Fier county with 1 - the energy industry where 8 operators are licensed, followed by Berat county with 1 - the energy industry where there are licensed 6 operators.

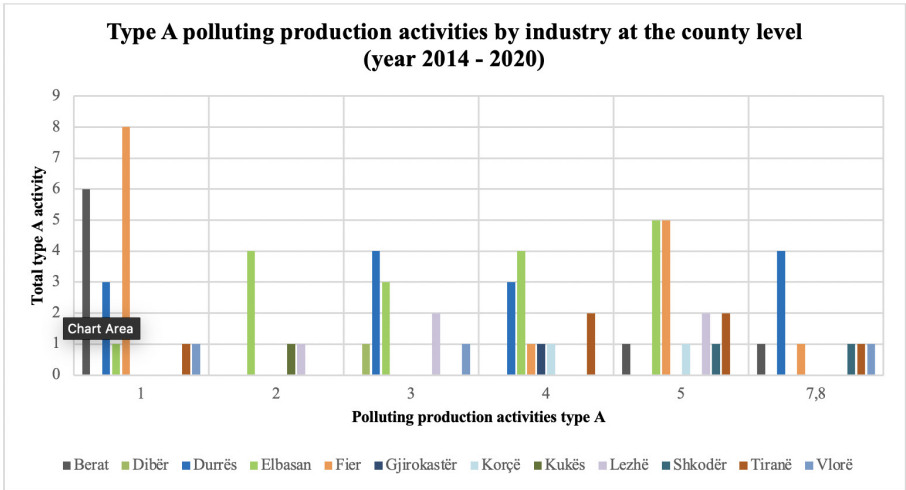


Figure 9: Type A polluting production activities by industry at the county level for the period 2014-2020

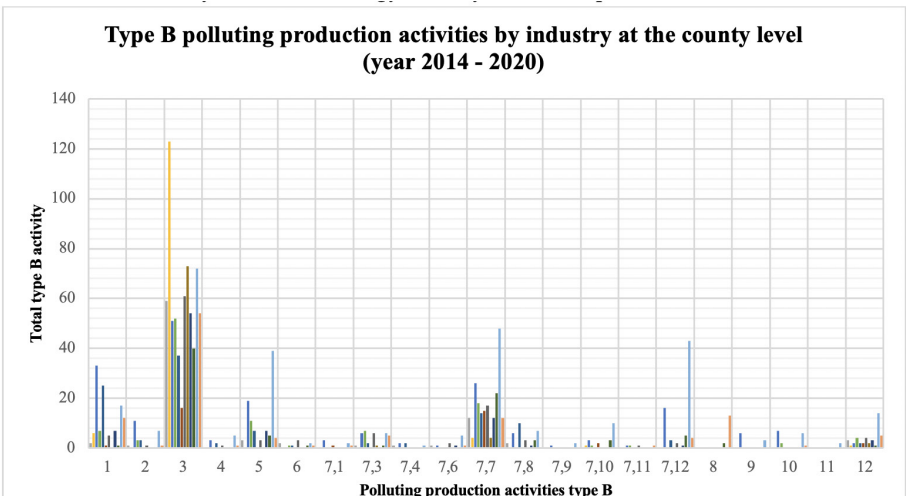


Figure 10: Type B polluting production activities by industry at the county level for the period 2014-2020

Regarding polluting activities of type B, they are shown in the chart below (Fig.10) where the highest number is held by Diber county with 3 - the mining industry where 123 operators are licensed, followed by Kukes county with 73 licensed operators and Tirana county with 72 licensed operators. Then, the highest number of B-type polluting activities is held by Tirana county with 7.7 with the food and beverage production industry where 48 operators are licensed and the Durës county with 1 - the energy industry where 33 operators are licensed.

The industrial sector of the energy industry, which also holds the highest number of type A activities at the national level, is divided into sub-sectors as shown in the chart below (Fig. 11), where the highest number of specific activities (industrial sub-sector) is oil and natural gas extraction with 8 licensed operators, followed by oil and natural gas exploration with 7 licensed operators. For type A activities at the national level, the energy industry sector is followed by the industrial sector of mining industry, which is divided into sub-sectors as in the chart (Fig. 12) where the highest number for each specific activity (industrial sub-sector) is 4 operators for the production of bricks and tiles, 4 operators for the smelting of mineral substances and 4 operators for the production of cement clinker.

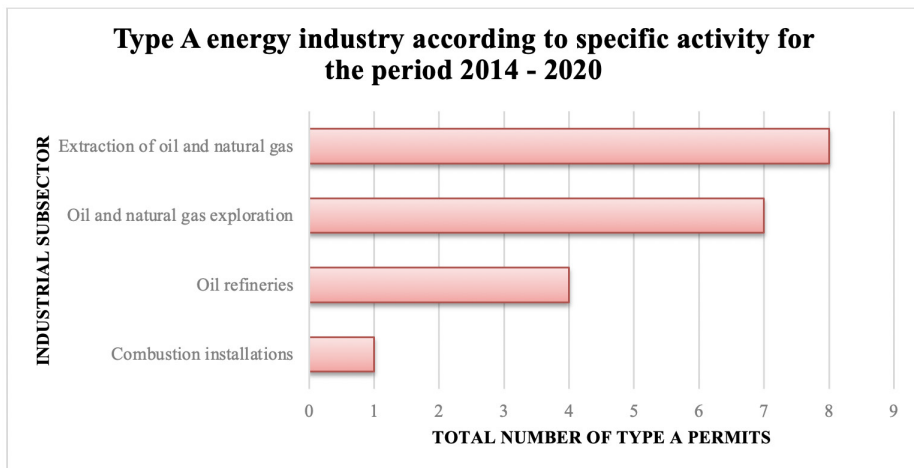


Figure 11: Type A Energy Industry according to specific activity for the period 2014-2020

According to type B activities at the national level the highest number is held by the industrial sector of the mining industry divided into sub-sectors as in the chart below (Fig. 13). The chart shows that the specific activity (industrial sub-sector) of mining (surface quarrying) has 318 licensed operators, followed by the activity of large-scale cement mixing (concrete plants) with 166 licensed operators, followed by the activity for the production and fractionation of minerals with 159 licensed operators and from the activity of underground mining with 125 licensed operators.

### IDENTIFIED PROBLEMS

From this study of the industrial sector in the territory of Albania, we can identify some of the problems arising from planning:

- The lack of sustainable and strategic planning has led from year to year to an increase in the num-

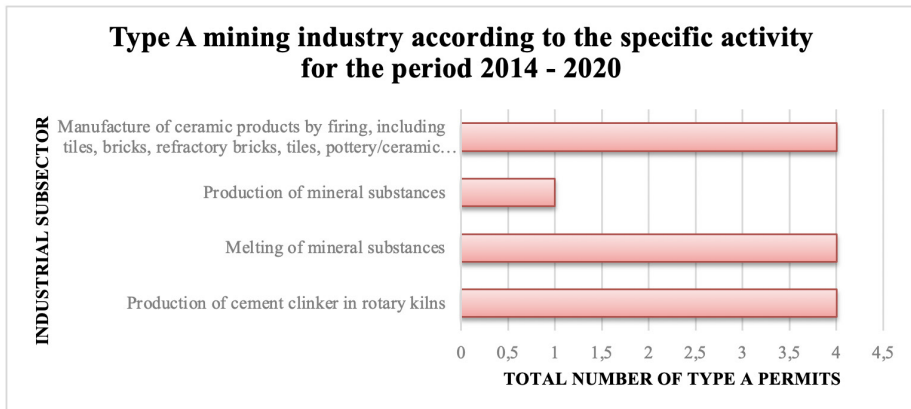


Figure 12: Type A mining industry according to specific activity for the period 2014-2020

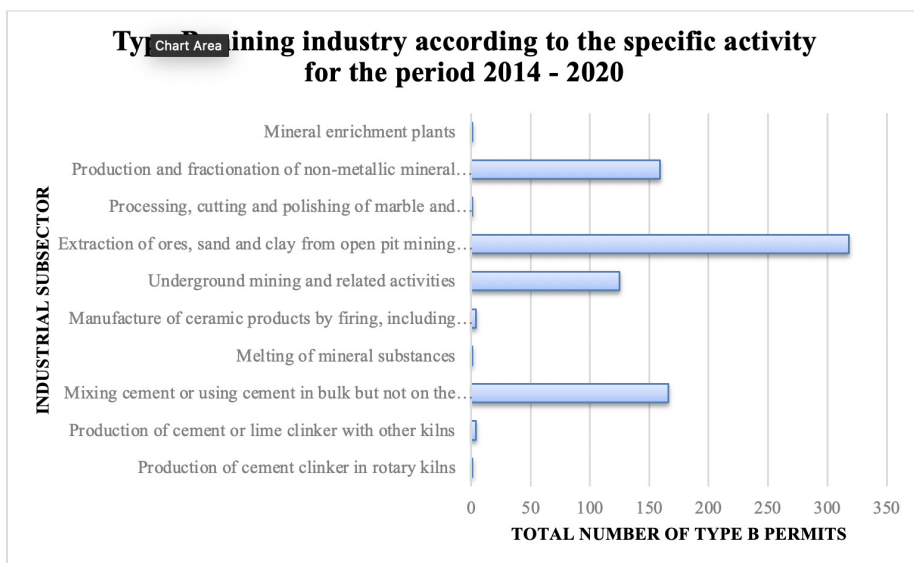


Figure 13: Type B mining industry according to specific activity for the period 2014-2020

ber of polluting activities in the environment (industrial sectors), threatening the environment of the territory of Albania.

-The lack of sustainable and strategic planning in the field of environmental protection, as well as interpretable legal spaces, have allowed economic operators to carry out several polluting activities (different industrial sectors) for the same location.

-For several years in a row, the territory of Albania has been in the absence of general plans and detailed local plans, which has given the opportunity to different industrial sectors to build and operate as they wish, having no interaction with existing projects.

-As a result of frequent changes in policies, strategies, national and local plans in the field of the environment, but not only, it results that at the national level, the industrial sectors of type A and B with an impact on the environment are concentrated in the center and in the north- east of the territory of Albania, mainly in the county of Tirana, Durres, Elbasan, Fier and Dibra, increasing the pressure on the components of the environment in these counties.

-The development of the territory of Albania mainly for residential and non-residential buildings has made the industrial sectors and sub-sectors (specific activities) of type A and B with high risk in the environment, at the national level be the mining industry and the energy industry, mainly in the utilization of natural resources (metallic and non-metallic minerals, oil) and their processing or storage, leaving few or no other economic sectors developed, as a result of the lack of planning from an early stage, developing the territory in a non-sustainable and non-strategic way.

-As a result of the lack of planning from an early stage and the promotion of sustainable and strategic environmental policies by public authorities, the lack of interaction between existing projects, new projects and planned ones, it has led to a non-uniform distribution of industrial sectors at the national level and centralized only in a few counties.

-The lack of Strategic Environmental Assessment of plans and programs and/or their non-realization in parallel with the planning of industrial sectors, has resulted in the pollution of environmental components being concentrated only in some districts.

-Also the legislation in force for the protection of the environment, mainly for the strategic environmental assessment, in the absence of by-laws, its implementation began in 2015 and this only in some sectors of the economy, as a result of the lack of demand from the public authorities and in some cases skipping this process on their part.

## **SECOND CASE: THE INDUSTRIAL SECTOR IN THE COUNTY OF TIRANA AND ITS COMPABILITY WITH GENERAL PLANS AND DETAILED LOCAL PLANS**

Based on the development of the territory, the county of Tirana ranks among the counties with the highest number of polluting activities in the environment, increasing day by day the pressures on the components of the environment. For the identification of the industrial sector in the county of Tirana and its compatibility with the general plan and detailed local plans, were analyzed the polluting economic activities of type A and B issued through the QKB for the period 2014 - 2020 in the county of Tirana. The geospatial data contained in the type A and B environmental permits have been verified through the National Geoportal "ASIG" and the geodetic platform "GIS".

From the processing of data for the period 2014 - 2020 in the county of Tirana, 6 polluting activities of type A and 291 polluting activities of type B have been identified, out of a total of 75 operators equipped with type A environmental permits and 1437 operators equipped with environmental permits of type B throughout the territory of Albania. The following figure (Fig. 14) shows the environmental permits of type A and B issued through the QKB for the period 2014 - 2020 in the county of Tirana.

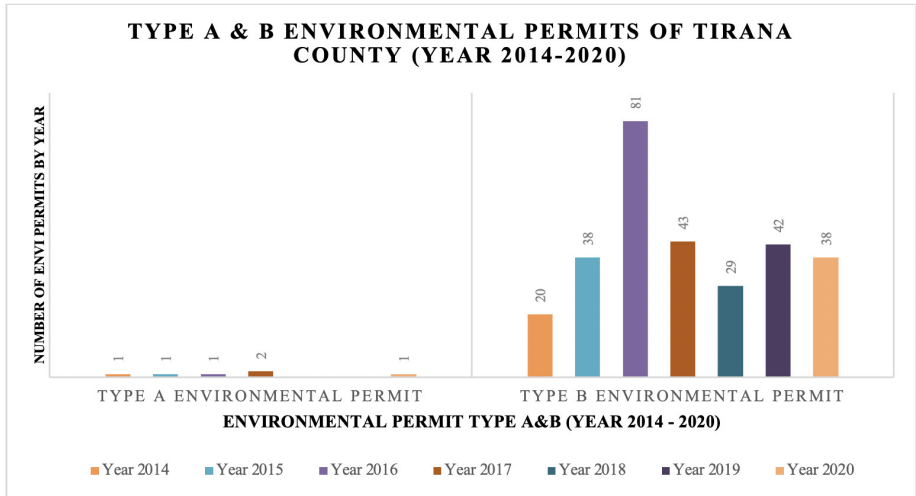


Figure 14: Type A and B environmental permits of Tirana district (Year 2014-2020)

For the same period, is made the distribution of polluting activities by year for each municipality of Tirana county, as in the chart below (Fig. 15) from which it results that the municipality of Tirana has the highest number of polluting economic operators, with 193 polluting economic operators, followed by Vora municipality with 47 polluting economic operators, while the lowest number is held by Rrogozhina municipality with 8 polluting economic operators.

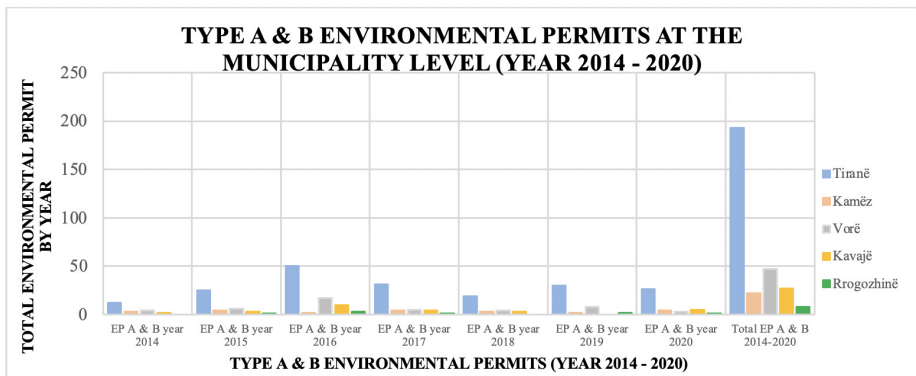


Figure 15: Type A and B environmental permits at the municipality level (Year 2014 - 2020)

While the chart below (Fig. 16) shows the distribution of polluting economic operators for each administrative unit of the respective municipalities of the county of Tirana. From the analysis of the data, the highest number of polluting economic operators is held by Kashar administrative unit with 61 operators, followed by Tirana administrative unit with 59 operators, Vaqarr administrative unit with 31 operators, while the smallest number is held by Ndroq, Zall Bastar, Synej and Lekaj administrative unit with 1 operator each.

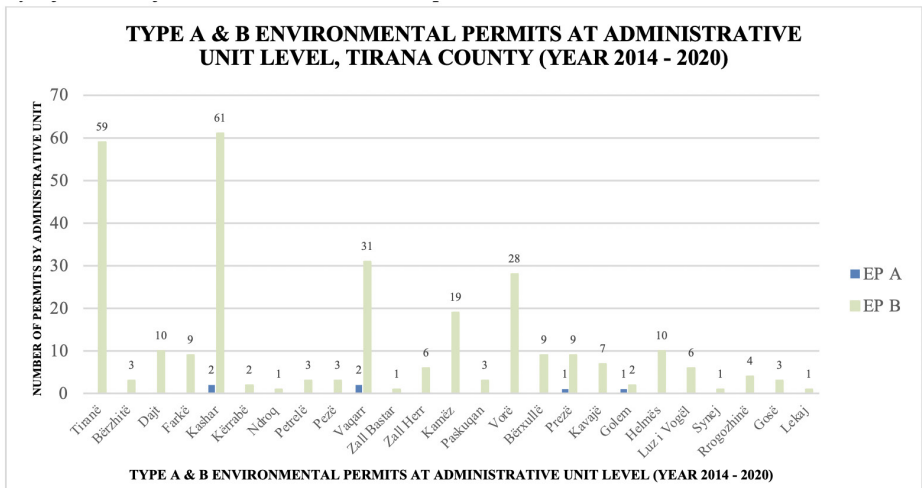


Figure 16: Type A and B environmental permits at the administrative unit level, Tirana county (Year 2014 - 2020)

Each of these polluting economic operators licensed through the QKB for the period 2014 - 2020, occupies a certain area of land and in some cases also building area. The chart below (Fig.17 and Fig.18) show the surfaces (total and buildings) used by the polluting economic operators at the municipality level and at the administrative unit level, for the county of Tirana. The data show that the municipality of Tirana occupies the largest total area used per operator, with 3.62 km2 of total area, followed by the municipality of Kavajë with 0.72 km2 of total area, while the largest area of the building used per operator is occupied by the municipality of Tirana with 0.3 km2, owned by the municipality of Vora with 0.07 km2.

While among the administrative units of the county of Tirana, the largest total area used per operator is occupied by Kashar administrative unit with 1.01 km2, followed by Helmes administrative unit with 0.62 km2, and Dajt administrative unit with 0.49 km2. Regarding the largest area of the building used per operator, it is occupied by Kashar administrative unit with 0.19 km2, followed by the Tirana administrative unit with 0.083 km2.

Referring to the General Local Plans (PPP) and Detailed Local Plans (PDV) approved by the municipalities of Tirana county, polluting economic operators of type A and B for the period 2014 - 2020 have been developed in 5 (five) land use systems .

In the charts below (Fig.19 dhe Fig.20) is shown the system of land used by the polluting economic operators for each municipality and administrative unit of Tirana county. In Tirana municipality, out of 193 polluting economic operators in total, 144 of them develop in the UB\_Urban system, 25 in the B\_Agricultural system, 15 in the N\_Natural system, 5 in the U\_Aquatic system and 4 in the IN\_Infrastructural system. In Vora municipality, out of 47 polluting economic operators in total, 38 of them develop in the UB\_Urban system, 6 in the B\_Agricultural system, 2 in the N\_Natural system and 1 in the IN\_Infrastructural system. While in Kamez municipality, out of 22 polluting economic operators in total, 20 of them are developed in the UB\_Urban system and 2 in the B\_Agricultural system.

Regarding administrative units, the system of the land used by the polluting economic operators

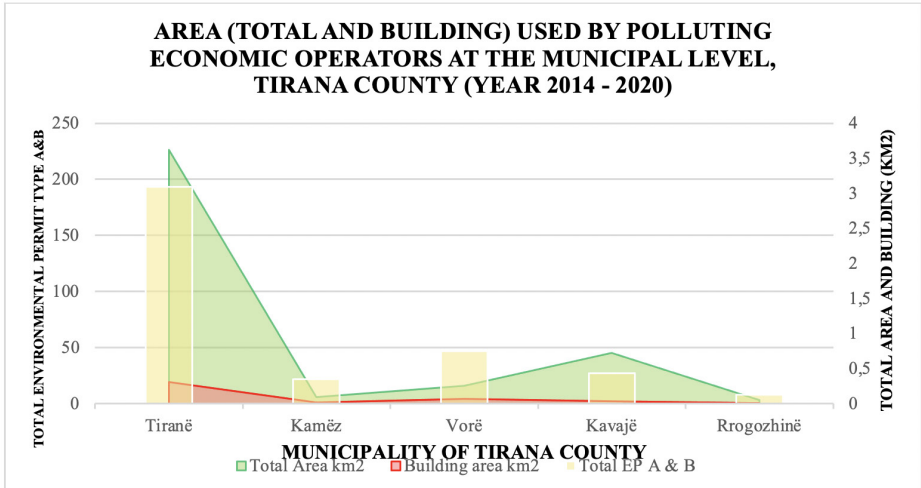


Figure 17: Area used by polluting economic operators at the municipality level, Tirana county (Year 2014 - 2020)

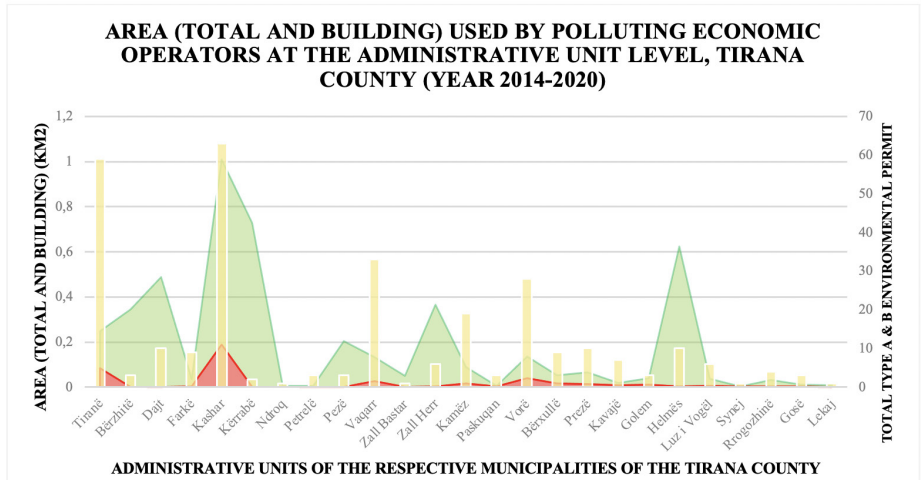


Figure 18: Area used by polluting economic operators at the administrative unit level, Tirana county (Year 2014 - 2020)

is mainly UB\_Urban, headed by Kashar, Tirana and Vora administrative unit. industries and 1 permit with 5 industries. Regarding the municipalities, the highest number of polluting economic operators is in Tirana municipality with 189 type B permits and 4 type A permits, followed by Vora municipality with 46 type B permits and 1 type A permit, Kavaja municipality with 26 type B permits and 1 type A permit, Kamez municipality with 22 type B permits and Rrogozhina municipality with 8 type B permits.

At the county level, the highest number of polluting industries is held by the mining industry, with 71 polluting industries in total, followed by the polluting industry of the use of solvents with 55 polluting industries in total, the polluting industry of food and beverage production with 51 polluting industries in total and from the polluting industry of waste management with 44 polluting industries in total.

In the municipality of Tirana, the highest number of polluting industries is the industry of solvent use with 44 polluting industries, the mining industry with 34 polluting industries, the food and beverage production industry with 37 polluting industries and the waste management industry with 26 polluting industries. In Kamez municipality, the highest number of polluting industries is the mining industry with 5 polluting industries and the waste management industry with 5 polluting industries. In Vora municipality, the highest number of polluting industries is the mining industry with 14 polluting industries and the waste management industry with 10 polluting industries. In the municipality of Kavaja, the highest number of polluting industries is the mining industry with 15 polluting industries, while in the municipality of Rrogozhina, the highest number of polluting industries is the mining industry with 3 polluting industries.

From the processing and analysis of the data is enabled the construction of the chart (Fig. 22) in which is reflected the performance of type A and B polluting economic operators according to industry, referred to the land use system - PDV for the period 2014 - 2020. The analyzed data show that the highest number of economic operators and polluting industries is concentrated in the UB\_Urban and B\_Agricultural land use system, as well as the rest in the IN\_Infrastructure,

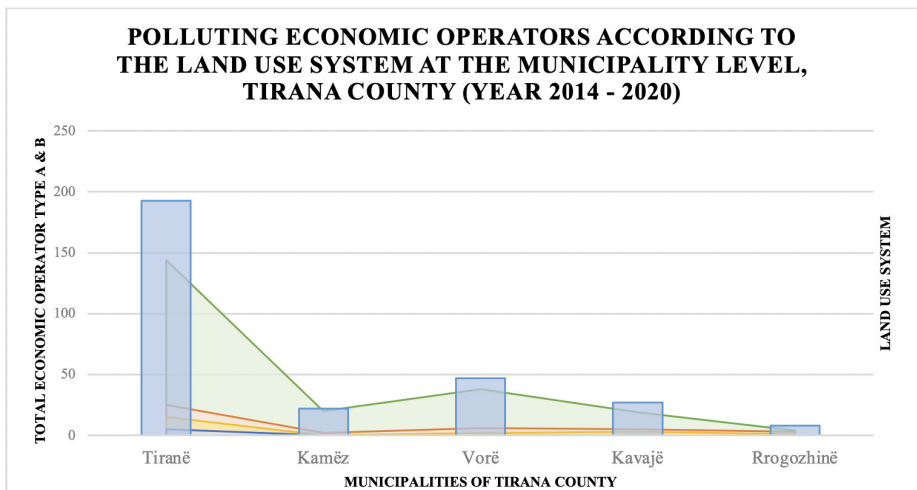


Figure 19: Polluting economic operators according to the land use system at the municipality level, Tirana county (Year 2014 - 2020)



### POLLUTING ECONOMIC OPERATORS ACCORDING TO THE LAND USE SYSTEM AT THE UNIT ADMINISTRATIVE LEVEL, TIRANA COUNTY (YEAR 2014 - 2020)

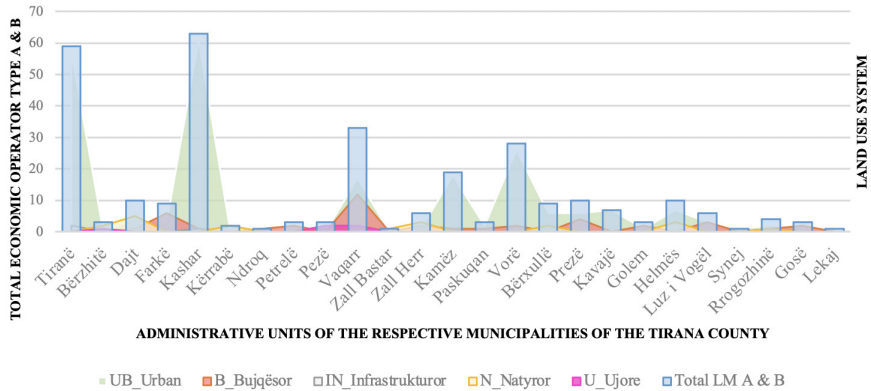


Figure 20: Polluting economic operators according to the land use system at the administrative unit level, Tirana county (Year 2014 - 2020)

### PERFORMANCE OF TYPE A & B ECONOMIC OPERATORS ACCORDING TO POLLUTING INDUSTRY AT COUNTY AND MUNICIPALITY LEVEL (YEAR 2014 - 2020)

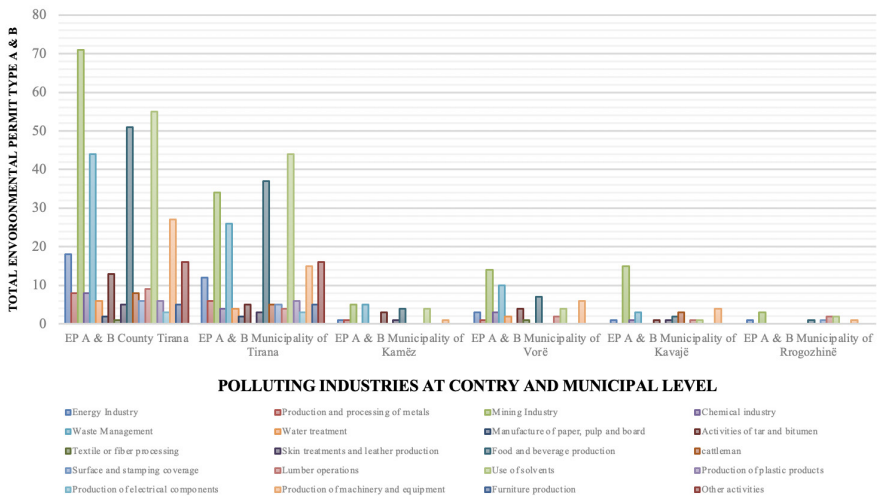


Figure 21: Performance of type A and B economic operators according to polluting industry at county and municipality level (Year 2014 - 2020)

N\_Natural and U\_Aquatic land use system. The data show a high number of economic operators and polluting industries in category A\_Residential, of the land use system UB\_Urban. Referring to the respective Structural Units of PDV for each municipality of the county of Tirana, the non-uniform distribution and mixed destination of the UB\_Urban land use system, in which there are categories A. Residential, S. Services, IE. Industry and Economics, B. Agriculture, AR. Social and Recreational Activities, etc, inducing economic operators to find terrain to carry out their polluting activities, where most of them are concentrated in the structural units located near the main road axes.

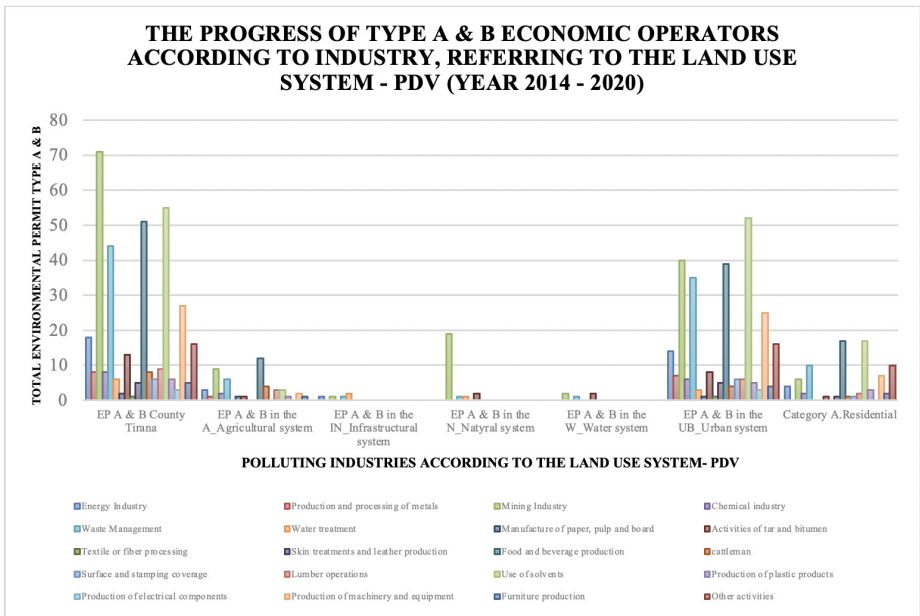


Figure 22: Performance of type A and B economic operators according to industry, referring to the land use system - PDV (Year 2014 - 2020)

From the processed data, we manage to digitize the polluting economic operators and the corresponding industrial sectors of type A and B issued through the QKB for the period 2014 - 2020 at the county and municipality level, according to land use systems, according to hydrography and road infrastructure. In the following figures (Fig. 23, Fig. 24 and Fig. 25) through the use of geo-spatial data provided by the National Register of Territorial Planning and the National Register of Licenses, Authorizations and Permits issued through the QKB, it is made possible the digitization of economic operators and relevant industries with an impact on the environment, as follows.

Dixhitalizimi i Industrisë në nivel Qarku dhe Bashkie (viti 2014-2020)

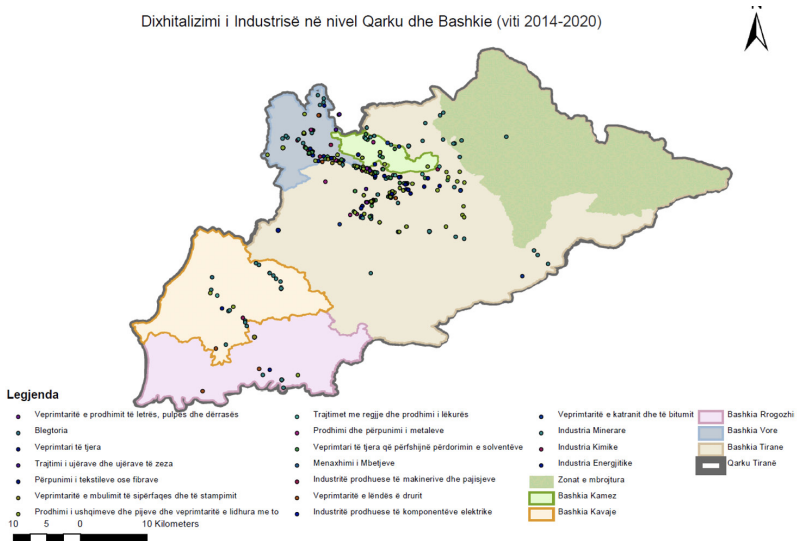


Figure 23: Digitization of industry at the county and municipality level (Year 2014 - 2020)

Dixhitalizimi i industrise sipas sistemeve te përdorimit të tokës (viti 2014-2020)

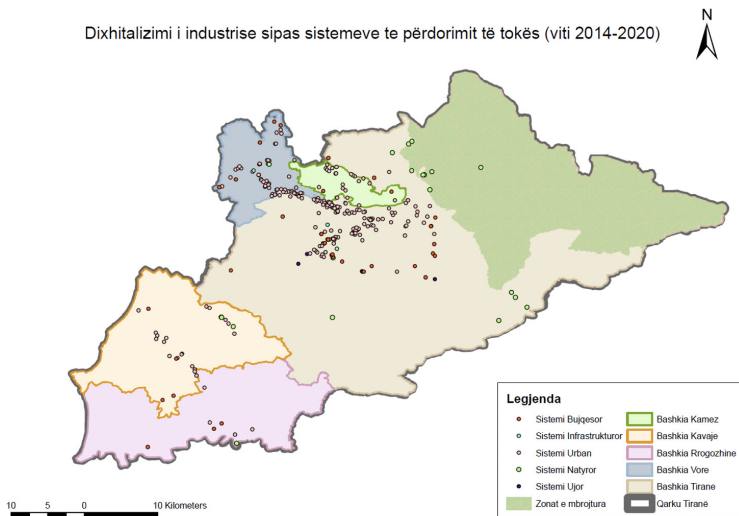


Figure 24: Digitization of industry according to land use systems (Year 2014 – 2020)

Dixhitalizimi i industrise sipas hidrografise dhe infrastruktures rrugore (viti 2014-2020)

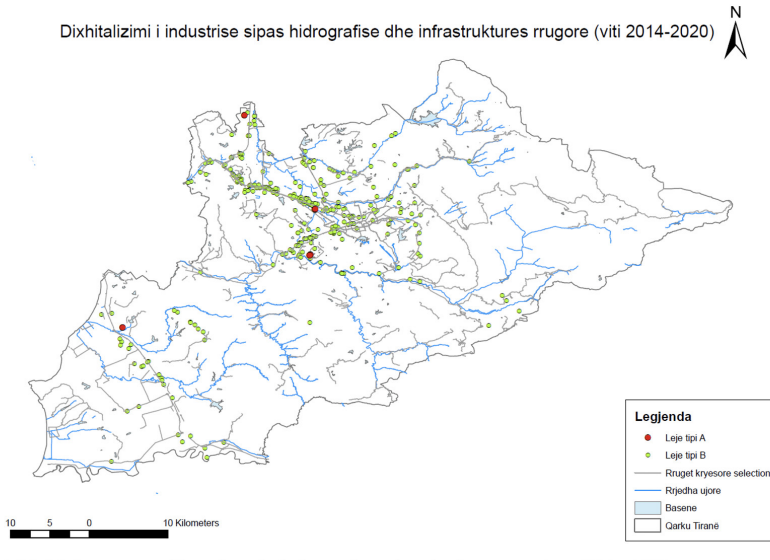


Figure 25: Digitization of the industry by hydrography and road infrastructure (year 2014 – 2020)

### IDENTIFIED PROBLEMS

From this study of the industrial sector in the territory of Albania, we can identify some of the problems arising from planning:

-The lack of sustainable and strategic planning has resulted in a concentration of polluting activities in the county of Tirana, mainly in the municipalities of Tirana, Vora and Kamëz.

-The lack of an information system, public authorities have planned the territory from an urban and environmental point of view, without relying on the concentration of industrial sectors in a certain territory, which has caused polluting activities to be concentrated in the Administrative Units of Kashar, Tirana, Vaqarr, Vorë and Kamëz, where there is also the highest number of resident population.

-This problem is followed by the high number of the total area and the surface of the building in these administrative units, which is entirely placed in function of the industrial (non-residential) sectors.

-The compatibility of environmental planning with territorial planning points out another problem which is related to land use systems, from which it results that the highest number of polluting economic activities takes place in the UB\_Urban system and in the B\_Agricultural system.

-The high concentration of the industrial sector in the land use system UB\_Urban and B\_Agricultural, is followed by the high number of polluting activities in the category A. Residential, so the industrial sector develops almost entirely in residential areas.

-The lack of environmental and urban planning of the territory, it is noticed that the industrial (non-residential) sectors are focused on the mining industry, the food production industry, the solvent use industry and the waste management industry, concentrating the most in the municipality of Tirana, Vora and Kamëz.

-Referring to the Structural Units of the corresponding PDV for each municipality of the county of Tirana, the non-uniform distribution and mixed destination of the land use system UB\_Urban, in which there are categories A. Residential, S. Services, IE. Industry and Economy, B. Agriculture, AR. Social and Recreational Activities, etc., making economic operators find terrain to carry out their polluting activities, where most of them are concentrated in the structural units located near the main road axes.

-From the digitalization of the industrial sector through the GIS system, we evidence that polluting economic activities are concentrated in structural units located near the main road axes, as well as a significant number of them in close proximity to surface water sources, which is consistent with urban areas for residential purposes.

-The lack of an information system, part of which should be a GIS geodetic platform, has resulted in environmental planning not being sustainable and strategic, thereby threatening the components of the environment in the main municipalities of the county of Tirana.

-National plans and local plans approved by public authorities have focused mostly on the development of the territory from the urban side for residential purposes, not giving due importance to the industrial sector.

-The problem that continues to be present is the lack of coordination and the will for cooperation between public authorities that cover the field of planning for all economic sectors that develop in the territory of Albania.

### **THIRD CASE: SEPARATE SOURCES OF AIR DISCHARGES IN THE TERRITORY OF ALBANIA [ ]**

Through the published data in the National Register of Licenses, Authorizations and Permits made possible by the National Business Center, for the period 2014 - 2022, have been identified economic operators of type A and B who, as a result of their productive activity (industrial sector) discharge in the air from the separate sources of stationary technical units.

The geospatial data of each polluting economic operator has been verified through the National Geoportal "ASIG" from where are determined the county and municipality.

In total, for the period 2014 - 2022 at the national level, 2656 licensed economic operators for various industrial sectors were analyzed, of which 87 operators are equipped with type A environmental permits and 2569 operators are equipped with type B environmental permits. The following chart (Fig. 26) shows the environmental permits of type A and B in the territory of Albania for each of the years 2014 - 2022.

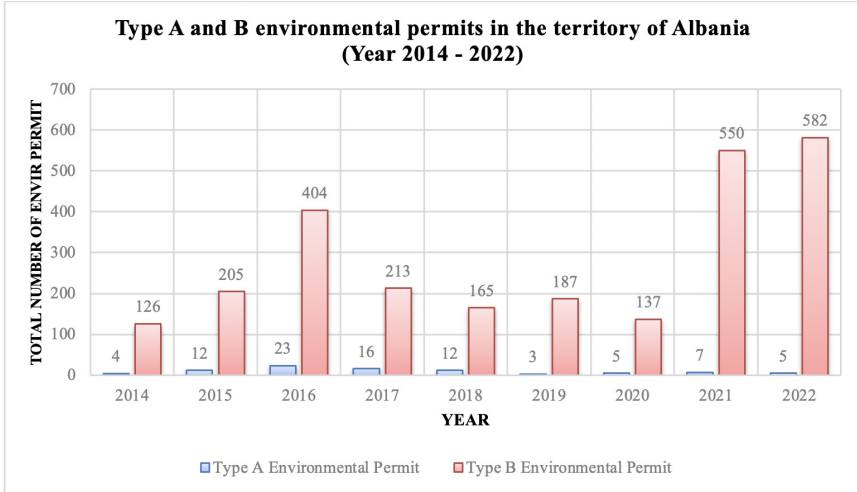


Figure 26: Type A and B environmental permits in the territory of Albania (Year 2014-2022)

From the analysis of data of the industrial sectors for the period 2014-2022, it results that we have 200 separate sources of air emissions of type A and B installations, where Tirana and Durrës county have the highest number of separate sources with 37 sources each, followed by Elbasan county with 31 sources and Fier county with 24 sources. While the lowest number of separate sources of emissions in the air is kept by the Kukës county with 2 sources, followed by the Gjirokastër county with 4 sources.

From the analysis of the separate sources presented in the following figure (Fig. 27) it results that the central region of the territory of Albania has the highest number of air emissions.

While the chart below (Fig. 28) shows the distribution of separate sources of air emissions from type A and B installations, for each respective municipality of the territory of Albania. From the data analysis, the municipality of Elbasan has the highest number of separate sources of air emissions with 26 sources, followed by the municipality of Tirana with 20 sources, the municipality of Shijak with 14 sources and the municipality of Durrës with 13 sources.

The chart (Fig. 29) shows the separate sources of air emissions at the county level that are the result of polluting economic activities (industrial sub-sectors) for smelting and metal production (31 sources), cement production (5 sources), factories of bricks and tiles (10 sources), smelting and production of mineral substances (6 sources), asphalt-concrete production (70 sources), pellet production (14 sources), waste incineration (10 sources), etc., concentrated on many in county of Tirana, Durrës, Elbasan and Fier.

**IDENTIFIED PROBLEMS**

From this study of the industrial sector in the territory of Albania, we can identify some of the problems arising from planning:

- The lack of sustainable and strategic planning has led from year to year to an increase in the num-

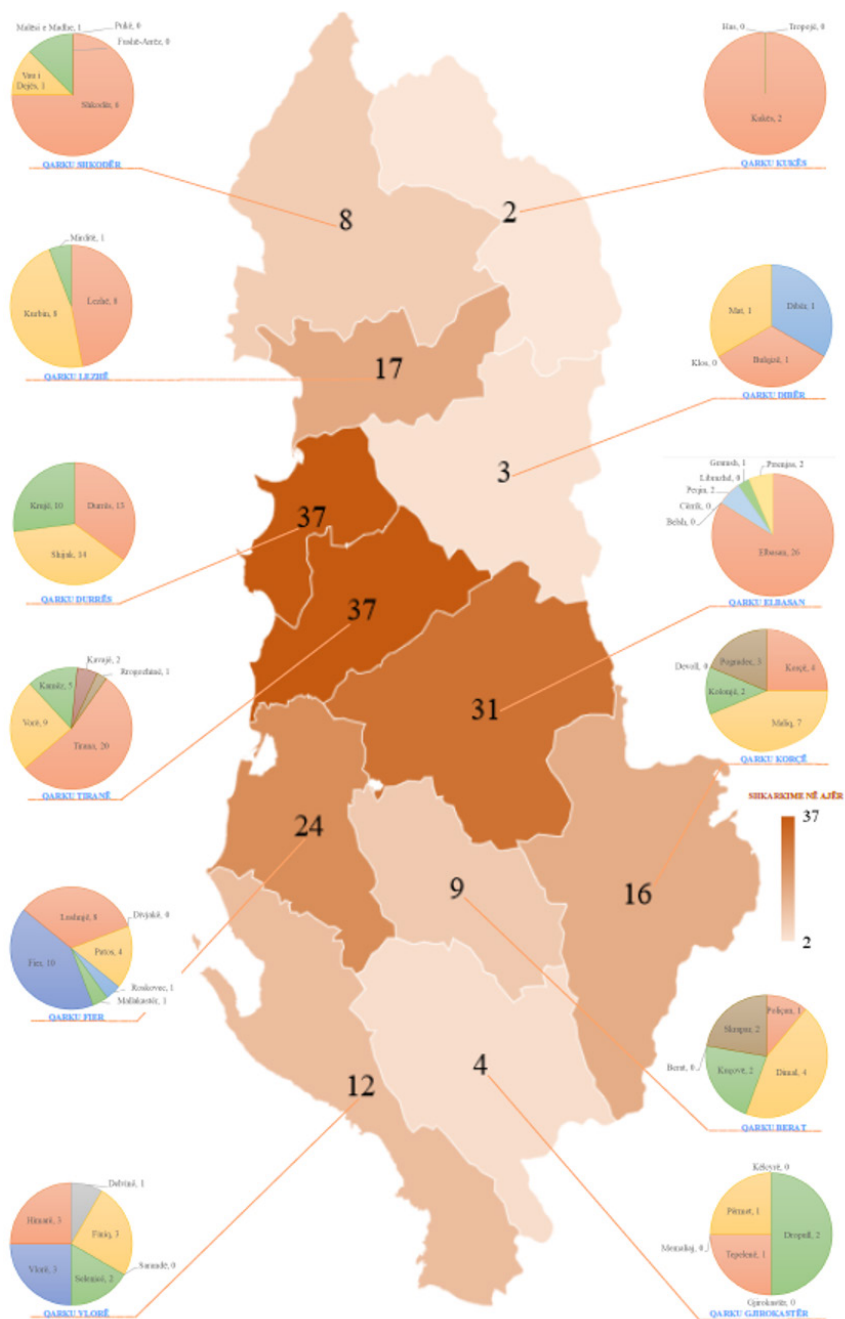
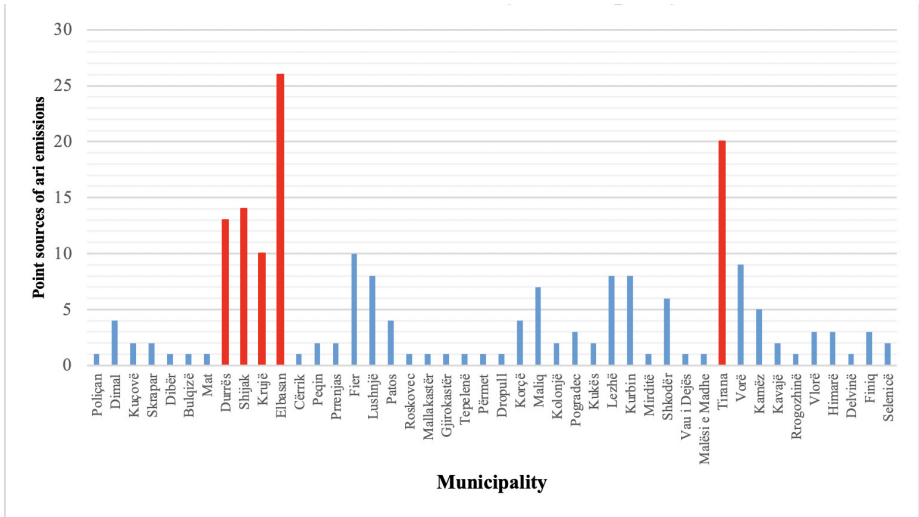


Figure 27: Separate sources of air emissions according to counties and municipalities



28: Separated sources of air emissions by municipalities

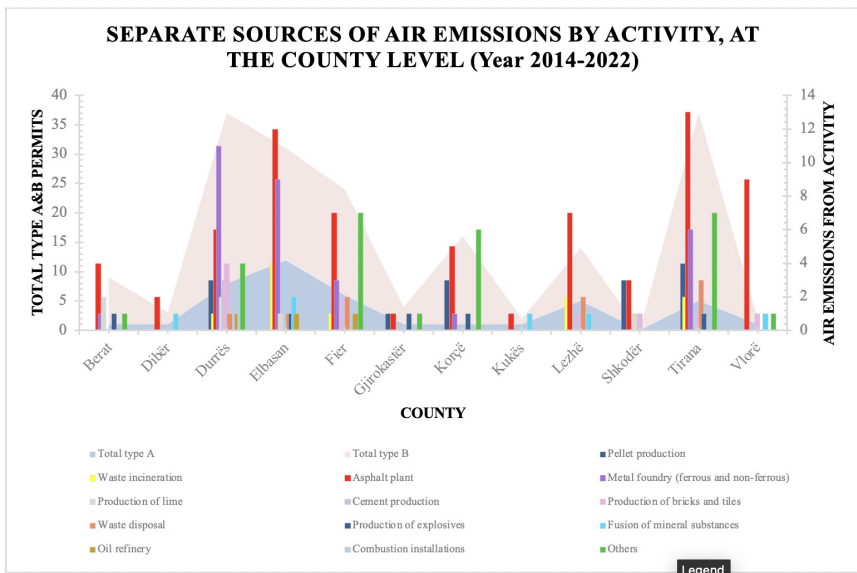


Figure 29: Separate sources of air emissions from the industrial sector, at the county level



ber of separate sources of air emissions from polluting activities in the environment (industrial sectors), threatening the environment of the central region of the territory of Albania.

- The lack of an integrated environmental management system on the part of public authorities, this system which would manage the entire mechanism of environmental protection, highlights a major problem in terms of air quality in the county of Tirana, Durrës, Elbasan and Fier, where is concentrated the highest number of industrial sectors that discharge into the air from separate sources.

- The system of integrated environmental management should be built as soon as possible, part of which is the system of environmental information and monitoring of the state of the environment, this system should be accessible by all public authorities and the public should have access to it.

- Monitoring of the state of the environment by public authorities and economic operators of polluting activities in the environment is not continuous, which means that the reported results are not reliable.

- The lack of an integrated network for monitoring the state of the environment where the quality of the environment, including air quality, is a cause and effect of the development of the territory in a non-sustainable and non-strategic manner.

- Environmental policies, strategies, plans, programs and projects cannot be drafted, revised or modified aiming at the protection of the environment in its entirety and the sustainable development of the country, if there is no information on the components of the environment.

## References

[1] Law no. 8417, date 22.11.1998 “Constitution of the Republic of Albania” changed, published in the official notebook no. 28, date 07.12.1998, page [10 – 11]

[2] Law no. 10 431, date 9.6.2011 “For Environmental Protection” changes, published in the official notebook no. 89, date 30.06.2011

[3] Law no. 107/2014, date 31.7.2014 “For Planning And Development Of The Territory” changed, published in the official notebook no. 137, date 11.09.2014

[4] Law no. 10448, date 14.7.2011 “For Environmental Permits “, changed

[5] National Registry of Licenses, Authorizations and Permits issued through the National Business Center

[6] National Geoportals of the State Authority for Geospatial Information

[7] Geodetic platform “GIS” e-planning of the National Agency of Territorial Planning

[8] “THE PROGRESS OF ENVIRONMENTAL IMPACTS ACCORDING TO THE INDUSTRY AND AT THE COUNTY LEVEL FOR THE YEARS 2014 - 2020”, author K. SEMEMA, N. SHKODRANI, First National Scientific Conference “ATPMQ”, date 10-11 November 2022, ISBN 978-9928-4735-2-3, Pg [153-163];

[9] “DIGITALIZATION OF THE ACTIVITIES OF POLLUTING OPERATORS BY INDUSTRY

(NON-RESIDENTIAL SECTOR) IN THE COUNTY OF TIRANA FOR THE YEARS 2014 - 2020”, author K. SEMEMA, N. SHKODRANI, First National Scientific Conference “ATPMQ”, date 10-11 November 2022, ISBN 978-9928-4735-2-3, Pg [164-179];

[10] “IDENTIFICATION OF SEPARATE SOURCES OF AIR EMISSIONS IN THE TERRITORY OF ALBANIA”, author K. SEMEMA, N. SHKODRANI, International Conference of Civil Engineering “ICCE 2023”, date 18-20 May 2023, ISBN: 978-9928-254-88-7, Pg [659 – 665];

# **Management roots back to the city walls. History, present, and future**

Assoc. Prof. Xhimi HYSA<sup>1</sup>,  
Dr. Shefqet SUPARAKU<sup>1</sup>,

<sup>1</sup>*Environment and Urban Management, POLIS University, Albania*

DOI: 10.37199/c41000105

## **Abstract**

The terms “manager” and “management” are frequently used in the daily communication. Given the universality trait of management, then every type of organization needs managers and management. Principles of management have remained solid over time, and over all organizational types. Fundamentals are fundamentals; what changes is the organizational mission, strategy, structure, and culture. The latter make the specific vocabulary of a defined organization. Thus, if principles have remained unchanged, what has changed is how managers respond to environmental dynamics and complexity in face of uncertainty. While technology, in one side has been showing itself as problem solver, on the other side has created new complexity conditions to deal with. This makes present and future more intriguing, while extends an invitation to managers to reflect through new lens. The importance of management is historically related to the territory. Not only, but the first organizational position where the term “manager” found a place was the city. Thus, the denomination “city manager” brings the institution of management back to the city walls. This paper makes an effort to harmonize together history, present, and future of city management from an interdisciplinary perspective. It aims to reconcile the good management practices of the city by reviving the past as a timeframe of Chronos and Aion, exploiting the opportunities of the present from a Cairo time perspective, and imagining the future as a miscellaneous time Chronos-Aion-Cairo. This study considers the city as a viable system (i.e., a living territory) and a service system, able to survive and reproduce itself by being a service provider to its citizens. All these exchanges happen in complex feedback loops as facilitated by artificial intelligence and virtual reality. This metaverse perspective makes the case for “city-verse” and the emergent figure of “city-verse manager”.

Keywords:

City Manager, Viable-Service System, Smart City, City-verse, Moritzburg Palace,

## Management briefly explained

Today management embraces different connotations of the term. The following paragraphs of this heading unfold a multiple definition of management from a quintuple perspective: etymology, epistemology, discipline, activity, and practice.

Etymologically, the popularized English verb “manage” as a consequence of industrial revolution has its roots in Italian and French verbs “maneggiare” and “mesnager”, which are related with handling horses (Mintzberg, 2014). Similarly, the Spanish word “manejar” is probably related with ruling horses, governance and direction (Real Academia Española, 2023, August 16). The common root of the above terms are the Latin words “manus” (hand) and “agere” (to act).

From the epistemology viewpoint, the latest research (Reihlen & Schoeneborn, 2022) differentiates between the following management epistemologies:

- Epistemologies focusing on aligning scientific statements with empirical reality through enhancement of accuracy, explanation, and prediction.
- Epistemologies centered on connecting scientific statements with socially constructed realities formed through shared meanings and contextual practices, rather than objective realities.
- Epistemologies utilizing imaginative techniques like fictional scenarios, counterfactuals, or ideal-type thinking as scientific assertions, aiming to juxtapose them against empirical reality to foster innovative theory construction and critical evaluation.
- Epistemologies concerned with the integration of scientific statements into empirical reality and their potential to induce changes within it.

As a discipline, management is interdisciplinary, including most of the scientific disciplines and finding applications in almost all of them. This is because management is not a mere set of tools and techniques. In contrast, “A manager who understands the discipline of management will still be an effective, perhaps even first-rate manager with no more than minimum competence in managerial skills and tools. A person who knows only the skills and techniques, without understanding the fundamentals of management, is not a manager but merely a technician.” (Drucker, 1974, p.26). Thus, the universality of management can be self-explained by the nature of management itself, that according to Drucker is close to pluralism and institutionalism, emphasizing clear tasks, responsibilities, methods, and practices (Drucker, 1974). Therefore, management is about fundamentals.

As an activity, management means decision making. Managers are people who make decisions of any kind. However, scholars refer to management decisions mainly to those that are more complex in their nature, and present in dynamic environments that are uncertain. The relationship between management and decision making is elegantly explained by the Nobel Prize in Economics, Herbert Simon, as follows: “What part does decision making play in managing? I shall find it convenient to take mild liberties with the English language by using ‘decision making’ as though it were synonymous with ‘managing.’” (Simon, 1960, p.1). Regarding the complexity of management decisions, the Viable Systems Approach unfolds a perspective of management decisions related to value categories and intuition, where the managerial spirit navigates through decisional areas of chaos and complexity (Barile, 2009).

The management as a practice begins with the basic managerial functions. The first one is planning. For Drucker planning is not just imagination, but simultaneously design and action. Thus,

“Planning and doing are separate parts of the same job; they are not separate jobs. There is no work that can be performed effectively unless it contains elements of both. One cannot plan exclusively all the time.” (Drucker, 1975, p. 284). Following this path, and considering the current management theory and practice, Management has four functions that derive from the work of Henry Fayol (1916):

- Planning – setting goals, designing and implementing strategies to achieve them.
- Organizing – designing the organizational chart, matching people skills with jobs, allocating resources, defining communication and hierarchical lines, etc.
- Leading – empowering employees with different motivation techniques, envisioning the future, stimulating change and consonance.
- Controlling – monitoring performance and taking corrective action when performance deviates from standards. Checking for day-to-day effectiveness and efficiency.

### **The Management and the City**

From the historical standpoint, the management practice is old as much as the human history. Human beings, unconsciously or consciously, have used the four management functions in order to survive and evolve, from neanderthal to homo economicus. Therefore, planning, organizing leading/commanding and controlling are fundamentals that we find not just in human beings, but in some animals too. Regarding the history of management, the modern management school is the classical one (1911-1947), represented by names such as Frederick Taylor (the inventor of scientific management principles), Henry Fayol (the inventor of management functions), and Max Weber (the creator of bureaucracy), among others. So, in the classical school, the focus was on production efficiency and organizational structure. However, these scholars were missing an important detail: the human being with its psycho-physiological potential and limitations. Consequently, the behavioral school emerged as a necessity to respond to employee needs. Afterwards, the quantitative school, and finally the contemporary management theories.

Going back in time, 3000-2500 B.C.E., the Egyptian pyramids are a proof of relevant projects in antiquity which required tremendous managerial skills. For instance, 100.000 workers and 20 years were needed to build only one pyramid (Robbins, Colulter & Decenzo, 2020). It is obvious that someone had to plan, allocate resources (materials and people), supervise the project, and motivate people to make the job done. Those times, cities and city managers (mayors, administrators, etc.) had different names. But one thing is clear: there is a territory to be managed and construct infrastructure (e.g., pyramids), while there are responsible people for the territory (e.g., pharaohs). It seems that the management has originated with the territory and people that were responsible for managing a particular area. Not just the pyramids in Giza have had a managerial legacy, but other places too. Think for example the old city of Dyrrachium (the current Albanian city of Durrës). Since the antiquity times (5000-4000 B.C.E), Durrës was composed of three main settlements of multiple cultures (Kacani, 2023). This organization recalls the departmentalization in every type of organization; a typical managerial division that refers to the classical management school. According to Kacani (2023), the city of Durrës since its first traces has been service oriented (e.g., water supply, constructions, etc.).

The historical myth that management is “business management” has been debunked by the history itself. The first practical application of the managerial theory does not refer to a business enterprise. It was Frederick Taylor himself (the inventor of scientific management) that in 1912,

when he was called to disclose the scientific management principles before the special committee of the house of representatives in United States, declared Mayo Clinic as the perfect example of the organization who applies the scientific management principles (Taylor, 1926). Thus, he quoted a non-profit organization instead of a business enterprise. According to the father of modern management, Peter Drucker (1999), the first organizational position where the term “manager” was applied (as per the current understanding of the term), it was not a business enterprise but a city, and most probably it was the city of Staunton (Virginia) in 1908 that hired as a city manager Mr. Charles E. Ashburner (James, 1914).

### 3. The City as a Viable-Service System

Like many other organisms, over time cities have undergone several metamorphosis processes, in some cases maintaining a strong identity and, in some others, going through radical transformations. As the finality of a city is to survive over time, then we can define the city as a viable system or a system able to maintain a separate existence, having the scope to survive in its context by interacting with other suprasystems and subsystems (Hysa, 2018; Barile et al., 2011; Golinelli, 2010). Referring to Beer’s Viable System Model (1985), a viable system can be described as a system that survives, remains united and is complete; it is homeostatically balanced both internally and externally and furthermore has mechanisms allowing it to grow and learn, develop and adapt, and thus become increasingly more effective in its environment. Simply put, a viable system is any system organized in such a way as to meet the demands of surviving in the changing environment. So are cities too. Thus, they need Governing Bodies and Management in order adapt to complexity and dynamism.

In addition, cities are smart service systems – “intended as service systems designed for a wise and interacting management of their assets and goals, capable of self-reconfiguration (or at least of easy inducted re-configuration) in order to perform enduring behavior capable of satisfying all the involved participants in time” (Barile & Polese, 2010, p. 31) – and convergent autopoeitic systems, able to coordinate varied urban functions such as Smart Environment, Smart Economy, Smart Mobility, Smart Governance, Smart People, and Smart Living (Kirwan & Dobrev, 2022). Hence, the service agenda makes a city an autopoeitic system (Maturana & Varela, 1980) able to produce and reproduce itself through services given and received, enabling intelligence, self-regulation, and consonance with the whole ecosystem.

### **City-verse and the Case of Moritzburg Palace**

Previous paragraphs introduced the management phenomenon, its origins and the symbiotic connection with the city. Their relationship has been deeply influenced by the technological developments, which have increased the complexity and the demand towards City Managers for new resources, dynamics capabilities, and competencies. Progress in artificial intelligence, virtual and augmented reality, has opened the door to consider cities and managers from a metaverse perspective, providing to the city new dimensions and requiring to managers new skills for managing these new dimensions.

With the emergence of smart cities, the metaverse is a virtual way to rethinking smart cities that enable opportunities as well as pose challenges to sustainability from a triple bottom line perspective (Allam et al., 2022). Applications of metaverse in the city are so diverse (e.g., science, business, health, culture, art, economy and daily life), that according to Kemec (2020) it can also serve as an urban policy design tool. Therefore, a city-verse will require a city-verse manager like cities require managers. It is relevant for municipalities of the present and future to recon-

cile physical with virtual realities so that to explore and exploited all the advantages provided by this mix. According to Kavurmaci & Eraydin (2022), in the case of city planning and design activities, creativity is fundamental on how problems are defined, analyses are handled, and solutions are implemented. A fascinating example of creativity in merging traditional tourism with innovation is the case of Moritzburg Palace.

Moritzburg Palace, known as “Schloss Moritzburg”, is one of the most significant baroque edifices in Saxony, Germany. The palace gets its origins in the initiative of Friedrich August I of Saxony, later King of Poland (Augustus the Strong), and it was built between 1723 and 1736 under the supervision of Matthäus Daniel Pöppelmann, the master mason who had constructed Dresden’s fortifications (Möbius & Karpinski, 1991). Today, the museum is a popular recreation area that together with the green surroundings and a lake provides a holistic experience.

In line with one of the components of metaverse, and considering its applications to the city castles and historical landmarks, at Baroque Museum Schloss Moritzburg the visit is enriched with a tablet called “HistoPad”. According to Histovery (<https://histoverly.com/en/>), that is the company behind HistoPad, this device is an augmented reality tablet created with the contribution of historians, archaeologists, and technologists to provide an interactive and immersive experience for visitors of historical sites and museums. It offers virtual reconstructions, 3D models, and multimedia content to enhance the understanding of historical and cultural artifacts. With regards to Schloss Moritzburg Museum, once inside the monument, the HistoPad can take a visitor on an immersive journey into the heart of court life under Augustus the Strong. Visitors are invited to join his courtiers for a game of billiards, and attend a birthday party for his daughter, Countess Orzelska. The Moritzburg Castle HistoPad is the second to be installed by Histovery outside of France, after Albrechtsburg Castle.

When you enter into the castle, the HistoPad is included in the admission price. With the device it is possible to access different spots and navigate through a journey of the 18th century with the options to: explore Moritzburg Castle at the time of Augustus the Strong and learn more about the Moritzburg celebration and the festive community thanks to augmented reality, 3D animations and high-resolution images; embark on an exciting treasure hunt, find hidden treasures and claim rewards like in a game; take a historic selfie to remember the visit; navigate through the rooms using the interactive map; scan the time portals in the historic castle halls; watch 3D reconstructions and models of exciting exhibits, murals and architecture; and move freely through the rooms and watch the castle’s history come to life through augmented reality (<https://www.schloss-moritzburg.de/en/events-and-exhibitions/histopad/>).

## **5. Future directions**

With the advent of technological revolutions such as artificial intelligence, virtual reality, and augmented reality, cities have begun to change and their managers to adapt towards the new realities. Cities like Barcelona, Singapore, Dubai, Boston, Copenhagen, London, etc., have already written their chapters into the world of smart cities. They have now improved services for their citizens in the areas of mobility, healthcare, security, water, energy, engagement and community, economic development and housing, waste, and so forth. These developments have already happened, and the same above areas will be dramatically affected by metaverse. Like it was the case of Moritzburg Palace, where the augmented reality enhances the tourism experience, so will be in other areas of the city. The challenge is that if in one side the city-verse (i.e., the city in the metaverse) is a very close new reality, on the other side the question mark is whether the city managers and the citizens are ready to absorb the complexity of this new variety. Recalling the

Ashby's Law of Requisite Variety (Ashby, 1956), where “only variety destroys [absorbs] variety”, then in order to afford the new complexity created by the metaverse, then the variety (knowledge richness or complexity) of a city manager and citizens should be at least equal to the variety (complexity) of the phenomenon. The problem is that the speed of technological advancements is so high that most probably many cities, managers, and citizens, are currently unprepared. It can be said that there is a gap between “machine techne” and “human techne”, which means that people skills must be further improved in order to collaborate with the computer skills. This is a responsibility of metasystems (e.g., governments) that should simultaneously consider high-tech and high-touch. Education plays the most crucial role.

## References

- Allam, Z., Sharifi, A., Bibri, S. E., Jones, D. S., & Krogstie, J. (2022). The Metaverse as a Virtual Form of Smart Cities: Opportunities and Challenges for Environmental, Economic, and Social Sustainability in Urban Futures. *Smart Cities*, 5(3), 771–801. MDPI AG. <http://dx.doi.org/10.3390/smartcities5030040>
- Ashby, W. R. (1956). *An Introduction to Cybernetics*. London: Chapman & Hall Ltd.
- Barile, S. (2009). *Management Sistemico Vitale: Decidere in contesti complessi*. Torino: Giappichelli.
- Barile, S., & Polese, F. (2010). Smart service systems and viable service systems: Applying systems theory to service science. *Service Science*, 2(1-2), 21-40.
- Barile, S., Bassano, C., Calabrese, M., Confetto, M., Di Nauta, P., Piciocchi, P., Polese, F., Saviano, M., Siano, Siglioccolo, M., & Vollero, A. (2011). *Contributions to Theoretical and Practical Advances in Management: A Viable Systems Approach (VSA)*. Avellino: International Printing Editore.
- Beer, S. (1985). *Diagnosing the System for Organizations*. Chichester: Wiley.
- Drucker, P. F. (1974). *Management: Tasks, Responsibilities, Practices*. New York: Harper & Row.
- Drucker, P. F. (1999). *Management challenges for the 21st century*. New York: Harper Business.
- Fayol, H. (1916). *Industrial and General Administration*. Paris: Dunod.
- Golinelli, G.M. (2010). *Viable Systems Approach (VSA): Governing Business Dynamics*. Padova: Kluwer (Cedam).
- Hysa, X. (2018). *Managing group dynamics with the Viable Systems Approach: A study on consonance, group cohesiveness, and positive conformity*. Beau Bassin: Scholar's Press.
- James, H. (1914). The City Manager Plan, the Latest in American City Government. *American Political Science Review*, 8(4), 602-613. doi:10.2307/1945258
- Kacani, A. (2023). *Durrësi Urban: para dhe pas pavarësisë kombëtare*. Tiranë: Botimet Nacional.
- Kavurmaci, E. A., & Eraydin, Z. (2022). *CITYBOOK*. Ankara: TED University.
- Kemec, A. (2022). From reality to virtuality: Re-discussing cities with the concept of the metaverse. *International Journal of Management and Accounting*, 4(1), 12-20.
- Kirwan, C.G., Dobrev, S.V. (2022). “Cities as Convergent Autopoietic Systems”. In: Pardalos, P.M., Rassia, S.T., Tsokas, A. (eds) *Artificial Intelligence, Machine Learning, and Optimization Tools for Smart Cities*. Springer Optimization and Its Applications, vol 186. Springer, Cham. [https://doi.org/10.1007/978-3-030-84459-2\\_1](https://doi.org/10.1007/978-3-030-84459-2_1)
- Maturana, H.R., Varela, F.J (1980). *Autopoiesis and Cognition: The Realization of the Living*. Dordrecht: Reidel Publishing Company.
- Mintzberg, H. (2014). *Manager l'essentiel : ce que font vraiment les managers ... et ce qu'ils pourraient faire mieux*. Paris: Vuibert.



Möbius, I., & Karpinski, J. (1991). *Baroque Museum: Moritzburg Palace*. Munich/Zurich: Schnell & Steiner.

Real Academia Española. (2023, August 16). “manejar | Diccionario de la lengua española”. <https://dle.rae.es/manejar>

Reihlen, M., & Schoeneborn, D. (2022). The Epistemology of Management: An Introduction. In C. Neesham, M. Reihlen, & D. Schoeneborn (Eds.), *Handbook of Philosophy of Management* (pp. 17-37). Springer. *Handbooks in Philosophy* [https://doi.org/10.1007/978-3-030-76606-1\\_66](https://doi.org/10.1007/978-3-030-76606-1_66)

Robbins, S. P., Coulter, M., & De Cenzo, D. A. (2020). *Fundamentals of Management*. Pearson.

Simon, H. A. (1960). The executive as decision maker. In H. A. Simon, *The new science of management decision* (pp. 1–8). Harper & Brothers. <https://doi.org/10.1037/13978-001>

Taylor, F.W. (1926). *Testimony of Frederick W. Taylor at Hearings Before Special Committee of the House of Representatives, January, 1912: A Classic of Management Literature Reprinted in Full from a Rare Public Document*. New York: Taylor Society.

<https://histoverly.com/en/>

<https://www.schloss-moritzburg.de/en/events-and-exhibitions/histopad/>

# **Economic and social rights enjoyment in Albania: Literature Review and Conceptual Framework**

Dr. Emi HOXHOLLI<sup>1</sup>, Prof. Dr. Donika KËRÇINI<sup>2</sup>

<sup>1</sup>*Polis University, Albania*

<sup>2</sup>*Agricultural University of Tirana, Albania*

DOI: 10.37199/c41000106

## **Abstract**

Economic and social rights have been affirmed since 1976 in the Universal Declaration of Human Rights but the globalization, huge economic differences, and financial and health crises that happened during the last decade have brought them into focus. Economic and social rights include the rights to adequate housing, education, health, work and food. These rights belong to every human being, regardless of age, sex, nationality, ethnicity, religion, race, wealth or any other status. Recognition and respect of these rights is today a challenge for all defenders of human rights, such as institutions, NGOs and academics. A human rights economy places people and the planet at the heart of the economic policies, investment decisions, consumer choices and business models and this will help in completing the ambition of the 2030 Agenda for Sustainable Development Goals (Türk,2023). Ten years ago, the World Bank in collaboration with the Human Rights Measurement Initiative developed the economic and social rights performance score, in order measure how effectively countries use their economic resources to ensure the fulfilment of economic and social rights. But which is the status of Albania regarding the economic and social rights? If we refer to data provided by People's Advocate, the Albanian NHRI, in 2021 there were 32 complaints about non-adequate housing, 101 complaints for education, 97 complaints for healthcare, 51 complaints regarding the right to work and 72 complaints for non-adequate food. Comparing these figures with the total number of 1,630 complaints about human rights violations is clear that they are very low due to the fact that individuals are not aware of having these rights and don't fight to be part of the policymaking.

Keywords:

Economic Rights, Social Rights, Albania, SDGs, Performance Score

## **Introduction:**

In the literature there is a debate regarding the definition of human rights, according to Donnelly if we speak on a basic level, human rights are “the rights one has simply because one is a human being” (Donnelly, 2008). The Universal Declaration of Human Rights (UNHR) was drafted and proclaimed after the second world war, by all leaders of the United Nations. In UNHR is stated that “all human beings are born free and equal in dignity and rights” and “everyone is entitled to all the rights and freedoms outlined in this Declaration, without distinction of any kind, such as race, color, sex, language, religion, political or other opinion, national or social origin, property, birth or other status”. Since 1948, the Universal Declaration of Human Rights has been considered a foundation stone and is well accepted as a common standard for all countries. It guarantees to every individual 30 basic human rights including the right to life, education, equality, freedom of speech and thought, religion, adequate living etc. Human rights are declared to be universal and claimed equally for all human beings, present and future (Weston, 2023). This means that we are all entitled to human rights, and they should not be taken away. UNHR does not classify human rights, but in the literature, we can find different divisions. In the framework of this paper, we will use the classification of human rights as explained by Vasak, 1977. According to Karel Vasak, 1977, developed the generation of human rights and divided them into three main categories: civil-political, economic-social and cultural.

-The first generation includes civil and political rights, which are considered fundamental rights since they are related exclusively to the freedom of every human being. They were considered to be ‘absolute’ and ‘immediate’ (Eide, 2001). This category of rights is included under the International Covenant on Civil and Political Rights (ICCPR).

-The second generation includes economic and social rights, which focus on the quality of life. They were held to be programmatic, to be realized gradually, and therefore not a matter of rights (Eide, 2001). These rights are included under the International Covenant on Economic, Social, and Cultural Rights (ICESCR).

-The third generation includes cultural rights, which focus mostly on the right to peace, solidarity, clean environment (Wellman, 2000). This third category is new but is already included under the International Covenant on Economic, Social, and Cultural Rights (ICESCR).

It is very important to mention that all human rights, regardless to which category they belong, are interrelated, interdependent and indivisible. For the purpose of this paper, we will focus on the second generation of human rights, economic and social rights. According to history, economic and social rights became important during the Cold War and the urgent need of Western countries to find a relation between poverty and the communist economic system (OHCHR, 2016). Economic rights are focused more on the right to be free of slavery and servitude and the right to be free of poverty, so they are correlated with social rights (USAID, 2017). Economic and social rights have an impact on the standard of living. Since 1991, Albania has ratified the International Covenant on Economic, Social, and Cultural Rights (ICESCR). Economic and social rights are part of the Albanian Constitution, under Part IV “Economic, social, cultural rights and freedom”, in articles 49 to 59 and the National Human Rights Institution has a mandate to promote and defend the Albanian citizens from the violation of this category of rights is Albanian Ombudsman.

## **An overview on economic and social rights:**

Discussions between researchers, non-profit organizations, academics and national/international human rights institutions regarding human rights have increased during the last two decades.

Economic and social rights return in focus, prompted by the financial crisis, conflicts between countries and the COVID-19 pandemic, so today all actors are paying attention to studies, articles, new programs and politics to suggest legal improvements to promote the respect of economic and social rights. According to the Sustainable Development Goals Report 2023, COVID-19 and the war in Ukraine reversed the progress of poverty reduction over the past 25 years taking into consideration that over 90% of the SDG goals correspond to human rights obligations (Rattray, 2019), they played an important role in including economic and social rights in 2030 Agenda for Sustainable Development . The main goal of the 2030 Agenda for Sustainable Development is to put an end to poverty and envisages “a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination”. High Commissioner, Türk, believes that “a human rights economy places people and the planet at the heart of the economic policies, investment decisions, consumer choices and business models and this will help to complete the ambition of 2030 Agenda for Sustainable Development Goals” (Türk,2023).

Economic and social rights are defined as human rights that are related to our ability to live in dignity and participate in our society. They include rights related to the workplace, social security, and access to housing, food, water, health care and education. They include the right to fair wages and equal pay; the right to adequate protection of income in the event of unemployment, sickness or old age; and the right to an adequate standard of living (Mclsaac, 2023). As we have already mentioned in the introduction, human rights are indivisible and interdependent, this means that one set of rights can't be enjoyed fully without the others. So, economic and social rights are important to be protected because failing to protect them will cause negative effects, affect numerous people, cause conflicts and lead to violation of other human rights (OHCHR,2008). At the moment a country ratifies the ICESCR, the state has accepted to complete three main duties under international law, to respect, protect and fulfill the economic and social rights. These three duties are known in the literature as “the obligation of state”. The state's obligation “to respect” means that the state should not interfere in the citizens enjoyment of economic and social rights. Meanwhile, the obligation “to protect” represents all actions a government should take to prevent third parties from interfering with citizens' enjoyment of their economic and social rights. The last duty is “to fulfill” which requires the government to take measures that will guarantee citizens claim their economic and social rights. According to ICESCR, the state must take action to ensure and improve the enjoyment of economic and social rights over time and this can be done in three steps:

- First, ratification of international human rights treaties, the codification of the economic and social rights in the national legislation, so they can be recognized as rights. Drafting and implementing strategies, policies and action plans, that help the state show its commitment to fulfilling these rights;

- Second, set a minimum core obligation for each specific economic and social rights, that ensure citizens will enjoy at least the basic and essential level of the right;

- Third, the state has an obligation to progressively fulfill the right to food, housing, work, health and education, by using its maximum available resources. All the measures taken by the state should be non-retrogressive, which means not leading to the deterioration of existing rights enjoyment levels and non-use laws, policies and practices which are discriminatory in effect. If the state, fails to complete the three main obligations mentioned above this means that the economic and social rights of the individuals are violated.

## Actual status of economic and social rights in Albania:

According to the Annual Reports of the Albanian NHRI, for two consecutive years 2022 and 2021, Albanian citizens complained about violations of economic and social rights only 8% out of 5,837 complaints registered in total during 2022 and 6% out of 6,264 complaints registered in total during 2021.

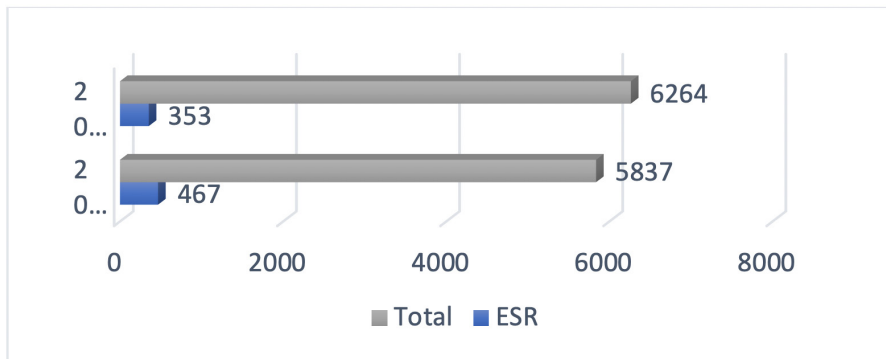


Figure 1: Complaints about violation of economic and social right versus total complaints  
Source: Albanian Ombudsman (2022,2021)

We believe that figures show that Albanian citizens have a gap of information about their economic and social rights in comparison with civil and political rights.

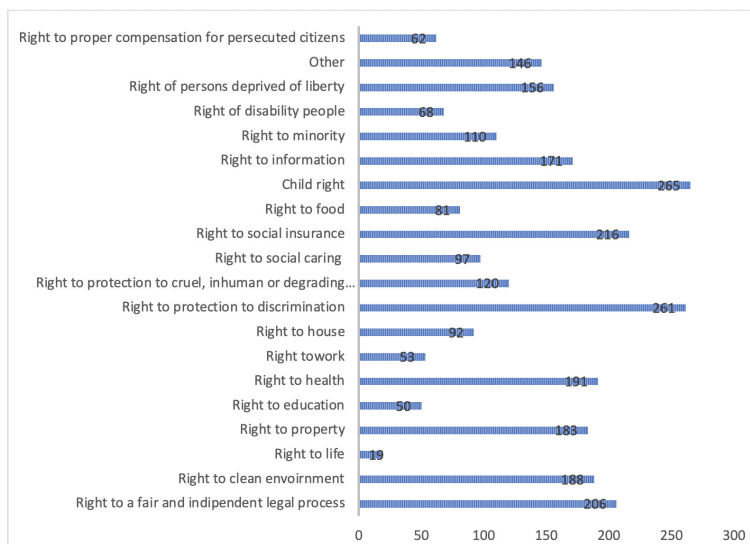
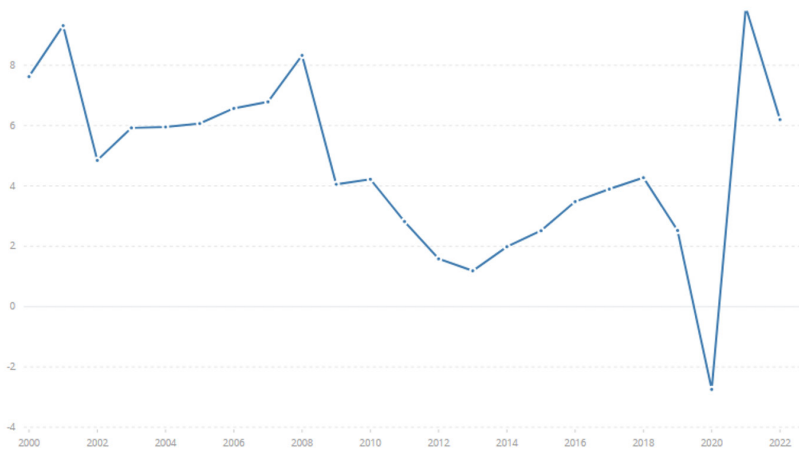


Figure 2: Violation of human right for 2022 classified by typology of right  
Source: Albanian Ombudsman (2022)

If we take into consideration the official data published by the World Bank, GDP growth of 4.8%, at-risk poverty rate of 21.8%, unemployment rate of 11.8%, inflation rate of 6.7%, housing problems caused by the earthquake of November 2019 and the slow process of reconstruction, the low level of complaints of Albanian citizens related to economic and social rights is due to the gap of information about these rights.



**Figure 3: Albania GDP per capita growth, annual in %**  
 Source: World Bank (2023)

Petel and Putten (2021) have studied the relationship between economic growth and economic-social rights. According to their study, countries that have a low level of economic growth or a decline in economic growth should have a high level of violation of economic and social rights, this happens because the state fails to complete its obligation to respect, protect and fulfill this category of rights. The data provided by the Albanian NHRI and official financial data published by national/international institutions do not show this kind of relationship for Albania and during this research, we aim to find out more about it.

For the same period, 2022-2021, we have shown in the table below how the complaints about violation of economic and social rights are divided into specific rights. As we can see, for 2022 the major number of complaints is related to the right to health with 41%, followed by the right to food and housing which are let's say at the same level. It was not the same situation in 2021, when the major number of complaints corresponded to the right to education with 28%, followed by the right to health.

According to the Albanian Ombudsman's annual report, during 2022, the right to house (Art. 11) remains complex and is one of the most important social issues in Albania. The municipalities have no transparency regarding the management of social housing programs and services offered in cases of inadequate living houses, emergencies for reconstruction, flooding and arbitrary deprivation of property for the reconstruction process due to the earthquake as per Normative Act no. 9, date 16.12.2019 "For facing the consequences of natural disaster". The right to work (Art 6,7)

in Albania is related mainly to the right to a regular legal processes at an Administrative Court.

	<b>2022</b>	<b>2021</b>
Right to education	50	101
Right to health	191	97
Right to work	53	51
Right to housing	92	32
Right to food	81	72
<b>Total ESR complaints</b>	<b>467</b>	<b>353</b>

*Table 1: Details about complaints on economic and social rights of Albanian citizens*

*Source: Albanian Ombudsman (2022,2021)*

The main violations of the right to work are linked with dismissals, transfers and recruiting process in the public administration for civil servants and those who are working under contracts based on the Labour Code. Albania is far from fighting for favorable working conditions and protection against unemployment. Right to food is seen from the Albanian NHRI mostly related to consumer protection. The Albanian citizens complain more about public corporates that offer utility services such as OSSHEE and UKT. In the majority of cases, the NHRI has recommended the improvement of internal procedures of these public corporations. The right to health (Art. 25) as mentioned in the Preamble of the Constitution of the World Health Organization (WHO) is a fundamental right to all human beings, this means that if the right to health is violated every individual can't exercise the right to education, work, house and viscera. The Albanian state based on the Constitution of the Republic of Albania has the obligation in collaboration with privately owned companies ensure Albanian citizens with a higher standard of healthcare services. The healthcare system should be designed to match all needs of the population equally, with efficiency and responsibility. The facts show that there is a lot of inequality regarding the use of services of the healthcare system offered by the Albanian state. First, the vulnerable groups in most cases don't receive the needed services. Second, the healthcare system does not offer equal services related to geographical distribution. Third, some healthcare services are still on payment and can not be afforded by all Albanian citizens such as Romas, Egyptians, pensioners etc. Right to education (Art. 13) is a fundamental right, since it depends on the exercise of all other human rights, especially economic and social rights. Through the right to education, states promote individual freedom, and empowerment and receive in exchange benefits from the progress. United Nations and the United Nations Educational, Scientific and Cultural Organization (UNESCO) have developed an international legal instrument to promote, protect and fulfill the right to education for the implementation of SDG 4 -Education 2030 Agenda that aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. These legal instruments such as declarations, conventions, recommendations, and framework of actions elaborated by UNESCO ensure that any individual without discrimination has a proper education. Since Albania is in the process of EU integration, the state is undertaking long-term reforms in the education system. Based on complaints about the violation of the right to education, the Albanian Ombudsman declare that legal discrimination is not a problem anymore, but there are a lot of cases of discrimination out of sight regarding the right to education. So, the right to education remains problematic also for 2022 (Albanian Ombudsman, 2022).

## Conceptual framework

The objective of this research to monitor the Albanian state's performance in meeting the obligations of ICESCR regarding the five economic and social rights. Based on the literature review, the definition and characteristics of human rights, the categorization of human rights, the connection between human rights and SGDs, requirements of ICESCR, about state obligations, we have drawn a conceptual framework that will guide us in achieving the main objective of this research. It's really important to underline that we can measure the Albanian state performance regarding the enjoyment of economic and social rights only if in the analysis we include both parts of the medal, the citizens and the state.

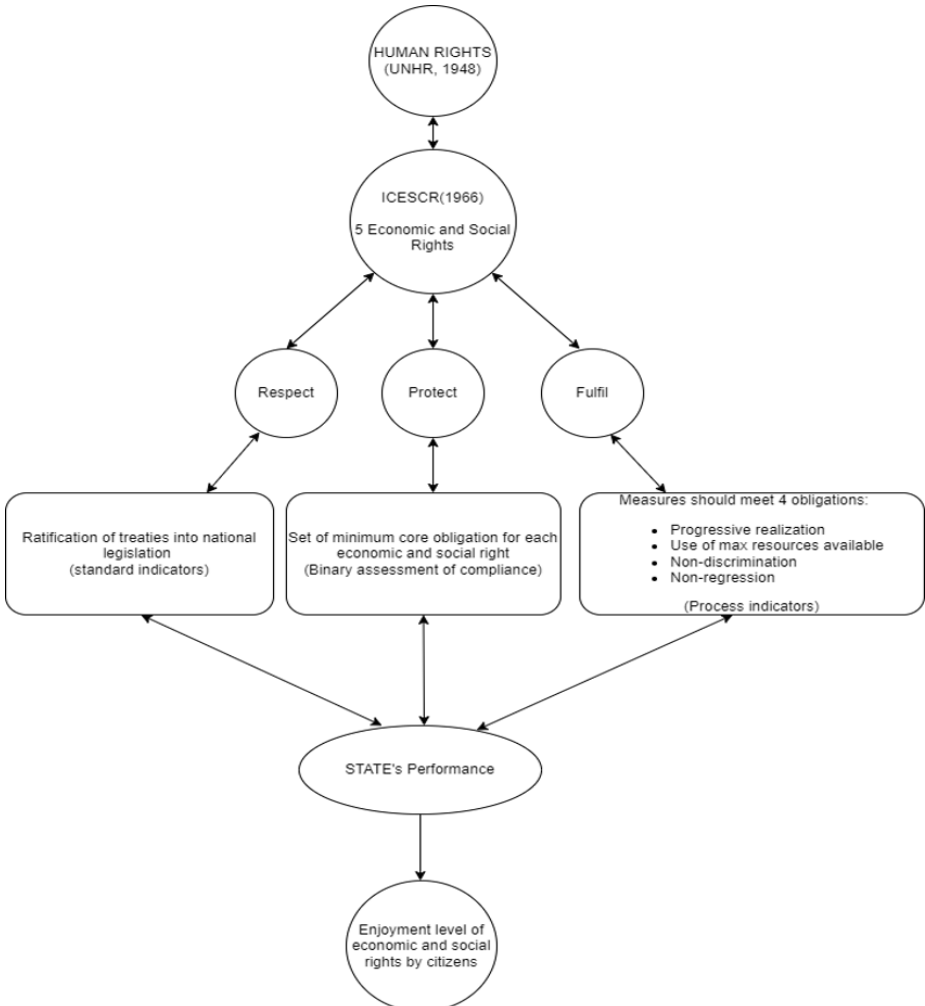


Figure 5: Conceptual framework

Source: Authors



The evaluation of the Albanian state performance in meeting ICESCR obligations to respect, protect and fulfil economic and social rights, as suggested by the literature review will be divided into three main sections answering three specific research questions:

- Has Albanian government taken all necessary measures as required by ICESRS to meet the obligation to protect economic and social rights of Albanian citizens?
- Do all Albanian citizens enjoy a minimal level of economic and social rights, regardless of the Albanian state resource level?
- How is Albanian government facing the challenges of fulfilling the economic and social rights of all Albanian citizens? To answer the first research question, the literature review suggested that we should conduct a qualitative analysis to assess whether the Albanian government has ratified treaties, codified laws, and implemented strategies for fulfilling human rights commitments. To evaluate if the Albanian government has achieved the required minimum core obligation for each ESR, regardless of the state resource level, we will do an observation to understand if this minimal level of rights is enjoyed by all citizens. Meanwhile, the third question, is more complex, taking into consideration that according to the ICESCR, four obligations should be assessed to measure the Albanian performance of the ESR fulfillment: progressive realization, use of maximum resources available, non-discrimination and non-retrogression. The literature suggests that the available resources of a country are represented by the GDP per capita. By combining the GDP per capita used by the state to protect, fulfill and respect ESR and the level of enjoyment of each right by citizens we can define if our country has performed as requested by ICESCR.

## **Methods and procedures:**

As shown in section 2.2 we will assess the Albanian performance in meeting obligations of economic and social rights divided into three parts, by the requirements of ICESCR and as suggested by the literature review. We will use the same methodology used by Mitchell, Baylis and Randolph in the research they have done in 2021 to monitor the enjoyment of rights in New Zealand. To understand if Albania has taken all necessary measures to complete the obligation “to respect”, through ensuring codification of national legislation that explicitly recognizes the right to education, right to food, right to house, right to health, right to work and strategies, plans, policies explicitly acknowledge that the adequate housing, working, education, food and health protection are rights, we will use structural indicators. “Structural indicators reflect the ratification and adoption of legal instruments that show a country or state’s acceptance of and commitment to fulfilling a human right. Structural indicators involve looking at the existence and creation of basic institutional mechanisms that enable the promotion and protection of human rights. Structural indicators often reflect a country’s commitment to the whole right or set of rights” (Mitchell, Baylis, Randolph, 2021). Structural indicators will be divided into two groups: structural indicators about the codification of national legislation and structural indicators about setting up strategies, action plans, policies etc. Regarding the structural indicators of codification of national legislation, we will do a quantitative analysis, since we already know the exact number of key international human rights treaties for each right and we will compare it with the number of ratified treaties by the state that recognize the rights, to find the percentage of compliance. Meanwhile, for the second group of structural indicators related to the creation of strategies, plans and policies that explicitly recognize the rights we will do a qualitative analysis to better understand if they exist in Albanian and if they are under implementation. The ICESCR requires from every state that has ratified the convention to ensure to all citizens a minimum essential level of enjoyment of economic and

social rights, regardless of the country’s resources. To achieve this, the Albanian state, should set a minimum core obligation for each right. During the second part of the research, we will do an observation regarding the minimum core of each right by using a binary assessment of compliance. The third part of the research is related to the obligation of the state “to fulfill” and the assessment of Albanian’s state performance in meeting this obligation by evaluating the compliance with the four criteria mentioned in ICESCR: progressive realization, maximal use of the available resources, non-regression and non-discrimination. In this case, we will use empirical methodologies as shown in the table 2:

<b>Criteria as per ICESCR</b>	<b>Methodology</b>	<b>Aim</b>
<b>Progressive realization</b>	Time series for a period of 10 years and comparison with other Western Balkan countries (when data is available)	To see if the indicator trend is moving as required by the convention. The comparative analysis will help us understand if Albania is moving with the same steps as the other countries in our region.
<b>Max use of the available resources</b>	SERF Index and HRMI Score	Through using the SERF Index, we will assess if the rate of improvement of ESR is increasing faster/slower than the available resources of Albania. The results will be compared with the HMRI score for our country.
<b>Non-regression</b>	SERF Index and HRMI Score	We will see if the indicator trend is constant, improved or decreased over time. Based on the result we will score the state performance regarding this obligation.
<b>Non-Discrimination</b>	Time series and descriptive analysis	We will try to find if there is a gap or disparity within the time series representing sub-group discrimination.

Table 2: Summary of Methodologies for assessing performance on human rights obligations  
Source: Mitchell, Baylis, Randolph (2021)

During this part of the research, we will use process indicators. Process indicators measure the ongoing efforts of governments to transform their structural indicator commitments into desired results, they also demonstrate the extent to which a country is meeting its obligations of conduct and measure the extent to which a country is meeting its obligations of result. The indicators if taken apart don't give information and can not be used to measure the performance of a country regarding the human rights fulfillment. For this reason, we will compare the results using the Economic and Social Rights Performance Score which is an indicator developed by the World Bank and Human Rights Measurement Initiative (HRMI), for 10 years, expanded in 171 nations, elaborating 131 types of data. The methodology used to create this dataset was the SERF Index which is the abbreviation of the Social and Economic Right Fulfillment Index and was developed in 2009 by Sakiko Fukuda-Parr, Terra Lawson-Remer, and Susan Randolph. SERF Index is a tool that measures and analyzes the countries' fulfillment of economic and social rights, relative to what can be achieved by the country's GDP per capita level. (Fukuda-Parr, Lawson-Remer, Randolph 2009). Gross domestic product (GDP) per capita was a commonly used indicator reflecting the assumption that what mattered was aggregate economic output and productivity (, 1999). For our analysis, we will use the GDP at the national level and GDP per capita for Albania during the last 10 years, 2012-2022 to measure the economic resources of our country. The data will be found on the official website of the Albanian Institute of Statistics (INSTAT). Then, we will choose 5 indicators from the variety of economic and social indicators, that we believe represent better the 5 economic and social rights. The data about these 5 indicators will come from INSTAT and will cover the same period as the data of the economic resource indicators. Based on the literature review, we have chosen to use the following indicators for each right and the relation with the SGD indicators, as shown in the table 3:

<b>ESR</b>	<b>SDG</b>	<b>Goal</b>	<b>Indicator</b>
<b>Right to food</b>	1	1.4	1.4.1 Proportion of population living in households with access to basic services (water, sanitation, condition of dwelling, overcrowding, level of education of household head)
<b>Right to house</b>	11	11.1	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing
<b>Right to health</b>	3	3	3.c.1 Health worker density and distribution
<b>Right to education</b>	4	4.4	4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill
<b>Right to work</b>	8	8.8	8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status.

*Table 2: Summary of SGDs indicators for each economic and social right*  
Source: Authors

Based on historical data that we will collect from INSTAT and ILOSTAT (in the case of indicator 8.8.2), will see the position of Albanian in comparison with the “achievement possibilities frontier” (APF), for every combination of GDP per capita or national GDP and right indicator. GDP per capita will be considered as the independent variable and each economic/social indicator will be considered as the dependent variable.

## **Recommendations and follow up**

During the literature review and examination of historical data on the complaints about the violation of human rights in Albania, it is clear that there is a lack of information regarding economic and social rights. For this reason, as mentioned in the Resolution of the Parliament of the Republic of Albania, the responsible national institutions should be engaged in promoting economic and social rights. Through awareness rising process, it will be possible to record and address the cases of ESR violations. The importance of economic and social rights is high, due to the human rights characteristics. If economic and social rights are not promoted, protected and fulfilled, a negative effect will also be transferred also in political, civil and cultural rights.

One of the key messages of UN entities during the meeting held in May 2023, was that every developing country should work constantly to improve the statistical data to facilitate the calculations regarding SDG targets. In Albania, the responsible institution of statistics has started a collaboration with the Albanian national human rights institution that is responsible for the implementation of SDGs Agenda 2023. The main purpose of the collaboration is to use the SDG indicators to start monitoring the fulfillment of human rights. At the moment all efforts are focused on the SDG indicators that monitor gender equality. Taking into consideration, that OHCHR has asked the countries to prioritize the work in three main directions: economic, social and environmental, the collaboration between the two institution should be focused on the economic and social rights SDGs indicators. The collection and elaboration of official data for monitoring economic and social rights in Albania is emergent. We believe that it is really important for Albanian experts, national human rights institution, and organizations fighting for human rights in Albania to begin interpreting the data offered by the SERF Index to better understand the situation and identify the main points that should be held under observation. We believe that there is an emergent need for research studies in the field of human rights, especially economic and social rights, that will help the responsible national institutions in measuring the state performance regarding the usage of maximum available resources for the progressive fulfillment of Albanian citizens ESRs. Such research studies will help also the state government to manage the financial resources in productive ways, with a focus on building an economy that advances equality and sustainability.

## **References:**

[6] Constitution of the Republic of Albania, Part IV “Economic, social, cultural rights and freedom”, Article 49 – 58 and Part V “Social Objectives”, Article 59, point c, <https://qbz.gov.al/preview/635d44bd-96ee-4bc5-8d93-d928cf6f2abd>

[2] Donnelly J., (2008) The relative universality of [2] human rights, Human Rights Quarterly, The John Hopkins University Press, Vol. 29, pp 183-193

[2] Eide, A., (2001) “Economic, Social and Cultural Rights as Human Rights”, Economic, Social and Cultural Rights: A Textbook, Dordrecht: Martinus Nijhoff, 2nd ed., pp 9-28

[4] Equality and Human Rights Commission (2017), Measurement Framework for Equality and Human Rights, <https://www.equalityhumanrights.com/sites/default/files/measurement-frame->

work-interactive\_1.pdf, pp 214-225

[4] Fact Sheet nr. 33 (2008), Office of the United Nations High Commissioner for Human Rights, United Nation, [https://www.ohchr.org/sites/default/files/Documents/Issues/ESCR/FAQ\\_on\\_ES-CR-en.pdf](https://www.ohchr.org/sites/default/files/Documents/Issues/ESCR/FAQ_on_ES-CR-en.pdf)

[2] Fukuda-Parr, S., Lawson-Remer T., Randolph S., (2009) ‘An Index of Economic and Social Rights Fulfillment: Concept and Methodology’, *Journal of Human Rights*, Vol. 8, pp. 1-27.

[4] Grad F.P., (2002), *Bulletin of the World Health Organization*, Vol. 80 (12)

[4] Guyer N.P., Fukuda-Parr S., Randolph S., Daniels M.L. (2009), *Measuring the Progressive Realization of Economic and Social Human Rights in Brazil: A Disaggregated Economic and Social Rights Fulfillment Index*

[6] Law no. 8454 dated 04.02.1999 “On People’s Advocate”, as amended, <https://www.avokatipopullit.gov.al/sq/article/legislation>

[6] Mclsaac E., (2023), *Backgrounder: Economic and social rights*, Maytree, <https://maytree.com/about-us/why-a-human-rights-based-approach/backgrounder-economic-and-social-rights/>

[6] Mclsaac E., (2022), *Moving from theory to implementation on human rights and poverty*, Maytree, <https://maytree.com/publications/moving-from-theory-to-implementation-on-human-rights-and-poverty/>

[4] Mitchell L., baylis P., Randolph S., (2021), *Monitoring the enjoyment of rights to adequate housing and health care and protection in Aotearoa New Zealand*, Motu Economic and Public Policy Research, Wellington N.Z.

[6] Normative Act no. 9, date 16.12.2019 “For facing the consequences of natural disaster”, <https://qbz.gov.al/eli/akt-normativ/2019/12/16/9/946f0872-3eb0-4d8e-8155-ab81e04f8134>

[4] People’s Advocate (2022) *Annual Report on the activity of People’s Advocate 2021*, pp 191-215, <https://www.avokatipopullit.gov.al/media/manager/website/reports/PA%202021%20Annual%20Report.pdf>

[4] People’s Advocate (2023) *Annual Report on the activity of People’s Advocate 2022*, pp 199-216, <https://www.avokatipopullit.gov.al/media/manager/website/reports/Raporti%20vjetor%20i%20veprimtarise%20se%20institucionit%20te%20Avokati%20te%20Popullit%20per%20vitin%202022.pdf>

[4] OHCHR (2000), *Human Rights Indicators: A guide to measurement and implementation*, <https://www.ohchr.org/en/instruments-and-mechanisms/human-rights-indicators>

[2] Petel, M., & Putten, N. V. (2021). *Economic, social and cultural rights and their dependence on the economic growth paradigm: Evidence from the ICESCR system*. *Netherlands Quarterly of Human Rights*, 39(1), pp 53–72. <https://doi.org/10.1177/0924051921994753>

[4] Randolph, Badendorst, Shay, Stewart, and Watson *SERF Index Methodology 2023 Update Technical Note*, Economic and Social Rights Empowerment Initiative, 2023, [www.serfindex.org/overview-2022/](http://www.serfindex.org/overview-2022/).

[2] Randolph S., Fukuda-Parr S., Lawson-Remer T., (2010), *Economic and Social Rights Fulfillment Index: Country Scores and Rankings*, *Journal of Human Rights*, Vol. 9, pp 230-261.

[6] Rattray S. (2019), *Human rights and the SDGs - two sides of the same coin*, <https://www.undp.org/blog/human-rights-and-sdgs-two-sides-same-coin>.

- [4] Report of the Inter-Agency and expert group on Sustainable Development Goal Indicators (2016), Doc E/CN.3/2016/2, <http://unstats.un.org/unsd/statcom/47th-session/documents/2016-2-IAEGSDGs-E.pdf>, pp 15 – 39
- [6] Weston B.H., (2023), “Human rights”, Encyclopedia Britannica, <https://www.britannica.com/topic/human-rights>
- [2] Wellman C., (2022), Solidarity, the individual and human rights, *Human Rights Quarterly*, Vol. 22 (3), pp 639-657
- [4] Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development (2017), A/RES/71/313, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N17/207/63/PDF/N1720763.pdf?OpenElement>
- World Health Organization (1948), Constitution of the World Health Organization, pp 1-3
- [6] Türk V., (2023), Overcoming multiple crises: Realising the 2030 Agenda through a human rights enhancing economy, Fifth intersessional meeting of the Human Rights Council on Human Rights and the 2030 Agenda.
- [2] Vasak K., (1977) Human Rights: A Thirty-Year Struggle: The Sustained Efforts to give Force of law to the Universal Declaration of Human Rights. UNESCO Courier, pp 29–32
- [4] Schutter D. O., (2013), “Economic social and cultural rights as human rights: An Introduction”, CRIHDO, Edward Elgar Publ
- [1] Sen, A. (1999), Development as Freedom, Oxford University Press, pp 35-54
- [4] UNDP (2023) Human Development Report 2021 -20 22, Annex Human Development composite indice, pp 272-285
- [1] UNESCO (2019), Right to Education Handbook, pp 28-38, <https://unesdoc.unesco.org/ark:/48223/pf0000366556>
- [6] United Nations General Assembly (1948), Universal Declaration of Human Rights, pp 1-8, <https://www.un.org/sites/un2.un.org/files/2021/03/udhr.pdf>
- [6] United Nations General Assembly (1948), International Covenant on Civil and Political Rights, , pp 1-8
- [6] United Nations General Assembly (1966), International Covenant on Economic, Social and Cultural Rights , pp 1-8
- [4] United Nations General Assembly (2015), Transforming our world: the 2030 Agenda for Sustainable Development, pp 1-35

# **'Declustering' decision-makings on cultural heritage Tirana's historic centre during urban development**

**Dr. Doriana MUSAJ**  
*Polis University, Albania*

DOI: 10.37199/c41000107

## **Abstract**

Tirana center was designed and used by all governments during most of its lifetime mainly as a political instrument. After decades of central controlled urbanism, the fell of the communist regime was accompanied with massive development mostly illegal and informal that spread all over the urban area. In 2000, when the aggressiveness of the constructions posed danger to the historic urban environment of the center of the city, the Ministry of Culture requested the designation of the Boulevard of Tirana and its surroundings as a 'Cultural Historical Architectural Ensemble'. Since then, the borders of the zone that defined the ensemble reshaped several times. Due to consecutive decisions the Ensemble lost 53% of its area. This paper uses a comparative analysis of the cartographic documents that accompany the governmental decisions on the ensemble while cataloging the cultural monuments which transformed, reshaped or demolished due to these decisions. The research concludes that the legal 'border' instrument used to protect the ensemble is easily transformable into a political instrument which in the case of Tirana, resulted beside the loss of heritage also in the transformation and shift of the urban common.

Keywords:

cultural heritage, historic centre, top-down decisions, destruction of heritage, legal instruments, urban common

## **Introduction**

The article provides a case study report, of the transformation of the historic center of the city of Tirana, from an urban cultural common area, into an exclusive one, through the use of the 'decision-making cluster' instrument. The theoretical question was designed while observing the absurd created: the historic center zone is declared as a monumental area to be conserved and inherited, using a legal border that defines the urban space under state protection, and at the same time the urban cultural heritage is being demolished/ transformed using the same instrument created to protect and preserve it.

The article provides a historical preview of the creation and development of the city center while considering its use as a political instrument during the decades of this part of the city (Méhilli, 2017). As the main focus of the research is the urban common inherited and declared Cultural Ensemble, the architectonic and urban realms that create the wholeness of this ensemble, their transformation and shifts were analyzed through the use of the plans and cartographic maps, while decision-making toward them used a legislative framework analysis. The transformation process began earlier in time, but it accelerated rapidly after 2018 when the protection border was reshaped by reducing its borders. Redesigned and rebuilt continuously, the center represents besides other aspects a cluster of decision-making and policies that transformed the urban common. While dealing with the complex issue of urban transformation, several instruments are used to collect data. The study uses spatial and ground-level assessment analysis by triangulating data collected from official and archival sources with those gathered through observation and field surveys. The triangulation method aims to describe urban development from three perspectives, 'declustering' them into three dimensions the urban, cultural, and legal dimensions. The observation in the field happened from that moment and it is still on as the redevelopment process is still ongoing. The research brings a map of the lost urban cultural commons due to the recent transformation processes, by trying to catalog some of them, in fact sheets. This work is ongoing, and information regarding the added knowledge recorded in the urban cultural common sheets is in continuous update.

The article uses two main concept that derived from the doctoral research of the author; the urban cultural common concept. Urban Cultural Common definition represents the inherited urban layer that contributes to cultural diversity via its social, cultural, and urban dimensions. Meanwhile clustering and declustering the urban commons, is generated from the use of the zone and the border instruments, while considering this grouping of the urban commons, beside a topographic related, also a reflects a common denominator of shared histories, memories, appurtenances, economic developments, and proximity of a heritage community, when used toward heritage.

## **Protecting, developing, and speculating with the public realms**

Albania is well-known as being wealthy in cultural heritage, both in archaeological and historical sites, and architectural ones. The country stands out for the vitality of urban development, as its urban habitats are remarkable in terms of their unique identity, content, and lifestyle. Its four seasons of geographical territory offer diversity in folklore, ethnography, culinary, urban environment, materials, and landscape. After the country suffered its separation in 1913, losing half of the territory and half of its population, the initiative to conserve and administer its archeological and historical heritage began in 1922 (Meksi, 2004).

Albania established the institutions and organizations for conserving and administrating its cultural, archaeological, historical, and architectural heritage assets only in 1965. The same year was established The Institute of Cultural Monuments. The first list of monuments in Albania, published



in Official Bulletin No. 95/1948 on October 16, 1948, includes 92 cultural monuments, (Annex 1) including archeological sites, fortifications, historic bridges, and urban and cult buildings according to Statute No. 568, issued March 17, 1948, “On the Conservation of Cultural Monuments and Rare Natural Objects.” Four monuments are identified in Tirana from this list: the Clock Tower, the Mausoleum of Sulejman Pasha, the Mosque of Et’hem Beu, and Tabaku Bridge - Annex 1. A new legislation titled “On the Preservation of Cultural and Historical Monuments and unique natural assets” was passed in 1971, repealing the 1948 law (Kuvendi, 1948). During this period, some historic city centers, including Elbasan, Shkodër, and Gjirokaštër, were designated museum zones, surrounded by conservation and protection zones.

In the period immediately following the 2-nd World War, it was requested to declare as cultural monuments the houses or places where members of the communist party met and conducted secret operations during the National Liberation War. In addition to these non-culturally significant objects, thousands of tombstones, obelisks, statues, and façade slogans were erected from the cities and street facades after the regime fell, while the “historic monuments” remained under state protection during the decades, some of them still are. According to Jerliu studies, an Albanian Kosovar urban cultural studies researcher and architect, the use of the cultural heritage as a political instrument, seems to be neither new nor applied only to Albania. Selective identification, as the case of Kosova and the Balkans countries shows, heritage can be used and certainly will be used for political purposes and incitement of nationalist sentiments (Jerliu, 2017, p. 8).

Cultural heritage directed by the communist party/ the centralized state	1948-1989	46
Cultural heritage after the change of the political system	1990-2007	115
Cultural heritage after the reform of the Heritage legislative framework	2008-2018	169

*Table 1: Protected cultural heritage in Tirana according to periods of administration and year of protection. Source: Author*

After the fall of the communist regime and the subsequent rebuilding phase of the state apparatus, there was a decline in official care for cultural assets. In 1994, a new legislation was established to protect cultural assets; “On the protection of moveable and immovable cultural assets” (Kuvendi, 1994) became the main document for heritage material management and protection for approximately ten years until replaced by Law No. 9048, issued July 4, 2003 (Kuvendi, 2003). In the first years following the 1990s, there were minor operations to “clean” the inventory of monuments declared to serve the communist propaganda, such as the removal of the “House where the Communist Party established” at Road Qemal Stafa in Tirana, but several other monuments of culture declared under the regime are still on the protection lists of the institutions.

## **The urban development of the 2000**

The 2000 brought a new development phase for the city. Due to the migration phenomena of the 90s, the housing demand increased and new buildings were being constructed, presenting a new architectural typology, with new living spaces. While developing under communism, the city claimed a five-story silhouette, meanwhile, the new capitalist city doubled the stores, more non-standardized apartment stores, and presented ‘individualistic’ urbanism (Aliaj et al., 2003). The economic crises of 2008, froze the real estate market, time which was used wisely by the Tirana municipality in 2011, to develop the general plan for the city which had been missing since

1989. So, the second decade of 2000, found Tirana with a general plan, and a new vision, both of which were changed in less than 5 years, due to the political shifts of the parties in power, both in the central and local governments (Maks Velo, 2013). A renewal and rebuilding process of the center of almost all cities in Albania began in 2013, as a political campaign led by Edi Rama, in power of central government since then.

These shifts in the central and local governance left their footprints in the territory. Several interventions were made in the cities of Tirana, Durrës, Vlora, Saranda, Shkodra, Korça, and even small towns like Përmet, Këlcyrë, Vau i Dejës, Belsh, Cërrik, Bulqizë etc. Interventions aimed to reframe, reshape, and transform these historic centers into modern and touristic destinations. These projects transformed these urban centers, by demolishing important landmarks while erasing historic and even archeological footprints (Emiri, 2019; Gusmari, 2017; Kabashi, 2017). Romeo Kodra, an Albanian visual artist and cultural researcher, describes Albania as an ongoing process “of return to the roots: of violence, erasure, corruption, financial speculation, and political secularization through monumental architectonic constructions which characterized the beginnings of fascism” (Kodra, 2020).

According to BIRN, the Regional Development Fund projects website 12 types of projects, 581 in total, have been implemented, or are still under development, which include: Boulevard, Facades, Schools, greening projects, recreation projects, urban requalifications, squares, streets, (BIRN Albania - Rilindja Urbane, n.d.), with an investment of 365.69 million euros. Tirana is the municipality that invested most of the other localities, 41.66 million euros, or 11.4% of the total fund. The most expensive project, with an investment of 9.46 million euros is the Skenderbeg square, requalified in 2018.

During this mass renewal and development phase, the measures for the protection of cultural heritage in the urban area improved. In 2018 a new law was enacted. Legislation no. 27/2018, “For cultural heritage and museums,” which is still in effect, reframed the administration and protection of cultural heritage sites, the role of institutions, and their management framework by redefining several notions and concepts (Kuvendi, 2018). The purpose of this law is “the preservation, protection, assessment, and administration of national cultural heritage... as a contributor to the preservation of national memory... as an expression of cultural values, as well as the promotion of cultural development in the country, ensuring and preventing illegal treatment of cultural objects.”(Kuvendi, 2018). The law is part of a separate analysis, as its wholeness presents several hundreds of pages and 279 articles. The case study selected, instead will present the consequences in the territory and the impact on the cultural heritage of the center of Tirana, declared Cultural, historic, and architectonic Monumental Ensemble in 2000, 2017, and 2018. The three decisions have the same objectives and focus, in protecting and preserving the center of the city, while differing from each other, besides in time also in the space put under protection.

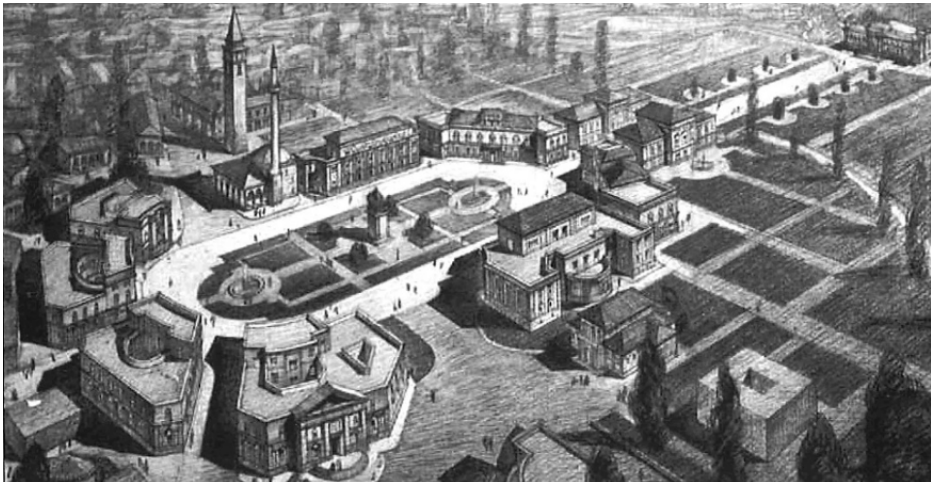
## **Case study: The historic center of Tirana**

A city center, a public space, and a political instrument

Baroque, classical, neoclassical, modern, brutalist, contemporary, traditional, and even futuristic architectural structures, which are part of the nation's heritage, define Tirana's center public space. During the century, each regime used the city's center as a political instrument of power by leaving its architectonic and urban footprints (Pojani, 2010, 2015). The central boulevard of Tirana and its urban commons, notably the “Skënderbej” plaza, has been utilized (and continues to be used) as such (Mëhilli, 2016).

During the communist regime, the central square and the boulevard were used as a perfect facade

for the country, where all types of monumental façades from the fascist to the communist era, found it easy to be used as a political instrument for activities that served state-party propaganda.



*Figure 1: Skënderbej Square project in 1930 Florestano Di Fausto; Tirana Center. Source: (Dhamo, Thomai, Aliaj, 2012 Tirana - Qyteti I Munguar)*

The boulevard of Tirana, the main squares, the stadium, and every street and facade of the city at a certain point transformed into a representative space, for the propaganda of the communist state. The primary function of the Boulevard, was the use of political parades related to ceremonies connected, first to the fascist and later to the Communist party. During the afternoon, the boulevard transformed into a pedestrian itinerary, where people strolled up and down. Public life was quasi-programmed and little was left to creativity or spontaneity. The standardized rhythm of the communist society was followed later after the regime fell into a mass “arrhythmia” of the public space.

Carrying a historical and political load, it was not a surprise when the public space, reinvented itself in 1991, transforming into the hub of political demonstration of the citizens. Hoxha statue put on the west side of the Skënderbej square, after his death, became the symbol of the regime’s destruction and was smashed to the ground on 20 February 1991 by the citizens of Tirana during demonstrations (Figure 5). Soon the central plaza became the central public space of the city, where merchants and automobiles (which were being used by the general population only after the regime fell) occupied the urban space, giving it a sense of chaos but also creating a vivid and vibrant public space.

<sup>1</sup>ThBIRN is an investigative Reporting Network, a network of non-governmental organisations promoting freedom of speech, human rights and democratic values in Southern and Eastern Europe <https://birn.eu.com/about-birn/>

<sup>2</sup><http://rilindjaurbane.reporter.al/>



Figure 2: 'Skënderbej Square during redevelopment. South-East view.'  
Source: Author, 2022

## The center is transforming into an exclusive area

The 90s were accompanied by mass migration from the smaller urban centers toward the larger ones, the larger number of which were positioned in Tirana. New settlements were constructed around the city structure, occupying agricultural land on the outskirts of the urban area, developing the informality phenomenon. The city center transformed from a parade space to an area of exchange for new merchants and people, centralizing organically the services around it. This spontaneity and informality of the 90s stimulated a chaotic landscape and urban environment for Tirana, which led instead of an urban plan for Tirana, to an urban renovation project called Dammi I Colori in 2003 (Salaj, n.d.). The application of the project included the street façades renovations while coloring them, including all the reconstruction and expansions of the main roads of the city. In 2000, when the aggressiveness of the constructions of the period posed a danger to the historic urban environment and, therefore, the destiny of the buildings along the boulevard's axis, the Ministry of Culture requested the designation of the Boulevard of Tirana and its surroundings as a Cultural Historical Architectural Ensemble. With Decision no. 180 dated 13.04.2000, "On the announcement of the Cultural Monuments Ensemble of the main axis and the historical center of the city of Tirana"; (Annex 4), the center of Tirana was declared under state protection. The legal border aimed to control and 'freeze' the development of further buildings, intending to preserve the architectural and historic ensemble as a whole. This clusterization of the city center, created



Figure 3: Skënderbej Square under construction during the 30-s. Source: Polis University Archive



Figure 4: Manifestation of the Communist regime on the Boulevard of Tirana. Source: Panorama Accessed May 1, 2020



*Figure 5: Skënderbej square on 11 February 1991- Hoxha statue torn down during the protest*  
 Source: Bold News, Accessed on February 2022

the terrain for the municipality, to organize during the beginning of the 2000 some “cleaning” operation in the urban environment. First, the proposals to demolish some old cultural buildings and later to reshape their architecture through colors, created, according to Aliaj, the terrain for a new paradigm toward the city, “a superficial one” (Aliaj et al., 2012, p. 68).

After inviting several international artists, for the façade project, the municipality of Tirana opened another international competition, to design the new center of Tirana, focusing on the Boulevard of Tirana and its surroundings. Architecture Studio, from Paris, won the competition and brought a new fictitious vision for Tirana while according to the architect and urban planner Aliaj, “ignoring the capital’s urban context” (Aliaj et al., 2012, p. 69). This city center master plan promoted the individual unit while reshaping the landscape and cityscape of the center of Tirana and disregarding the city’s and public interests. An already established parcel-based paradigm of the 1990s was introduced also through this plan, which was approved later by the National Council for the Regulation of the Territory, chaired by the prime minister.

This approach to redesign the center of Tirana was in continuance of several interventions during the decades of fascism and later communism. The proposed intervention was designed to intervene along the entire axis of the boulevard, reorganize the infrastructural net, and redrew the three main plazas, ‘Sheshi Skënderbej’, ‘Sheshi Europa’, ‘Sheshi Nënë Tereza’ (Bulleri, 2011, p. 138). While the previous projects and interventions of the center somehow related to the urban context, the French project ignored the private property regime, repeating the same approach during the construction of the cultural palace, constructed by the communist regime in 1960 (Aliaj et al., 2012, p. 69). It draws a geometric line in the city center by separating its architectural and urban influence, while developing an urban island inside the city-Annex 3. The center is reconceptualized with the tabula rasa principle by designing new itineraries, nodes, and landmarks that sprawl

<sup>3</sup>Parcel based paradigm- describes the development of the city inside its existing core with the parcel-based principle, where each cadastral parcel can propose a partial urban plan, shifting from the urban dimension of the urban planning toward the individualist urbanism dimension.



*Figure 6: Skënderbej square surroundings under construction, 2023; Author*

vertically into towers of 25 floors in height. (Aliaj et al., 2012, p. 69). Less was done of this plan, until 2015, when the parties in power changed from the democratic party that led the country from 2005-2013 to the socialist one which is still in power since 2013.

Right after the local election in 2015, Erion Veliaj, the new mayor of Tirana, replaced the already in-power plan of the city of 2013, preparing a new vision for Tirana. In December 2016, the Tirana City Council approved the Tirana 2030 (TR030) General Local Plan designed by the Italian company Stefano Boeri Architetti. In collaboration with UNLAB and IND, Boeri aimed to “usher in a new era in the nation’s capital by merging sustainable development,” sophisticated infrastructure, green corridors, and preserving the city’s historical heritage (Boeri, 2016). Stefanoboeriarchitetti granted the exclusive right to design the future of the Albanian capital with a 15-year vision. His design proposed a dense city with multistore structures that would combine the development and fill the “vacant areas” or replace the present low buildings. In this new paradigm for Tirana, a new project was claimed by the municipality of Tirana on the redesigning of the central “Skënderbej” square, in 2017. Although the plan was presented as a new vision for the capital, it resembled the 2003 Architecture studio version, intending to interrupt the existing circularity and mobility of the center, by transforming the square from a central node into a plaza pedestrian-exclusive area in the shape of a flat piramide. According to the designer studio, MVRDV, the square aims to present itself as “a void in the chaos of the city, a flat pyramid lined by a densely planted periphery, formed by a collection of old and new public spaces and gardens.”(Chapter 1 Skanderbeg Square, 2017).

The new square was inaugurated in 2018, and right after the surroundings began to transform rapidly-Figure 6. Five years after its inauguration, the square seems today to have preceded the high-rise buildings, now part of the city’s realms (Luarasi, 2019). High-rise buildings are reshaping the city’s silhouette while the central plaza, “Skënderbe” square surroundings are developing into skyscrapers, magnifying the emptiness of the quadratic sloppy terrain. To make room for new buildings, the government proposes to demolish the old ones, even though the project pur-

pose intended to “combine the history with new democracy, freedom, welfare, consumption, and internationalization” while transforming the urban landscape and its urban commons. (“51N4E Reveals ‘French Plan’ for Skënderbeg Square – Exit Explains,” 2017).

## Conclusions

### Clustering the cultural heritage

The center is legally protected, including its monuments as part of the Ensemble in a geometric cluster, designed and approved by the governmental agencies (Figure 48). Its form and surface changed during the decades, excluding several monuments of culture and their urban surroundings landscapes. The shift of this cluster from one DCM to the other developed the destruction of some urban heritage and urban commons of the city. Others are transformed or in the process of transformation (Musaj, 2021).

After the cluster of protection was reshaped into another form, thirty-six monuments of culture were left of the legal-protected zone. At least three of them were demolished afterward: the Stadium of Tirana, the National Theater, the First National Bank, and one private villa, all built during the 30s . Two monuments of culture declared as First category monuments are left in decay. Those represent the urban layer built at the end of the 19th century and some of the last of this historical

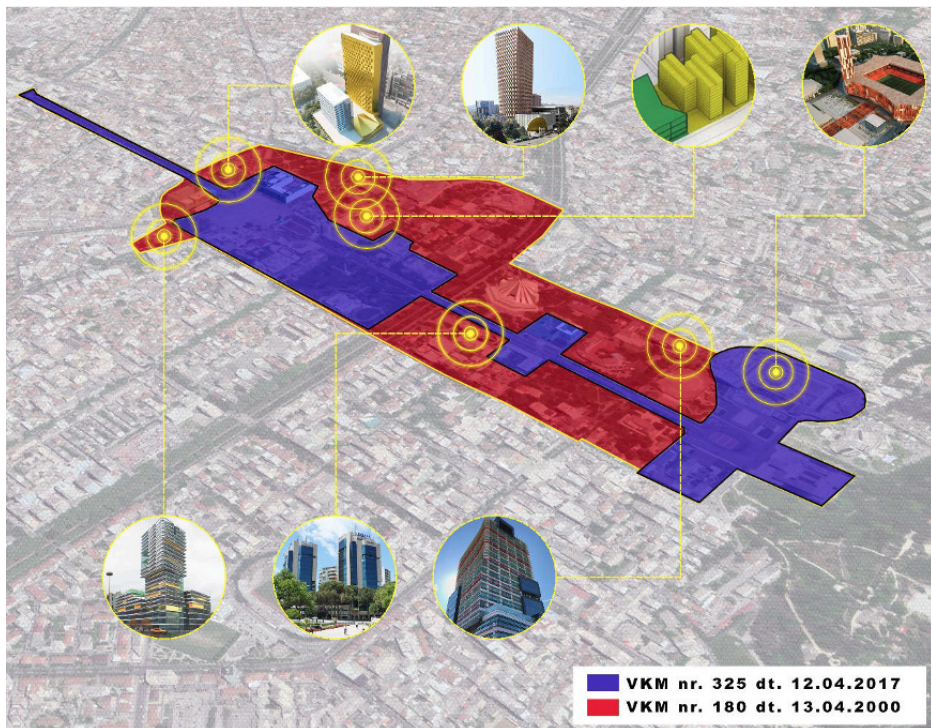


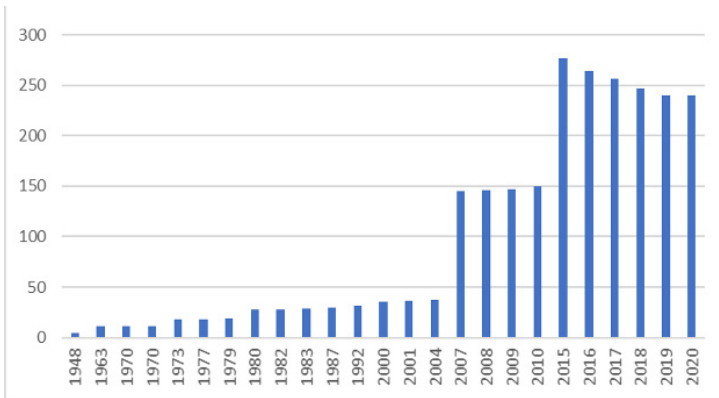
Figure 7: The map of the center of Tirana with the skyscrapers built or under construction. Source: (opinion. al, 2018)



heritage. Meanwhile, four other monuments 'de-clustered'-left out of the protection zone, lost their silhouette, landscape, and visuality. New skyscrapers are being built next to these urban commons reshaping their identity and relation to the public space Figure 7.

Even though the legal borders are presumed to conserve and protect the Urban and Architectonic Ensemble, declared as cultural heritage patrimony, the urban commons of the protected zone are being transformed and rebuilt. Interventions are made on the facades, structures, and even volumes. Several projects are under development along the boulevard of Tirana, such as The extension of the Hotel Tirana with a skyscraper next to it; the extension of the Gallery of Art, with a new building that will partially preserve the monument's facades; the Academy of Art, that will develop into a new architecture while preserving the façade partially; The Pyramide of Tirana, which restructured its silhouette while removing its pyramidal form of the object; The Bank of Albania, The Municipality, the Ministry of Interior, the corpus of Polytechnic University have already been extended with new structures. Meanwhile, the New Stadium developed has integrated a partial part of the main façade of Bosio's masterpiece, integrating it at the entrance.

Furthermore, with the digital map of Tirana of 2018, we can have a more territorial approach toward the "lists" of monuments mentioned in the previous section. This urban dimension is essential in Tirana's case as the city's development decades diffuse these monuments from the landscape, hiding them inside the districts. Thus, with the help of printed maps and sometimes mental



**Graphic 1: The number of monuments of culture generated from the data collected by the decisions of the institutions. Source of data IKTK- elaborated in the graphic by the Author**

maps, the observation method began from the previously recognized and identified monument of culture alongside the boulevard of Tirana and its surroundings. This identification process was implemented using Google map coordinates, and photographs were taken on-site for each object. In the district of Tirana, there are 261 cultural heritage with the status of "cultural monument" Declustering the urban commons

The "cluster" of the boulevard of Tirana, the legal border, topologically, consists of scattered dots, geometrically. Nonetheless, the cluster could consist of an object, a landscape, or a road, as they may all share a common characteristic. The case of the historic center of Tirana cluster assembles different types of buildings and urban commons that share a historical period, a particular material, an architectural style, narrative art, and affiliations to an urban layer. Despite the common

variables, it is unexplainable the shape of the zone, and its surface at why it excluded several objects. The National Theater Case, which was concluded in the Constitutional Court of Albania, demonstrates the lack of indicators, variables, or criteria that were missing for this object to be declared of cultural value.

The decision of the court delivered on 2nd of July 2021, states that “*The court assesses that from the documentation presented by the parties participating in the constitutional trial, it is not clear which criteria were missing for this object to be declared of cultural value, as well as why the need to preserve its cultural heritage did not prevail. Although the Assembly has approved a law with contemporary standards for cultural heritage, which also provides for the time criterion of more than 70 years of age, the verification of the public cultural interest for the National Theater*



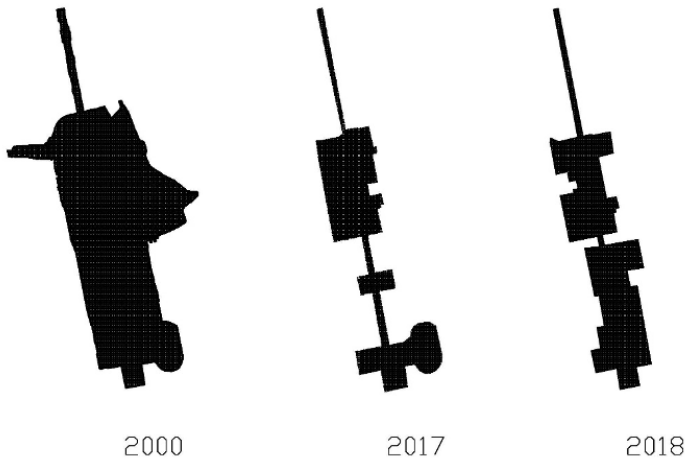
**Figure 8: The ruins of the National Theatre, a few moments after the collapse, 17 May 2020. Courtesy of the author Artan Rama**

*has not been done, which is an indicator of the lack of coherence of the actions of state bodies (Gjykata kushtetuese, 2021, p. 46).* From the total list of the urban commons identified as part of the ensemble, there are 60 of them, while only 59, excluding the theater, have gained the title Monument of Culture at a certain time.

The historical core of Tirana has inherited century-old decisions that have shaped cultural heritage alteration while decision-makers interpret the center area and utilize architecture to assert their influence. Architecture itself has been used as a tool by the government, to define what is now the center of Tirana throughout its history as a capital. In 2000, a monument protection zone was established to conserve the city's core urban area. The area covered Brassini Boulevard (Bulleri, 2011), and partially extended in the east part of the city, where some Ottoman footprints

stand and the archeological area of the fortress of Tirana lay. But, despite being preserved under a protection zone, some of the monuments lost their title, during the first decade of 2000. From 2000 to 2019, five monuments lost their title, due to Minister of Culture decisions, approximately 8% of the total urban commons. The list of 2023, includes 54 monuments of culture protected legally by the title “monument”.

After the KKT approved the Tirana Plan on April 17, 2017, the Council of Ministers Decision No. 582, dated October 3, 2018, reduced the territory of the Historical Center of Tirana, leaving several urban commons like the National Theatre, the National Historical Museum, Stadium, Clock Tower, etc. outside its boundaries (opinion. al, 2018). Thirty-six monuments were left out of the new border, or 60% of the total monuments found in the 2000 border (Ndrevataj, 2021). This lack of protection, created the ground to demolish seven of these buildings, all of which were left outside the new cluster Annex 6.



*Cluster 9: The shape transformation and the reduction of the area of the city claimed “Cultural Monument Ensemble of the central axis and the historical center of Tirana, three decisions in a row. Source: Author*

Decision-making about urban heritage is not based on the principles of restoration and heritage or the law but on economic interest. By replacing objects that were once on the list of cultural monuments with new structures, not only has transformed the object and surrounding landscape of the district, and the urban space but the urban commons of the city as a whole have been altered. It has been established that the replaced objects have been abandoned to oblivion and deterioration without any care or investment to recover them. No strategies for their protection or regeneration have been identified. It has not been demonstrated that the inventory of monuments is sufficient to sustain the economic pressure that these cultural assets face and the protection zone instrument for objects outside the historical zone has not been implemented. The majority of the objects within the historical area have been restored, reconstructed, or in some cases were added additional

extensions to provide more space for the functional purposes of the administrative buildings. Fifteen monuments underwent reconstruction and some of them even had additional structures added during the last three decades, even though being recognized as monuments of culture, and as such by law, should have been preserved in their original state.

Within the historical area, the buildings identified as private property have been in a degraded state or without restoration for decades. The total number of buildings that lack investments and restoration is identified to be nine (Annex 6). While facilities such as the Stadium and National Theater were neglected by the state in the decades following 1990, only a few maintenance interventions have been documented. The deterioration of these two objects was then used as an excuse for their destruction.

All decisions to remove monuments from protection lists are made concealed by government agencies. The law does not specify the process by which objects can be removed from the protection list or the protection zone, granting this right unreservedly to the proprietor in the case of private objects or the state in the case of public objects. Decisions to remove items from the protection list do not exhaust the procedure or the criteria that must be met for an item to be deemed devoid of cultural significance. This research does not conclude the reasons used to remove monuments from the list.

	<b>Monuments on the list Until 2015</b>	<b>Monuments added to the list 2015-2021</b>	<b>Monuments removed from the list 2015-2021</b>	<b>Monuments on the List 2021</b>
City	260	2	35	225
Periphery	39	0	2	37
Total monuments	299	2	37	264
<b>Table 2 Monuments of the culture of Tirana district</b>				
Cultural monument declared before 1990				4
Cultural Monument declared Order no. 122 dated 05.03.2007				4
Cultural Monument declared Order no. 276 dated 16.07.2015				27
Total of removed buildings from the protection list until 2023				35
<b>Table 3: Monuments of culture in the city of Tirana removed from the list of monuments. Source: Author</b>				

In 2018, DCM no. No. 582, dated 03.10.2018, approved. It aimed the define the historical center of the city of Tirana, its protective zone, and the approval of the plan for preservation, protection, and administration, which has been changed again, with the Decision of the KKR no. 423, dated 26.9.2018 of the National Council of Restorations. The proposal approved the declaration of the historical center of the city of Tirana, the definition of its protection zone, and the approval of the plan for preservation, protection, and administration. According to the audit agency report page 114, the Ministry justified the draft decision for the declaration of the historical center of the city of Tirana, as Law No. 27/2018 “On Cultural Heritage and Museums” approved on 17.5.2018

brought “a new approach to the preservation and protection of cultural heritage values, terminology new in the categorization and typologies of cultural assets, their classification, etc.” Thus, in light of the previous, VKM No. 325, dated 12.4.2017 and entitled “On the Proclamation of the Historical Center of the City of Tirana and the Approval of the Regulation for Its Administration and the Surrounding Protected Area,” was required to be revised following the new law. The review of this DCM focuses on: - the elucidation of terminology and concepts based on the new law; - a reflection of the diverse protection and preservation criteria of historical centers and their protection zones about the specific cultural values for which they have declared. The group of experts from this agency concludes that, in reality, this DMC has changed the boundaries of the historical center; that is, “the justification of the object of the change due to the terminology with the proposed changes have brought substantial changes to these boundaries where they are, including new objects such as the Pyramid, the Presidency, the Youth Park, the Park next to the Rogneri Hotel, the Palace of Congresses, from 50 to 80 years old” page 115. Following that regarding the report approved by KKR on 26 September 2018, “it is unclear which objects were removed from the historical center and why, and there is no mention of the Scientific Council of IMK or their position on these matters.” The Audit Agency concludes the report by stating that Thus, the approval process or the need to change or define the borders according to the coordinates “does not turn out to be complete with clear arguments from the institutions involved, such as the Scientific Council, the Technical Secretariat of the National Restoration Council, the Minister of Culture, who is also the Chairman of KKR, and KKR not fulfilling their institutional functions and professional specifications. “Their decisions have been used as a facade to excuse the activities of institutions that lack the capacity and ability to make choices that impact Albanian cultural heritage and historical memory, such as the Municipality of Tirana or Prime Minister office,” are their closing remarks. The reconstruction of the decision timeline concludes that institutions arbitrarily use the “protected zone” instrument without paying attention to the territory’s consequences.

## Reference

- 51N4E Reveals “French Plan” for Skënderbeg Square – Exit Explains. (2017, June 12). Exit - Explaining Albania. <https://exit.al/en/51n4e-reveals-french-plan-for-skenderbeg-square/>
- Aliaj, B., Dhamo, S., Shutina, D., Dajko, E., Bushati, V., Shtëpani, E., Karafli, E., Bregasi, L., & Barjami, E. (2012). FORUM A+P #10—Tirana dhe Imagjinata Urbane, Nga gjenezat tek modeli metropolitan. <https://doi.org/10.13140/RG.2.2.34572.26241>
- Aliaj, B., Lulo, K., & Myftiu, G. (2003). TIRANA, the Challenge of Urban Development. BIRN Albania—Rilindja Urbane. (n.d.). Retrieved October 12, 2023, from <http://rilindjaurbane.reporter.al/>
- Boeri, S. (2016). Tirana 2030 | Albania. Stefano Boeri Architetti. <https://www.stefanoboeriarchitetti.net/project/tirana-2030/>
- Bulleri, A. (2011). Tirana. Contemporanea sospesa. Ediz. I. Quodlibet.
- Chapter 1 Skanderbeg Square. (2017). 51N4E. <https://www.51n4e.com/reflections/skanderbeg-square>
- Emiri, G. (2019, February 25). Apeli i hap rrugë ndërtimit të “Velierës” në zonën arkeologjike “A”—Amfora. <https://amfora.al/apeli-i-hap-rruge-ndertimit-te-velieres-ne-zonen-arkeologjike-a/>
- Gjykata kushtetuese. (2021). Vendime përfundimtare. Gjykata Kushtetuese. [https://www.gjk.gov.al/web/Vendime\\_përfundimtare\\_100\\_1.php](https://www.gjk.gov.al/web/Vendime_përfundimtare_100_1.php)
- Gusmari, E. (2017, February 27). E ardhmja e zbulimeve te “Veliera” varet nga Këshilli Arke-

ologjik Kombëtar. Revista Monitor. <https://www.monitor.al/e-ardhmja-e-zbulimeve-te-veli-era-varet-nga-keshilli-arkeologjik-kombetar/>

Jerliu, F. (2017). TRASHËGIMIA KULTURORE E KOSOVËS KONCEPTET DHE KONTEKSTET E MBROJTJES.

Kabashi, G. (2017, November 13). Projekti “ Veliera ” i Durrësit, që prej një viti në dorë të dy gjykatave. Reporter.AL. <https://www.reporter.al/2017/11/13/projekti-veliera-i-durresit-qe-prej-nje-viti-ne-dore-te-dy-gjykatave/>

Kodra, R. (2020, June 12). To build, or not to build? That is the question regarding The National Theatre of Albania. (Romeo Kodra). AKS revista. <https://aksrevista.wordpress.com/2020/06/12/to-build-or-not-to-build-that-is-the-question-regarding-the-national-theatre-of-albania-romeo-kodra/>

Kuvendi, R. (1948). Law No. “MBI MBROJTJEN E MONUMENTEVE TË KULTURËS DHE TË SENDEVE NATYRALE TË RRALLA.” IKTK Archive.

Kuvendi, R. (1994). Law No.7867, “PËR MBROJTJEN E PASURISË KULTURORE TË LUAJTSHME DHE TË PALUAJTSHME.” [www.qbz.gov.al](http://www.qbz.gov.al)

Kuvendi, R. (2003). Law No. 9048, “PËR TRASHËGIMINË KULTURORE.” [www.qbz.gov.al](http://www.qbz.gov.al)

Kuvendi, R. (2018). Law No. 27 “PËR TRASHËGIMINË KULTURORE DHE MUZETË.” <https://qbz.gov.al>

Luarasi, S. (2019). A White Pyramid And a Center that Is Not a Center. *Log*, 47, 76–84.

Maks Velo. (2013). Betonizimi I Demokracise. Uet Press. <https://www.adrionltd.com/en/media-communication/96189-betonizimi-i-demokracise.html>

Mëhilli, E. (2016). Tirana: Kryeqyteti dhe pushteti. Përpjekja. [https://www.academia.edu/45127173/Tirana\\_Kryeqyteti\\_dhe\\_pushteti](https://www.academia.edu/45127173/Tirana_Kryeqyteti_dhe_pushteti)

Mëhilli, E. (2017). From Stalin to Mao: Albania and the Socialist World. Cornell Univ Pr.

Meksi, A. (2004). Restaurimi i monumenteve të arkitekturës. Uegen.

Musaj, D. (2021). Raporti Kërkimor. Urban Stories- Citizen Channel. <https://urbanstories.citizens-channel.com/raporti-kerkimor/>

Ndrevataj, E. (2021). “36 monumente më pak”, Si vilat e vjetra të Tiranës po zëvendësohen me pallate—Tirana 2031 [Journalist]. Citizen Channel-TR2031. <https://tirana2031.citizens-channel.com/36-monumente-me-pak-si-vilat-e-vjetra-te-tiranes-po-zevendesohen-me-pallate/>

opinion.al. (2018, July 14). Dokumenti/Qeveria e hoqi para 1 viti Teatrin Kombëtar nga zona e mbrojtur “Monument Kulture.” *Opinion.al*. <https://opinion.al/dokumentiqeveria-e-hoqi-para-1-viti-teatrin-kombetar-nga-zona-e-mbrojtur-monument-kulture/>

Pojani, D. (2010). Tirana. *Cities*, 27(6), 483–495. <https://doi.org/10.1016/j.cities.2010.02.002>

Pojani, D. (2015). Urban design, ideology, and power: Use of the central square in Tirana during one century of political transformations. *Planning Perspectives*, 30(1), 67–94. <https://doi.org/10.1080/02665433.2014.896747>

Salaj, A. (n.d.). ‘Dammi i Colori’, Anri Sala, 2003 | Tate. Retrieved May 31, 2023, from <https://www.tate.org.uk/art/artworks/sala-dammi-i-colori-t11813>

# **Exploring the dialectic between permanence and change The case of Epidamn Boulevard in Durrës**

Iden BUKA<sup>1</sup>

Ph.D. Candidate. Marsela Plyku DEMAJ<sup>1</sup>

Dr. Llazar KUMARAKU<sup>1</sup>

<sup>1</sup>Polis University, Albania

DOI: 10.37199/c41000108

## **Abstract**

Durrës has always been considered an important city both in the region and beyond, with a strategic position, as a transit or exchange gate, but also an interesting place to stay and live. The strategic position, natural but also historical, cultural and archaeological values have always given Durrës the potential to develop in the above-mentioned aspects, but also the potential to influence the development of other countries, which create relations with this city, so and the relationship with Italy has undoubtedly been mutual throughout history.

Today's "Epidamn" boulevard is a result of the interventions in the urban area of Durrës during the period of the Italian occupation at the beginning of the 20th century. However, the axis where Epidamn Boulevard is located today is also present in the earliest maps, or even in pictures from the beginning of the 20th century.

This paper investigates the organizational ability of the Boulevard element to influence the morphology of the city of Durrës. This ability will be analyzed through a philological reading of the space of this axis, emphasizing the transformations over time and the permanence and change of architectural elements in different periods. This dialectic of permanence and growth as explored by Rossi, implies a city which not only possesses a before and an after, but which is defined by their interrelationship. The expected results are a series of diagrams that read the stability and transformations of this morphological axis in relation to the urban form of the city of Durrës. These diagrams will serve to raise the awareness on the form-creating abilities that the compositional element of the axis has in relation to the urban form.

## Keywords

permanence, growth, urban transformation, 20th century architecture, Durrës

## Introduction

“In the disciplines that we call the history of ideas, the history of science, the history of philosophy, the history of thought, and the history of literature (we can ignore their specificity for the moment)...attention has been turned, away from the vast unities like “periods” or “centuries” to the phenomenon of rupture, of discontinuity.” (Foucault, 1972, f. p.4)

The topic of discontinuity is explored thoroughly by Foucault. He opposed an idea of history understood as a progressive and linear accumulation of moments that tend to be summarized in a final telos of meaning, rather, describe as traversed by jumps that make any causal or continuous explanation of events impossible. (Choque Aliaga, 2018). While (Rossi, 1982) explored on a dialectic of permanence and growth, which implies that a city does not only possess a before and an after, but which is defined by their interrelationship. Durrës, is for sure a city which has been characterized by major discontinuities in the course of its history. Still it has been continuously considered an important city both in the region and beyond, with a rich archaeological heritage and strong ancient identity, a strategic position as a transit or exchange gate, but also an interesting place to stay and live.

This article explores on the dialectic between permanence and change through investigating the organizational ability of the Boulevard element to influence the morphology of an urban settlement, taking as case study Boulevard Epidamn in the city of Durrës. The boulevard has indeed a strategic position in the city, remaining geographically and thematically unchanged since its construction.

## Literature Review

Many published but also online sources have been consulted to either understand the historic development of the case study area and to develop the necessary graphical tools for an analysis.

Regarding the influence of the relationships between Durrës and Italy, towards the flourishing of the city in the early 20th century, (Beja, 2012) notes that before the '30s, the urban settlement was within the castle walls and the agreements with the Italian government during this period, acted as an important driver to the city-s socio-economic revitalization, which consequently brought a flourishing of the sea routes. These agreements enabled also the construction of the new port during 1928-1934.

The considerable damage caused by the 1926 earthquake in Durrës is documented with pictures and testimonies from people who experienced it, such as the late doctor Ali Sula, who recalls in his memories “The window glasses trembled together with the houses for 2-3 days in a row and this is my first childhood memory” . Qendro 1927 , recalls “Since that day the shaking of the soil did not stop, not in Durrës, not in Kavaja there’s no healthy house left. The population had to leave their homes and head out into squats, in rapidly built timber structures, in 1 storey adobe houses: the cracked walls of the houses and the stones no longer inspired faith...”.

## Tools and Methodology

The Boulevard element will be analysed through a philological reading of the space of this axis, emphasizing the transformations over time and the permanence and change of architectural elements in different periods. The present research relies in an analysis composed of three main elements:

<sup>1</sup>Sula, 1998. Cited in Shqiptarja, 2018

<sup>2</sup>Qendro Th. magazine Diturija, February 1, 1927 (see consulted internet sources)

<sup>3</sup>Qendro, 1927. Cited in Durrës Lajm, 2019



(1) Historic research is one of the main pillars of the present research. The presence of today Epidamn boulevard is investigated through different historic periods.

(2) Spatial analysis including form and morphology is conducted mainly based on juxtaposition and comparison of maps of different periods as well as based on observations in field.

(3) Analysis of changes in building scale and architectural features are presented through a series of diagrams based on historic and today photos from the site.

The expected results are a series of diagrams that read the stability and transformations of this morphological axis in relation to the urban form of the city of Durrës. These diagrams will serve to raise the awareness on the form-creating abilities that the compositional element of the axis has in relation to the urban form.

## Case study area

### General characteristics

Today-s “Epidamn boulevard” is a product of the close relationship between Durrës and Italy in the beginning of the 20th century. At that time, it was called “Rruga Tregtare” (Commercial Street) due to the financing for its construction and afterwards the presence of foreign merchants in addition to the local ones. The boulevard stretches along the archaeological zone A of the city (Fig.1). It is the main axis of what was once called “lagja Kala” (Castle district), due to its location within the area encircled by the castle walls. The earliest phase of the castle walls dates back to the 5th-6th century and is linked to the name of the Byzantine emperor, Anastas I (originally from Durrës) who made it one of the most fortified cities in the Adriatic.

The boulevard has an important position in the city where at one end it closes by “sheshi Liria” (Freedom square), also known as “sheshi i Bashkisë” (City Hall square), and at the other end links to the entrance of the port of Durrës. The ancient “Egnatia” route stretches perpendicular to the boulevard at the southern end. Along its axis and in proximity, various historic buildings of cultural importance, can be noted, the most important of which is the Amphitheater of Durrës.



Fig. 1, Archaeological zoning (zone A and zone B) of Durrës – DCM No.786, 26.12.2018

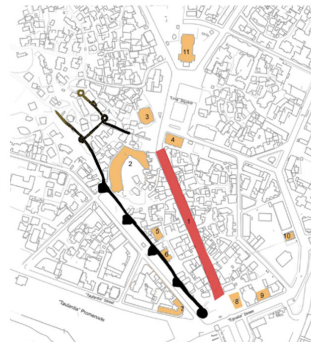


Fig. 2, Schematic map showing the presence of the historic buildings along the boulevard

<sup>4</sup>The historic research and analysis was undertaken by I.Buka, in the framework of the “Theoretical Deepening” class, during the 5th year of the studies (2022-2023) in the Department of Architecture, Polis University. The graphic elaborations are developed by H.Marjanaku under the direction and mentorship of Dr. Ll. Kumaraku and PhD Candidate M.P.Demaj.

## Historic Research

Based on the historic research, the axis where “Epidamn” Boulevard is located today is evident in the earliest maps, or even in the photos from the beginning of the 20th century. The relatively small urban center of Durrës of the 19th century was located within the area enclosed by the castle walls (fig.3 and 4). There was little infrastructure outside the walls and the seashore came very close to them. During this period this axis had mainly an utilitarian character which is to practically connect the two fortification gates the north and the south one. (Miho, 2003, f. p.191) The Ottoman map of the 19th century (fig.3) shows rather schematically the zoning and buildings outside and inside the castle walls. The building plots are shown in pink and it can be concluded that the urban layout of Durrës and the social life takes place within this enclosure and the evident axis (which coincides with the Epidamn boulevard) can be considered its urban center. After the devastating earthquake of 1926, a large number of houses, mostly built in adobe, within the Castle district were damaged. It didn't take long for the city to recover. The potential of the city for development and the vital importance of the port, paved the way for the ambitious and modern project for the construction of the city's new boulevard. The need for the construction of a new, wider, straight axis that would respond to the many and multifaceted requests of the new port structures and city centre, that would provide the necessary transportation functions and that would present the city to the visitors in a more dignified way were among the main reasons for the creation of the new boulevard. (Miho, 2003, f. p.191)

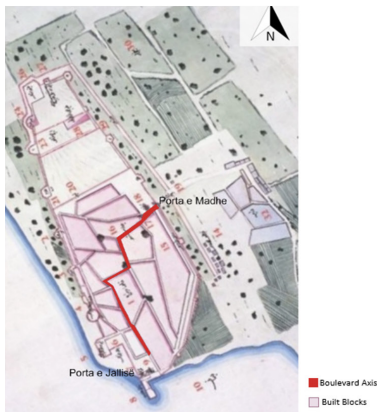


Fig. 3, (Axis within the Castle district) 19th cent. Ottoman map, ARŞIV 2016



Fig. 4, (Presence of the axis within the Castle district) Plan of the city of Durrës, source HEUZEY, DAUMET 1876. Represented by G. Naessens

Figures 5-6, show the process of the debris removal, along with the intervention for the opening of what would become the city's new boulevard. This intervention was an innovative response for the time, to one of the existing environmental problems, the bad smells coming from the swamp area. According to (Kaçani, 2023), the opening of the boulevard was also a solution for the ventilation of the city. The construction of the new boulevard started in 1927 and continued until 1929. Comparing the 1928 and 1937 plans it is visible that the direction of the axis was not random. It was based on the direction of the old road, on the reuse of the open spaces previously used as courtyards and of the spaces opened due to destruction of many buildings in the aftermath of the earthquake (figures 10-11). The initial name of the axis was the “Boulevard of the Castle” (Miho,

2003). The main factors for the opening of the boulevard, were initially the emergent need for infrastructure after the damages caused by the 1926 earthquake and the inevitable growth of the population, but certainly it was a reciprocal interest between Albania and Italy for the revival of the commercial connections that acted as a driver for these developments and the further revival of the city.

Referring to (Beja, 2012), the 1940s marked a turning point for Durrës. It was during the years of the WWII, that although trade had a profitable climate, social life was shaken. The war did not leave devastating consequences, but the city still could not resume the old prosperity, due to the policies of the communist regime. Perhaps during this period, the “Commercial Street” got its actual name as “Epidamn Boulevard”. Today, the “Epidamn” boulevard, is a strong attraction and very frequented urban space in the city.



Fig. 5, View of the destructions caused from the 1926 earthquake



Fig. 6, View of the destructions caused from the 1926 earthquake in the Castle district



Fig. 8, Aerial view of the castle district where the axis of the boulevard is clearly noted - years 1930-1940

2003). The main factors for the opening of the boulevard, were initially the emergent need for infrastructure after the damages caused by the 1926 earthquake and the inevitable growth of the population, but certainly it was a reciprocal interest between Albania and Italy for the revival of the commercial connections that acted as a driver for these developments and the further revival of the city.

Referring to (Beja, 2012), the 1940s marked a turning point for Durrës. It was during the years of the WWII, that although trade had a profitable climate, social life was shaken. The war did not leave devastating consequences, but the city still could not resume the old prosperity, due to the policies of the communist regime. Perhaps during this period, the “Commercial Street” got its

actual name as “Epidamn Boulevard”. Today, the “Epidamn” boulevard, is a strong attraction and very frequented urban space in the city.

## Spatial Analysis

This section provides a spatial analysis of what has been evidenced by the historical research. The regulatory plan commissioned by King Zog (fig 7-8) noted the widening and better orienting of the boulevard, holding a central position in the city plan, from which it conserves still today (see fig.9)

The Regulatory Plan tried to conceive the city as a compact urban unit, divided in two main parts by the central road axis. The regulatory plan predicted a spread of the urban settlement, according to the Italian grid, with an accented urban mark that consisted of a Y-shaped route (see fig.7-8) which lead to the new central square and that would mark a new pole for new projects in the coming years. (Menghini, Pashako, & Stigliani, 2012) As foreseen, due to the increasing number of development projects designed by Italian architects in the new areas beyond the castle walls, new poles were created and eventually a shift of the urban center happened. Figures 10 - 13 graphically show the changes experienced in the urban layout comparing 1928s and 1940s. The intervention for the widening of the boulevard as result of the Regulatory plan, as well as the shifting of the city centre, and the extension of the urban settlement are clearly displayed in the analysis.



Fig. 8, Regulatory plan of Durrës 1942. (AQTN). L. Carmignani, F. Poggi,



Fig. 9 – Regulatory plan of Durrës zoning, L.Carmignani, F. Poggi, 1942. (AQTN).

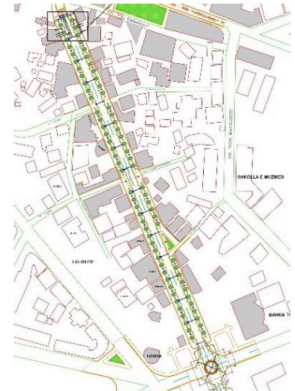


Fig. 10, Renovation project of the boulevard 2005, Municipality of Durrës

The Regulatory Plan tried to conceive the city as a compact urban unit, divided in two main parts by the central road axis. The regulatory plan predicted a spread of the urban settlement, according to the Italian grid, with an accented urban mark that consisted of a Y-shaped route (see fig.7-8) which lead to the new central square and that would mark a new pole for new projects in the coming years. (Menghini, Pashako, & Stigliani, 2012) As foreseen, due to the increasing number of development projects designed by Italian architects in the new areas beyond the castle walls, new poles were created and eventually a shift of the urban center happened. Figures 10 - 13 graphically show the changes experienced in the urban layout comparing 1928s and 1940s. The intervention for the widening of the boulevard as result of the Regulatory plan, as well as the shifting of the city centre, and the extension of the urban settlement are clearly displayed in the analysis.



Fig.11 Boulevard axis (above) and city centre in 1928, (I.Buka 2022)

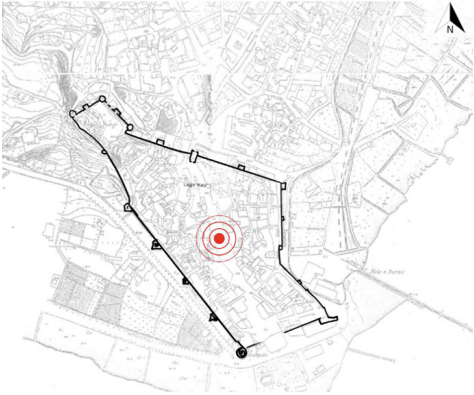


Fig.13 – Constructed areas 1928 (I.Buka 2022)

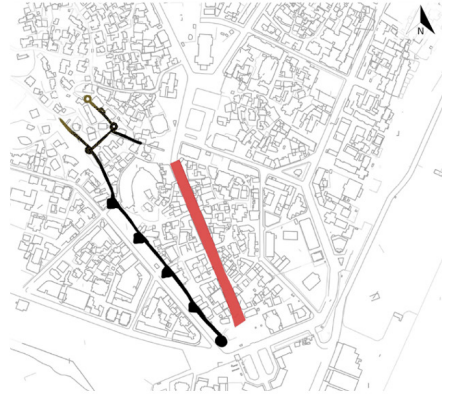


Fig.12 Boulevard axis (above) and city centre after 1930 – until today (I.Buka 2022)

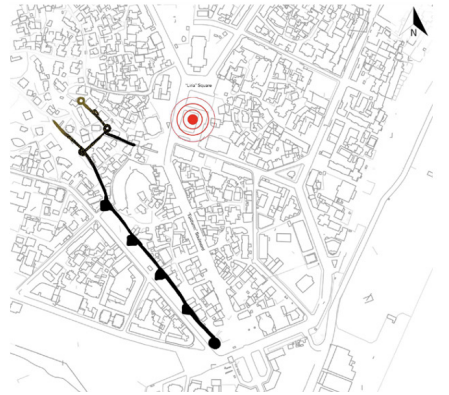


Fig.14 – Constructed Areas 1937 (I.Buka, 2022)



## Building scale and architectural features

During the 20th Century, the roads of the Castle district were narrow, in the form of cobbled alleys. The 1-2 floor buildings create a continuous façade, with distinguishable elements such as the rectangular windows which create an a-a rhythm on the façades (fig.14). However, this rhythm was often interrupted by occasional openings of doors or windows. This can be due to the fact that during this period, Durrës displayed a medieval character, and buildings were generally built by the owners and master builders, and not through specific project design process.

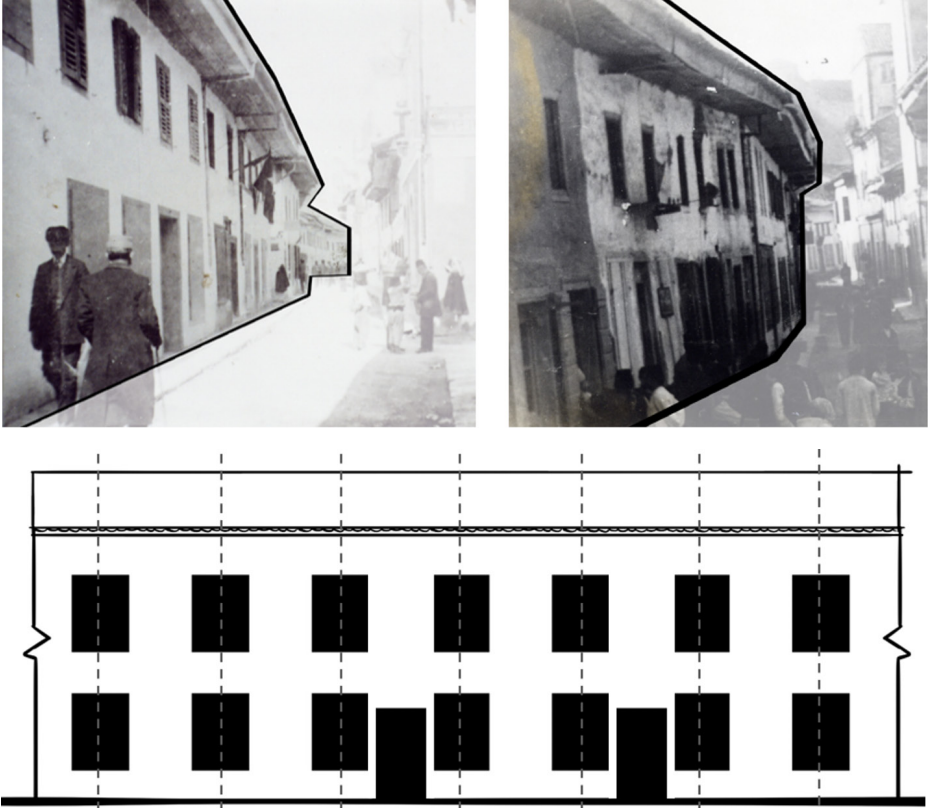


Fig. 15 – above - partial view of the façades along the boulevard axis (during 19th cent.), below -Sketch illustrating the rhythm a-a present in the façades (I.Buka, 2022)

The Italian influence in architecture and urban planning, aided to the flourishing of the city of Durrës, both in the field of architecture and the local economy. This influence today, is evident in “Epidamn” boulevard”, which generally carries the same architectural styles and values. The architectural elements of the 1930s, which can be noticed in many of the buildings along the boulevard, was clean and rational, with a moderate décor and 2-3 floor buildings. (Beja, 2012)

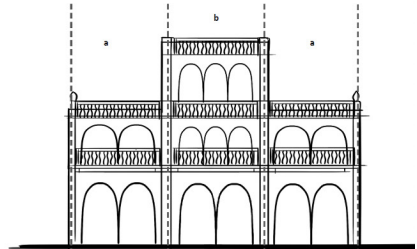
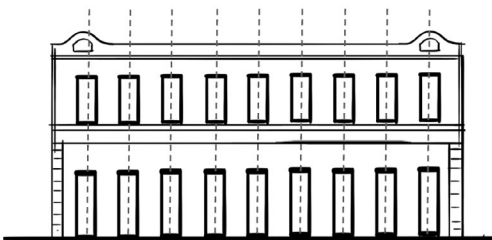


Fig. 16 – (above) partial view of the facades along the boulevard axis (years 1930-1940.) , (below) Sketch illustrating the rhythm a-a and a-b-a present in the facades (I.Buka, 2022)

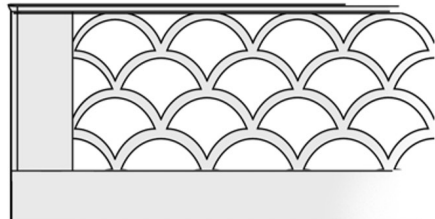
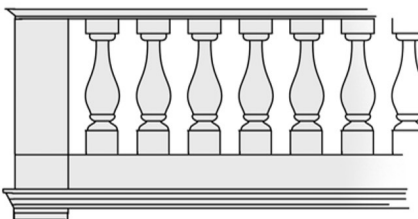
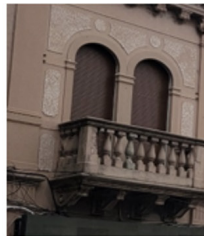


Fig. 17 – Balconies details (I.Buka, 2022)

The characteristic elements of the facades are the arched windows and doors, balconies, rhythmically composed in harmony with the sharp frame of the buildings. However, not all facades have arched elements, but they find common ground in rhythm, harmony and rational purity, which give the facades as a whole a uniformity and similar character.

Taking in consideration the above-mentioned aspects and as noted in the Figures 16-17 it can be affirmed that the boulevard has pretty much conserved its volumetry and main characteristics.



Fig.18 – Boulevard "Epidamn", '80s

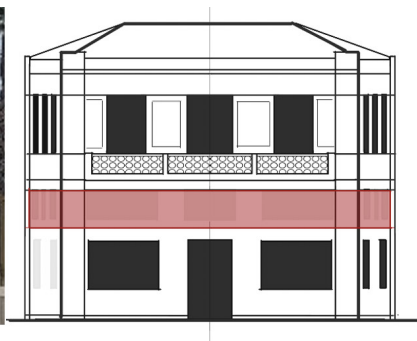


Fig. 19 – Boulevard "Epidamn", 2023

The characteristic elements of the facades are the arched windows and doors, balconies, rhythmically composed in harmony with the sharp frame of the buildings. However, not all facades have arched elements, but they find common ground in rhythm, harmony and rational purity, which give the facades as a whole a uniformity and similar character.

Taking in consideration the above-mentioned aspects and as noted in the Figures 16-17 it can be affirmed that the boulevard has pretty much conserved its volumetry and main characteristics.

After a period of neglect from 1990 to 1999, renovations that consisted mainly in repainting of the facades in 1999, can be considered a turning point, and a beginning of the visual chaos that was evident during 2000 and still today. The figures below show some of the changes in the architectural character of five selected buildings. The aim is to evidence the permanent elements of the boulevard that are still present. The changes and additions are displayed through photos (historic and today) and graphically in red color.

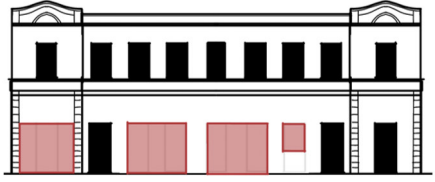


Building (3)

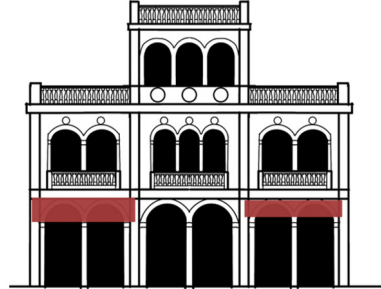




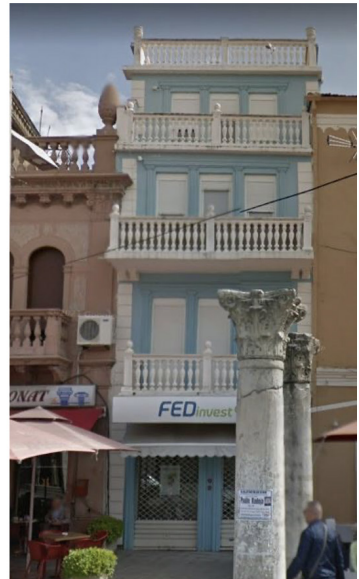
Building (1)

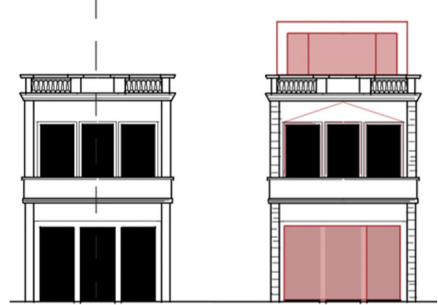


Building (2)



Building (4)





*Building (5)*

## Conclusions and Recommendations

At the core of this analysis is the investigation of the boulevard element as a permanent element in the morphology of the city of Durrës. The research showed that the transformations that this axis has undergone through time (and space) are undeniably reflections of a variety of periods during its lifespan and as mentioned several times in this article, the role of the boulevard in the development of the city of Durrës, is great. Several conclusions and recommendations can be drawn up as result of this research:

1. The Epidamn boulevard has been and still is an important arteria in the city formation.
2. The opening of the boulevard after the earthquake followed the real direction of the development of the city and clearly acknowledged the role of castle district and the boulevard axis in the city setting.
3. The presence of the boulevard axis has channelled, guided, and often accelerated the propulsive forces that act on, or are about to act in the city.
4. The strongest character of the boulevard was in pre-war period when planning mechanisms, architectural projects activity and the functional aspect acted together towards the forming of the "Commercial street" as an urban unit. It can be said that the current character of the boulevard derives from the atmosphere of the early 20th cent.
5. The vernacular, pre-modern and communist architecture somehow coexisted harmoniously together, somewhere blended somewhere separate but anyhow they succeeded to display their distinct character
6. The post 90s did not succeed to define a contemporary character and in some cases has failed to understand and recognize the character, significance and relationships of elements from different periods in the boulevard
7. The conservation, valorisation and emphasise of the elements that have demonstrated to be permanent in the boulevard is of outmost importance and should be taken in consideration by the local government authorities when evaluating new development proposals in this area.

## Bibliography and References

- Beja, R. (2012). Durrësi dhe Italianët. Durrës: Emar.
- Choque Aliaga, O. (2018). "The discontinuity in the continuity, Michel Foucault and the archaeological period". TOPOLOGIC No.23, 32-46.
- Foucault, M. (1972). The archaeology of knowledge. New York: Pantheon Books.

Kaçani, A. (2023). Durrësi urban para dhe pas pavarësisë kombëtare. Durrës: DOI: 10.13140/RG.2.2.18729.98408.

Menghini, A., Pashako, F., & Stigliani, M. (2012). *Architettura Moderna Italiana per le città d'Albania*. Tirana: Dudaj.

Miho, K. (2003). *Shqipëria, Vështrim Urbanistik 1912-1944*. Tirana: EXTRA.

Rossi, A. (1982). *The Architecture of the City*. MIT Press.

## Consulted internet sources

20th Cent.

Caka, E, Ruka, R dhe Shehi, E (2021) Shënime mbi fortifikimet e Durrësit në periudhën osmane. [https://www.researchgate.net/publication/355107275\\_Shenime\\_mbi\\_fortifikimet\\_e\\_Durresit\\_ne\\_periudhen\\_osmane\\_Observations\\_on\\_Durres\\_fortifications\\_in\\_the\\_Ottoman\\_period](https://www.researchgate.net/publication/355107275_Shenime_mbi_fortifikimet_e_Durresit_ne_periudhen_osmane_Observations_on_Durres_fortifications_in_the_Ottoman_period)

Earthquake 17 December 1926

Durrës Lajm 2019, Tërmeti shkatërrimtar i vitit 1926 në Durrës <https://durrëslajm.al/termeti-shkaterrimtar-i-vitit-1926-ne-durres/> (26 Qershor 2019)

Shqiptarja 2018, Dr. Ali Sula, mjeku 95-vjeçar që publikon historinë e Durrësit <https://shqiptarja.com/lajm/dr-ali-sula-mjeku-95vjecar-qw-publikon-historinw-e-durrwsit> (14 Gusht 2018)

Italian influence '30s

ARS Progetti S.P.A (2022) Plani i Menaxhimit të Integruar i Zonave Arkeologjike A & B të Qytetit të Durrës. Romw, Itali Available from: [https://creativeeurope.kultura.gov.al/wp-content/uploads/2022/07/Durres\\_-IMP\\_ALB\\_11\\_03\\_2022.pdf](https://creativeeurope.kultura.gov.al/wp-content/uploads/2022/07/Durres_-IMP_ALB_11_03_2022.pdf)

Durrës Lajm 2012, “Durrësi dhe italianët”, historia e një bashkëjetese <https://durrëslajm.al/durresi-dhe-italianet-historia-e-nje-bashkejetese/> (10 Mars 2012)

Rovigatti, P. (2000) *Un piano per Durazzo*. Pescara: Sala Editori Università' degli studi di Parma (2007) Projekt Ndërkombëtarizimi. Amfiteatrit të Durrësit: Njohja e një monumenti për vlerësimin e pasurisë kulturore botërore.

Source: <http://www.progettodurres.unipr.it/albanese/Due%20progetti.htm> Zhamo P. Durrësi Source: <https://www.academia.edu/25585955/Durr%C3%ABsi> 28

'40s

Durrës Lajm 2012, “Durrësi dhe italianët”, historia e një bashkëjetese <https://durrëslajm.al/durresi-dhe-italianet-historia-e-nje-bashkejetese/> (10 Mars 2012)

Zhamo P. Durrësi Available from: <https://www.academia.edu/25585955/Durr%C3%ABsi>

'80s

Youtube 2019, Bulevardi Epidamn Durrës 1980

[https://www.youtube.com/watch?v=m\\_n\\_AJiUe5E&ab\\_channel=mrjulian](https://www.youtube.com/watch?v=m_n_AJiUe5E&ab_channel=mrjulian) (14 Mars 2019)

'90s

TV Klan 1999, Durrës, projekti për rrugën “Tregtare” <https://tvklan.al/durres-projekti-per-rrugen-tregtare-16-dhjetor-1999/> (16 Dhjetor 1999)

# Exploring the balance between common and private spaces A case study from Tirana

Hera MARJANAKU<sup>1</sup>  
Ph.D. Candidate. Marsela Plyku DEMAJ<sup>1</sup>  
Dr. Llazar KUMARAKU<sup>1</sup>  
<sup>1</sup>Polis University, Albania

DOI: 10.37199/c41000109

## Abstract

This article explores the relationship between private spaces (dwellings), common spaces and the presence of the human factor. In the consideration that the dwelling space as a phenomenon takes place in both the inside and its outside immediate urban setting, these levels of scale are often intertwined; they are inextricably linked in a complex entanglement of interests. Changes on one level have immediate implication for others. A search on urban design should consider all levels as intertwined in a constant search for improvement as a whole.

The aim of this paper is to explore the changing relationships between the community and private and common spaces through the history of urban transformation in one of the dense urban areas close to the Tirana centre. Tirana is a particular example displayed throughout its history and still continuing to display great and fast urban transformations in its territory. The case study area displays signs from the most distinct urban transformations of the city.

Based on a space syntax assessment from the field and using a diagrammatic analysis-comparison methodology, the following points are explored:

1. relationship between the individual and the common space
2. relationship between the individual and the semi-private territory surrounding the dwelling (courtyard / garden)
3. relationship between the individual and the private space (dwelling)

Conclusions obtained from this analysis of the existing situation will be compared in a formal way with the same relationships in a previous historic period, showing the level of transformation and changing levels of relationships between private and common spaces.

## Keywords

common space, urban design, urban density, high rise, urban transformation, Tirana.

## **Introduction**

In the last 30 years, while Albania has been and still continues to be in an economic and social transition period, its urban spaces and architectural character are continuously and rapidly undergoing drastic changes and transformations. Urban development problems are among the first effects of this transition period emerged while the cities need to provide proper infrastructure, cope with increasing needs for public transport, manage vehicle traffic and protect the environment.

The population of Tirana has increased in unforeseen numbers since 1990 due to uncontrolled and unplanned migrations mainly of the rural population but increasingly also from other urban centers all over Albania. Due to this fact, the experience with urban development during and after the 1990s in Tirana created one of the most singular cases of architectural and urban development models in Europe, especially for its dynamism and energy as well as for its irregularity and total chaos on the one hand, and the total absence of development plans and policies on the other hand. The situation of architecture and urban planning in this period is the best visual expression of the city's difficult transition. (Aliaj, Lulo, & Myftiu, 2003, f. p.66)

This paper explores the changes that happened in the relationship between private spaces (dwellings), common spaces and the presence of the human factor analyzing a selected case study urban area in Tirana in two distinct historic periods being during the communist regime (in the early '60s) and today. Both periods are selected with 30 years from 1990 which is the year that marked the fall of the communist regime.

## **Literature Review**

2022 is considered a notable year for the Albanian capital, since Tirana was announced as the "European Youth Capital". It is obvious that the city is gradually going towards the concentration of the central government entities and organizations that act as gears of development. However, in face of this accomplishment which presents the city as a "Dream City" full of opportunities and promising a bright future and healthy living, the current and touchable everyday reality comprises concrete buildings and functional areas.

Numerous studies and published sources provide information on the process of urban and architectural transformation that Tirana has undergone in the last 30 years. (Aliaj, Lulo, & Myftiu, 2003) state that following the 1990s, Tirana is characterized by the extreme degradation in the quality of urban environments and the occupation of public lands by illegal development. In the same line (Velo, 2013) analyses the fact that in the 1990s Tirana inherited several peculiar characteristics the most significant of which was the horizontal extension bearing a great potential to conserve common open and green spaces. He further considers that after the 1990s in the course of only 10 years, due to the unplanned and spontaneous development that Tirana has experienced, it resulted to become the most chaotic and unesthetic city in Europe occupying its common open spaces with high-rise buildings.

Considering the morphological analysis as crucial to a good design, (Leupen & Harald, 2011) mentions the need for undertaking such an analysis also in the most chaotic parts of the cities. In exploring on how to better understand the morphology of an urban area, he refers to Colin Rowe who drew the buildings as black volumes against an empty background. Jean Castex who includes a number of influential works on urban form, describes the city as the outcome of a series of erosions of the typological diagram. In his studies he links typological analyses at building level with the analysis of urban fabrics and urban plan types.

## **Tools and Methodology**

The methodology used for the development of this research is based in a two-steps approach which are:

- Separate figure-and-ground analysis as well as permeability analysis of the common and private spaces in two distinct historic periods being early '60s and today,
- Comparison of both analyses

The analysis-comparison process which is undertaken in parallel and using similar terms, is considered to be adequate for assuring the achievement of some concrete and well based conclusions from this research.

As part of the separate analyses the following three types of relationships will be examined:

- a. relationship between the individual and the common space.
- b. relationship between the individual and the semi-private territory surrounding the dwelling (courtyard / garden)
- c. relationship between the individual and the private space (dwelling)

The conclusions are derived from the comparison and the juxta positioning of the two-analysis based on the above-listed three types of relationships. The results are displayed in the form of an abacus showing the changes that happened in the relationships between common and private spaces. The facts and figures are the outcome of observations in field and historic research.

## **Case study area**

### ***General characteristics***

The selected area is referred in (Bushati, 2012) as “Zone 1, it is located very close to the center of Tirana, (see Fig.1) confined by the Train Station (north), the “Dibra Street” (south), the boulevard “Zogu I-st” (west) and the “Barrikada Street” (east). It is considered as one of the first distinct roads in Tirana which has undergone a series of renovations between 1920’s and 1930’s. This a zone where the effects of the transitory period, that the city has been experiencing, are widely felt, and a variety of new ideas and projects are foreseen to be realized until 2030.

The area under examination includes significant historic buildings bearing cultural values. They date back in the end of 19th century and also in the period between 1912- 1944, displaying interesting features and relationships with one another and with the inhabitants as well. These features can be considered as the starting point for this research.

### **Accessibility Analysis**

The analysis of accessibility is conducted in the case study area in the two selected historic periods 1958 and 2022. It aims at understanding the level of permeability and the movement patterns in the case study area in each period. Also by comparing both analyses, an understanding of the changes in the accessibility of transition between common and private spaces can be conceived.

First, the main routes connecting bigger distances compared to close internal distances within the zone are identified. These are the routes used by a significant number of locals. Various social activities are established along them, such as services for both inhabitants and visitors. It should be highlighted that these routes contour “Zone 1,” and because of the high volume of movement, the linking routes between the east and west sides, was considered acceptable, resulting in a mi-

<sup>1</sup>(Dhamo, Thomai, & Aliaj, 2021 )

<sup>2</sup>The historic research and analysis was undertaken by H.Marjanaku, in the framework of the “Theoretical Deepening” class, during the 5th year of the studies (2022-2023) in the Department of Architecture, Polis University. The graphic elaborations are developed by H.Marjanaku under the direction and mentorship of Dr. Ll. Kumaraku and PhD Candidate M.P.Demaj.



Fig. 1 Aerial view of Tirana – Zone 1 is highlighted in relation to the city centre

ni-zoning of the entire area.

Through the fragmentation of the whole, it seems possible to create the so called moderate access pathways. This is a term used to describe movement within a narrower radius of permeability. This is generally done to link two greater routes, to connect two ends of the whole, or to interconnect pieces from one end to another, within the mini-border. In terms of visual aesthetic, it has become the key characteristic, that concentrates into the main view.

It should be noted that over the time frame reviewed, that is during the 64 years, communal gathering activities take place on public routes, widely accessible to everybody, leaving the tranquility to the inner pathways having either moderate or limited access. This referring to the more intimate interior access, where just a few dwellings are collected and the population that lives there is rather small. These pathways, on the other hand, are not utterly cul-de-sacs since they develop the social activity of a specific group of people, who are linked by the fact that they share a common space. They use and these limited access - paths collectively.

The accessibility analysis allows for the clarifying of linear segments that contribute to the form of the urban settlement. However, as architects, urban planners, restorers, historians, journalists, and politicians, as prime ministers, citizens, and individuals, we must accept that a path/route/street laid with either concrete, cobblestones, bricks, tiles, marble etc., is never just one element of a passage. It is never just a street. The linear vectors of accessibility routes graphically presented in figures 1 and 2 should be considered as living elements and as such as elements that develop a chain of interactions with the every-day life of the users.



Fig. 2 - Accessibility analysis, map of 1958



Fig. 3 Accessibility analysis (2022)

Several observations listed below can be drawn from the accessibility analysis:

1. Zone 1 was in 1958 a more compact urban unit mainly framed by main routes and having an internal structure of moderate access routes and limited access (more private) areas, while today due the increase in population density the developments have been extended towards the internal structure of the urban unit creating main access routes and a new division of the whole.
2. Today Zone 1 can be considered of being composed of 3 sub-zones (south, central, north) which are defined from the east-west routes that have gained more importance over the years.
3. Moderate and limited access spaces providing kind of quiet and semiprivate spaces, have diminished in the course of 60 years, in favor of direct access areas and more publicly used and crowded spaces.
4. What is immediately noticeable is the prominence of the green tone, not just as a frame color, as was shown in prior research, but also how the ease of movement transcends not only the vast surface but also the mini inner areas. Regardless of whether they overlap, it is noticeable that as the red hue begins in the primary diagrams, the green color becomes prevalent in the areas previously considered to be more private.

### Relationship between the individual and the common space

This section aims to analyze the changes that have happened in the relationship between the individual and common spaces. A figure and ground graphic representation of Zone 1 has aided in the production of the following abacus, which categorizes the interaction that the individual buildings establish with the common street area in two different historic periods (1958 and 2022).

They are divided as follows:

1. Buildings easily accessible from the main road/s (direct access)
2. Buildings accessible from secondary road/s (moderate access)



### **Buildings with limited access**

The comparison shows that the progress of development does not exclude secondary roads either. Even now the internal paths with moderate and limited access have turned into derivatives of the main road, this pertains to the density and usage frequency of the area, where the flow of the population and the flow of rapid construction are directly influencing each other.

While in 1958 the direct access buildings were those that were built along the main axes framing the zone, today it is noticed that there is an increase in the volumes, and scale of developments (apartment blocs) in the internal part of the urban unit also. The smaller, internal areas comprised by mainly individual buildings which prevailed in the internal part of the urban unit in 1958 result today as very diminished in numbers.

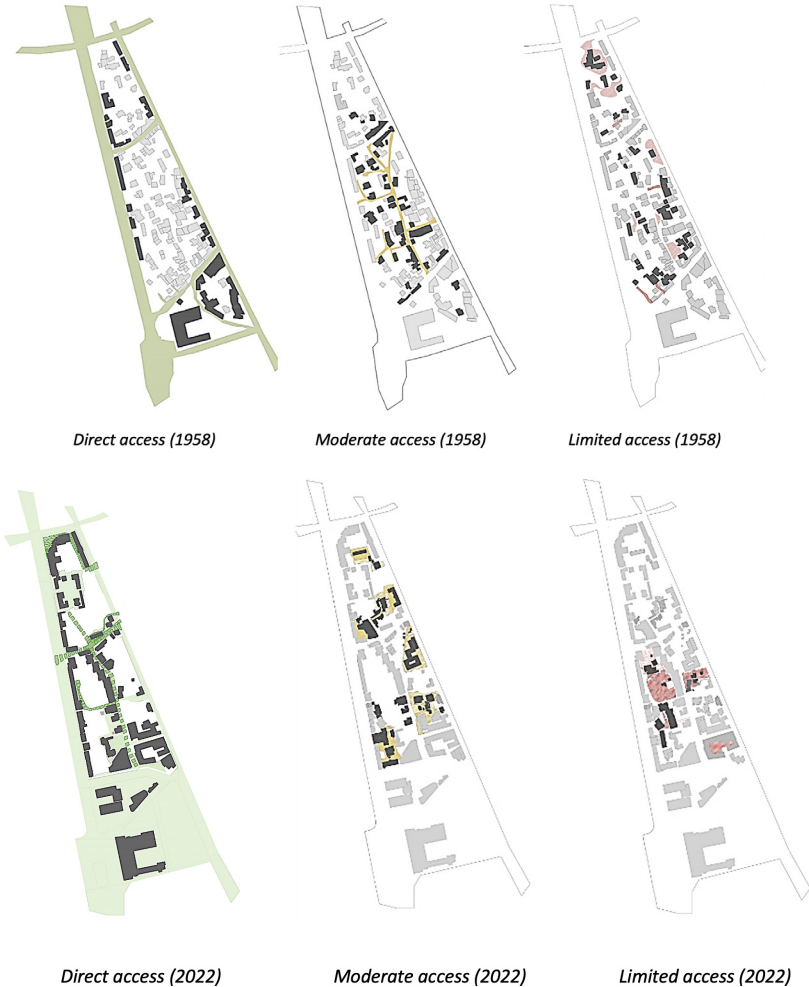


Fig. 4 Abacus showing the comparison of accessibility patterns in 1958 and 2022

## Relationship between the individual and the semi-private territory surrounding the dwelling (courtyard / garden)

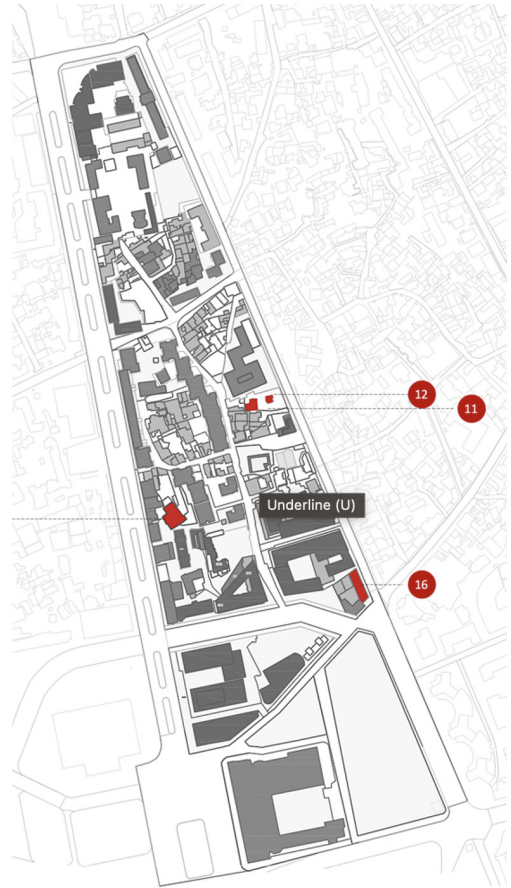
The following section takes into consideration three historic villas in Zone 1, that date back to the period between the end of 19th century and the beginning of 20th century. Being permanent elements in the last 60 years, they can be an indicator towards how much existing buildings were influenced by the developments in their surrounding urban unit, in terms of accessibility, and based on their typologies.

Villa No. 11 is one of the residences of Petrela family. It is a two-storey villa built around 1900's. The presence of decorative elements in the façade as characteristic feature of the early 20th century is present in the exterior. The building faces the today busy and crowded "Barrikada street", however it still has conserved its courtyard providing a semi-private space for its inhabitants. The above serves to develop the sense of security as well as liberty, as the yard becomes the primary space from which family activities are carried out, completely independent of the outside world.

Building no. 12 is the Tekke of Sheh Dyrri, a religious building, however it has been constructed in the typology of vernacular architecture that prevailed in Tirana region until the end of 19th century. This building also follows the same logic of

providing an internal courtyard for the users while the main entrance gate to this courtyard faces the busy street The following section takes into consideration three historic villas in Zone 1, that date back to the period between the end of 19th century and the beginning of 20th century. Being permanent elements in the last 60 years, they can be an indicator towards how much existing buildings were influenced by the developments in their surrounding urban unit, in terms of accessibility, and based on their typologies.

Villa No. 11 is one of the residences of Petrela family. It is a two-storey villa built around 1900's. The presence of decorative elements in the façade as characteristic feature of the early 20th century is present in the exterior. The building faces the today busy and crowded "Barrikada street", however it still has conserved its courtyard providing a semi-private space for its inhabitants. The above serves to develop the sense of security as well as liberty, as the yard becomes the primary space from which family activities are carried out, completely independent of the outside world.



Building no. 12 is the Tekke of Sheh Dyrri, a religious building, however it has been constructed in the typology of vernacular architecture that prevailed in Tirana region until the end of 19th century. This building also follows the same logic of providing an internal courtyard for the users while the main entrance gate to this courtyard faces the busy street



Fig. 5 - Villa no.11, photo credits M.P.Demaj



Fig. 6- Tekke of Sheh Dyrri, photo credits M.P.Demaj

### **Relationship between the individual and the private space (dwelling)**

In reference to the similar relationship that exists between the individual and the private space / dwelling, as well as the person in relation to the personal spaces he is offered or creates, it is additionally important to highlight the Petrela family's second villa (villa no.16), which is located at the crossroads of two main routes, Barrikada street and Dibra Street. The three-story residence, built 27 years after the first Petrela's villa, has similarly found its answer for the enrichment of private areas separated from the outside world, which in this case does not include neither a wall nor the courtyard within it. The addition of the terrace element provides the needed private space in this case.



Fig. 7 - Villa No.16 – photo credits M.P.Demaj

The selected villas display a kind of relationship between common and private spaces that prevailed in Zone 1 until 1990s. While analyzing the changes that happened in these relationships the following catalog is developed. (fig..) where characteristics borrowed from present objects are recorded based on their location. The graphic presentation of the results in this section shows the changes in the relationships that the three selected buildings have with their surrounding urban unit. As noted in the introduction this Zone has experienced an increase in density but also an increase in height of new buildings. The fundamental principles of maintaining the appropriate distance between buildings have not been considered and the graphic representation of the urban silhouette close to the selected buildings displays this fact. Suffocation of historic 2-3 stories buildings is caused by the setting of high-rise structures in a relatively close proximity. Construction of the multi-story buildings in the immediate area, in these cases interrupted the boundary that belonged to them and also interrupted the space that belonged to them.

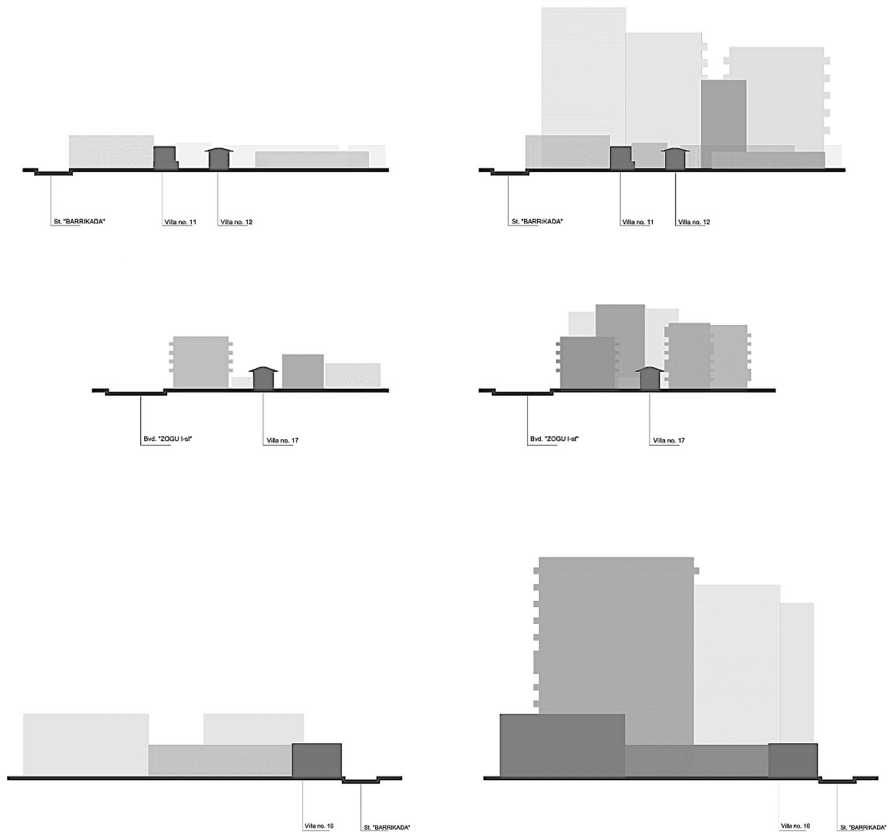


Fig. 8 - Comparison of the changes in the relationship of the studied villas with the surrounding urban unit 1958 (left) towards 2022 (right), schematic section

## **Conclusions**

The analysis and comparison approach constitutes the core of the present research, which serves as a method for understanding and raising awareness for a situation that is currently happening and is expected to continue for the following years.

The analysis demonstrates that there exists an imbalance between the appealing city's ideals and the real circumstances that Tirana residents face on a daily basis. The observations derived by the comparison may be perceived in the following manners: (1) the people concept of their physical well-being and the goals wanting to attain for one's self has changed through time. So far, the essential shift consists in the inhabitants consciousness as citizens and makers of their personal space. What was formerly considered essential, that is transitory spaces from common to private (such as courtyards) has been changed and may have taken on a new form and value. (2) the common spaces are being reduced to movement axes and the urban units are losing their own peculiar characteristics made through an interconnection of common semi-private and private spaces. They are rather going towards the unification of the urban character, being limited to buildings and streets and lacking those small spaces that are linked to the local identity and diversify and enrich the urban form.

## **References**

- Aliaj, B., Lulo, K., & Myftiu, G. (2003). Tirana - the Challenge of Urban Development. Tirana: Co-Plan.
- Bushati, V. (2012). Vilat e Tiranës, gjysma e parë e shekullit XX. Polis Press.
- Dhamo, S., Thomai, G., & Aliaj, B. (2021 ). Tirana qyteti i munguar. Polis Press.
- Leupen , B., & Harald, M. (2011). Housing Design, A Manual. Nai Publishers.
- Velo, M. (2013). Betonizimi i Demokracisë. Tirana: UET Press.

# The Architecture of Hospitals. Learning From the Past

Ph.D. Candidate. Franklind JESKU  
*POLIS University, Albania*

DOI: 10.37199/c41000110

## **Abstract**

Reading architecture through resilient witnesses like hospitals or healthcare facilities offers a tool for unlocking the elemental and generative principles of architecture and how architecture builds societies and vice versa.

Every social class is treated by hospitals in that specific historical time. Medicine, healthcare, and habitations are interrelated keys to exploring how this infrastructure can help to heal and the contribution of resilience in the architecture's role in shaping our society and its health. In this light health is considered a human right.

Consequently, hospitals influence individual behaviors in advancing human rights. This paper is part of a theoretical framework over the archetype and organization form of the hospital architecture. For many years, the issue of form composition in architecture has been overridden in favor of a series of studies on phenomenology or information, ignoring the fundamental issue of the discipline of architecture, which is precisely related to the organization of form. Nowadays, the essence of composition in architecture often dominates our profession's fundamental principles. The subject of this paper is a historical excursus of hospital and their relation to the specific context and historical period. the formal organization of hospital architecture is analyzed and studied in the functional, tectonic, and compositional plans. This research tries to find the balanced connections between form, function, and composition in hospital design, considering their context and history. Beyond technicalities, this study focuses on understanding how the organization of a hospital can impact the function of a hospital, healing, and well-being. The investigation starts with a historical overview: how have hospitals changed and evolved over time, and what can we learn from the most important examples of each era in the past?

Keywords:

Health, Hospitals, Architecture, Resilience

## Introduction

According to Walter Benjamin, the materiality of architecture and artifacts, rather than the intentions of architects or architectural theory, is one of the most important witnesses (Benjamin, 1935) of human society because it can physically demonstrate the operation of reification and commodity fetishism .

Therefore, reading architecture through resilient witnesses like hospitals or healthcare facilities offers a tool for unlocking the elemental and generative principles of architecture and how architecture builds societies and vice versa. Every social class is treated by hospitals in that specific historical time. Hospital and system design, following the need for social change, can strengthen resilience where it is missing, adapting to the fast-evolving world.

The different periods to study start from The Greek Asclepieions, going to the medieval ages, passing through the Renaissance of Brunelleschi, followed by the Nightingale Era and the Modern Movement, from the Alvar Aalto's Sanatoria Period to the Megahospitals decades, finishing with Le Corbusier's masterpiece "Hospital of Venice" project.

## State of the art

Throughout history, many natural and man-made changes have altered the way cities were originally designed or laid out. For some, the urban shape developed as a result of socio-political reasons, religious separations, or economic divides. For others, a different approach has allowed for uniquely mixed cultural atmospheres. And while the development of cities is generally slow, occasionally cities experience dramatic and immediate changes to the urban fabric – the results of natural disasters, military conflict, or industrial catastrophes. The capacity of humans and cities to be resilient is the main argument that can justify the sense of doing architecture and it is the main framework in which this research has to work.

The architecture of health is entering new paradigms, where technical, emergency, and resilient solutions are taking advantage of more architectural issues.

The quality in terms of the architecture of a hospital can also indicate a high quality of living in a specific society. The academic accumulated knowledge of the hospital design of each society can give an overview of these qualities, by defining guidelines for future development. Nowadays, the overview and concern is that recent hospital buildings have not responded to contemporary demands adequately. The hypothesis is that this view is with strong foundations and that the foundations are mainly related to the architectural quality of the majority of hospitals. The hospitals, also as we have seen after COVID-19, have not reached the level of other major public buildings such as airports or malls. The reasons for this lack of quality are the shortcomings in the design process. This research, as stated before, will start with a historical overview, taking into consideration different historic periods and the main hospital archetype for each period. The process of diving into the eras will also underline the different senses or interpretations of the term "hospital", as healthcare adapts to historical events. Moreover, the hospital is the perfect place for paradox: it should adapt to the human dimension but also be large to make more economic sense. It should be open outside for the city but also secure, and open inside but also prevent infection spread, and it's the place where technology should coexist with natural environments for helping in healing. The time of a hospital is the time of a city, where part of it is out of time before even being completed, and here architectural design can prevent or help this process. By analyzing each building, we will see how some archetypes are more flexible and adaptable than others, and the less adaptable ones were predominant at their time. Hospitals have always been declared urban landmarks, even after

<sup>1</sup>In Marxist philosophy, the term commodity fetishism describes the relationships of production and exchange as social relationships among things (money and merchandise) and not as relationships among people.

WWII, as we understand the importance of the hospital being harmonized with its surroundings and with the city itself.

The state of the art of hospital architecture is an evolving field, shaped by changes in medical technology and rising patient expectations. Advances range from architectural concepts inspiring a more efficient organization for service delivery to building systems ensuring safety and comfortable conditions for patients. Hospital designers seek to create healing environments that improve clinical outcomes while addressing healthcare equity issues globally. The design also incorporates sustainability elements, as architects are challenged with responding intelligently to climate change concerns through bioclimatic strategies such as decarbonized energy sources or accessible green spaces within urban areas. In modern hospitals, large open public atriums have emerged which serve both functional and recreational purposes. As balconies provide views outwards into gardens and natural landscapes creating positive psychological stimuli due to associated connections between viewing greenery vs. stress relief. During the last pandemic (Covid-19) the human race faced the biggest mass lockdown in history. Although it became a topic broadly debated by several study fields, the pandemic opened a new door to a better understanding of the significance of resilience in architecture and resilient cities through health facilities.

For the first time, the World Health Organization (WHO) found it necessary to include architects in their intervention plan (World Health Organization, 2020). Architects finally became crucial in responding to the emergency demanding infrastructure for the infected patients to be treated. The emergency building of new treatment centers, hospitals, and other services became more important than ever.

After the peak of the pandemic, the World Health Organization created *Téchne*, an interdisciplinary group that provides guidelines on some key points of the emergency healthcare system or facility buildings. *Téchne* is working on building emergency treatment centers mostly in the African continent, collaborating with local institutions and local constructors.

The architecture of health is entering new paradigms, where technical, emergency, and resilient solutions are taking advantage of more architectural issues.

In Europe there is an assortment of situations regarding the health system, giving rise to multiple and sometimes divergent responses to emergency situations such as during the first stages of the Covid – 19: one of the biggest issues of healthcare facilities and institutions in response to the pandemic was, for example, the adaptation of existing hospitals to the increasing number of affected patients.

The response of each country, in terms of infrastructure, depended on the architecture of health, which is also strictly connected to their health system. Hospital design is interconnected to system design, therefore understanding the historical evolution of the architecture of health by improving it is the way to understand the health system of each country and improve it.

## **Evolution of Hospitals: Lessons from Iconic Case Studies**

The Greek Asclepieions

The Asclepieions offer us an interesting dilemma. On one hand, they allowed priests to interpret patients' dreams as a form of therapy. On the other hand, many aspects of their architecture and methods were ahead of their time — similar to today's hospitals with features such as closed-off areas & therapeutic spaces that influence modern sanatoria design. Nowadays, in Greece, there are efforts underway to revive these ideas by introducing "Asclepieion Parks" which promote health and culture interconnectedly by using open urban spaces for various activities beneficial for both

<sup>3</sup>WHO's network of architects, engineers, designers and public health practitioners from several institutions globally, that responds and prepares to acute public health events with urgent and customized support.



individuals and society at large (Sotiriou & Boddy 2006). Resorting back to ancient techniques like water/mud baths or medical herbs ointments prescriptions still apply today (Akurgal 1985), whereas healing was reflected in balancing nature & human beings together. Sports stadia where champions stood as role models towards society were also included (Sotiriou & Boddy 2006) while being part of major cities around the world – e.g the Asclepieion at Pergamon (Fig.1), together with those at Epidauros and Kos, was one of the most important therapeutic centers in antiquity. The disposition is miscellaneous of buildings connected by underground tunnels from treatment complex structures some resembling two-story cylinders presenting six semi-circular apses overall surrounded by stoas (Akurgal 1985).

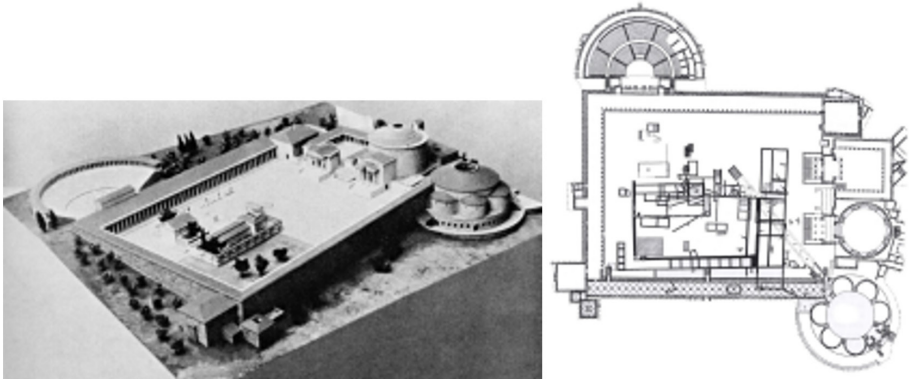


Fig. 1

### The Medieval Era

At Asclepieia, the main hall was usually a long building with an open portico in one direction, originally designed to act as a shopping arcade. This type of plan became popular and was used for hospitals throughout history - the Roman military hospitals were also based on this design. Derived plans like these have certain advantages which are now more relevant than ever when it comes to designing efficient healthcare establishments. For example, Vindonissa Roman military hospital (in Switzerland) adopted such a layout (Fig.2); consisting of private and public spaces that made way for what we would today understand as true hospital architecture.

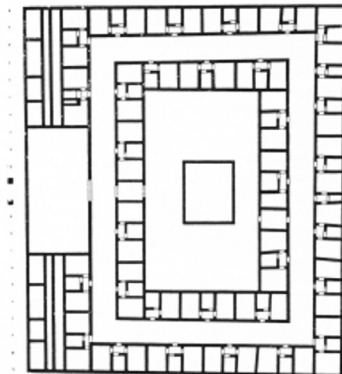


Fig. 2

In the Middle Ages though, poor conditions coupled with inadequate medical care dominated wellness or health promotion factors at most facilities – thus earning them nicknames such as ‘the house of death’ due to their association with mortality. A common plan form used during the late Middle Ages was the cruciform with the nuns’ nursing station in the center. After 1334, with the construction of Santa Maria Nuova in Florence cruciform plans suddenly began popping up all across Europe, particularly Italy; making nursing stations centrally located so even those furthest away could see them easily without movement through Catholic symbolism – illustrating how prior religious recognition had an important role in the development of modern medicine.

### The Renaissance and F. Brunelleschi

The first hospital building which has been a lasting architectural masterpiece, Brunelleschi’s ‘Ospedale degli Innocenti’ in Florence (finished c. 1445), was originally an orphanage though its name - ‘Foundling Hospital’ - carries the meaning of a hospital. In the Renaissance period, people had yet to have a solid definition of what constitutes a hospital. On one side of Piazza Santissimo Annunziata, lies this beautiful arcaded front (Fig.3). Years later in 1456 went another famous Italian architect; Filarete designed another large and rectangular plan resembling many iconic hospitals we see today 500 years after his time (Fig.4). He even provided restroom systems with advanced features like flushing water cisterns and cabinets next to each bed. Though little remains from Filaret’s original plans much remains of his magnificent work at Ospedale Maggiore being used until now for medical teaching & administration purposes according to official records.

In France, the publication of the book “L’homme machine” (Man a Machine) in 1747, written by the atheist physician and philosopher Julien Offray de Lamettrie, had paved the way for a new kind of rationale concerning man as a physiological being. In an intellectual atmosphere dominated by the major figures of the Enlightenment, Diderot and Voltaire, and with the Revolution just around the corner, the term “machine à guérir” (machine for healing) was coined for the first time (by Condorcet, Lavoisier, Tenon et al.) to describe a hospital for the future.

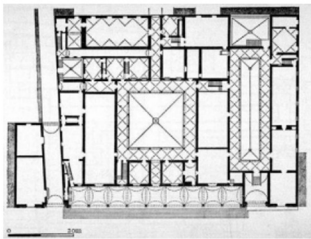


Fig. 3

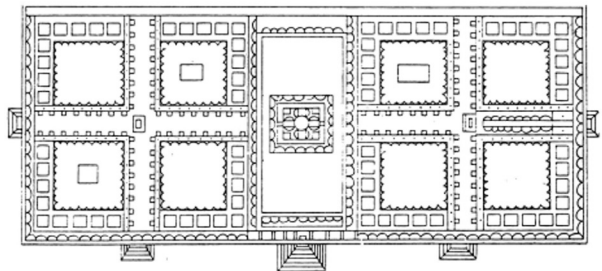


Fig. 4

### The Modernist Movement

The first pavilion hospital is generally considered built in the 18th century at Stonehouse, near Plymouth, England, by Rowehead (Fig.5). This hospital was recognised as the first of its kind and was designed to help prevent the spread of infection, with a large open quadrangle in the center and ward blocks located away from each other. Nowadays, this idea of a pavilion hospital, popularized during the ‘Nightingale Era’, is being brought back as a functional and organizational concept. Many pavilion-type complexes around the world have a common problem - they were

<sup>3</sup>Florence Nightingale (1820-1910), known as “The Lady With the Lamp,” was a British nurse, social reformer and statistician best known as the founder of modern nursing. Her experiences as a nurse during the Crimean War were foundational in her views about sanitation.

originally built without proper connections between the pavilions. In some cases these connections were added at a later date in the form of heated corridors or tunnels, but in many cases, only covered open galleries or other such inadequate connection measures were added. This became a problem when there were changing clinical practices in the later half of the 20th century that required better connection and integration between medical services - something that was overly difficult to achieve with the existing structure. Changing architectural fashions at the beginning of the 20th century further hindered the process by rendering pavilion designs less generic and future-proof when compared to those of Stonehouse or Louviers.

Throughout Europe, neo-classical and other revivalist block hospitals were more popular than ever. However, the Hôpital Lariboisière, which was completed in 1854, was an innovative approach.

This hospital in Paris was designed by Martin-Pierre Gautier and was built as a response to the 1832 cholera epidemic, which revealed the current state of inadequate hospital services. This



Fig. 5

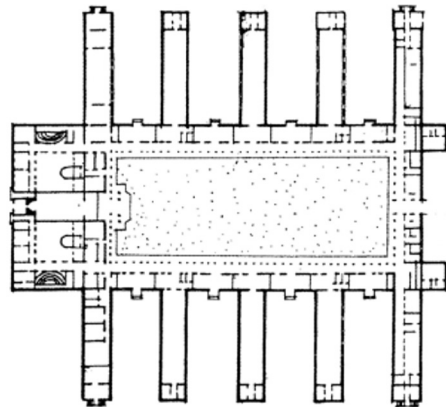


Fig. 6

hospital (Fig.6) was funded by the generous bequest of Countess Elisa de Lariboisière, a wealthy childless widow, who had died shortly before the project began.

#### The Sanatoria Period: Alvar Aalto's Masterpiece

Due to the popularity of the Industrial Revolution and the growth of cities, tuberculosis became a prevalent disease. The only cure for the disease was fresh air and sunshine. To combat the epidemic, a new generation of architects in Europe formed and began producing widely influential sanatoria to treat patients. The exchange of ideas between these countries was strong; facilities such as Zonnestraal and Paimio could be seen in numerous magazines. But, each had a different style: Germany favored large stripe window walls while France and Finland used continuous balconies. In the 1930s, single rooms grew in favor among those in treatment due to the trend of *existenzminimum* and *neue sachlichkeit*. Despite this, many sanatoriums still used the same curing techniques, such as Plateau d'Assy - a facility built in France with individual cure balconies. Richard Döcker's work involved finding the right gradient for terraced solutions to get the optimal

<sup>1</sup>In architecture the term mainly relates to Neues Bauen (New Building) and avant-garde currents of rationalist and functionalist Modernism that existed alongside conservative counterparts and Expressionism.

amount of sunshine. Alvar Aalto's Paimio Hospital (Fig.7) from 1933 was not only one of the most iconic symbols of modern Finland, but also featured many patient-centered approaches, such as light fittings and washbasins designed specifically for noise reduction. Despite some shortcomings, it remains a heavily inspiring place for patients today.

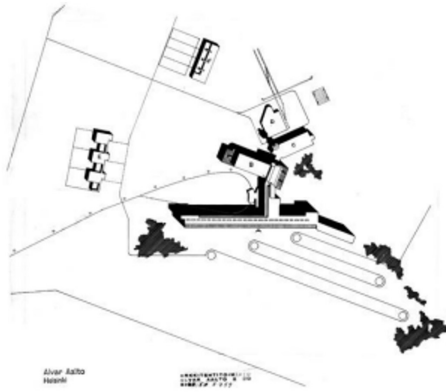


Fig. 7

Martti Teikari's Research

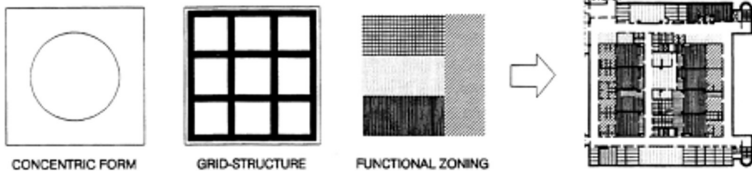
Martti Teikari researched seven central hospitals in Finland that were built in the 1970s and 1980s, looking at the level of staff satisfaction when it came to operating, radiology and emergency departments. From his findings, North Carelia Central Hospital (designed by Veijo Martikainen Architects and finished in 1989) (Fig.8) had the highest satisfaction level with the operating department at 95%, and Mikkeli Central Hospital (Fig.9) (designed by Marja and Erkki Wirta Architects and finished in 1985) had the highest satisfaction level for radiology at 80%.



Fig. 8



Fig. 9



Teikari analysed the three elements in the plans that seemed to provide the winning formula: concentric form, grid-structure and functional zoning (Fig.10). These three terms are important for creating adaptable, flexible, agile, future-proof and possibly even therapeutic environments. Surprisingly, the radiology departments in Mikkeli (which had the highest satisfaction score) had the greatest total corridor length and longest walking distances of all six examples studied. Yet, the staff in Mikkeli ” was the least stressed about the distances” according to Teikari. Further, North Carelia’s operating department had similar findings. Most architects agree with Teikari’s three essential elements and use them to pick the “winners”. This evidence-based conclusion further shows that the most “beautiful” plans have the best outcome, a conclusion Jullian also reached during the design process of Venice Hospital: “the best plan plays the best tune”.

Teikari’s evidence suggests that it is more important to have good design that is simple and clear with enough daylight in appropriate areas, and that is organized into different functional areas, than it is to worry about measurable aspects such as walking distances or how close different areas are to one another.

### Megahospitals decades

After World War Two, the Hill-Burton Act triggered a great surge in hospital construction across the United States. The ‘muscular expressiveness’ of Modernism was seen as the best way to meet the requirements of the new hospital buildings. Before the 1960s, monobloc hospitals featured long, centralized corridors. But soon, so-called ‘racetrack’ hospitals (with two corridors) appeared, such as St. Joseph’s Hospital in Burbank, California, designed by Welton & Beckett. One of those hospitals, the Archbishop Bergan Mercy Hospital in Omaha, was an example that spread all over the world, but the difference of the European usage of this plan was the using of glass floors for rooflights to bring in illumination to working areas in the centre. This was a stark contrast to American hospitals, since those in Europe were designed so that the patient rooms got daylight while the staff didn’t. Bellevue Hospital in New York City was an earlier example of a ‘cube’ hospital (Fig.11). While early models were typically pure ‘monoblocs’ - high monolithic masses - the need for space for diagnostics and clinical procedures meant the plinth section of the building became more important. Thus, the ‘tower on a plinth’ model - also referred to as the ‘Breitfuss-model’ due to its neutrality - became the new norm.

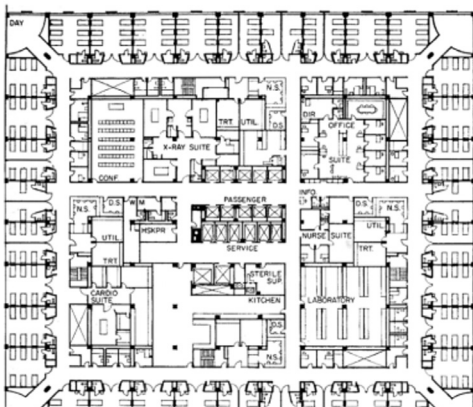


Fig. 11

## Venice Hospital by Le Corbusier

Le Corbusier and his close collaborator, Guillermo Jullian de la Fuente, designed Venice Hospital in 1964-70 (Fig.12). This innovative extension of the existing city was composed of modules based on measurements taken from the city streets around it and was, essentially, floated on the Cannaregio canal. However, the project was never completed due to Le Corbusier's death in 1965. The team presented ideas including a diagnostic system with onsite radiology, temporary accommodation for recovering patients and their visitors, an internal street of shops and restaurants, and a way of integrating technical systems into the building. The design also divided critical patients from those with short-term stays, with the latter located on street level to simulate a sense of normal life, and the former in cells with no external disturbances to hinder them. As an interesting approach, the patient's beds are raised to a level that creates an equilibrium between the standing visitor and the recumbent patient, thus eliminating the feeling of being looked down upon (Fig.13). Pablo Allard and Jullian had lots of conversations in 2001. Jullian was referring to a report by the French Ministry of Health when he said that the issues mentioned there were easily solved. What Jullian was actually interested in was the architecture of the hospital. He went on to say that the building elements were so precise that the plans looked like musical notations. One day, everyone in the office chose a different sound, and Jullian associated each sound with a building element. The tunes created from that were then played. From such tests, they came to the conclusion that the best plan was also the best tune, even though some empirical evidence was absent.

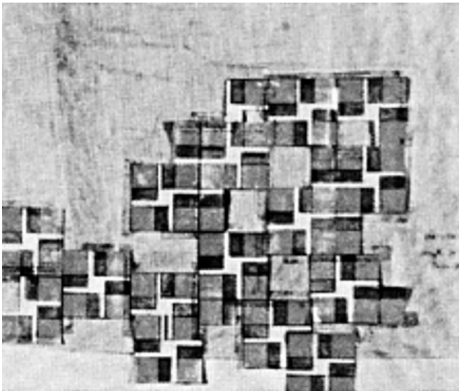


Fig. 12

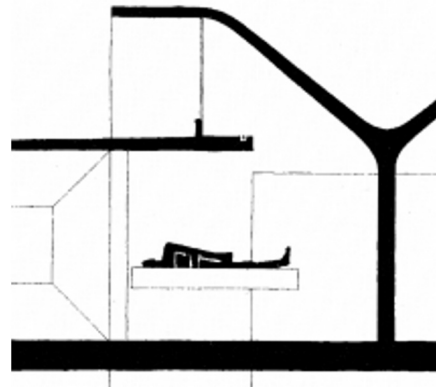


Fig. 13

## Conclusions

Using hospitals and other healthcare facilities as steadfast witnesses, this article concludes by exploring the profound connection between architecture and society and revealing the fundamental and generative principles of architectural design. We have looked at how architecture both shapes and is shaped by the society it serves via the prism of healthcare. As important organizations that have served all socioeconomic classes throughout history, hospitals are a prime example of how habitations, healthcare, and medicine are intertwined in terms of design.

The importance of hospitals in influencing individual behaviors and furthering human rights is highlighted by health as a basic human right. This study has added to the body of knowledge on the organizational structure and archetype of hospital architecture.

Our study focused on the formal structure of hospital architecture and included a thorough inves-

tigation of its composition, utility, and tectonics. We have gone beyond the technical components of hospital architecture to grasp how the arrangement of a hospital may significantly affect its operation, healing processes, and general well-being of patients by working to develop harmonic links between form, function, and composition.

We began with a historical overview and followed the development of hospitals through the ages, learning from noteworthy examples from each period. We have emphasized the ongoing significance of hospital design as a concrete representation of social values and objectives throughout our investigation. This paper ultimately reinforces the notion that the design of healthcare facilities goes beyond aesthetics to have a profound impact on lives and communities, demonstrating the essential role that architecture plays in forming our societies and promoting the health and well-being of individuals.

## **Bibliography**

- Aalto, A. (1933). Paimio Sanatorium. Jyväskylä: Alvar Aalto Museum.
- Addington, M., Kienzl, N., & Intrachoto, S. (2001). Mat buildings and the environment. In H. Sarkis (Ed.), *Case: Le Corbusier's Venice Hospital and the mat building revival* (pp. 66-79). London: Prestel.
- Akurgal, E. (1985). *Ancient civilisations and ruins of Turkey from prehistoric times until the end of the Roman Empire*. Istanbul: Haset Kitabevi
- Benjamin, W. (1935). *The work of Art in the Age of Mechanical Reproduction*.
- Cohen, J.-L. (2011). *Architecture in Uniform: designing and building for the second world war*. Paris: Editions HAZAN.
- Emergency Architecture and Human Right. (2021). *Resilient cities*. Copenhagen.
- Emergency Architecture and Human Rights. (2016). *Architecture for Humanitarian Emergencies*. Copenhagen: Emergency Architecture and Human Rights.
- Emergency Architecture and Human Rights. (2019). *Manifesto: Architecture is a Human Right*.
- Foucault, M., Kriegel, B. B., Thalamy, A., Beguin, F., & Foriter, B. (1979). *Les machines à guérir (aux origines de l'hôpital moderne)*. Paris: Pierre Mardaga .
- Foucault, M. (1970). *The Order of Things*. London: Tavistock.
- KU Leuven. (2020, November 27). [arch.kuleuven.be](https://arch.kuleuven.be/english/news-calendar/news/archive/faculty-of-architecture-helpsthe-chn-network-enhance-pandemic-resilience). Retrieved from <https://arch.kuleuven.be/english/news-calendar/news/archive/faculty-of-architecture-helpsthe-chn-network-enhance-pandemic-resilience>
- Le Corbusier (1929). *The City of Tomorrow*. London: The Architectural Press
- Mansfield, J., & Murphy, M. P. (2021). *The Architecture of Health: Hospital Design and the Construction of Dignity*. Cooper Hewitt, Smithsonian Design Museum.
- Mau, B., & Koolhaas, R. (1995). *S, M, L, XL*.
- Smithson, A. (2001). How to recognise and read matbuilding. In H. Sarkis (Ed.), *Le Corbusier's Venice Hospital and the mat building revival* (pp.90-103). London.
- Sotiriou, D. (2006). *Modern Asclepieions*. In B. Thellman Beck, M. Kekomäki, K. Meigas & E. Vauramo, 18
- Sotiriou, D., & Boddy, K. (2006). *Guidelines for Modern Asclepieions and Setting up of Services*. Retrieved Board for Hospital Facilities (Bouwcollege).
- TAMassociati. (2017). *Taking care, architecture with Emergency*. Electa.
- Tschumi, B. (1996). *Architecture and Dijunction*. Cambridge: The MIT Press.
- World Health Organization. (2020). *Severe Acute Respiratory Infections Treatment Centre*. World

Health Organization.

World Health Organization. (2022). Principles to guide health system recovery and transformation in Ukraine. World Health Organization.



# **Concept of heritage Materialization and Modernity INTERACTION BETWEEN MODERN CONSERVATION AND MODERNITY**

Ph.D. Candidate. Kristiana MECO  
*POLIS University, Albania*

DOI: 10.37199/c41000111

## **Abstract**

This research aims to investigate the inclusion of approaches and ideas of heritage materialization and modernity through analysis and case studies of both the period of modernity and the preservation of cultural heritage. The relationship we find between the materialization of cultural heritage and modernity is a dynamic interaction between the preservation of cultural heritage and the rapid transformations that occur with modern architecture. Materialization is both physical for cultural identification and historical heritage that is related to concrete places and traditions of a certain space or a physical place. The preservation of objects of important cultural value, such as old buildings, monuments, are part of the process of materializing the value of heritage.

The methodology used shows how the modern method tries to protect the materialization of the heritage from the influences of the modern period such as urban expansions, mass productions by making an adaptation of the traditional methods to the contemporary ones. The methodology will be developed by comparing the materialization and modernity without affecting its history, but preserving it.

The aim of this study helps us to understand how modern conservation navigates practical challenges, in innovative technologies, strongly preserving materialized heritage in the face of new modern forces. By promoting a dialogue that maintains the balance between the materialization of heritage and modernity, in this way a sense of continuity with the past is preserved in the complexity between the present and the future.

The initial hypothesis is related to the research question: What is the connection between modern conservation and modernity? Heritage has an important role in determining not only the physical identity of objects, but also the individual and collective identity of people. It connects us with the past, influences the present and informs the future.

The results are expected to show how heritage is a factor that is preserved, passed on to future generations, materialized and guarantees important values in our society. In general, the materialization of cultural heritage is fundamental in the transmission and preservation of data. Every object and building must be preserved physically and also from a historical point of view, since they have a certain value.

Keywords

heritage, conservation, modernity, materialization, preservation, city

## **Introduction**

This paper examines the heritage value of contemporary architecture. In particular, it examines how different social, political, economic and cultural contexts have influenced, contested, changed and used the understanding of modern architecture. This thesis examines two case studies, showing how modernity has influenced the materialization which is preserved as a part of the cultural heritage. The two case studies that make up this study are listed, each with its own thematic introduction and conclusion. This entry describes the larger search background regarding the basic ideas of heritage and the value of heritage, materialization of the value of heritage and cultural heritage, and the relationship between heritage and modernity ideologies. The introduction concludes with a review of the literature on heritage value and conservation.

This paper also considers the relationship between the materialization of heritage and modernity. It represents the challenge that exists between modernity and the preservation of cultural heritage. Analyzing material heritage and non-material heritage, this paper aims to show the interaction that exists between the materialization of heritage and the forces of modernity.

The concept of these two key words as the materialization of heritage and modernity are adapted to the course of modern times. The materialization focuses on the physical preservation of monuments, objects, villas or the documentation preserved for these historical values. So, values that pass from generation to generation and preserve the history of a country. The most important thing is how heritage materializes and shapes the interpretation of culture and history.

Modernity changes by becoming more complex and moving away from traditional elements and approaching rationality and individualism. Since it is more innovative, always following the new rules, it puts in tension the few points where the connection between modernity and cultural heritage is created. To connect these elements together, we must restore the buildings and monuments to preserve the historical values. Being that modernity is related to different transformations in society, this transformation is characterized by a departure from the traditional towards new values. With these changes, the materialization is also connected with innovation, the integration of technologies that promote the improvement of life. These processes affect the evolution of society.

The preservation of monuments or objects of cultural importance, such as old buildings and works of art, are part of the materialization of heritage. Cultural heritage has an important role in defining individual and collective identity because it connects us to the past and informs us about the future. . Heritage can be preserved and passed on to future generations by being materialized and in this way highlights the values in society.

The materialization of cultural heritage values has an important and fundamental role in its preservation. In the restoration of architecture, the most important thing is the restoration of the structure of buildings or monuments, and therefore it is valuable for the preservation of cultural heritage that has value for our society.

Finally, we must emphasize that the concept of materialization and modernity both act in a dynamic way between preservation and progress. If we manage to maintain this balance between the two, cultural heritage will become a vital aspect for contemporary society. These forces hold the key to the preservation and sustainable development of our common heritage for future gener-

ations. Wanting to adapt to the modern world, it is imperative that we value our heritage and its value in development.

## **Objectives and Materialization**

In architecture, the material is an important part which is related to the tools of architecture to identify virtual elements, photographs, images. Also, materiality in architectural objects is related to elements which are natural physical substrate. In architecture we limit materiality in the theoretical aspect as an image in representative objects. The object with materiality is related to the structural and aesthetic factors. Being that an object can be individual or a group of objects that are of different typologies like us:

- morphology
- stylistic argumentation
- materialization including new materials in construction.

Some of the objectives of this study are related to:

### **Objectives 1:** Examine the Impact of Modern Technologies on Heritage Materialization

Examine how digital technologies, virtual platforms, and multimedia contribute to the preservation, representation, and dissemination of cultural practices and artifacts in the modern era as you investigate their role in the materialization of heritage.

### **Objectives 2:** Explore the Tensions and Synergies Between Tradition and Innovation

Examine the intricate interactions that exist between cutting-edge techniques and conventional heritage preservation strategies in the current setting, noting points of conflict, adaptation, and cooperation in the materialization of heritage in modern societies.

The procedures used to preserve, interpret, and convey cultural heritage to modern audiences are collectively referred to as “heritage materialization,” which is a broad and ever-changing term. The merging of the materialization of heritage and modernity has emerged as an essential topic of research in a time of rapid technological advances and changing cultural norms. By looking at the theoretical underpinnings, real-world applications and implications of the materialization of heritage within the framework of modernity, this study aims to investigate this connection.

Definitions from the field of monument conservation are beneficial for the preservation of buildings:

- The preservation of monuments, which are objects, collections of objects and fragments of artifacts, is in the public interest. The preservation of objects is in the public interest if they have artistic, scientific, folklore, landscape or urban design merit and are important to human history, cities, urban estates or the evolution of labor and production relations.
- Monument protection areas are collections of architectural structures, including those in which not every architectural structure meets the requirements for an individual monument. In addition to complete architectural, landscape, horticultural and agricultural complexes, monument conservation areas can also be urban planning, cities, urban landscapes and silhouettes, districts and urban areas, residential properties, building complexes and road segments. If particular structures are crucial to the overall aesthetic, they should be listed, along with their immediate surroundings. There are also places of business and industry, transport hubs and places of worship. (fig 1)

In the end, we must comprehend how materials combine with structure to produce shape in structures, making them a fundamental precondition in the formation of an architectural institution. The material will follow three key procedures from the time it is received until it is applied. The first is the selection of appropriate materials, which is typically based on the future building’s in-

tended use and the opportunities presented by this natural resource. Second, it entails sculpting materials based on their attributes and how the architect wishes to express his artistic vision. The matching and assembling of the materials come last. Here, the articles are arranged in accordance with the stage of technological development that was at that time, as well as with how it was used and what consequences were anticipated.

This method of looking at materiality in architecture could lead to creative material use in the design field. The concept immortalized in this case extends beyond the conventional limitations of construction materials by starting with the qualities and properties of the material, including structure, elasticity, transparency, and fluidity. The various material activities highlighted here, including folding, bending, engraving, cutting, knitting, weaving, mirroring, and display, are the main points of interest.



Figure 1: Chand Baori, Indi / Source: <http://www.chandbaori.org/>

### **Heritage Materialization and Modernity**

As a dynamic construct, inheritance changes over time, it is not a static thing. Artifacts, customs, languages and practices all fall into these categories of tangible and intangible aspects of culture. It is necessary to reassess the preserved tactics, because modernity often challenges traditional general ideas and emphasizes progress and innovation.

The materialization of heritage is tangible in cultural materials for preservation and exhibition, it is called the materialization of heritage. The construction of museums, exhibitions and digital archives are all part of this process, as well as the conservation of objects, architectural designs and natural environments. New techniques and technologies brought by modernity have an effect on

the way heritage is manifested.

The materialization of heritage has undergone radical changes with the development of digital technology. New possibilities for immersive and interactive experiences with historical sites and objects have emerged due to 3D scanning, virtual reality and augmented reality. These technologies allow the preservation of heritage and its creative presentation to a larger audience.

Some case studies that help us better understand how elements of the modern alternate with the traditional. These are: Louvre Abu Dhabi, Virtual Museum/ British Museum.

The Louvre Abu Dhabi is a case study that clearly shows us how modernity has influenced the materialization of cultural heritage because it combines elements of architecture with the latest technology, especially highlighting traditional and modern elements. (Fig 2)



Figure 2: The Louvre Abu Dhabi/Source: <https://thespaces.com/louvre-abu-dhabis-giant-dome-creates-a-rain-of-light/>

Virtual Museum/ British Museum. The concept of virtual museums is a worthy example of how modernity allows to coexist with the traditional. These digital platforms allow individuals to become familiar with cultural artifacts and understand how the materialization of cultural heritage can be preserved. (Fig 3)

The interaction between the materialization of heritage and modernity raises several important points:

The challenges of heritage conservation have become difficult in a time of rapid change and progress; therefore, the authenticity, sustainability and moral implications of contemporary technologies must be carefully considered.

Accessibility and inclusiveness to ensure that many voices and views are included in the preservation and display of cultural heritage, modernity must facilitate more inclusion in the materialization of heritage.

The application of the latest technologies to the materialization of cultural wealth raises a number of ethical questions, such as those involving data privacy, cultural appropriation, and the monetization of heritage.



Figure 3: Virtual Museum/ British Museum / Source:<https://www.britishmuseum.org/>

### **Conclusions and discussion**

In the context of modernity, the idea of materializing heritage is a complex and dynamic process. The preservation and presentation of cultural heritage will always be at the center of cultural discourse, even as modernity continues to transform our environment. The theoretical foundations, practical applications and implications of this relationship are summarized in this study, with an emphasis on the necessity for a balanced strategy that values tradition while welcoming innovation.

Since modernism, modern society we, as architects, have been so focused on economic advancement and the search for something new that the primary purpose of the city becomes confused and loses its meaning, which is from people to people. The city is a construct that is initially related to geography and the specific social context that has more to do with people and pass a position on people's desires.

We must not forget the fact that a building is not a simple element placed on a white page and the relationships that this object must create are deeply based on its context and the understanding of

how it has evolved in relation to people and the Environment. People are the first consideration in the production of an architectural work as they are social creatures embedded in a particular physical location, such as a city or rural area.

Given that modernity has the interconnection of realities that have merged over time, heritage can be the link between cities and social experience in this sense. Here, we can use the essence of the past to create in the present for the future.

In the end, the idea of heritage is often associated with the past, with the preservation and restoration of ancient structures, cultural objects and traditional ways of life. But in the context of modernity and the rapid changes and transformations that characterize contemporary society, heritage also has a role to play.

Heritage can be a source of inspiration and direction in the context of modernity, providing a link to the past and a foundation for the future. In a rapidly changing world, it can also help foster a sense of continuity and identity.

Concluding that contemporary conservation is a common cultural heritage shared by all people. It upholds the past by highlighting the importance of these structures and recognizing the people to whom they belong as cultural heritage. As science and technology have grown in importance in recent times, they have increasingly contributed to the digitization and preservation of historical artifacts. We must consider the preservation of the original components and the basic framework.

## References

- JACKSON, A. (1970) *The Politics of Architecture: A History of Modern Architecture in Britain*. London, Architectural Press
- JACOBSEN, W.SUDENDORE (2000). *Metropolis: ein filmisches Laboratorium der modernen Architektur*. Stuttgart, Menges
- Curman.S. (1906). *Principles of Restoration*
- Pialos.O.J ( 2022) *HISTORIC PRESERVATION THEORY*.USA
- Ching, D.K.F, Jarzombek, M. & Prakash, V. (2011). "A global history of architecture". New Jersey
- Habermas. J (1981) – "Modernity, an unfinished project", MIT Press, Cambridge, Mass
- Pickard, R. (2008) "Analysis and Reform of Cultural Heritage Policies in South-East Europe", France
- LISCOMBE, R. W. (1997) *The New Spirit: Modern Architecture in Vancouver, Canada*
- LOEW, S. (1998) *Modern Architecture in Historic Cities: Policy, Planning, and Building in Contemporary, France*
- MACHEDON, L.; SCHOFFHAM, E. *Romanian (1989) Modernism: The Architecture of Bucharest, 1920–1940*, Cambridge, Mass
- MACRAE-GIBSON, G. (1985) *The Secret Life of Buildings: An American Mythology for Modern Architecture*, Cambridge, Mass
- ROZ, M, RIVET. P (1980) *Tony Garnier et son temps. Techniques et architecture*,
- SAMSON, M. D (1996) *Modern Movement in Germany*, *Journal of the Society of Architectural Historians*, Vol. LV, No. 2,
- Berndt. E,Christof. Th (2011) *Architecture Theory*, Köln
- Ruurd. R (2010) *Architecture in crisis*
- Berndt. Evers, Christof. TH, *Architecture Theory*
- Brislin.P (2012) *Identity, Place and Human Experience Architectural Design*
- Kaan.K (2016) *The Building site of modern architecture: On Louis Sullivan in Chicago*
- WINTER. J (2000) *Conserving the 'White architecture' of the 1930s*

# **CONSTRUCTIVE ELEMENTS OF PLANNED CAPITALS; "TIRANA SPINE" AND "ANKARA ATATURK BOULEVARD"**

Assist. Prof. Dr Zeki Kamil Ülkenli<sup>1</sup>,  
Attila Gürsel<sup>2</sup>

<sup>1</sup>*TED University, Turkey*

<sup>2</sup>*M.C.P., Turkey*

DOI: 10.37199/c41000112

## **Abstract**

The subject of this study is the "plan of Tirana", the capital of Albania since 1920, in particular the "main boulevard" in the city center, and the "Atatürk Boulevard" in the "planning story of Ankara", which was declared the capital in 1922, even before the end of the war of independence.

Both capitals are intended to prove the beliefs and endeavors of these new countries to their citizens and to the modern world.

The new Albanian government needed urgent government buildings such as ministries, the palace, and a strong form which would monumentally connect all these facilities; therefore, the main boulevard, which functions as the "spine" of Tirana's central business district, was designed as an idea by Italian architects in 1925. This "spine" circulation system was mainly inspired by the urban movements of the time, such as the linear city and as in the planning of Ankara; the beautiful city movement.

Ankara, too, had to demonstrate the strength and credibility of the young Turkish Republic, first to its own citizens and then to the entire western world. Therefore, with the choice of the new capital, ties with the Ottoman Empire were severed and Hermann Jansen, a world-renowned planner, was commissioned to prepare a plan for Ankara. In this plan, it was necessary for the positioning of new government buildings, mainly around the designed boulevard, like Tirana.

Tirana and Ankara are studied in the light of the historical development of capital city functions and the main titles of their planning stories: the spine and Atatürk Boulevard.

## **Keywords**

Tirana Spine, Ankara Ataturk Boulevard, Planned Capital Cities



## Introduction

Planned capitals, that is, cities planned from scratch or on the texture of an existing city to assume the function of capital, are primarily symbols of pride and the endeavour of nation-building. (Bozdoğan 2012, p.83) It is essential to show this to both citizens and the whole world. Therefore, they can't take their image and character from an existing city (Tankut 1990). The city is an abstract, always assumed as a geometric utopia identified with modernism (Figure.1).



Fig. 1 & 2 *La Turquie Kemalist* April 1935 and a book cover "to the greater Ankara" 1957

Ankara's past is insignificant, which makes Ankara a *tabula rasa* where big dreams for the young republic can be realised. (Bozdoğan 2012) (Figure 3) Citing an article in the magazine "Resimli Ay" (Month with Figures magazine) in 1924, just one year after the proclamation of the Republic, Bozdoğan emphasises that the presentation of the unfamiliar forms of the first popular images of industry and advanced technology in an awe-inspiring way, almost as if they were works of science fiction, was, in fact, a future that was aimed to be reached "in the name of a universal human future independent of particularities such as place and country", and this is exactly the path the young republic wanted to walk. (Pics. 3 and 4).

<sup>1</sup>Tabula rasa or tabula rosa refers to the "blank slate" proposition put forward by John Locke. According to Hume, an empiricist, there is no innate idea in our minds. However, Hume also opposes causality. The temporal and spatial relations we establish between things are related to our experiential habits, not to their properties in themselves. (The concept of "experiential" here is not a consciously conducted stage, but mere testimony.) We cannot know the relations between phenomena by our own methods, we can only refer to them. Nature does not operate by rules, it has no formalisations. In order to perceive nature or phenomena, human beings construct systems, formulae, priority-succession relations. ([https://tr.wikipedia.org/wiki/Tabula\\_rasa](https://tr.wikipedia.org/wiki/Tabula_rasa))



*In Figure 3 & 4; "The poster used in the article "Our small and modest capital is being built in Ankara" (Muhit magazine, 1929, no.10) (The image below is from the 1928 Berlin Alexanderplatz competition, but not specified.)" Source: Bozdoğan 2012, p.134.*

Tirana, founded by Sulejman Pasha in 1614, gained significant importance over three centuries later in 1920 when the Congress of Lushnja proclaimed it as the nation's capital. This declaration elevated Tirana to the status of a European "modern" capital, prompting the need for reconstruction, starting with the administrative and civic center. The new government had to commence its work in this transformed city. In 1899, Sami Frasheri in his book "Albania - Her Past, Present, and Future," proposed the capital of Albania should be situated in one of the cities located in the heart of the country where the Albanian language is spoken. He even suggested the idea of establishing a new city in a healthy and Picturesque location at the center of Albania. This envisioned city, which he referred to as Skenderbegas, would be meticulously planned with wide and straight streets, charming houses, and inviting squares. He foresaw that the city would rapidly expand as the country's elite and scholars would gather there to build their homes (Frasheri, 1988:71-72). On January 20, 1920, the Congress of Lushnja officially proclaimed Tirana as the provisional capital city of Albania. As Sami Frasheri had described 21 years earlier, Tirana fulfilled all the necessary geographical and social criteria to be an ideal capital.

Situated in the heart of Albania, close to both the sea and mountains, it boasted a favorable climate and fertile lands. Additionally, Tirana experienced rapid economic growth and flourishing trade. Given Frasher's vision of an ideal capital city, Tirana required a well-designed urban development plan that would include a robust political and administrative center. Tirana, the capital city, began to undergo rapid expansion as it emerged as an appealing new political and social hub of Albania.



*In Figure 5; The Ethem Beu Mosque. Minaret with missing roof (1913)*

<sup>2</sup>In May 1913 a French banker and philanthropist Albert Khan financed a trip of his photographers to the Balkans in order to capture human cultures of the whole world in black-and-white and color photographs as well as in moving Figure films for his planned "Achieve of the Planet"

## **CITIES PLANNED TO BE CAPITALS; TALE OF TWO CITIES**

### **Tirana; a new capital for Albania**

After being declared the capital city in 1920, Tirana underwent a period of political instability that lasted for five years until 1925. During this time, the government underwent multiple changes due to fierce political struggles between opposing parties and conflicts involving ex-feudal landowners and liberal democrats. Finally, in January 1925, the Constitutional Assembly put an end to the political turmoil by approving the new status of Albania as the Albanian Republic, with Ahmet Zog proclaimed as the first chairman of the Presidential Republic. At this point, Tirana's status changed from a temporary capital to a permanent one. Despite being a democratic regime, Ahmet Zog wielded his power against opposition parties, leading to the erosion of civil liberties. Opponents of the regime faced dire consequences, including murder, while the press suffered from strict censorship. Nevertheless, in October 1928, Ahmet Zog declared Albania a Constitutional Monarchy, proclaiming himself as the country's king (Raymond, 2008).

After a turbulent political phase and the ascent of Ahmet Zog's government to power, the prevailing authorities of the era directed their nation's policies towards Italy, which, at that specific juncture, stood as the most influential and advanced neighboring nation. In the face of severe financial constraints, the government sought economic assistance from Italy to support the geodesic surveying of Albanian towns and the development of their regulatory plans (Aliaj 2003:429). Mussolini's Italy viewed this reconciliation as a perfect occasion to advance its ambitions for potential expansion into the Balkans. Capitalizing on the financial support provided by Italy via the National Bank of Albania, Italy established the "Society for the Economic Advancement of Albania."

### **Ankara; The Utopia of the Republic**

Ankara is not only a spatial planning/engineering project but, also one of the comprehensive social engineering utopian projects of the early Turkish Republic. So, if Ankara is characterised as a utopia, from which point or points can it be addressed?

Conceptually, the creation of a capital city out of nothing with an urban noble population, in other words, planned capitals, come into play here. On 13 October 1923, Ankara was declared the capital a dramatic and historical decision was taken to distance the new regime from the Ottoman past. (Bozdoğan, 2012, p.82) The selection and zoning of Ankara, which had been under serious opposition until 1927, as a modern capital, regardless of the debates, is a national epic that feeds the republican "imagination". (Bozdoğan, 2012, p.83)

It is noteworthy that Ankara received the title of the capital city (13 October 1923) even before the Republic was proclaimed (29 October 1923).

Ankara was a Utopia that the Young Republic had to realise. Firstly, the Republic had to be able to realise short and long-term projects within its borders, especially in daily life, for the society that was also intended to be transformed; it had to be able to explain this; it had to be able to prove the same thing concretely to other countries. (Figure 6)



*In Figure 6; Zeki Faik İzer, İnkılapYolunda, 1933 (A typical and famous example of early Republic posters)  
Source: İzer, 1933.*

Ankara of 1922, on which utopia will be built, is described as follows ;

“What is Ankara? It is an old and truly eastern city of 50,000 inhabitants, centred on a hill with the ruins of a magnificent castle from ancient times. Only the locals can find their way around the twisting streets of Ankara, and only they know how to get from one end of the city to the other without having to go around the whole city, passing old cemeteries - as we did in the first fourteen days. Only there (at the old cemeteries) is it possible not to see the labyrinth where part of the city was burnt down years ago. And like all eastern cities, Ankara is very dirty, very dry, full of dust and all kinds of vermin. It is very difficult for a European to find air to breathe. On the other hand, there are plenty of germs everywhere; especially malaria is widespread among both natives and Europeans.” (Leonid- Friedrich, 1985, pp.43-44)

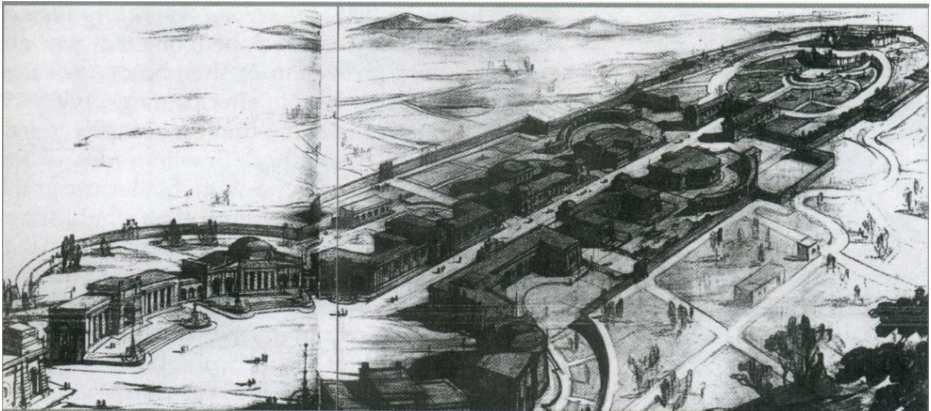
According to the authors, the Ankara of tomorrow is the symbol of Kemalist Turkey. A new Turkey is rising on the ruins of the old empire destroyed by the world war and this is a source of pride. “Some time ago, at the far end of the Golden Horn, on the shore of the “Sweet Waters of Europe”, I was listening to the whining of countless gramophones on the boats splitting the waters. And I realised that Abdul Hamid was dead, the Young Turks were in power, the signs in the Bazaar were beginning to change and the West was triumphing. And here we are today, Ankara and the monument of Mustafa Kemal! Events are unfolding rapidly. The dice have been rolled: Another centuries-old civilisation is being destroyed”. (original: Le Corbusier, *L'art decoratif d'aujourd'hui*, 1925) (Bozdoğan, 2012, p.15)

## Tirana; The Planning Process

The era of King Zog marked the second significant phase in the transformation of Tirana's urban and architectural landscape. In 1925, the Albanian government extended invitations to renowned Italian architects, including Brasini and Floristano Di Fausto, to contribute to the city's development. Fausto was responsible for crafting the initial master plan to reorganize the new center of Tirana. This plan comprised a group of six buildings designated for ministries and a centrally-located eclectic boulevard. Although the plan underwent some modifications, its essence was later translated into more pragmatic forms.

On the other hand, Brasini envisioned creating a Roman-style island within the city, distinct from the predominant Oriental character that marked the rest of the area. The purpose of this island was to serve as a connecting link between the old town and the envisioned modern city of the future. His project involved the development of a wide boulevard in a north-south direction, dividing the existing city from its periphery. This boulevard was proposed as a monumental and governmental center for a new autonomous city, disregarding the Oriental heritage of the old town. The primary objective of this axis as an urban mechanism was not to regulate the transportation network but to serve as a bridge connecting the old city center with the new modern city. This clever urban planning technique has been employed by planners in various cities at different points in time.

In 1926, the second regulatory plan for Tirana was devised by three engineers: Eshref Frasherri, Castellani, and Weiss. This plan not only revised the previous one created by Austrian architects but also brought to life the concept of constructing a broad north-south boulevard, as initially proposed by Italian architect Brasini.



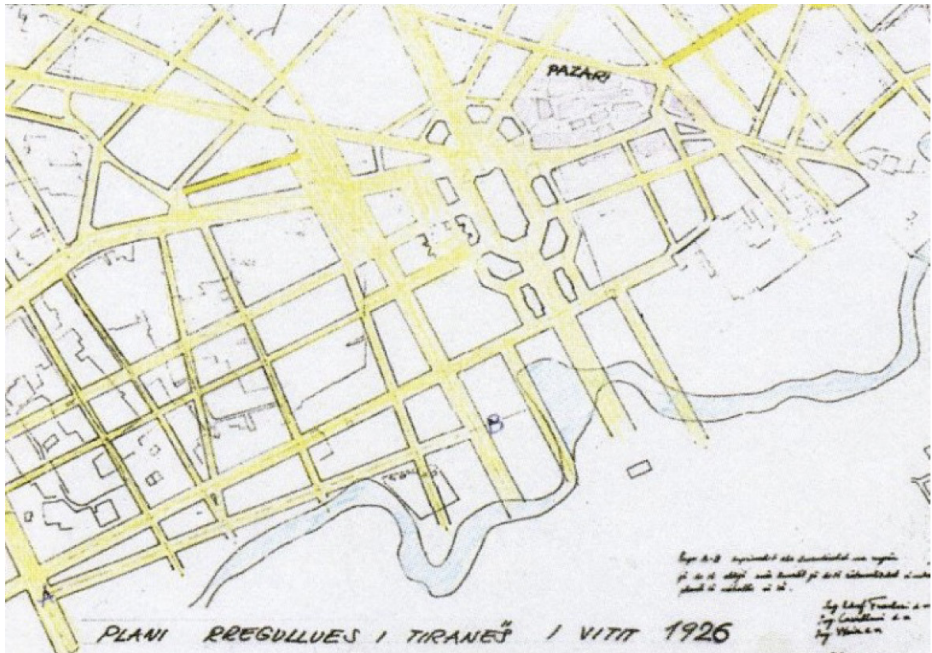
*In Figure 7; The first draft of North-south "Spine" launched by Italian architect Brasini*

In 1928, the third regulatory plan for Tirana was formulated, and it became the first one after the regime had transitioned into a kingdom. The new plan was crafted by Austrian architect Kohler. In the process of implementing this plan, a significant portion of Tirana's courtyards and gardens was sacrificed to create space for the redesigned streets. Remarkably, these new streets adhered to the original lines due to urban economic considerations. The Austrian approach for transforming old Tirana mirrored the techniques employed in Europe during the 19th century to restructure medieval quarters. A similar method was famously used by Baron Haussmann in Paris and later

<sup>9</sup>From the administrative point of view, when it became the capital of the country, Tirana was still a sub-prefecture of the Durres prefecture. It became an independent prefecture in 1922.

by the Austrians themselves in Vienna.

The New Tirana area had been designed as an area of an extensive development, which is an area of mansions, which would be generally built in rectangular courts and would form quadratic quarters matching the road net-work, or would be placed by several concentric circles. In the regulatory plan of the New Tirana the area of private plots was observed. These plots ranged from 1,000 to 1,500 m<sup>2</sup> and allowed abundant spaces for gardens, and Italian architects that revised this regulatory plan would later call this area “Garden City” (Aliaj, 2003:32-33).

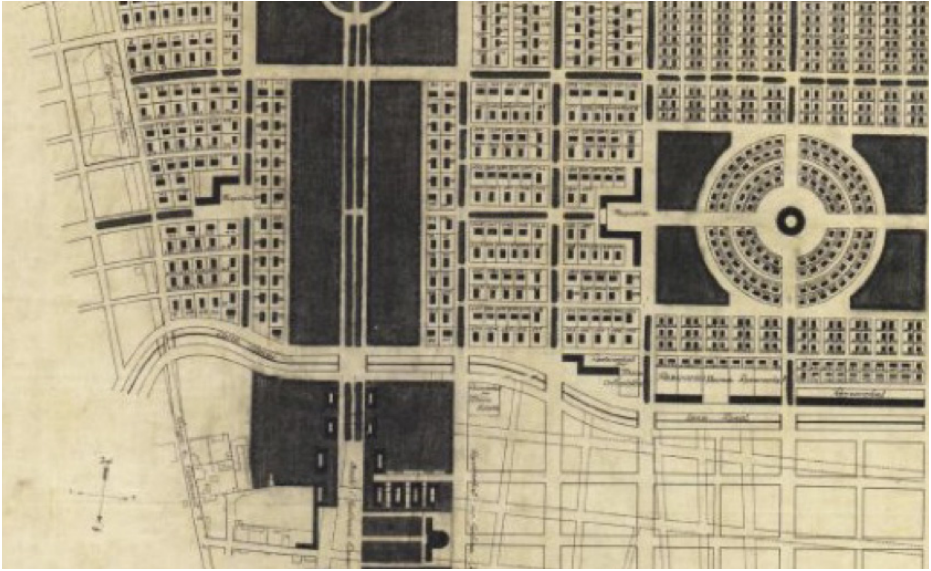


In Figure 8; The part of Tirana Urban Plan 1926

In that regulatory plan, another crucial aspect was the precise delineation of the north-south Boulevard, running parallel to the administrative center. It started from the bazaar and extended all the way to the southern foothills, culminating at the Royal Palace. In the year following 1929, the fourth regulatory plan was promptly devised. The plan envisioned the boulevard stretching not only from the bazaar but also from the future stadium of the city, intended to be constructed on the site of the present-day railway station, all the way to the Royal Palace.

The remarkable National Bank of Albania building, a masterpiece by Italian architect Vittorio Morpurgo, was unveiled in 1938. It was strategically situated at the commencement of Mussolini Road, now known as Kavaja Road. Constructed using reinforced concrete, the building was adorned with ceramic bricks and stone slates imported from Italy. The National Bank of Albania building, along with the other ministries' structures, came to symbolize power and sturdiness, embodying the essence of strength and stability (Aliaj, 2003:40).

<sup>7</sup>This area later used by the “polit bureau” government of Enver Hoxha, which is so called dictator of communist regime, as the residential villas and the residence of the dictator itself.

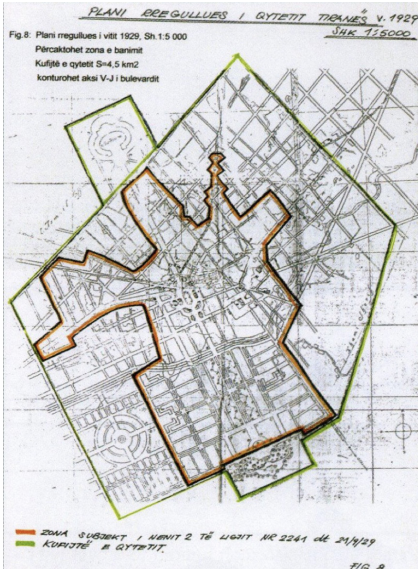


*In Figure 9; 1928 Urban Plan, New Tirana Area Grid-iron Plan*

After Italy's official occupation of Albania on April 7, 1939, and its declaration as part of the Italian Kingdom, a new regulatory plan for Tirana was introduced. The implementation of this plan took place between 1939 and 1942. The primary aim of this plan was to establish a well-developed urban center that would be settled by Italian colonists. The preparation of this plan involved a collaborative effort of Italian and Albanian specialists, with the Florentine architect Gherardo Bossio and engineer Ferdinando Poggi leading the mixed working group (Aliaj, 2003:42). The master plan encompasses an area of 2,800 hectares, which includes the military sections, the airport, the connecting infrastructure, and industrial sections, totaling 1,700 hectares. A significant aspect of this regulatory plan is that it clearly defines the city's municipal borders, encompassing a total area of 7,300 hectares, including the surrounding communes.

The plan allocates specific spaces for various purposes, with 132 hectares designated for landscaped areas, primarily located to the north and south of the city. Additionally, 33 hectares are dedicated to the sports section to the east, 22 hectares for the park behind the Fascio House (the University) in the hilly area, and 660 hectares for residential areas. To accommodate the city's growth, it is envisioned to expand northward beyond the Lana River, creating a satellite zone called CITTA GIARDINO (garden city), which will consist of elegantly landscaped mansions. The industrial section will expand in the northwest and southwest directions, while a worker's neighborhood will be established in between these two sections. Strategic facilities have their designated areas, such as the railway station in the southwest, linking Tirana with Durres and the eastern region of Albania. A track spur will link the industrial section, and the hospital and cemetery areas will be located northeast of the city. The fair's section will be built northwest of the city, and the airport will be situated to the west, enclosed by the outer ring road of the city, which comprises the roads of Durres and Kavaja.





In Figure 9; 1928 Urban Plan, New Tirana Area  
Grid-iron Plan

The regulatory plan envisions Tirana as an extensively landscaped city-park with predominantly low-rise buildings. The central area is designed to be bustling and dynamic, although its implementation has faced significant challenges due to the strong attachment of the inhabitants to their private properties. To minimize disruptions, the plan has made every effort to limit expropriations, preserve existing buildings, and enhance their value, all while ensuring that the city retains its Turkish influence.

The dense and vibrant section comprises the boulevard with government buildings, the avenues of Durres and Kavaja, the Old Bazaar Street, and the surrounding area, accommodating up to 5-story buildings intended for offices, shops, banks, and various amenities to serve the citizens.

This comprehensive regulatory plan includes detailed schemes for street traffic, the development of the downtown area, urban conditions for the entire city, the zoning map, plans for connecting the city with Dajti Mountain via a lift, and the layout of the

graveyard, among other aspects. The urban and architectural developments in Tirana came to a halt with the fall of Mussolini in September 1943 and the subsequent entry of Nazi armies into Albania. The escalating resistance against the Nazi forces led to a series of battles that caused extensive damage to the city's cultural and historical monuments.

The conclusion of World War II ushered in a communist government in Albania, signaling the end of the Italian Fascist period's influence on Tirana's town planning. Under the dictatorial communist regime, the focus shifted towards centralization, and urban operations were carried out without consideration for private ownership. Architects and town planners were granted significant authority to revolutionize and transform the city, subject to the constraints and political instructions set forth by the routine Plenum of the Central Committee of the Party of Labor of Albania. In 1957, a new regulatory plan for Tirana was developed. The communist authorities were inclined to reject any connections with the past, particularly with monarchy and Fascism. As per their perspective, the history of Tirana began only after 1945.

The heart of Tirana was envisioned as a grandiose space representing the "strength and revitalization" of Albania. To achieve this vision, the Old Bazaar of Tirana, City Hall, Orthodox Cathedral, a collection of traditional houses, shops, hotels, and bars were demolished under the pretext of being "dilapidated and insignificant." These structures were replaced with significant landmarks such as the Palace of Culture, Hotel Tirana, the National History Museum, the "Scanderbeg" Square, and new residential buildings. Few historical buildings like the Mosque of Ethem Beu, the Clock Tower, the complex of ministries, and some characteristic Tirana houses were preserved and protected.

## Ankara; The Planning Process

Prof. Dr Hermann Jansen, who won the planning competition opened in 1927 for the capital Ankara, is one of the well-known planners of the period. (Figure 11) In the period starting with Jansen, many scientists and architects who escaped from the Nazis came to Ankara and produced important works that shaped Ankara and formed the outlines of its architecture. The construction of Ankara was an important issue in itself, and when the arrangements began to be physically realised, they were proudly announced in the press.

“For the first time in the four thousand years of variable Turkish history, the houses are not squeezed around the Castle as if seeking protection; on the contrary, Ankara is spreading downwards, down to the plains, and according to a broad construction and reconstruction plan drawn up, it is becoming a solid residence and a quiet workplace. Construction has been going on for seven years and Professor Jansen has been in charge of Ankara’s construction for seven years.” (Haftalık Yeni Hayat 26 (15 August 1936): 8)



In Figure 10; Competition’s Jury Members

“Ankara is a city of the future. Istanbul is a city of the past. In the latter the visitor thinks in terms of Ottoman rulers, mosques, and history books [...] and concentrate(s) exclusively on the relics of a past now intentionally forgotten by the average Turk who looks ahead to better days. What we who really want to know the Turkey of today and tomorrow should do is to take the first train for Ankara [...] to find the magnificent city of eternal youth [...] It gleams with cleanliness like the freshly scrubbed face of a youngster on his first day in school [...] On the way to our hotel we are surprised at the width of the paved streets [...] and the decidedly modern lines of the buildings [...] “Well, of course, its all terribly new. We’ve only been building the city for fifteen years and there’s a lot more for us to do” the taxi driver apologises, but not without pride. “You know we started practically from scratch.” (Akcan, 2009, p. 42)

<sup>8</sup>The selection committee appointed by Ankara Şehremaneti had travelled to Berlin to propose the project to Prof. Ludwig Hoffman. Hoffman stated that he did not want to make long journeys due to his age and could not take the project, and recommended Hermann Jansen and Joseph Brix instead. The committee decided to open a competition with the participation of Léon Jaussely, the chief architect of the French government (Tankut 1990, p.46).

Tankut states that “Turkish Urbanism” begins with Ankara. (Tankut 1984, 303) With the construction of this city, the building tradition of the Turkish nation is renewed and a new generation is raised in the consciousness of building. The Jansen Plan directed the urban development of Ankara from the 1930s until the end of the 1950s.

“In the period when the Republic was proclaimed, starting from 1924 until 1932, when the Jansen Plan came into force, the applications were shaped by the Plan prepared by Lörcher. With these planning studies and the subsequent Uybadin - Yücel Plan, the core area of Ankara was formed.” (Günay 2005, p.61)

Meanwhile, the document taken as a basis for the implementations is the plan made by the Berlin architect Carl Christoph Lörcher, which was not fully implemented. This plan is the basis of the texture that will form the centre functions in Ulus and Kızılay. (Figure 12)



*In Figure 12; Lörcher Plan with Ankara City Boundary in 1924 (Cengizkan 2004, Old Ankara Boundary drawn by Günay)*

“The plan proposes a dense and collective form. The efforts to make the station periphery the centre, to adapt the Ulus centre to this structure and to integrate it with the central functions radiating from the central station, and to develop Dışkapı will remain as the model of a Western city; the station will be isolated from the city with the Jansen Plan. The plan also proposed the renovation of a large part of the existing city; İstasyon Street and Talat Paşa Boulevard between İstasyon and Cebeci were determined by this plan. In the south, the Yenişehir texture has been created. Along Atatürk Boulevard, Sıhhiye Square, and Zafer Square, the entrance to Tuna and İzmir Streets are shaped according to this plan.” (Cengizkan 2004 and Günay 2005, p.67)

Günay also makes the following definitions; the grid type arrangements in the east and west of Atatürk Boulevard are stuck to the boulevard at an angle; the real grid plan seen in Western cities is not formed. Atatürk Boulevard is the only spine between Ulus and Kızılay and the lack of an

<sup>9</sup>(La Turquie Kemaliste, “Ankara-Istanbul”, no. 48 (December 1947), pp. 38 - 43) translated from Acan, E. 2009, p. 42

alternative has created a problem that continues to exist today. The plan also lacks predictions and strategies for the growth of the city, since the priority at the time of the plan was the urgent construction of the city and the selection of locations for public buildings. The villa type of construction proposed in Kızılay and Yenışehir, and the road texture and densities will be insufficient as Kızılay gains the character of a central business area; the demolish-build process will begin. (Günay 2005, p. 69)

In 1932, some of the planning decisions in the Jansen plan were given to him, and some of these decisions also influenced Jansen's main planning principles. (Figure 13)

Although Lörcher's project was not accepted, some of his ideas were put into practice and used as data in the zoning plan competition organised in 1927. "Lörcher later sued Hermann Jansen, the winner of this competition, for copyrights, but could not get any results." (Akcan 2009, p.43)

"Jansen is very disturbed by these decisions. Jansen wants to develop the city on the Etlik ridges rather than the Yenışehir section. Thus, both the division of the city by railway would be prevented and a city more suitable for climatic conditions would be born." (Yavuz 1981, p.26)

Therefore, the Jansen plan, like the Lörcher plan, developed the city in the north-south direction. This position resulted in compression into the geomorphological bowl, which would later cause pollution and transport problems. Since the central structure was not designed as dominant, it could not develop strongly, and only 10 years after its implementation, the physical recommendations of the plan started to be insufficient. The most effective part is the spine designed together with the Ministries area. (Günay 2005, p.80 and 115) Jansen defines himself as a Stædtarkitekt (city architect) within the discipline of Stædtbauen (city building, urbanism) (Cengizkan 2005, p.29 and Tankut 1990).

Again, Tankut draws attention to the following points in the essence of the plan. The Plan;

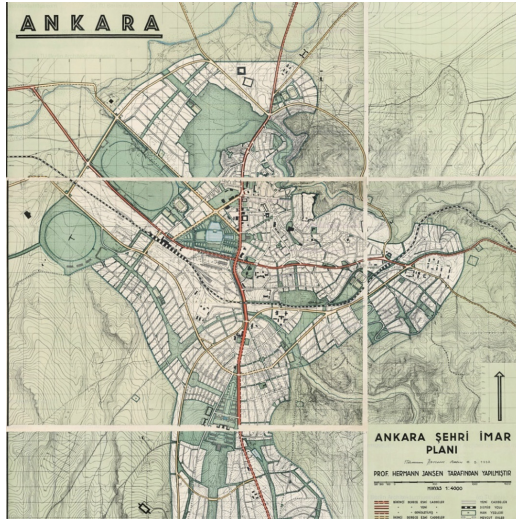
"An urban environment that exhibits urban aesthetics, in other words, an image of the city that creates intense emotions in its inhabitants, such that these intense emotions range from pleasure to pride, and that urban dwellers identify with the urban environment and claim it as their own." (Cengizkan 2005, p.52)

In the end, the modernisation process, which Atatürk summarised as a "new homeland, new society, new state" in the 4th assembly of the Republican People's Party, started with Ankara. (C.H.P. 4th Grand Assembly Report, 1935, p.15)

"One of the important structural features of urban planning that will serve the purpose of creating a new way of life in the capital city where the modernisation process was initiated is the square (space) fiction where the society will come together and spend time in cities that will bear the traces of modernity." (Türkyılmaz, 2015, p.105)

Between 1936 and 1938, Jansen also prepared plans for Izmit, Adana, Ceyhan, Tarsus, Mersin and Gaziantep.

Allternative has created a problem that continues to exist today. The plan also lacks predictions and strategies for the growth of the city, since the priority at the time of the plan was the urgent construction of the city and the selection of locations for public buildings. The villa type of construction proposed in Kızılay and Yenışehir, and the road texture and densities will be insufficient as Kızılay gains the character of a central business area; the demolish-build process will begin. (Günay 2005, p. 69)



In Figure 13; Jansen Plan

In 1932, some of the planning decisions in the Jansen plan were given to him, and some of these decisions also influenced Jansen's main planning principles. (Figure 13)

Although Lörcher's project was not accepted, some of his ideas were put into practice and used as data in the zoning plan competition organised in 1927. "Lörcher later sued Hermann Jansen, the winner of this competition, for copyrights, but could not get any results." (Akcan 2009, p.43) "Jansen is very disturbed by these decisions. Jansen wants to develop the city on the Etlik ridges rather than the Yenisehir section. Thus, both the division of the city by railway would be prevented and a city more suitable for climatic conditions would be born." (Yavuz 1981, p.26)

Therefore, the Jansen plan, like the Lörcher plan, developed the city in the north-south direction. This position resulted in compression into the geomorphological bowl, which would later cause pollution and transport problems. Since the central structure was not designed as dominant, it could not develop strongly, and only 10 years after its implementation, the physical recommendations of the plan started to be insufficient. The most effective part is the spine designed together with the Ministries area. (Günay 2005, p.80 and 115) Jansen defines himself as a Stædtarkitekt (city architect) within the discipline of Stædtbauen (city building, urbanism) (Cengizkan 2005, p.29 and Tankut 1990).

Again, Tankut draws attention to the following points in the essence of the plan. The Plan; "An urban environment that exhibits urban aesthetics, in other words, an image of the city that creates intense emotions in its inhabitants, such that these intense emotions range from pleasure to pride, and that urban dwellers identify with the urban environment and claim it as their own." (Cengizkan 2005, p.52)

In the end, the modernisation process, which Atatürk summarised as a "new homeland, new society, new state" in the 4th assembly of the Republican People's Party, started with Ankara. (C.H.P. 4th Grand Assembly Report, 1935, p.15)

“One of the important structural features of urban planning that will serve the purpose of creating a new way of life in the capital city where the modernisation process was initiated is the square (space) fiction where the society will come together and spend time in cities that will bear the traces of modernity.” (Türkyılmaz, 2015, p.105)

Between 1936 and 1938, Jansen also prepared plans for Izmit, Adana, Ceyhan, Tarsus, Mersin and Gaziantep.

## **Constructive Elements**

### *The Spine; Tirana*

When Sulejman Pasha founded a new city in the middle of nowhere in 1614, most probably did not imagine this little town would be the modern capital city of an independent Albanian country. The city grew rapidly and spontaneously without plan until 1923. The declaration as the temporary capital city of Albania in 1920 and permanently in 1925 resulted the need of regulatory plans for the new modern face of Albania.

Tirana, unlikely from most of the European cities, has a short history which is neither dated to ancient nor medieval times. The nucleus of the city center was not very big and spread. Although the historical structure of the city was not very rich, the governments after the independence from Ottomans raced to “modernize” the city by demolishing the old houses, mosques, bazaar etc. The existing streets were extended and new wide and straight streets were built by bulldozers of power holders. The new capital needs a powerful constructive element of urban regulations, to create a diversification between old and new, conservative and modern, spontaneous and planned i.e. a diversification between a city built by citizens and one that built by authorities.

Tirana built this line by the combination of the “Boulevard of Zogu I”, the “Scanderbeg Square” and the “Boulevard of Martyrs of Nation”; the “spine” of the city which is straight without considering existing structure, property ownership and/or personal interests. While examining the construction stages of the spine of Tirana it may be seen obviously that totalitarian regimes’ power helped to create: An architect of fascist Italy, Brasini designed, a man who declared himself as the king while he was elected as the president of presidential republic of Albania, Ahmet Zogu applied and a dictator who desired to rule the world by conquering and colonizing the other countries, Mussolini financed this spinal boulevard.

On February 1929, according to an article in a newspaper called “Bashkimi” Tirana Municipality would apply urban regulatory plan especially on main boulevards: (Mehilli, 2012:49)

“From Et’hem Beu Mosque until hills of Pasha works begin for Boulevard Zog I. Mr. Mehmet Fortuzi with his friends has taken place in opening ceremony of construction of Kavaja Street. This year the boulevard will be constructed only 500 meters long i.e. till Romanian Embassy, because of the low budget of municipality. Width of the street will be 30 meters. Both sides will have sidewalks, which are 4 meters width. In fact, 3 meters will be cement tiles and 1 meter will be trees and flowers. Boulevard will have two roads which are 8 meters wide each, and between them, will be a sidewalk 6 meters wide. Both two sides of this sidewalk will plant trees and flowers 2 meters wide each. Royal Road will be widening. The plan for expansion of Diber Street ends today. The houses on the Hoxha Tahsin Street that the regulatory plan has finished will be evaluated in these days and the expropriation of the lands will be made. The systemization of Skenderbeg Square began.”

The fourth regulatory plan without losing time was designed the following year 1929. The whole boulevard was designed not only from bazaar but from the future stadium of the city that would be built in the place of the present-day railway station to the Royal Palace. According to the plan the Royal Government took a decision of law No: 2241 at 21.09.1929 for this regulatory plan and

this date was also marked as the beginning of the works for construction of “Zogu I” Boulevard that represented only the northern half of the boulevard. During that period, Tirana was basking in a golden age of urban prosperity and splendor, which found its ultimate expression in the inauguration of the new city boulevard. A visiting French architect was so amazed by what he witnessed that he exclaimed in astonishment, “I saw a boulevard without a city!” (Aliaj, 2003:36). The north-south boulevard extended for a distance of 2 kilometers and had a minimum width of 35 meters. This thoroughfare was a dual carriageway, featuring four lanes in each direction for vehicular traffic. It was surfaced with slates and bordered by expansive sidewalks paved with small mosaic-shaped pumice stones. Additionally, it was embellished with four rows of trees and privets along its edges. The extension of the “Vittorio Emanuele” boulevard, formerly known as the “Zogu I” boulevard, southward from the “Scanderbeg” Square according to Brasini’s plan was unquestionably the most pivotal step in the city’s urban development. This expansion had been meticulously outlined in a comprehensive regulatory plan that encompassed both the city center and the “Impero” boulevard. To truly justify the grandeur of this boulevard, it was deemed necessary to adorn both sides with structures intended for offices, banks, as well as social and commercial activities. These buildings were envisioned to be uniform in their volume, strategically spaced to fulfill their intended purpose, and architecturally pleasing to match the avenue’s width, magnificence, and significance (Aliaj, 2003).

This boulevard, without a doubt the city’s most prominent, traversed it right through its heart. Furthermore, the “Viale del Impero” boulevard would serve as a connecting link between the established city center, which was evolving around the “Scanderbeg” Square, and the emerging political and sports center to be developed at the southernmost terminus of this boulevard. Consequently, the architectural style of the 1930s and early 1940s, influenced by neo-fascism, found expression in expansive ceremonial boulevards and plazas designed to host grand parades. These spaces featured porticos and walls adorned with natural stones, imposing colonnades, spa-



*In Figure 14; The Boulevard of Zog I*

cious monumental staircases, and embellishments adorned with Latin inscriptions and reliefs.



*In Figure 15; Durres Street, Kavaja Street and the Municipality Building*

To set this emerging architectural style apart from Renaissance influences, its proponents embraced a distinct approach. This included the adoption of different design elements, schematics, and simplifications inspired by ancient aesthetics, such as the omission of capitals and frontals, as well as the substitution of pitched roofs with flat ones. The boulevard symbolizes the authority's might, possessing a potency equivalent to that of the government itself. It stands as a monument, reflecting the unwavering strength of this authority. It isn't merely an ordinary boulevard or a broad street conceived to address urban issues within the city; rather, it's conceived as the central axis, akin to the backbone of a living organism, crucial to maintaining its form. Its design is nearly immutable, making it a defining feature. (Kera, 2004:2)

Aerial View of the Spine, 1940. The boulevards and the square were constructed in the heart of the old structure as it was planned and drawn on the blue prints. The north side of the spine was designed as a boulevard with trees in the middle. Scanderbeg Square was finished with buildings of ministries and the green park at the center. The park was dig in order to give effect of hugeness to the ministries which are not more than 3 storey. From the west, coming Durres Street and connects to the square. At the intersection stands City Hall which was demolished later and in the Centralized Economy Period the National History Museum had been constructed. The boulevard from the time of design till today has been changed several times in function, in contents, in the shapes and sizes of the squares and buildings, but the main role remains constant as the "spine" of the city. It has always a beginning and an end although the functions of them have been changed. It has always been monumental and represents the modern side of Tirana and Albania. The urban structure of Tirana faced its most significant challenge during the transitional period following the collapse of the Communist Regime.





*In Figure 16; The Blue prints of 1929 Urban Plan of Tirana*



*In Figure 17; View from today's University "Casa del Fascio" 1940. Spine had begun to construct. The formation of the spine helped the formation of the new Tirana while developing.*

This era marked a time of urban upheaval, akin to what was witnessed in numerous former communist countries across Europe. As the capital city, Tirana experienced a substantial influx of migrants from other regions, leading to confusion in land ownership. The newly established government grappled with addressing property disputes involving multiple legal owners. Inexperienced and financially constrained, both the central and local administrations struggled to navigate the demands and pressures of a capitalist and liberal market. Moreover, the central business district faced a shortage of shops and offices. Entrepreneurs initially erected informal small kiosks, which were subsequently granted annual usage permits by the municipality. This practice led to an encroachment on parks, the banks of the Lana River, and public squares—essentially, all available open spaces. Even the garden surrounding the Parliament building fell victim to this proliferation of kiosks. Over time, these kiosks transformed into more substantial two or three-story structures made of reinforced concrete (Aliaj, 2003).

Up until the year 2000, these makeshift constructions lacking proper permits persisted within the Municipality of Tirana. Remarkably, even amid this tumultuous phase, the essential and commanding structure of the “spinal” boulevard remained intact. During 2018, Tirana became the focal point of numerous urban regulatory plans, attracting the attention of both domestic and international architects and urban planners who envisioned the city’s future. A plethora of options emerged, encompassing ideas for new neighborhoods, sub-centers, road networks, industrial zones, and more, all intricately mapped out across Tirana. A unifying element among these plans was the enduring presence of the spinal boulevard. None of these proposals could disregard

or contemplate altering its trajectory. The boulevard's unwavering significance is not only a formidable obstacle to change, but it also stands as a catalyst for the progressive development of Tirana's urban landscape. The urban landscape of Tirana, along with its prominent spinal boulevard, serves as a testament to the potential outcomes stemming from the deliberate shaping of an urban space by city developers. Whether referred to as a path, a network for movement, an axial thoroughfare, a shaft, a guiding force, or indeed a spinal boulevard, such forms possess an inherent strength and aesthetic appeal. They stand as a manifestation of authority's influence, effectively binding and demarcating the city's older and newer architectural elements. Today Tirana is the subject of several urban regulatory plans. The future of Tirana is projected



*In Figure 18; Aerial View of the Spine, 1940.*

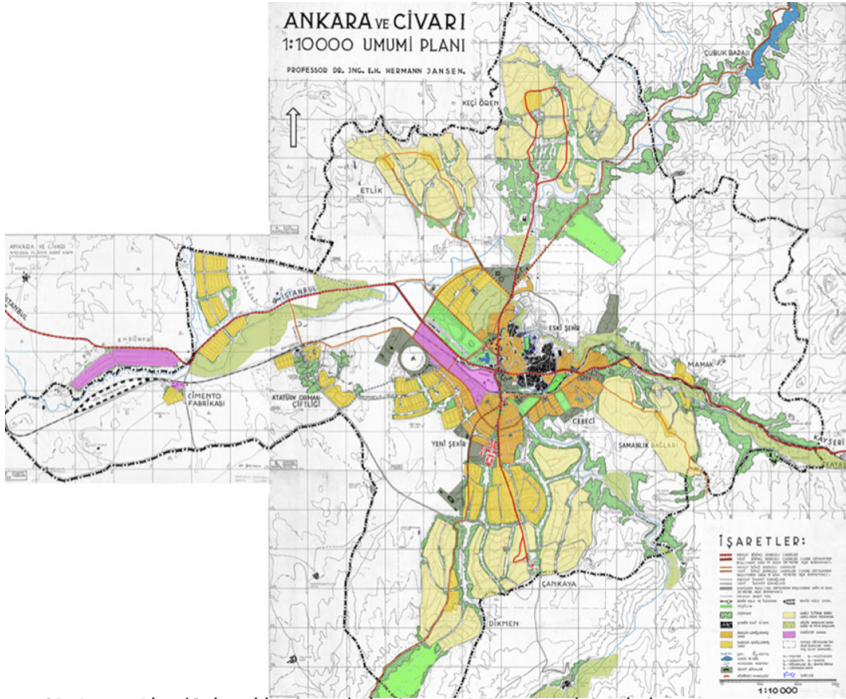


*In Figure 19; Winner Project of the Central Tirana Master Plan Competition (2004) by "Architecture Studio" France. Scanderbeg Square*

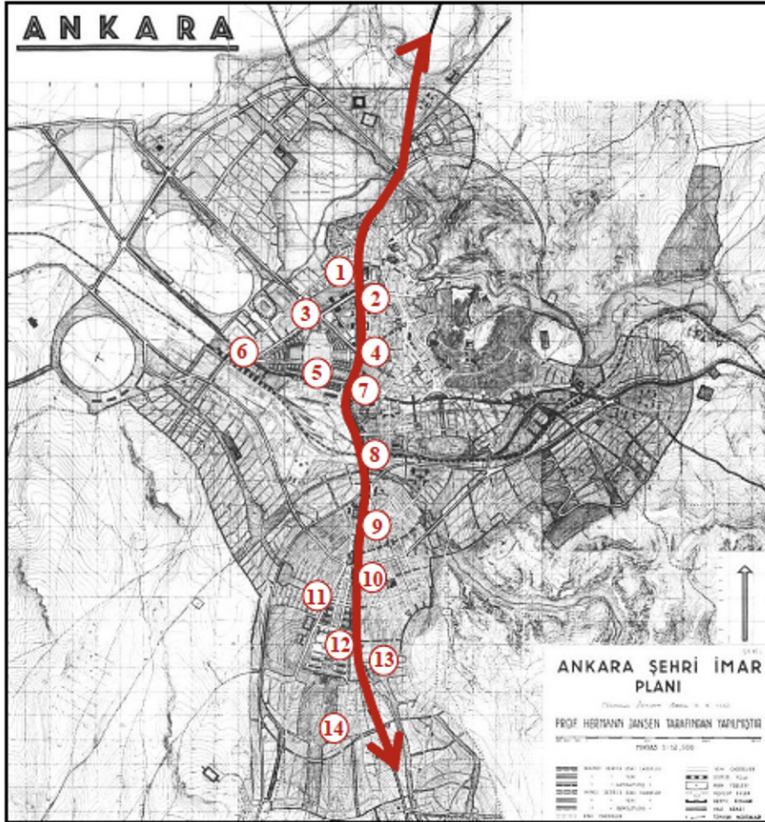
by many Albanian and foreigner architects and urban planners. The variants are numerous. New neighborhoods, sub centers, road networks, industrial zones, etc. take places on the maps of Tirana. The common point of them is their spinal boulevard. None of them can neglect it or dare to change. The boulevard is not only too strong to change but also too constructive for the new development plans of Tirana city.

### **ATATURK Boulevard**

Atatürk Boulevard as the main component of the Jansen Plan constituted the spine of the city. Atatürk Boulevard began from Ulus - old city and first National Assembly and extended to the south toward the new residential area – Yenişehir (New Town) and end up with the Presidenti Palace in Çankaya (Figures 21 & 22).(Gülkök, 2013, p. 53)



In Figure 21; Jansen Plan (Colored by Günay) The Spine is RED on North-South directions



- |                                      |                                    |
|--------------------------------------|------------------------------------|
| 1. Old Assembly (TBMM) Building      | 7. Sıhhiye (Lozan) Square          |
| 2. Hakimiyet i Milliye (Ulus) Square | 8. Zafer Square                    |
| 3. Second Assembly (TBMM) Building   | 9. Kızılay Square                  |
| 4. İtfaiye Square                    | 10. Havuşbaşı Square, Güvenpark    |
| 5. Gençlik Park                      | 11. Administration District        |
| 6. Gar (Railway Sitation)            | 12. İnönü Square                   |
| 7. Opera Building                    | 13. Third Assembly (TBMM) Building |

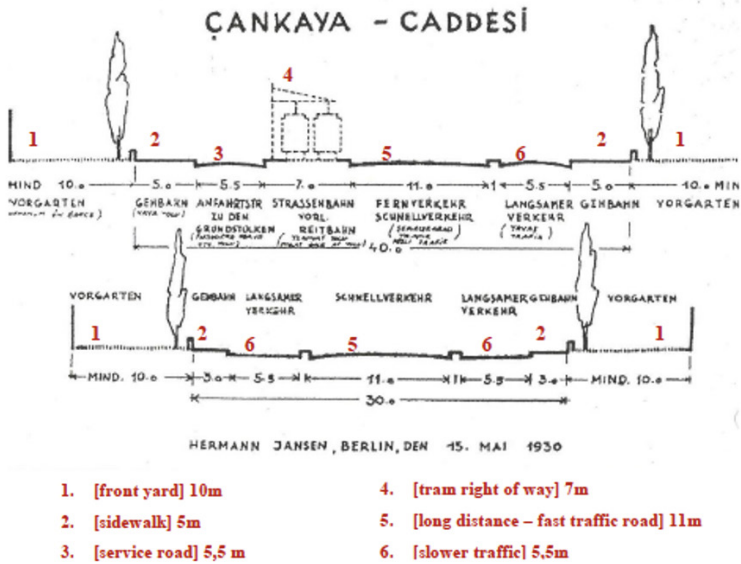
In Figure 21; Jansen Plan Ankara Core / The Spine is RED on North-South directions (Gülkök, 2013 and Keskinok 2009)

Conceptually, Jansen designed the city in terms of functional neighbourhoods. Ulus is the traditional center of Ankara and, also the political center of the Republic where Anafartalar Avenue and the Ankara Castle would signify the traditional character of Ankara while Ankara Palace signify a new life style, interacted in together (Figure 23). (also stated in Gülkök, 2013).

As Gülkök points, Sıhhiye neighbourhood was planned as public health project in early Republican Period (“Sıhhiye” in Arabic means “health”). Jansen primarily emphasized to the importance of creating a “healthy” environment for a healthy nation (Jansen Plan Report, 1932) . The health

theme is also popular especially in Europe at that period. On the other hand, cultural, educational and other public buildings had located here, such as State Opera House, State Theater, Exhibition Center; Faculty of Letters, Radio House and Ethnographic Museum. Architectural style of these buildings was characterized by the 'Modern Architectural Movement' symbolizing the new nation state's secular identity (Koçak, 2008: p.88).

After the 1940s, political and social life shifted from Ulus - Traditional Center trough Yenışehir where Grand National Assembly and new administrative district built together with villas of bureaucrats. In result, significance of Ulus as a city center had decreased. (Gülkök, 2013)



In Figure 23; Jansen Plan Ankara Boulevard Detail (Gülkök, 2013)

In the 1940s, the depression of the capitalist world economy had affected the economy of Turkey as well. In this period, Turkey's economy had become closed to world economy and began to experience national industrialization, in the frame of protective and etatist policies. During the period dominated by Etatism, in 1930s, according to Keskinok, the nation state conducted the most comprehensive program for the construction of its own space by the principles of Populism (2009).

As Gülkök states;

“In the frame of etatist economic policies, construction of Ankara accelerated by the investments made on such areas of education, health, transportation, housing and administrative buildings. In the years between 1930 -1940, Austrian, French, German and Italian Embassies built along the Boulevard. On the other hand, administrative building of the new regime, such as Presidential Palace, Residence of the Minister of Foreign Affairs, and Residence of the Prime Minister has been designedly situated on the Boulevard, to make the institutions of the Republic visible, and to assembly the state and public on the background consisting the spatial indicators of the democracy.”



The Spine is RED on North-South directions In the early Republican era, the sidewalks of Atatürk Boulevard were the space where social life (as 'lived', 'perceived space') and ideological intentions (as 'conceived', 'representation of space') overlapped.

There is a political/ideological nature to the approach of planning and state authorities to public space. Modernisation and public space were seen as a system in which these two concepts worked together while being consistent with each other in the early Republican period. According to Keskinok, the new regime gave priority to the creation of spaces necessary for the new administrative structure and modern lifestyle. The public spaces, defined by Batuman as "the political legitimization platform of the modern individual" (2002: 44), can be conceptualised in different ways. Moreover, the platform on which one class has hegemony over the other social groups (Gramsci) is the public space as a site of transformation of bourgeois identity. In this perspective, it is common that public space can be described as a space where different identities, activities and discourses meet, interact and collide. (Gülkök, 2013)

The approach of planning and state authorities to public space is political/ideological in nature. Modernisation and public space were seen in the early republican period as a system in which these two concepts worked together and were consistent with each other. According to Keskinok, the new regime gave priority to the creation of spaces necessary for the new administrative structure and modern lifestyle (2009). The public spaces, defined by Batuman (2002: 44) as 'the political legitimization platform of the modern individual', can be conceptualised in different ways. Moreover, the platform on which one class has hegemony over the other social groups (Gramsci) is the public space as a site of transformation of bourgeois identity (Gülkök, 2013). From this point of view, public spaces are often described as places where different identities, activities and discourses converge, interact and clash.



In Figure 26; In Gülkök 2013 (Source: *Ankara Kentinin Planlaması ve Atatürk Bulvarının Oluşumu*, ed. Keskinok, Ç., Ankara 2009)

In this framework, the boulevard, as distinct from the traditional gathering places of the Ottoman urban texture such as mosque courtyards, marketplaces, recreational areas and near fountains, was an important component and indicator of the modern community and the lifestyle associated with it. The Atatürk Boulevard had been designated as the spatial - operational, social - progressive and ideologically representative backbone of Ankara. For Jansen, Atatürk Boulevard was characterised as connecting the different districts and functional zones of the city, but also as a connecting space for different groups of people, as the main interactive backbone. As Keskinok explains, 'it is the story of the foundation, process and development of the Republic' (2009; 37). The avenue was assigned the task of installing a new - modern urban culture in the citizens of Ankara. As such, the boulevard marks the essential characteristic of the modern capital as 'the representation of space', constitutes the built environment as 'designed space', generates modern urban practice as 'spatial practice', and is the site of social and cultural practice as 'living space'.

In the 1950s, as a result of political and economic developments, the focus of planning decisions shifted to efforts to manage and regulate urban growth, rather than to concerns about the transformation of urban space and society. Having been declared the Capital, Ankara began to grow at a rapid pace. By 1957, Ankara's population growth rate was about twice as high as Jansen's estimates, and the rapid growth of Ankara's population put pressure on the city's space. The second Ankara Master Plan, adopted in 1957, was designed by Nihat Yücel-Raşit Uybadin to address the urban problems caused by unplanned and illegal development, intensive migration and overpopulation. In the 1960s, Kızılay became a bustling business and commercial center and the new city center of Ankara, catering to upper and middle income classes. Commercial shops, cafes under shopping arcades and new office blocks expanded in the 1960s.



*In Figure 27; Sidewalk shop Cold Beer 1933 In Gülkök, 2013 (Source: Archives National Geographic (Photography by Kurt and Margot Lubinski)*



“As the consequence of the Flat Ownership Law was enacted in 1968, allowing to “9-10 storey buildings along the Boulevard also on the roads connecting to the Boulevard, and 6 storeys for near regions”; most of the apartments on the Atatürk Boulevard had been demolished and replaced by new higher buildings, up to 1970s. By the demolition, rationality behind the Jansen construction disappeared as front setback distances and gardens of the buildings occupied by the masses of the buildings.” (Gülkök, 2013)

Ankara first suffered from urban traffic and air pollution in the 60s. As a result, the functional character of the avenue, which served as a means of public transport, tended towards the ideological and political motivations of the new modern metropolis.

Nonetheless, Ankara and Atatürk Boulevard were bustling social hubs until the 1970s. Despite the fact that Atatürk Boulevard was a structure designed by the ideological power of a state, it turned into a promenade where people liked to spend their time, share, observe, use and experience. It was both a recreational and a public space. But during the 1970s, under the influence of political events and conflicts, the spatial organization and the social and cultural dimension of the avenue had a negative impact on life. In the mid-1970s, however, traffic congestion in the inner city led to an increase in pedestrian/vehicle collisions. Under the influence of the conflict between vehicles and pedestrians, the physical structure of the Boulevard was reshaped.

Since the 1980s, decentralizing strategies have led to unequal urban development, with peripheral areas attracting more investment than central areas. Between 1977 and 1994, Kızılay began to lose its importance and attractiveness, and through the processes of following and innovating, the area of activity in the Boulevard changed over time. Later, in the 1950s and 1960s, Kızılay became the most popular place and after the 1970s, Kavaklıdere became the most popular place.

“The second half of 1990’s is also a breaking point in terms of the meaning and practices of Ankara urban space. The incoming economic and political interests that produced urban spaces brought different urban experiences for Ankara citizens. Secured, gated, dissociated and homogenous life spaces followed by the spatial and social fragmentation.” (Gülkök, 2013)

## **CONCLUSION**

Creating a spinal boulevard, akin to the one present in Tirana, represents a remarkably intricate endeavor. This complexity might well account for the challenge in altering or dismantling such a city structure. The spinal form’s emergence is evident in newly established cities like Brasilia, Stalingrad, and Washington D.C., as well as in urban landscapes under dictatorial regimes, such as Napoleon III’s Paris, Mussolini’s Rome, Hitler’s Berlin, and King Frederik V’s Copenhagen. The process of constructing a spinal boulevard, as illustrated by the framework, can generally be categorized into three primary factors: political motivations, functional considerations, and design aesthetics. Irrespective of its origin under dictatorial regimes or not, the spinal form stood as a potent embodiment of urban design. Many designers harnessed its fundamental attributes: facilitating movement, ensuring equilibrium, maintaining an upright stance, offering shelter, and absorbing impact.

In the context of Tirana, which has been under study, these five attributes prominently define the characteristics of the spinal form:

1. Movement: The spine has remained the central axis of Tirana's transportation network since its inception. Serving as the main thoroughfare for various modes of transport, the spine comprises two boulevards and a square that serve as a pivotal junction in the city's road network. The train station located at the northern terminus of the spine, despite its diminished functionality today, reinforces the significance of the movement-oriented nature of the spine. Moreover, all roads leading from surrounding regions converge at the spine, establishing it as the cornerstone of Tirana's overall movement system.

2. Balance: The presence of the spine in Tirana has instilled a sense of equilibrium in the city's development. Prior to the construction of the spine, the city experienced spontaneous growth around multiple nuclei, lacking a comprehensive plan for new development. As Tirana's population surged due to its newfound status as the capital, the construction of the spine served as a crucial tool for instilling order and equilibrium in the city's expansion. Additionally, the spine symbolizes a balance between the old and the new, bridging the modern and the conservative elements within Tirana. This equilibrium-inducing role of the spine endures even after many years.

3. Upright Posture: When Tirana was designated as the new capital of Albania, the first order of business was designing a boulevard and a civic center that would project the modern, independent identity of the nation. Aligned with Frasheri's vision of an ideal capital city, Tirana required an urban development plan that centered around a robust political and administrative core. This center, embodied by the spine, provides Tirana and the nation with an upright, resolute posture.

4. Protection: The spine of Tirana possesses a protective quality, steadfastly maintaining its unaltered form amidst various periods of political upheaval. Despite the tumultuous events in its relatively brief history—such as the era of communism, World War II, and the post-socialist transition that permitted encroachments on urban spaces—the spine has safeguarded the city's overall urban layout. Tirana, particularly following the cessation of communism, underwent development without a comprehensive urban plan. Construction flourished, often without adhering to any regulatory guidelines. Nevertheless, the spine acted as a guardian, shielding the city's fundamental urban structure.

5. Shock Absorption: Tirana has experienced a series of seismic shocks throughout its relatively short history. However, the spine, much like a resilient foundation, absorbs these waves while steadfastly maintaining its unaltered form. While the vertical profile of the spine may have undergone natural shifts over time, its core essence remains unscathed, safeguarding both its function and form to this day.

In Ankara, the nature of socialisation in the context of shopping activities has been changed by the new places of consumption produced by the new accumulation process. Shopping malls are new (representations of) public spaces. The consumption of socialisation is the way of urban public life; it is practised in its own consumed public spaces. Under the influence of this process, the upscale shops on the boulevard could only survive until 2000, when they found new spaces in the shopping malls. As a result, the Boulevard lost its last attraction for the middle and upper classes. Atatürk Boulevard is no longer the heart of the city, but has become a transitional area and a representation of the city centre, as it no longer attracts all urban groups. For this reason, the construction of the Boulevard and its sidewalks was carried out before the construction of the Republic.

Another important point is that although there was little vehicular traffic in the early Republican period, sidewalks were an important planned urban element. As a result, the pavements had a high value that went beyond the basic function of ensuring safe circulation by separating the pedestrian street from the vehicular street. Along the boulevard, we can see that the reality, which contradicts the value given to the pavement, brings to light the ideals and the urban discourse of the time. In this way, the plan for the new city of Ankara was not based on the projections and tendencies of the existing urban context, but was shaped by the political and social intentions and ideals.

## References

- Akcan, E., (2009) *Çeviride Modern Olan; Şehir ve Konutta Türk Alman İlişkileri*, YKY Yay., İstanbul
- Aliaj, Besnik; Lulo, Keida; Myftiu, Genc: (2003) *Tirana The Challenge Of Urban Development*, Tirane
- Ankara Şehrinin Prof. M. Jausseley, Jansen and Brix tarafından yapılan plan ve projelerine ait izahnameler, Ankara Hakimiyeti Millîye Matbaası, 1929
- Batuman, B. , (2002), “Mekân, Kimlik ve Sosyal Çatışma: Cumhuriyet’in Kamusal Mekânı Olarak Kızılay Meydanı”, Ankara’nın Kamusal Yüzleri Başkent Üzerine Mekân Politik Tezler, G.Arif Sargın (der.) İletişim Yayınları, s. 41-76.
- Bozdoğan, Sibel., (2012) (çev. Tuncay Birkan) *Modernizm ve Ulusun İnşası*, Metis Yay., 3. basım, İstanbul
- Cengizkan, A., (2004) *Ankara’nın İlk Planı: 1924 – 1925 Lörcher Planı*, Ankara Enstitüsü Vakfı, Ankara
- Cengizkan, A., (2005) “1957 Yücel Uybadin İmar Planı ve Ankara Şehir Mimarisi”, *Cumhuriyet’in Ankara’sı; Özcan Altaban’a Armağan*, (der.) Tansı Şenyapılı, ODTÜ Geliştirme Vakfı Yay., Ankara C.H.P. 4. Büyük Kurultayı Tutulgası, (1935), Ulus Basımevi, Ankara
- Frasheri, Sami; (1988) *Vepra, Tirane*, (Translated From Albanian Original By The Writer)
- Günay, Baykan., (2005) *Ankara Çekirdek Alanının Oluşumu ve 1990 Nazım Planı Hakkında Bir Değerlendirme*, Cumhuriyet’in Ankara’sı; Özcan Altaban’a Armağan, (der.) Tansı Şenyapılı, ODTÜ Geliştirme Vakfı Yay., Ankara
- Gülkök, I., (2013) *Production Of The Sidewalks; The Case Of Atatürk Boulevard*, unpublished MSc. Thesis, METU, Ankara
- Haftalık Yeni Hayat 26, “Eski Ankara Nasıl Gençleşiyor?”, (15 Ağustos 1936): 8
- Kera, Gentiana; (2004) *Aspects Of Urban Development Of Tirana 1820-1939*, Seventh International Conference Of Urban History, Athens-Pireus,
- Kılınç, K., (2002), “Öncü Halk Sağlığı Projelerinin Kamusal Mekânı Olarak Sıhhye”, Ankara’nın Kamusal Yüzleri Baskent Üzerine Mekan Politik Tezler, G.Arif Sargın (der.) İletişim Yayınları, s. 119-156.
- Koçak, F. A., (2008), *Social and Spatial Production of Atatürk Boulevard in Ankara*, A Master Thesis in the Departments Sociology, METU, Ankara.
- Keskinok, H. Ç., (2009) (ed.), *Cumhuriyet Devrimi’nin Yolu; Atatürk Bulvarı, Koleksiyoncular*

<sup>15</sup>The city was designated as Albania’s capital in 1920. Subsequently, in October 1928, Ahmet Zog proclaimed Albania a constitutional monarchy with himself as king. On April 7, 1939, Italy’s occupation of Albania and its integration into the Italian Kingdom marked a significant turning point. The conclusion of World War II ushered in a communist regime in Albania, characterized by centralized authority that often-imposed urban initiatives disregarding private ownership. Architects and urban planners, following directives from the Central Committee of the Party of Labor of Albania, transformed the urban landscape according to political dictates. An especially impactful episode occurred during the transitional period following the collapse of the Communist Regime in 1991, which posed a severe challenge to Tirana’s urban structure. The urban structure of the city has been profoundly affected by these successive political shifts, resembling shock waves.

Derneđi, Ankara

La Turquie Kemaliste, Nisan 1935

Leonid – Friedrich, (1985) Ankara 1922 iki komintern gözlemcisinin kurtuluř savařı deđerlendirmeleri, çev: Gizem Grtrk, Kaynak Yay., İstanbul

Mehilli, Spiro Vasil; (2012) Tirana 1920-1944, Tirane

Raymond Zickel And Walter R. Iwaskiw; (2008) Interwar Albania, Albania: A Country Study, Tirane

Salzmann, Mury; (2010) Tirana Planning, Building, Living, Vienna

Őenel, Alaeddin., (1994) Çađdař Siyasal Akımlar, İmaj Yay., Ankara 1994

Tankut, Gnl., (1984) Jansen Planı Uygulama Sorunları ve Cumhuriyet Demokrasisinin Kent Planına Yaklařımı, Tarih İinde Ankara; Eylül 1981 Seminer Bildirileri, ODT Mim. Fak. Basımı, Ankara

Tankut, Gnl., (1990) Bir Bařkentın İmarı; Ankara 1929 – 1939, ODT Mimarlık Fak. Yay., Ankara

Trkylmaz, M., (2015) Ankarada Havuzbařları: 1923-1950, Ankara Arařtırmaları Dergisi, Haziran, 3(1), 105-139, Ankara

Yavuz, Fehmi., (1981) Bařkent Ankara ve Jansen, ODT Mimarlık Fakltesi Dergisi (JFA), cilt 7, sayı 1, Ankara

# **The peripheral areas, a new classification for Tirana**

Emë MEÇOLLARI  
*Polis University, Albania*

DOI: 10.37199/c41000113

## **Abstract**

The peripheral areas of Tirana have witnessed a significant development in recent years, reflecting the rapid urbanization of the city and population growth. The expansion of the city, especially after the 1990s, combined with insufficient legislation to regulate territorial growth, has led to the emergence of informal settlements on the outskirts of Tirana. Consequently, a double city has been formed, with differences between the center and the periphery in terms of urban structures, types of development, resident population, etc. Despite this, it should be noted that the peripheral regions are closely connected to Tirana and are considered an important part of the city's urban structure. Since the suburbs are not separated from the core of the city, it is difficult to tell where they begin and end. Therefore the exact definition of a suburb still remains a question: what exactly constitutes a suburb and how does it differ from the city center in terms of characteristics? This study aims to redefine the concept of the periphery based on different theoretical frameworks and identify the peripheral areas of Tirana through a Geographic Information System (GIS) analysis to determine their distinctive features.

By explaining the concept of the periphery, this thesis presents a comprehensive and detailed understanding of the periphery and related terms. Also, the thesis presents an innovative approach by developing an integrated matrix of indicators that will be integrated into the GIS system, serving as a tool for similar studies in Albania.

The objective of the study is to provide guidance to planning institutions and stakeholders, whether public or private, to identify peripheral areas and implement appropriate policies and strategies for their sustainable development.

## Keywords

Indicators, periphery, spatial justice, urban sprawl

## **Introduction**

According to the book “The Challenge of Urban Development in Tirana” (Aliaj, Lulo, & Myftiu, 2003), the city of Tirana’s early roots are tied to the Old Mosque of Sulejman Pasha. In addition to the mosque, other buildings with various uses, such as hammams and bakeries, were constructed, dividing the city into a number of smaller districts. The urban nature of this place, especially in its surrounding districts, was conditioned by the affiliation of a significant number of the people with farming, raising livestock, and crafts. After Albania gained its independence in 1912, Tirana started to see population expansion and urbanization. The city grew outside of its historical center, and new suburbs began to sprout there. These neighborhoods can be thought of as the first suburban developments.

When Tirana was proclaimed the capital in 1920, it still maintained an organic shape with medieval characteristics that had been established without the aid of any prior project. With the projects started to modernize the city during the reign, the first attempts to give new forms to this organism started (Dhamo, Thomai, & Aliaj, Tirana - Qyteti i Munguar, 2021). Tirana became a more significant urban center as new government buildings, schools, hospitals, and cultural institutions were constructed. We have migratory movements throughout this time period, primarily as a result of the rise in living standards, which also influenced the development of the city.

The initiatives for the city continued under the communist regime, with an emphasis on giving Tirana a new dimension and image. These projects ranged from the construction of the new historical district to the extensive interventions for the formation of new zones that primarily served as residential and industrial hubs. Urbanization persisted at this time, and suburbia started to expand. To accommodate the expanding population and offer essential amenities, the state constructed brand-new apartment buildings and housing complexes in the suburbs. Suburban areas such as “Blloku” served as residential areas for the elite of the time. However, throughout this period the city’s growth was strictly controlled according to regulatory plans (Dhamo, 2012). This growth trend shifted dramatically after the 1990s.

The demise of the communist dictatorship in 1990 brought about enormous socioeconomic and physical changes. The tactics for managing the territory were drastically altered, shifting from a limited and rigorous expansion of the city to an extended urbanization with irregular territory development (Bosetti, et al., 2020). This phenomena spawned an assortment of issues, including uncontrolled land use, deterioration of the urban environment’s quality, excessively crowded urban structures, different socioeconomic and health issues, a lack of suitable infrastructure, a lack of public services, and more (Aliaj, Lulo, & Myftiu, 2003). The sharp increase of the population and urban areas, along with insufficient regulations to manage territorial development, resulted in the establishment of informal communities on Tirana’s outskirts.

## **The aim of this research**

Peripheral areas frequently have different political requirements than urban or rural areas. Policy-makers can get insight into the distinct issues and opportunities that these communities confront by studying the suburbs. These insights can be used to influence the creation of policies and actions addressing challenges such as infrastructure, affordable housing, education, health care, and local government. Understanding suburban dynamics assists researchers, policymakers, and urban planners in anticipating and responding to the changing requirements and needs of suburban communities. The objective of this research is to define and identify suburbs using a framework interlaced with indicators, which will then be incorporated into a geographic information system (GIS).

## Literature review

More people will move to cities as the population of the world rises, and a sizable number of them will reside in areas that are already categorized as suburban. It is crucial to comprehend what a suburb is and its significance heading into the future.

Suburbs vary greatly in appearance, population, and actual significance around the world, making it difficult to define suburbia in terms that apply universally. Since peripheral territory is interpreted differently in many literary works, it is required to compile a number of concepts from various authors in order to define it. Suburbs can be categorized according to a wide range of criteria, including geography, transportation options, culture, and external appearance. Nevertheless, some terms have a certain stability and familiarity despite ongoing changes, significant spatial alteration, and heated discussion about the regions surrounding cities.

The Oxford Dictionary defines a suburban area of a city as “A residential district situated on the outskirts of a city or large town, typically characterized by single-family homes, gardens, and a low population density” (Murray, 1989). Individual homes on small lots, a variety of stores and services, and a mix of commercial and industrial uses are frequently characteristics of suburban districts. These communities typically surround large cities and provide a more economical alternative to residing in the city core.

According to the Dictionary of the Albanian Language, the suburb is defined as “The part that is located on the side of a residential center, far from the center of the city or village, the outer quarters of a city; the peripheral parts of a country, far from its economic, political and cultural center” (Akademia e Shkencave e RPSSH, 1985).

A Routledge study on the periphery argues (Forsyth, 2019), that the periphery can be described in terms of a number of factors, including geographical location, built environment characteristics, transportation, activities, sociocultural dimension, architecture and design styles, etc. Suburban regions are regarded as a significant component of the metropolitan landscape since they offer both residents and visitors homes, employment, and recreational possibilities. They frequently have a low population density, individual residences, and a mixture of industrial, commercial, and recreational purposes. They are close to large cities and can provide a more economical alternative to living in the city center. Suburban areas contribute significantly to the overall urban area by balancing and diversifying the metropolitan landscape.

Suburbs are frequently considered to be migratory zones characterized by depravity and poverty. For social groups fleeing the old city core, the suburbs offer a “new settlement” aspect. This links the notion of spatial justice and the periphery. A key component of spatial justice is “the fair and equitable spatial distribution of socially valued resources and opportunities to use them” (Soja, 2010). Previous studies have demonstrated that the population is impacted by the unequal allocation of public resources, services, and goods in metropolitan regions. Cities are expanding outward as more people move from rural to urban areas, widening the gap between urban and rural residents’ standard of life, particularly in low- and middle income nations. As a result, there is social unfairness in the allocation of public goods and services. The idea of a “15-minute city,” in which daily services including work, shopping, education, health care, and other activities are easily accessible within 15 minutes on foot from any area in the city, strives to lessen the uneven distribution of services.

According to Edward Soja (Soja, 2010), marginalized or suburban areas of a city or metropolitan area are referred to as liminal. Soja claims that families with poorer incomes, lower levels of education, and restricted access to services and facilities are frequently found in these “in-between” communities. These border regions might offer chances for different kinds of urban growth in

addition to acting as vulnerable and hostile environments (Soja, 2010). He emphasizes that because it challenges the dominant spatial order and provides excluded people with an opportunity to challenge established power structures, liminality is a crucial element of spatial justice. He highlights the significance of appreciating and embracing liminal spaces as sites of transformation and opportunity. Soja makes the case that it is essential to establish a “triangle of spatial justice” that encompasses the core, the peripheral regions, and the liminal areas in between. This triangle represents a more inclusive and egalitarian spatial paradigm that acknowledges the existence and significance of liminality in urban and social processes.

Sociologist and expert in urban studies Saskia Sassen investigates the peripheral in the context of globalization and global cities. Sassen explores how the effects of international movements of labour, capital, and information on suburban regions in her book “The Global City: New York, London, Tokyo” (Sassen, 2001). She highlights that suburbs are not uniform areas but rather have a variety of social, economic, and cultural characteristics. Sassen points out that suburban areas are more than just deprived areas on the fringes of major cities; they are essential to the operation of the global economy. According to her, peripheries are crucial to the global economy because they house a variety of economic activity like resource extraction, manufacturing, and low-skilled labor-intensive businesses.

Urban sprawl is another concept that is strongly tied to the periphery and is characterized as unplanned, uncoordinated, and uneven growth that is fueled by numerous mechanisms and results in unsustainable patterns of development (Galster, et al., 2001). This phrase has been used in a variety of contexts to discuss urban development patterns, the growth of urbanized regions, the reasons behind specific land use behaviors, and the effects that result from those behaviors. When referring to low-density, ineffective, and unplanned suburban development on the outskirts of cities, the term “urban sprawl” is typically used in a derogatory sense. The necessity to accommodate urban population expansion contributes to urban sprawl.

### **Tirana’s urban development through the years**

Tirana’s origins could be traced back to the Ottoman Empire, when it was a small city with a dense urban core. The city was scattered around its core until the first quarter of the nineteenth century, when the main routes were opened in a radial shape connecting the center with the few populated regions. The relationship of a large portion of the population with farming, raising livestock, and crafts influenced the urban nature of this place, particularly in its outskirts. Tirana began to undergo population expansion and urbanization following Albania’s independence in 1912. The city developed beyond its historical core, with the introduction of new communities beyond the core that can be termed early suburban developments.

Beginning in 1917-1918, we witness the first attempts by several Austrian academics to map Tirana and its road structure. Based on this, Austrian engineers and architects created the first plan for Tirana in 1923. The goal of this design was to alter and rectify Tirana’s road system to a more rectangular shape while keeping the main radial routes of the old city (Dhamo, Thomai, & Aliaj, 2021). Other interventions in the city, particularly in the central area, included the opening of new axis within the existing street structure and the construction of new aristocratic districts, as was common of European towns at the time.

During the reign of the monarchy, projects to modernize the city were also established, Tirana became a more significant urban center as new government buildings, schools, hospitals, and cultural institutions were constructed. There were numerous migratory movements throughout this time period, primarily as a result of the rise in living standards, which also influenced the



expansion of the city.

Following World War II, Albania fell under the control of communists. A controlled planning strategy was put into place during this time, which had a big impact on Tirana's urban growth. During this time, the city underwent substantial deconstruction and reconstruction efforts with the goal of transforming it into a socialist city. Traditional structures were dismantled to create room for imposing civic spaces, broad boulevards, and public squares. Additional neighborhoods were also added, with housing and industry as their primary functions. The suburbs functioned as the elite's preferred neighborhoods at this time.

Among several countries in Eastern and Central Europe, Albania transitioned from a totalitarian to a democratic political system in the beginning of the '90s. The nation's urban planning industry was significantly impacted by this political upheaval. Mass internal migration caused rapid and unplanned development of Tirana's outskirts, leading to inadequate infrastructure to meet the requirements of the expanding population.

Tirana has kept on becoming more urbanized, and its suburbs have continued to grow. The growth of the suburbs has been aided by increased migration from rural areas, higher living standards, and the development of infrastructure. Modern residential complexes, high-rise buildings, shopping malls, and other facilities are being built in the suburbs, which has affected the city. Urban regeneration initiatives have sought to improve both the quality of life for locals and visitors. Examples include the revival of city centers and the establishment of green areas.

Today, Tirana is a modern day urban center that is expanding to an unspecified extent. Because of their mutual dependence, the city core and the suburbs cannot be thought of as two separate entities. The peripheral districts are still an integral part of Tirana's urban layout and are involved in the growth and development of the city.

## **Tools and methodology**

The major goal of this research is to identify Tirana's peripheral locations and comprehend what makes them distinctive, as was indicated in the chapters above. Some indicators have been developed based on the theoretical framework, in order to provide a more accurate database. The three main types of these indicators are physical, social-economic, and service/access-related indicators. The indicators that will be used for the analysis, their reference ranges, and the grouping for each reference are displayed in the following table.

The mapping of these areas in the GIS geographic system will allow for the identification of the peripheral regions in the city of Tirana for each chosen indicator. A map overlay based on indication categories was carried out after assessing each indicator separately. This overlaying was created to show which areas fall under which categories.

## **Analysis and interpretation of results**

The findings of overlaying the maps of the physical indicators show that Kashar, Kombinat, Selita, Sauk, Shkoza, Allias, and Dajti are the most prominent peripheral areas. Low building intensity, the existence of largely brand-new single objects, and low altimetry are characteristics of these areas. According to the local plans of the municipality of Tirana, no increases in intensity are anticipated for these areas either.

It is discovered that the areas of Kashari, Kombinati, Selita, Sauk, and Dajti are significant according to the overlay of socioeconomic indicators. These neighborhoods are distinguished by a predominant residential land use, a low resident density per square meter, lower land values and

Categories	Indicators	Reference ranges	Classification
Physical	Existing intensity	0-0.5	Peripheral area
		0.5-3.0	Intermediate zone
		3.0-5.4	Central area
	The difference between the proposed intensity and the existing one	0-0.5	Peripheral area
		0.5-3.0	Intermediate zone
		3.0-5.4	Central area
	Construction typologies	Individual structures	Peripheral area
		Individual linked/linear/tower structures	Intermediate zone
		Non-individual structures	Central area
	Altimetry	0-2 floors	Peripheral area
		3-5 floors	Intermediate zone
			7+ floors
	Construction quality	Mainly new constructions	Peripheral area
		Mix of new and historical constructions	Central area
Socio – economic	The population	Less than 30,000 inhabitants	Peripheral area
		More than 30,000 inhabitants	Central area
	Population density	0-200 inhabitants/m <sup>2</sup>	Peripheral area

Service/access related		201-1000 inhabitants/m <sup>2</sup>	Intermediate zone
		1001-2000 inhabitants/m <sup>2</sup>	Central area
	Land use	Main residential use/industrial-economic area	Peripheral area
		Mixed Land Use	Central area
	Unemployment rate	Over 0.5	Peripheral area
		0.3-0.5	Intermediate zone
		0.2-0.3	Central area
	Land value	20,000 - 25,000 ALL/m <sup>2</sup>	Peripheral area
		25,001 - 35,000 ALL/m <sup>2</sup>	Intermediate zone
		More than 35,000 ALL/m <sup>2</sup>	Central area
	Healthcare centers	Less access to health care coverage	Peripheral area
		More access to health care coverage	Central area
	Educational institutions	Less access to educational institutions	Peripheral area
		More access to educational institutions	Central area
	Urban transport stations	Less access to urban transportation	Peripheral area
		More access to urban transportation	Central area

Table 1. Indicators for the identification of peripheral areas.  
Source: PPV Tirana TR030, Open Data of Tirana's Municipality and author's calculations.

Accessibility	More than 1500m from the outer ring road of the city	Peripheral area
	501m-1500m from the outer ring road of the city	Intermediate zone
	0-500m from the outer ring road of the city	Central area
	Low accessibility	Peripheral area
	Medium/high accessibility	Central area

Table 1. Indicators for the identification of peripheral areas.  
 Source: PPV Tirana TR030, Open Data of Tirana's Municipality and author's calculations.

a higher unemployment rate than the rest of the city.

When it comes to quality of service and access indicators, Kashari, Sauku, and Dajti areas have been identified as the three primary peripheral locations. Additionally, it was noted that most suburban locations have reasonable access to amenities including hospitals, schools, and public transportation, disregarding the fact that the distance from the center causes the quality of these services to deteriorate.

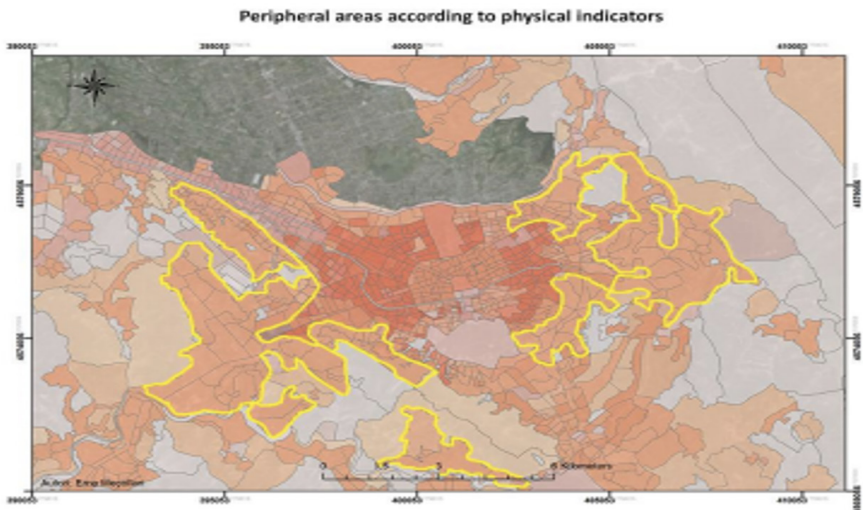
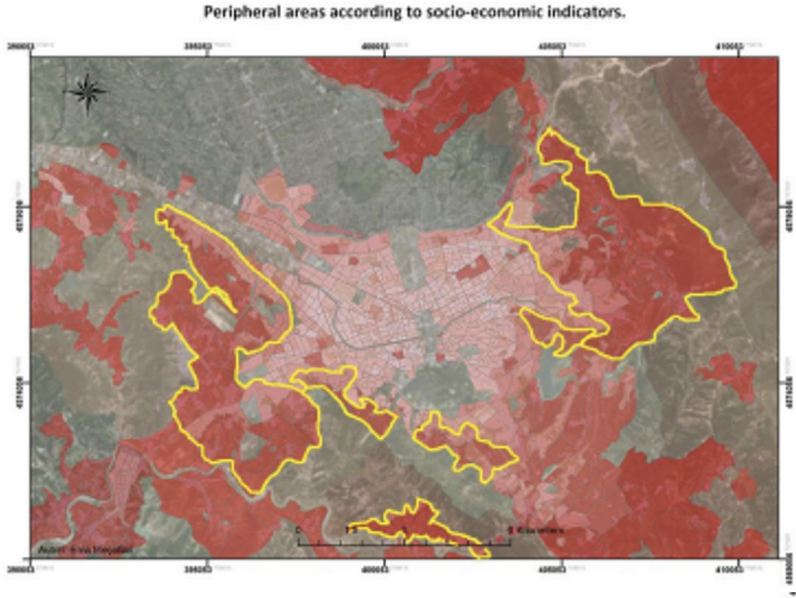
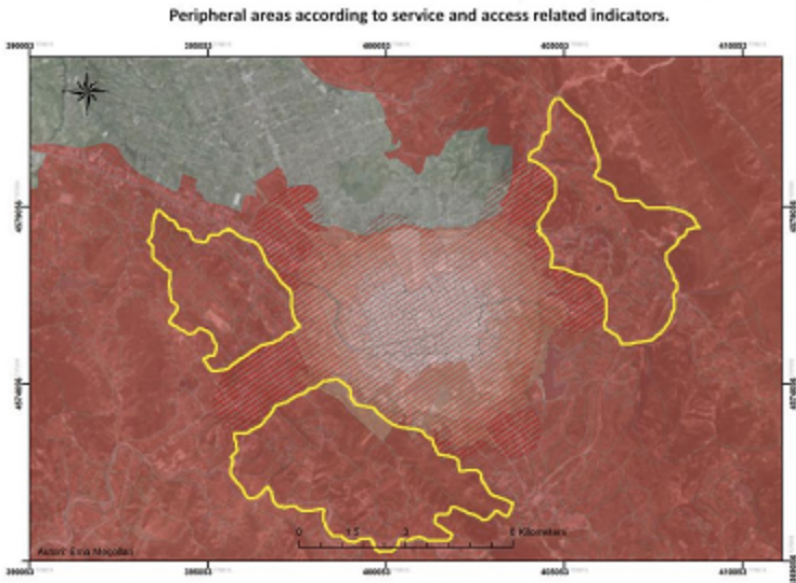


Figure 1. Peripheral areas according to physical indicators  
 Source: Author's calculations



*Figure 2. Peripheral areas according to socio-economic indicators.  
Source: Author's calculations*



*Figure 3. Peripheral areas according to service and access related indicators.  
Source: Author's calculations*

## **Conclusions and recommendations**

In the end, the periphery is a complex concept that has diverse connotations depending on the author or literature. To begin with, suburban attributes can vary greatly based on location, history, population, and physical environment. While some suburbs are prosperous, low-density residential regions with easy access to city centers and urban services, some are less desirable locations with deteriorated infrastructure, limited public transportation alternatives, and socioeconomic challenges. In addition, cultural and political issues frequently impact how the periphery is perceived and valued, which shapes how it is defined.

However, we might claim that, in the face of these continual shifts in definitions, we have reached a point of definitional singularity. The concepts considered provide an overview of a number of peripheral characteristics from which we understand that suburbs are areas located outside of the city core, with distinct physical characteristics such as individual dwellings with detached plots, the presence of industrial areas, and low buildings primarily 1-2 stories. Furthermore, in the case of Tirana, the suburbs are distinguished by lower land values, resulting in greater affordability for purchasing or renting a residential construction.

The conducted research allowed for the identification of Tirana's peripheral regions based on the stated indicators, which depend mainly on theoretical research. These indicators are classified as physical, socio economic, and indicators related to services/access. Kashari, Sauku, Selita, Kombinati, and Dajti are the primary peripheral areas discovered by the mapping of these variables. At the end of the investigation, we can see that these areas are characterized by low population density, low development intensity, generally low-rise buildings, lower land value in comparison to the city's core, and so on.

## **Recommendations**

Some of the recommendations that the Municipality of Tirana can provide for the management of peripheral areas are as follows:

- Creating a comprehensive urban planning framework that considers the features and demands of suburban communities. This entails doing a complete assessment of infrastructure needs, land use patterns, transportation networks, and environmental concerns.
- Policy and strategy implementation to promote equitable resource distribution between the center and the periphery.
- Develop efficient and inexpensive public transportation networks to prevent overloaded buses, encourage sustainable means of transportation, and boost accessibility within and between suburban communities.
- Encourage suburban economic growth to increase job possibilities and lessen travel needs. Promoting collaborations with private-sector organizations to attract investment and develop entrepreneurship in suburban neighborhoods.
- Conduct participatory planning by fostering active community engagement in decision-making processes connected to suburban development, so that the outcomes are as desired as feasible.

## **References**

- Akademia e Shkencave e RPSSH. (1985). Fjalor Enciklopedik Shqiptar. Tirana: Kombinati Poligrafik Shtypshkronja e Re.
- Aliaj, B., Lulo, K., & Myftiu, G. (2003). Tirana the Challenge of Urban Development. Tirana: SEDA and CO Plan.

- Bosetti, S., Chiffi, C., Pechin, S., Uccelli, I., Alite, E., & Bajrami, Z. (2020). Plani i lëvizshmërisë së Qëndrueshme Urbane për Bashkinë e Tiranës. Lëvizshmëria e qëndrueshme urbane në vendet e Evropës Juglindore II, 2, 8-115.
- Dhamo, S. (2012). Tirana dhe roli i “imagjinatës urbane” në transformimin e saj. Nga gjenezat tek modeli metropolitan. Forum A+P, 10, 6-59.
- Dhamo, S., Thomai, G., & Aliaj, B. (2021). Tirana - Qyteti i Munguar. Tiranë: Polis Press.
- Forsyth, A. (2019). The Routledge Companion to the Suburbs. (B. Hanlon, & T. J. Vicino, Eds.) New York: Routledge.

# **Unveiling the Post-Digital Paradigm Cultural Implications in a Post-Human Design Ecology**

Dr. Valerio PERNA  
*POLIS University – INNOVATION\_Factory, Albania*

DOI: 10.37199/c41000114

## **Abstract**

In recent years, the concept of intelligence has become a popular term that accompanies various actions, practices, processes, and products. This prominent presence in contemporary discussions stems from two significant factors. Firstly, there has been a fundamental shift in our understanding of intelligence. It is no longer seen solely as a quality exclusive to humans but rather as a collection of emerging properties and conditions that can exist in both human and non-human entities. Secondly, intelligence is now viewed as a multi-layered relationship between a 'brain' (whether human or non-human), a body, and the environment(s) in which that body exists.

Presently, intelligence encompasses all aspects of design, introducing a new form of design intelligence that differs greatly from the human-centered approaches of the past. Similarly, creativity is no longer solely attributed to the human brain. Its definition has expanded to include the operational value of novel abstractions and pattern associations generated through machine-driven thinking processes.

Architects are now exploring various "intelligent" tools such as different AI languages, generative adversarial networks and text-to-image tools to understand how non-human intelligence can be applied to address contemporary issues in cities and urban centers, and considering also the expected benefits and the possible risks originating from their use.

The paper aims to investigate the emergence of a post-digital sensibility in architecture and seeks to delve through theoretical and practical approaches - the notion of creativity and intelligence in a post-human design ecology while demystifying the so-called 'risks' associated with the utilization of Neural Network processes in design. Furthermore, it aims to assess the extent to which these processes can inform architectural design for today's challenges.

Keywords

AI, GAN, Resilient City, Intelligence, Post-Human Design, Architectural Design



## **Introduction**

In the span of a few years, the field of architecture is undergoing rapid transformation due to the incorporation of cutting-edge digital technologies, particularly the integration of artificial intelligence (AI) into various aspects of design, representation, and production. There exists a persistent inquiry into a range of “intelligent” instruments, incorporating diverse AI languages, generative adversarial networks, and text-to-image capabilities. These endeavors are aimed at understanding how artificial intelligence, in its various forms, can be effectively utilized to tackle present-day urban complexities and issues. Concurrently, deliberate attention is being devoted to evaluating the potential advantages and drawbacks stemming from the integration of these tools within urban centers and municipalities.

Considering the already substantial impact of AI – and that “AI is everywhere” (Del Campo, Leach 2022) in fields such as engineering, social sciences, and political sciences, it becomes imperative for architecture to adopt a critical approach in understanding and evaluating the implications of these transformative technologies within its own domain. By doing so, architecture can effectively navigate and harness the potential benefits while addressing any challenges that may arise from the integration of AI in its practices.

This scholarly article aims to delve into the growing prevalence of a post-digital sensibility within the realm of architecture. Employing a comprehensive investigation that encompasses both theoretical and practical methodologies, the study aims to explore the complex interplay between creativity and intelligence within a post-human design ecology (Anderson & Speed, 2008). Moreover, it seeks to demystify perceived ‘risks’ attributed to the incorporation of Neural Network processes in design (Oxman, 1999). Additionally, the research strives to evaluate the potential of these processes in informing contemporary architectural design to effectively address the challenges of today (Yoo et al., 2021).

## **Wandering through a Post-Human Design Ecology**

A commonly used but already outdated definition of AI is that seeks to do what human minds can do (Boden 2016). In the last years, we have seen many cases in which human intelligence has been outperformed from the artificial one (the cases of Kasparov defeated by DeepBlue in 2016 and Lee Sedol by AlphaGo in 2016 are emblematic) and, besides the lack of consciousness still not present in any of the many existing AI tools, we feel the urge to face an intellectual leap where contemporary perspectives acknowledge that intelligence, whether exhibited by humans or artificial entities, exists in a state of dynamic interdependence. Indeed, all forms of intelligence, whether organic or mechanized, are viewed as constituents of a broader collective—an overarching alien intelligence that transcends individual boundaries (Voyatzaki 2016). These developments are intricately linked to the evolution of media and symbolic systems. The current imperative lies in augmenting both our individual and communal cognitive capacities through active participation in diverse intellectual collaborations. This engagement is vital for the conception, innovation, and creation of a novel human reality within the transformed and reterritorialized realm of cyberspace and the technologically infused cultural milieu characteristic of the post-human era (Lévy 2016). Considering these premises, not by chance we have seen a growing interest in the architectural and design community toward the notion of Posthuman and Postdigital conditions where the relationship between science and architecture is intended in terms of its cultural production rather than in terms of technical possibilities (Del Campo 2018), and to isolate some enzymes through which science has – and will – be contributing, in continuity or discontinuity, to the lineage of architectural production. Posthuman design practices involve a shift away from centralized human

judgment and instead embrace the idea that creative capacities can be delegated to entities beyond the human realm. These entities may include objects, tools, materials, diverse species (whether organic or artificial), and environmental influences.

The term was coined by Kim Cascone, an electronic music composer by trade used the term Post-digital for the first time in his article *The Aesthetics of Failure: "Post-digital" Tendencies in the Contemporary Computer Music* (2017) where she points out a series of discipline where the interaction and interrelationship among human and non-human intelligences has become a standard practice and not just a kind of amusement or technical trick but, instead, contributes to the development of several of novel insights empowering the innate human condition of doing so and, innerly, mutating the relationship to the human condition.

The real question regarding these processes lies in the understanding of what techniques in human-machine interaction can we implement to stimulate creativity even more and how can we establish feedback loops between humans and machines, enabling the development of new workflows and technologies that, in turn, inspire and impact us. Indeed, the exploration of a post-digital sensibility in architecture involves investigating how natural language-based AI applications can transcend traditional boundaries, and through theoretical and practical approaches, delve into the realms of creativity and intelligence within a post-human design ecology. By utilizing Neural Network processes in design, this discourse seeks to dispel the perceived risks associated with such technological advancements and unlock new possibilities for architectural expression and exploration. By integrating AI-powered text-to-image tools with architectural practice, the exploration of a post-digital sensibility foresees a future where traditional boundaries between language, creativity, and design are eradicated. Through a deliberate understanding and destigmatization of AI's capabilities, architects can pioneer new avenues to influence the built environment in unprecedented and imaginative manners.

Furthermore, it is needed to outline that the Postdigital doesn't have to be literally intended as a moment after the digital, as the previous phase could be intended concluded and historicized, but rather the prosecution of an already existing a new paradigm shift within the digital culture realm, where the real object of studies are the implications and interferences. Using an Heideggerian term we are witnessing a continuous slow transition from one state to the other, from Ereignis to Sein. Having established the foundational ontological discussions, we now proceed to a comprehensive exploration of AI within the architectural domain. This journey entails a closer examination of pivotal technologies like diffusion models and generative adversarial networks, crucial in enhancing computational capacities and reshaping conventional paradigms of architectural innovation. Furthermore, we will illustrate a practical application of these technologies within the academic context of Polis University, offering insights into their tangible implementation and impact on architectural design and practice.

### **AI and Architecture – Models and features**

AI, with all its branches and deviations, can be considered such a relatively new field. When it comes to computer science, there is an important distinction to be made when developing intelligent machines: expert systems and learning system.

The first one where quite famous at the end of the 80s-beginning of the 90s (Saggio 2007) and are computer-based programs designed to replicate and mimic the decision-making processes of human experts in specific domains. These systems utilize knowledge representation techniques to capture and store expert knowledge, along with reasoning mechanisms that enable problem-solving and decision-making based on that knowledge (Buchanan, Smith 1988). However, with the

growing complexity of the data and information to be elaborated, they showed themselves to be obsolete and not able to offer precise answers. Furthermore, their impossibility to learn – and to grow accordingly to the given inputs – confined them into a field of ‘hardcore solutions’ where there is the constant need of need a human ‘expert’ to input information into the knowledge base. In a few words, they operate but they do not learn and do not interpolate data increasing complexity; they related to the expert (the human) than send the inputs and critically extrapolate them. Starting from 2006, we have seen the rise and diffusion of so-called learning system. Learning systems, often referred to as machine learning or artificial intelligence, involve algorithms and models that enable computers to learn from data and improve performance on a specific task over time. They rely on various techniques such as supervised learning, unsupervised learning, and reinforcement learning to analyze and adapt to patterns within the data. Supervised learning involves labelled data to train models, unsupervised learning discovers patterns without labelled data, and reinforcement learning involves making decisions based on trial and error. Learning systems are fundamental in modern AI applications, from natural language processing to computer vision. Researchers and practitioners continually enhance learning algorithms and frameworks to achieve better accuracy and efficiency (Bishop, 2006; Goodfellow et al., 2016). Indeed, AI these days refers more and more to the field of deep learning as we intend a machine learning technique that teaches computers to do what comes naturally to humans: learn by example. Most modern deep learning models are based on multi-layered artificial neural networks such as convolutional neural networks and transformers and gets its name from the number of layers – in many cases more than 1.000 – in a neural network.



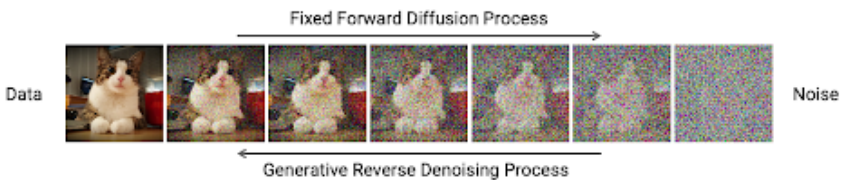
Fig. 1 - Hannah Daugherty, Mariana Moreira de Carvalho, and Imman Suleiman, *Augmented, Imagining the Real*, Taubman College of Architecture and Urban Planning, University of Michigan, Ann Arbor, Michigan, 2019).

The latter is comprised of interconnected artificial neurons, organized in layers imitating the functioning of the human brain (Input layer – hidden layer – output layer). Each neuron in a layer is connected to neurons in the subsequent layer, with weights assigned to these connections. During training, the network learns optimal weights by adjusting them to minimize the difference between predicted and actual outputs, using algorithms like backpropagation. When it comes to their usage in the discipline of architecture, neural networks possess the capacity to be trained in order to discern and encapsulate significant attributes present in particular architectural datasets. In this context, a neural network was specifically trained using diverse architectural features sets, including elements such as gates, domes, and columns. Additionally, the network's training process involved the integration of a dataset comprising renderings of architectural features designed by students. Through this training, the network was able to imbue the resultant images with the distinct design sensibilities encapsulated in the added dataset of the students' and teaching staff's creations.

This integration of AI technology encompasses a wide array of functionalities, ranging from generating design renderings based on images to optimizing design solutions through vector-based approaches. By leveraging AI, the early-stage design inspiration phase is enriched with heightened creativity, while the efficiency of the overall design process is significantly enhanced.

Diffusion models, also known as diffusion probabilistic models or score-based generative models, are a class of generative models, and some of the most diffused in the field of architectural design. Diffusion models exhibit versatile applications encompassing image denoising, inpainting, super-resolution, and image generation. For instance, in the domain of image generation, a neural network undergoes training to eliminate gaussian noise from images, essentially learning noise removal techniques. Following this training phase, the neural network becomes proficient in image generation. It initiates the process by utilizing a randomly generated noisy image and subsequently denoising it.

These models find extensive utilization in the generation of diverse real-world data, notably within the domain of text-conditional image generation. Prominent examples of this application include Midjourney, DALL-E and Stable Diffusion.



*Fig 2. Diffusion model processes moving to and from data and noise*

In the next section, we will analyse the implementation of such models in a pedagogy experience at POLIS University, showing the beginning of a proper methodology where architecture students can benefit from a postdigital approach and understand the conceptual and ontological implications of such tools within their design practice.



Fig 3 - Daniel Bolojan / Nonstandardstudio, *Machine Perceptions: Gaudi + Neural Networks*, 2021

The integration of artificial intelligence (AI) within architectural practices represents a significant advancement, opening avenues for innovative and more efficient design solutions, presenting a promising trajectory for the future of architecture.

Ludwig Wittgenstein, in his influential *Tractatus Logico-Philosophicus* (1922), introduced the notion that the boundaries of one's language delineate the boundaries of their understanding of the world. This philosophical standpoint suggests that if one lacks the linguistic capacity to articulate a concept, it is considered non-existent or incomprehensible. However, in today's context, Wittgenstein's assertion takes on a new significance as we observe the rise of natural language text-to-image applications propelled by artificial intelligence algorithms. This advancement prompts deep reflections on the concept of a post-digital sensibility in the realm of architecture.

This year, we started the implementation of Diffusion Models at our institution (POLIS University, Tirana, Albania) especially with the students of the Professional Master Program in Digital Architecture. The Studio in Advanced Architectural Design challenged the students to implement in their design process some AI-based tools. Being aware that these AI models, however sophisticated, are constrained in their capacity to generate content beyond the confines of the original dataset and consequently, their creative capacity, often described as "imagination," is bound by definite limits we involved the students in an explorative process where their ideas could be first drafted semantically and then tested through the chosen model. Doing so, we wanted to stress the importance of the semantic dimension of architecture through the power of learning how to extrapolate from a specific pre-trained dataset, the kind of features the students wanted to achieve and visualize future scenarios dealing with contemporary architectural needs and crises.

The process was composed from an analytical analogic part – where the students drafted their

prompts in the form of small written texts -, a second one where the drafted prompt is implemented in small portions to validate its validity in a form of growing complexity and then produced outputs are again interpolate and blended through a series of digital techniques with the diffusion model itself. These technological advancements raise critical inquiries regarding our established design and pedagogy methodologies, comprehension of our culture, and interactions with the surrounding world. Notably, two pivotal factors contributing to this substantial disruption are the immense volume of data generated daily and the remarkable speed at which computers can process this data, extracting valuable insights.

With the students we work on 3 different directions: from close-up to the urban environment; blending and re-interpolating; a matter of style.

**1. From close-up to the urban environment:** the students were given a directive to capture detailed close-ups of architectural elements during several explorations in Stable Diffusion – Midjourney and Dall-E2. Subsequently, employing the zoom-out and inpainting tool, they systematically resized and creatively reimagined the initial prompt until they achieved an urban scenario linked to the original image. This exercise served as a valuable method for comprehending how the specific features investigated in the original prompt could anticipate and exert influence on the urban environment concerning the proposed project (fig. 4-5).

**2. blending and re-interpolating:** the outcomes stem from diverse blending and interpolation processes applied to the identical Midjourney prompt across various versions and distinct characteristics. The ultimate image is an amalgamation of reconfigured and scaled images achieved through the utilization of blending tools (fig. 6).

**3. a matter of style:** the final exercise scrutinizes the occurrence of prompts affiliated with particular architectural styles within the framework of diffusion models. The underlying concept is to explore how AI can aid in the reintegration of distinct architectural styles into the discourse surrounding architecture. In doing so, it prompts critical inquiry into the influence of artificial intelligence on the contemporary urban environment, emphasizing the need to assess and comprehend its impact on architectural practice and design ethos (fig. 7).



Fig 4. close up deezen photo of a building wooden biomorphic facade made of organic forms, wooden/perforated, big windows, located in an urban scenario with people passing by, highly-detailed, hyperrealistic, photographed by Nick Knight –ar 9:21 (first 3 images) –ar 7:4 (final image) The result is obtained with a series of inpainting – zoom-out an remix features from the original image



Fig 5. close-up photo of a residential block parametric gothic facade made of white marble, environmental fog, cold side light, highly-detailed, -ar 1:1 – The result is obtained with a series of inpainting – zoom-out an remix features from the original image



Fig 6. Prompt 1: Moodboard model of a building made out of wood, surreal neuron city, by Wenzel Lorenz Reiner, refined spontaneity, ffffound, plurality, contorted limbs, soaring towers and bridges, by Weiwei, by Wolfgang Zelmer, technical sketch, artforum, notation -ar 3:2 -v 3

Prompt 2: A wooden model of a building that looks like a tree, in the style of abstract and conceptual sketches, fantastical machines, floating structures, intricate webs, columns and totems, organic forms, muted tones, panoramic scale -ar 128-73 -v 3

Prompt 3: blend 1+2 -v 5.2

Prompt 4 Photography of a private living room in a wooden model of a building that looks like a tree, in the style of abstract and conceptual sketches, fantastical machines, floating structures, intricate webs, columns and totems, organic forms, muted tones, photographed by Nick Knight -ar 128:73

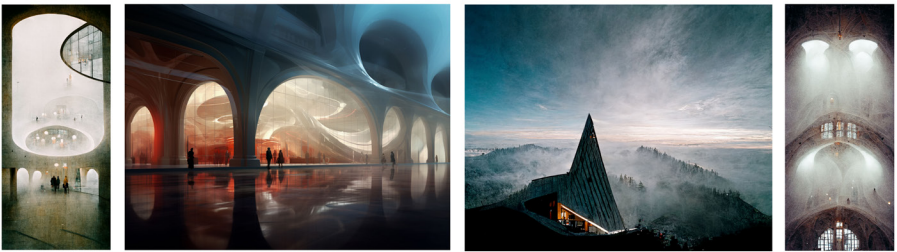


Fig 7. Several prompts based on the notion of style. Prompt 1 An open public space with a white floor and circular lights, in the style of gothic architecture, urban expressionism, distinctive noses, intricate ceiling designs, danish design, atmospheric fog, fuji film eterna 400t, bold structural designs -ar 9:21

Prompt 2 Full - Shot Angle of an exterior of triangular concrete cabin on top of a mountain, gravity - defying architecture, dimity roulland, neue sachlichkeit, cornelis springer, iconic, high - angle, danish design, atmospheric fog, fuji film eterna 400t, bold structural designs

## Conclusion and further discussion

The methodology described above is just a starting point for the implementation of such tools and technologies within the pedagogy debate in the Institution. As designers, our creative processes often involve a mode of creativity characterized by interpolation and combination. Within this framework, we generate and construct interpolations by amalgamating and recombining preex-

isting concepts and ideas to challenge some of the outmost challenges in the architectural debate. Indeed, the main objective of this research is to offer the students new methodologies at-hand and to nurture them in the exploration of those at the forefront of a postdigital Ai-driven architectural debate. Such tools can be used to explore at the same different elements of the architectural discipline: formal, aesthetical, tectonically, etc. and to lead to the development of a further multimodal algorithmic, text-based, image-based and gradient-based inputs. When the system learns and evolves the connection between the human and the machine is definitely harbinger of innovation and complex dynamics within the two entities. Contemporary crises can be then drafted into specific scenarios that can be then analysed, evaluated, and actualize in the real world to test solutions which are enriched with a formal, technical, and visionary enzyemes.

The agency of the design phase is split at the same time between the two exploiting at the same time the stochastic power of the machine and, the human capacity to discern novel design methodologies from the outcomes presented by neural networks is noteworthy. It underscores the ability to extract inspiration even from errors or deviations in the generated results. This discernment, accompanied by a nuanced sensibility, allows designers to imbue spaces with layers of meaning beyond the inherent materiality, thereby enriching the design process and the final architectural manifestations. Indeed, the convergence of AI-driven text-to-image tools with architectural practice represents a pivotal juncture. In exploring this post-digital sensibility, we envision a future where the traditional boundaries segregating language, creativity, and design are deconstructed. By embracing and unravelling AI's vast potential, architects can pave the way for groundbreaking approaches to shaping the built environment, transcending conventional limitations and venturing into unprecedented realms of architectural innovation.

## Reference List

- Anderson, P., & Speed, C. (2008). The New Ecology of Things (NET): Social, spatial, and temporal dimensions of ubiquitous things. *International Journal of Human-Computer Studies*, 66(10), 929-940.
- Bishop, C. M. (2006). *Pattern recognition and machine learning*. Springer.
- Goodfellow, I., Bengio, Y., Courville, A., & Bengio, Y. (2016). *Deep learning* (Vol. 1). MIT press Cambridge.
- Boden, M. (2016). *AI: Its Nature and Future* (p. 1). Oxford University Press.
- Buchanan, B. G., & Smith, R. G. (1988). Fundamentals of expert systems. *Annual review of computer science*, 3(1), 23-58.
- del Campo, M. (2018). *Autonomous tectonics: the work of SPAN, between autonomous behaviour and cultural agency* (Doctoral dissertation, RMIT University).
- del Campo, M., & Leach, N. (Eds.). (2022). *Machine Hallucinations: Architecture and Artificial Intelligence*. Hoboken: John Wiley & Sons.
- Cascone, K. (2017). The aesthetics of failure: "Post-digital" tendencies in contemporary computer music. In *Electronica, Dance and Club Music* (pp. 97-103). London: Routledge.
- Lévy, P. (2006). Collective Intelligence, A Civilisation: Towards a Method of Positive Interpretation. *International Journal of Politics, Culture, and Society*, 18(3/4), The New Sociological Imagination (Spring - Summer, 2005), 189-198.
- Oxman, R. (1999). Digital architecture as a challenge for design pedagogy: Theory, knowledge, models and medium. *Design Studies*, 20(2), 99-120.
- Saggio, A. (2007). *Introduzione alla rivoluzione informatica in architettura*. Roma: Carocci.



Vogiatzaki, M. (2016) Intelligence. *archiDOCT*, 6(1), 6-13

Yoo, T., et al. (2021). Architectural design meets artificial intelligence: An updated systematic review. *Automation in Construction*, 125, 91-104

# **A GIS-based analysis of the urban green space accessibility**

## **Case Study: Administrative Area No.6, Tirana, Albania**

Leonora HAXHIU<sup>1</sup>  
Ph.D. Candidate. Franceska KORANCE<sup>1</sup>  
<sup>1</sup>*POLIS University, Albania*

DOI: 10.37199/c41000115

### **Abstract**

Urban green spaces such as parks, recreational areas as well as urban forest represent a fundamental component of urban ecosystems. In terms of urban planning, it is important to focus on the urban green spaces open to the public, especially analyzing the availability and accessibility of all urban residents to these areas. Managing and ensuring access to these green areas within urban landscapes poses distinct challenges. Geographic Information Systems (GIS) have become an indispensable tool for researchers aiming to analyze urban green space accessibility.

Albania currently lacks specific nationwide standards for green space per capita, and such standards vary between countries, shaped by urban planning policies, population density, and environmental considerations. This study situated in Administrative Area No. 6, Tirana, Albania, comprehensively assesses the general accessibility and deficiencies in urban green spaces. It also explores the interaction between green space density and population density within the area.

Using GIS, this study aims to seek the relationship between green space accessibility, and deficiency of urban green spaces into the given area. The number and location of the green spaces within the area are correlated with the population density in order to analyze the accessibility to green areas based on walking distance between the access points of the green spaces and the residential areas. It also seeks to guide local decision-makers in identifying areas requiring additional green space development in new residential zones and older urban areas.

Results highlight the distribution of green spaces, emphasizing disparities in accessibility and deficiency within the area.

Keywords: Accessibility, GIS, Network Analysis, Urban Green Space, Tirana.

## **Introduction**

Urban green spaces are integral components of modern urban ecosystems, offering respite from the bustling city life and providing essential environmental benefits (Ignatieva et al., 2020). However, ensuring the effective management and accessibility of these green oases within urban landscapes presents unique challenges (Langemeyer, 2015). To address these challenges, the integration of green space data into a Geographic Information System (GIS) becomes crucial enabling real-time observation of spatial data and facilitating informed decision-making. GIS has emerged as an indispensable tool in the arsenal of researchers dedicated to analyzing the accessibility and walkability of urban green spaces (Guerrero et al., 2016).

We examine various type of green spaces including urban forests, residential green areas, public parks and recreational areas to comprehensively assess their accessibility and deficiency in accessibility within our zone (Figure 1). This research also considers the density of these green spaces and population density within the area offering a nuanced understanding of their relationship. Currently, Albania does not have specific nationwide standards or guidelines for green space rates per capita. The development and implementation of such standards can vary from one country to another and often depend on factors like urban planning policies, population density, and environmental considerations. By harnessing GIS capabilities, researchers can collect and analyze data that illuminate the complex relationship between urban green spaces, their accessibility and the well-being of urban dwellers.

This study situated in the context of Administrative Area No. 6, in Tirana, Albania, endeavours to shed light on two fundamental aspects of urban green spaces: accessibility and deficiencies in green spaces. Specifically, it offers a comprehensive assessment of green space accessibility, considering the distance required for residents to reach the nearest green space. Furthermore, the study identifies residential areas that stand in need of improved access to green spaces or an increase in green area coverage. Kombinati, is a suburban neighbourhood located approximately 6 kilometres southwest of Tirana's city centre, falls within Administrative Unit No. 6. The unit covers an area of 5.5 square kilometres and home to a population of 77,620 inhabitants.

The paper also aims to guide local decision-makers in identifying areas that require additional green space development, both in new residential zones and within older urban areas. While the analysis provides valuable insights into accessibility disparities in urban green spaces, it is essential to acknowledge certain limitations. These limitations may arise from methodological constraints, data processing errors, or the use of road network data obtained from open sources, which may contain inherent inaccuracies. Furthermore, the study is limited from delving into a more nuanced analysis of demographic factors such as age, socio-economic status, or ethnicity, despite the potential influence of these variables on green space accessibility.

The study consists of three main parts after the introduction, the literature review, methodology used, results and the conclusion.

## **Literature review**

The problem of how to ensure the accessibility of green areas is a significant issue for urban planners and leaders (Ergen, 2021). Every segment of society should have access to green areas. European countries often set standards and guidelines for the provision of green spaces per capita to enhance urban quality of life and environmental sustainability. These standards vary across nations but generally aim to ensure that residents have sufficient access to green areas. For instance, countries like Sweden and Finland typically strive for a minimum of 10 square meters of green space per person, emphasizing the importance of nature in urban planning. In contrast, densely

populated countries like the Netherlands and Belgium aim for higher green space ratios, often exceeding 20 square meters per capita. These standards serve as benchmarks for urban planners and policymakers, fostering greener, healthier, and more livable cities across Europe (Yukhnovskiy & Zibtseva, 2019).

Langemeymer (2015) takes a broader perspective on urban ecosystem services, emphasizing the multifaceted value of green spaces in cities. While not exclusively focused on accessibility, this work contributes to the understanding of the holistic benefits of urban green areas. It offers a comprehensive urban green spaces beyond accessibility and highlights the various roles green spaces play in the cities.

Ignatieva (2020) explore the global phenomenon of lawns in urban green spaces and their potential for sustainable solutions. This study contributes to the broader discussion of urban green space accessibility by considering alternative approaches. It encourages innovative thinking about urban green spaces and sustainability and it promotes the consideration of alternative solutions to improve accessibility. But it does not directly address traditional accessibility concerns.

Sotoudehnia & Comber (2011) study emphasizes the importance of urban green spaces (UGS) as vital areas for relaxation and stress relief in urban environments. It found that people tend to travel longer distances to access green spaces than what network analysis suggests. This study observed that individuals preferred traveling towards central city green spaces over those in the northern direction.

Moreover, Yan & Wang (2021) used ArcGIS platform and a combination of traffic and population distribution data, this research analyzed the spatial accessibility of parks and green spaces in Weifang prefecture-level city. They employed the cuckoo search algorithm to optimize park green space site selection. The study highlighted disparities in accessibility across different streets, assisting in the allocation and optimization of green spaces in the city.

So (2016), in his paper explores the relationship between urban green spaces and the well-being of urban residents. It notes that access to public green spaces is not evenly distributed, with the White population having no higher accessibility than others. Interestingly, the Hispanic population has the highest accessibility but also experiences higher park pressure.

Furthermore, Kemec & Salar (2023) in their study conducted in Erbil city employed GIS and network analysis to evaluate the accessibility of different types of green spaces. It found that a significant percentage of the population had access to community, district, and neighborhood parks within various travel times, indicating relatively good accessibility. However, mini parks were less accessible to the population.

Poslončec-Petrić et al. (2020) in their study discussed the development of Geographic Information Systems (GIS) for managing green areas, emphasizing their role in sustainable development. It highlights the challenges associated with creating and maintaining a green cadastre system and its significance in effective green area management.

On the other hand, Vilcea & Şoşea (2020) this study using GIS, analyzes the accessibility of Craiova residents to urban green spaces. It correlates the location of parks with population density to evaluate accessibility by both walking and driving distance. The findings reveal uneven distribution and access to green areas in the city.

Khahro et al. (2023) in his study focusing on Hyderabad, Pakistan, assessed the spatial accessibility of urban parks in different areas of the city. The research aims to contribute to Sustainable Development Goals (SDGs) by improving citizens' well-being and promoting sustainable urban development.

In summary, these papers collectively emphasize the importance of urban green spaces for the

well-being of urban residents and the need for equitable distribution and accessibility of these spaces. They also showcase the valuable role of GIS and optimization techniques in assessing and improving green space accessibility. These insights can inform urban planning and policy decisions aimed at creating healthier and more sustainable cities.

## Methodology

The research presented in this paper aimed to investigate accessibility and availability of green spaces in Administrative Area No.6, using Geographic Information Systems (GIS), with a primary focus on the Network Analyst module. The methodology involved several key steps to comprehensively analyse the urban green space landscape. First and foremost, data collection played a crucial role. To obtain the necessary information we utilized the European Corine Land Cover Dataset (Urban Atlas), which provided the land cover vector data. Street network data was obtained from Open Street Map, while additional spatial information was taken from the General Local Plan of Tirana. Also, some missing data were digitized using the last orthophoto from the national geoportal. All these data sources together conducted our database (Figure 2). This data formed the foundation for the subsequent analyses.

Spatial analysis was then processed using QGIS 3.32 and particularly QNEAT (Network Analyst Tool) plugin. This step allowed us to process and manipulate the collected data effectively, paving the way for in-depth examination.

Green space analysis was a central aspect of the research. To achieve this, a series of indicators were used. The primary indicator focused on calculating the total area of green spaces within the administrative area, their size and vegetation (Table 1). Additionally, the study examined green spaces within walking distance buffers, an essential factor for urban accessibility.

<i>Data acquisition and database creation (vectors, orthophoto)</i>	<i>Data processing</i>	<i>Data analysis and interpretation</i>
<ul style="list-style-type: none"> <li>- Green spaces (Urban Atlas, orthophoto)</li> <li>- Street Network (Open Street Map)</li> <li>- Demographic data</li> </ul>	<ul style="list-style-type: none"> <li>- Digitize the missed green spaces</li> <li>- Creating access points of green spaces through Network Analyst.</li> <li>- Creating service area polygons for park use (Network Analyst)</li> <li>- Integration of layers</li> </ul>	<ul style="list-style-type: none"> <li>- Classification of green areas into categories</li> <li>- Identify the areas with low access to green spaces and high population density.</li> <li>- Determine the accessibility of population to green spaces.</li> </ul>

**Table 1: Research steps**

A critical element of the research involved correlating the location and extent of existing green areas with the population distribution within the area. This analysis aimed to identify areas where residents might face challenges in accessing green spaces due to either limited proximity or an outright lack of such areas.

Accessibility in this paper, refers to physical accessibility, particularly with regards to walking between access points in parks and residential areas. To assess this, several factors were taken into account.

The study considered the proximity of green spaces to densely populated residential areas, using

buffer zones set at distances of 150, 300, 450 and 600 meters from park access points. The presence of green areas in residential neighbourhoods (residential green areas) is also considered. The street network was evaluated to understand its role in facilitating access to green spaces. In our analysis, we categorized the administrative area into zones characterized by high, low or medium population density with data sourced from the administrator of the unit.

Additionally, as a tool for our analysis, we used QNEAT3- Iso-Areas as Polygons tool, enabling the creation of polygons that represent the areas with uniform walking distances to access green spaces, facilitating a more detailed exploration of accessibility. Furthermore, the density of green spaces was assessed using information extracted from the orthophoto data, providing valuable insights into the spatial distribution of green areas within the administrative area.

Type	Number	Vegetation
<b>Natural Areas</b>	3	High
<b>Green Residential Area</b>	17	High-medium
<b>Small public parks and recreational activities</b>	4	Low
<b>TOTAL</b>	24	

Table 2. Classification of green areas in terms of size, and vegetation cover

This multifaced methodology ensured a thorough and insightful analysis of green space accessibility and availability in Administrative Area No.6. It employs a comprehensive approach that combined spatial analysis, GIS tools, and a range of indicators to assess the availability and accessibility of green spaces in Administrative Area No.6 (Kombinat).

## Results

The unit covers an area of 547.6 hectares and approximately 77,620 inhabitants in 2022.

There are a total of 24 green areas identified, distributed throughout the administrative unit as follows:

- The areas occupied by urban forests are primarily located in the peripheral areas near the administrative boundary, particularly in the southeast (SE) and southwest (SW);
- the public parks and recreational areas are concentrated in two specific regions, notably in the west (W) and east (E), while the green residential areas are distributed almost throughout the entire unit, with a higher concentration in the SE and SW, where more private houses with gardens are present.

The total area of the green spaces considered for the analysis is 33.4 hectares, with 20 hectares covered by urban forest vegetation. In contrast, the built-up area occupied by residential land use

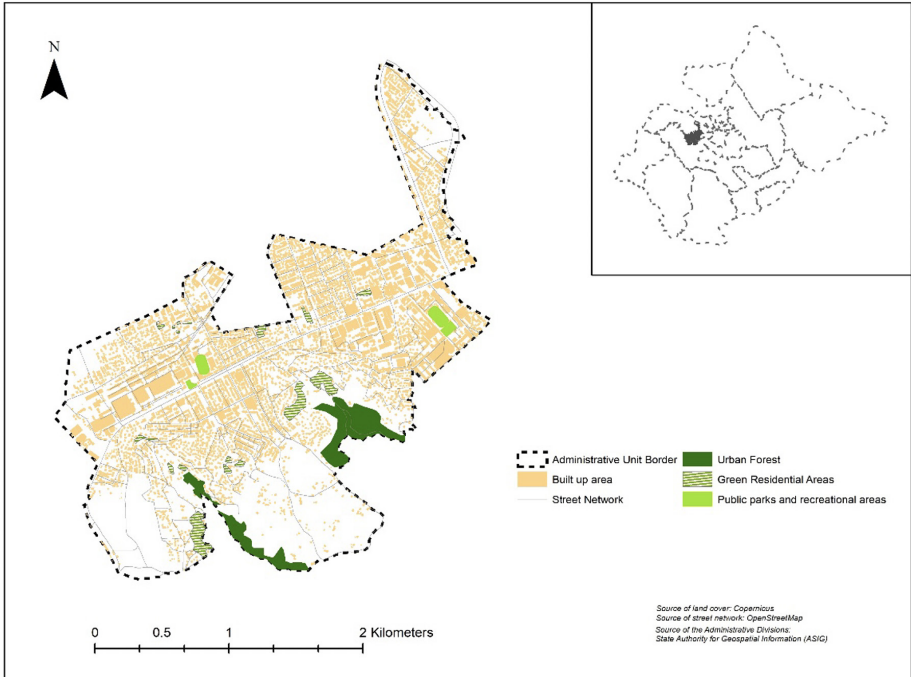


Figure 1: The distribution of the green areas within the administrative area

covers 110.2 hectares. Out of the four urban green areas categorized as public parks and recreational zones, totaling 3.49 hectares, one of them covers 1.4 hectares and has the lowest vegetation.

As illustrated in Figure 2, several green areas that could not be classified as parks, referred to as “residential green areas”, were identified from satellite images and digitized. The total area of these green spaces is 9.94 hectares. These areas consist mainly of gardens located around collective housing or private gardens attached to single dwelling housing. The total area classified and mapped as green spaces is 33.4 hectares, which is approximately 6% of the total area occupied by residential land use.

The results underscores significant disparities in green space accessibility among residents (Figure 2). In the northern and north-western sectors of the area, residents experience notably limited access to green spaces. This disparity results in an unequal distribution of urban green spaces, leaving a substantial portion of the population with restricted access to these essential amenities.

Conversely, residents in the southern portions of Administrative Area No. 6 enjoy closer proximity to urban forests, indicating a more favorable accessibility situation in these regions. The analysis also reveals a complex and somewhat chaotic pattern of green space distribution, presenting a pressing issue for urban planning and development. The disparities in accessibility are particularly pronounced, emphasizing the need for a more balanced distribution of green spaces across the area.

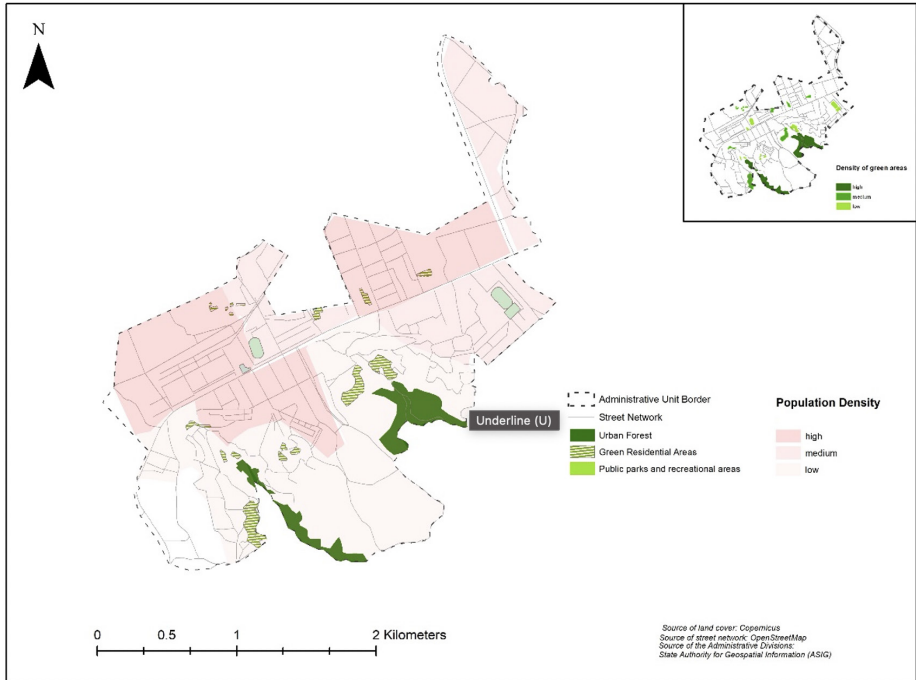


Figure 2: The distribution of the green areas and population density within the area

Furthermore, as evident in the figure below (Figure 3), the study's analysis provides a clear representation of green spaces accessibility in terms of distance buffers 150,300, 450 and 600 m and identifies areas within residential zones lacking public green spaces.

It is evident that additional green spaces are needed, particularly in the northern and north-western regions, to address the accessibility deficiencies and enhance the overall well-being of residents.

Upon analyzing the data, it is evident that an area measuring 273.5 hectares lacks green spaces, and half of it resulting in poor pedestrian access to the available green spaces. The largest deficient areas are located in the northwest (NW), northeast (NE), and southwest (SW), with NE and NW being densely populated areas with a lack of green spaces. Additionally, in the southern part of the unit, where residential housing predominates, nearly half of the population faces reduced access to public green areas.

While many single dwelling residences have private gardens attached to the house, the study's aim is to identify areas with low availability of public green spaces. In the northern part, especially in the NE, there has been significant urban expansion in the last decade, with newly built surfaces predominantly used for residential purposes.

Regarding demographic density, we can't provide correct numbers since our information was based on from an interview with the unit administrator, particularly about the neighbourhoods in



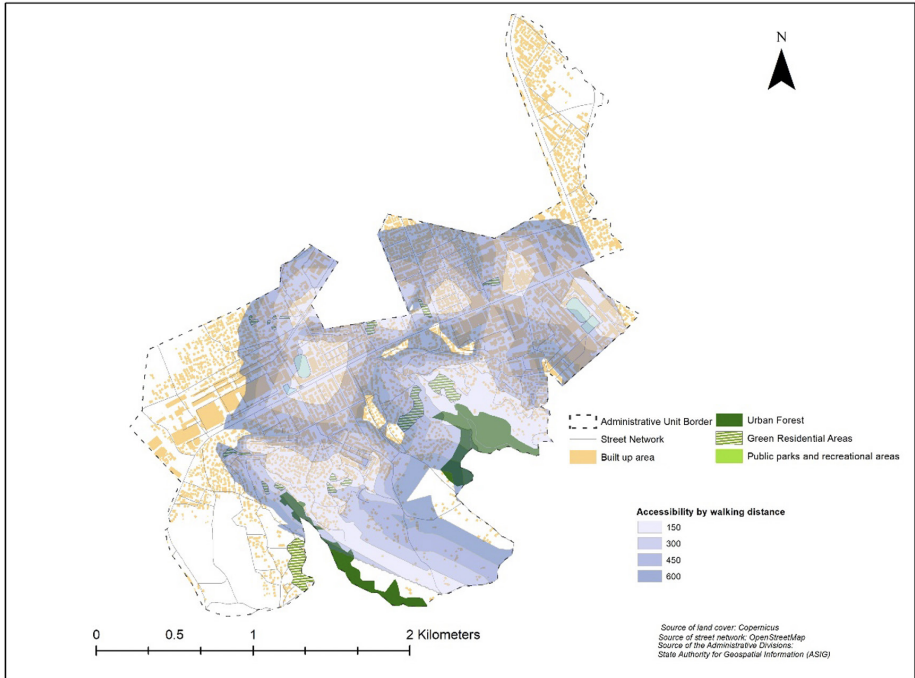


Figure 3. Pedestrian accessibility by walking distance

Kombinat and their perspective on the accessibility to green spaces.

## Conclusions

This study uses GIS tools to analyze the accessibility of existing public green spaces in Kombinat. The findings indicate disparities in population access to public parks and the presence of areas lacking in green spaces. In the context of urban expansion, which has impacted both Tirana Municipality and Kombinat over the last decade, local decision-makers face conflicting demands in implementing urban development plans. The need to promote compact cities with high population densities to limit urban sprawl, along with the existing urban structure, presents challenges in increasing green urban areas and enhancing ecosystem services.

The present research highlights several areas in the unit that require planning for the establishment of green spaces, recreational areas, and improved pedestrian access for the population. Achieving this acquires close collaboration between urban planners, local authorities, and the community. While this study identifies areas where expanding green spaces is advisable, it does not identify exact locations for effective park establishment. Further analysis is required, coordinated with urban management plans issued by authorities and the expressed needs of the population. Socio-demographic aspects should also be considered in this endeavour.

The study's results may be affected by methodological limitations or errors in the data. The methodology relies on the analysis of the road network, obtained from open sources, which may con-

tain their own errors, and employs the QGIS component for calculations. To mitigate the potential impact of errors originating from a single data source, we utilized multiple data sources. We completed green surface data from the Urban Atlas with digitizing additional green areas from orthophotos. The accessibility of urban green areas involves additional aspects beyond those covered in this study, which could affect the results. A critical factor is the classification of green spaces into different categories. In the absence of formal green area classifications, the categorization or exclusion of green areas based on specific criteria remains a decision with a high degree of subjectivity.

By examining accessibility based on means of transportation, authorities may consider expanding public transport routes. Presently, many new residential areas rely solely on personal cars for park access. Introducing new public transport options may reduce traffic congestion, parking issues around large community parks, and air pollution.

In conclusion, the results of this study serve as a starting point for future research concerning Kombinat's need to expand green spaces. They provide an initial identification of areas with challenges related to the availability of green spaces and limited access to small green areas.

## References

- Kemec, S., & Salar, H. A. (2023). Accessibility Analysis of Urban Green Space: The Case of Erbil City. *ICONARP International Journal of Architecture and Planning*.
- Vilcea, C., & Şoşea, C. (2020). A GIS-based analysis of the urban green space accessibility in Craiova city, Romania. *Geografisk Tidsskrift-Danish Journal of Geography*, 120(1), 19-34.
- Langemeyer, J. (2015). Urban ecosystem services: the value of green spaces in cities (Doctoral dissertation, Stockholm Resilience Centre, Stockholm University).
- Ignatieva, M., Haase, D., Dushkova, D., & Haase, A. (2020). Lawns in cities: from a globalised urban green space phenomenon to sustainable nature-based solutions. *Land*, 9(3), 73.
- Bashkia Tiranë (2023). Njësia Nr. 6. Accessed online at: <https://tirana.al/njesia-administrative/njesia-nr-6/info>. (Accessed on 16.09.2023).
- Guerrero, P., Møller, M. S., Olafsson, A. S., & Snizek, B. (2016). Revealing cultural ecosystem services through Instagram images: The potential of social media volunteered geographic information for urban green infrastructure planning and governance. *Urban Planning*, 1(2), 1- 17.
- Yukhnovskiy, V., & Zibtseva, O. (2019). Normalization of green space as a component of ecological stability of a town. *Journal of Forest Science*, 65(11), 428-437.
- Poslončec-Petrić, V., Cibilić, I., Radak, V., & Kaliger, A. (2020). Green information systems for sustainability: case study Knin, Croatia. *International Multidisciplinary Scientific Conference: SGEM*, 20(6.2), 295-302.
- Khahro, S. H., Talpur, M. A. H., Bhellar, M. G., Das, G., Shaikh, H., & Sultan, B. (2023). GIS-based sustainable accessibility mapping of urban parks: Evidence from the second largest settlement of Sindh, Pakistan. *Sustainability*, 15(7), 6228.
- So, S. W. (2016). Urban green space accessibility and environmental justice: A gis-based analysis in the city of Phoenix. Arizona (Doctoral dissertation, University of Southern California).
- Ergen, M. (2021). Using geographical information systems to measure accessibility of green areas in the urban center of Nevşehir, Turkey. *Urban Forestry & Urban Greening*, 62, 127160.
- Sotoudehnia, F., & Comber, L. (2011, April). Measuring perceived accessibility to urban green space: an integration of GIS and participatory map. In 14th AGILE Conference on Geographic Information: Advancing Geoinformation Science for a Changing World.

Yan, W., & Wang, S. (2021, October). Analysis on the spatial accessibility of parks and green spaces and optimal site selection—Taking Weifang prefecture-level city as an example. In IOP Conference Series: Earth and Environmental Science (Vol. 865, No. 1, p. 012020). IOP Publishing.

Yan, W., & Wang, S. (2021, October). Analysis on the spatial accessibility of parks and green spaces and optimal site selection—Taking Weifang prefecture-level city as an example. In IOP Conference Series: Earth and Environmental Science (Vol. 865, No. 1, p. 012020). IOP Publishing.

# **Innovative Soft Planning Tools and the Concept of Positive Energy Districts. Experience from Slovakia**

Milan HUSAR<sup>1</sup>

Matej JASSO<sup>1</sup>

Sila Ceren VARIS HUSAR<sup>1</sup>

Vladimir ONDREJICKA<sup>1</sup>

<sup>1</sup>*Slovak University of Technology in Bratislava,*

DOI: 10.37199/c41000116

## **Abstract**

The concept of positive energy districts, as one of the tools to reach the objectives of European Strategic Energy Technology Plan, is one of the most broadly discussed energy transition instruments for European territories. Besides its technical aspects, there is an increased focus on the governance of the energy transition and more soft elements of the concept which are focusing on adoption of the new approaches to energy consumption by citizens and other stakeholders. We argue that one part of this transition is anchored in the planning culture of the respective countries/regions and that all the transition schemes must be sensibly tailored to the specific needs of a given place, locality and community. This contribution is focusing on soft planning tools as the inherent part of the positive energy district concept and the innovations that can support the energy transformation processes. Reflecting on the results of H2020 Making City Project and the experience from Slovakia, we are discussing the requirements of successful PED projects focusing on successful energy transition and adoption of new technologies by communities. We conclude with a set of observations of the factors contributing to successful adoption of positive energy district implementations.

## Keywords

Spatial planning, positive energy districts, planning culture, soft planning tools, public participation

## Introduction

The current state of European political and spatial development is signalling significant challenges to democratic systems that are rooted in civil and democratic values, such as transparency and participatory decision-making. These systems are facing immense pressure due to negative meg-trends and a highly volatile international environment. These complex challenges, unlike any seen before, are raising doubts about the principles of democratic decision-making and the inclusion of diverse stakeholders and societal segments. This shift is driven by the rise of nationalism, populism, and unilateral politics, creating ambiguity and uncertainty in all aspects of spatial development and planning. As a result, it is greatly impacting regional competition and cooperation. Old normative tools are no longer sufficient to ensure balanced and sustainable spatial development. Scholars, researchers, and decision-makers are increasingly turning to softer tools that offer greater flexibility in dealing with the unstable and volatile external environment.

Values like respect for human dignity, freedom, democracy, equality, the rule of law, and human rights must be emphasized and promoted in innovative ways to address both external and internal threats and instabilities. The declining trust in political institutions is contributing to decreased social and territorial cohesion, revealing long-standing structural weaknesses and underestimated challenges in rapid spatial development. Democratic governance requires fresh impetus to respond flexibly to threats and generate innovative solutions for society. To achieve the primary goals of European spatial development, research should focus not only on innovative management and effective planning tools but also on informal and soft approaches to spatial development within specific countries and regions. Planning culture, deeply ingrained in the broader cultural and social context of European countries, is characterized by democratic, participatory, and transparent decision-making processes typical of civil society and open governance.

The discussion around planning culture has intensified in recent years, recognizing its significance in dealing with complex, dynamic, and multi-faceted problems. Hierarchical planning cultures with authoritarian decision-making have proven ineffective in achieving acceptance and sustainability of decisions. Incrementalism-based planning cultures have also struggled to manage spatial conflicts and controversies. Participatory planning culture is essential for addressing contemporary challenges like the transition to renewable energy sources. Democratic planning culture is a unique set of approaches based on democratic values, deeply influencing spatial development processes through broad and transparent participation of all stakeholders. It superimposes the principles of democratic governance onto territorial, spatial, and social levels, shaping various aspects of spatial development. Effective management of conflicts, whether spatial, social, or economic, is crucial for sustainable development and competitiveness of cities and regions. These conflicts must be transformed into mutually beneficial networks of common assets. Integrating different values and beliefs into a coherent spatial concept is a fundamental challenge for spatial planners. Consensus-oriented planning cultures depend on trust and tolerance, making democratic and transparent planning culture a significant contributor to democratic decision-making and overall governance in Europe.

The paper is structured as follows. The introduction is followed by literature review with particular focus on energy efficiency and the motivations that are bringing energy planning to the foreground of the spatial planning discussion on trend and demands on contemporary spatial planning. The third part, tools and methods, is linking the research to the Making City Horizon 2020 Project that is being developed and implemented in Europe including Slovakia, specifically in the city of Trenčín in the west part of the country. This research is building on the project's results acknowledging it is lacking the soft planning approaches that go to be background in the light of

the technical aspects of PED projects and their implementation in practice. Based on this premise, we argue for the need for innovative planning approaches within the spatial planning culture as an addition to the usual approach. In our understanding, deliberating these soft approaches can significantly improve the delivery of such projects and city development strategies not only for PED implementation but for other focuses, too. The final part is discussing the benefits of such an approach and is concluding the research paper.

## **Literature review**

In recent years, energy efficiency has been one of the key planning topics in connection with sustainable development, resilience as well as climate change. There are many technological approaches aimed at efficient use of energy, innovative technologies and renewable energy sources, but what is often missing is their relationship to the spatial planning system, the legal aspects of spatial planning and its position within the overall culture and ways of how public administration and decision-making is working. The understanding of PED in the context of this paper is following the implementation of the Horizon 2020 Making City Project that seeks to support PED planning and methodology aimed at developing new integrated strategies to address the transformation of the urban energy system towards low-carbon cities with the PED approach as the core of the urban energy transformation journey. It is implemented at the level of cities and districts, which have two types of areas - two lighthouse cities and six follower cities. The city of Trenčín (Slovakia) is one of the following cities where several urban areas were selected to replicate the PED concept developed by the project consortium. The PED replication includes a wider area of the city center including several municipal buildings (schools and sports infrastructure) and residential buildings (individual housing and apartments). PED provides a holistic approach to energy harmonization and energy planning. It has evolved from simple, non-integrated, simple “building” based interventions to PED concepts that look forward to achieving energy and climate goals that will lead to integrated energy planning.

Reducing overall energy consumption in the EU has been on the political agenda for decades in connection with the fight against climate change and beyond. In cities, after transport, buildings consume the most energy, which is why the majority of national and international policies focus mainly on increasing the energy efficiency of buildings and urban districts. The subject of energy efficiency policy is slowly shifting from individual buildings using renewable energy sources to considering entire districts and neighbourhoods in order to better calibrate solutions and increase the potential for innovative energy solutions.

Buildings account for 40% of total energy consumption in the EU [1] and 35% of greenhouse gas (GHG) emissions from energy use [2]. Increasing the energy efficiency of buildings has been at the top of the list of climate change adaptation and mitigation priorities for the past two decades. Until recent years, the focus has been mainly on individual buildings (concepts such as zero-energy buildings), especially publicly owned buildings that have been renovated with public funds. These solutions very often focus on streamlining renewable energy solutions for individual buildings [3,4]. In the EU, more than 220 million buildings with generally low energy efficiency were built before 2001, of which only 0.2% undergo renovation every year. This means that there is a huge potential to reduce energy consumption in the building stock. Regulations and building codes have evolved and continue to evolve towards more efficient or near-zero energy buildings, with EU Directives 2010/31/EU and 2018/844/UE being clear examples of a strong commitment to improving the energy efficiency of the building stock [4]. In an effort to improve the flexibility of decentralized energy production, individual buildings and energy systems should be able to

interact with each other and achieve this quality, the PED concept emphasizes the importance of active interaction between energy production systems, energy consumers and energy storage within the district [3]. The literature on concepts and solutions for zero energy balance and energy positivity at the district or neighbourhood level is relatively sparse, as it is a relatively new idea and is mostly in the conceptual phase [3]. However, the introduction of these concepts is supported by the European Clean Energy Package, which calls for so-called “energy communities” for all European energy consumers and a number of small energy suppliers [5]. The advantages of PED compared to the individual focus of buildings include the ability to use more of the available energy production and storage potential of the community, i.e. the neighbourhood, and that the focus is on accelerating the decarbonization of the city, especially in terms of its scalability potential. A key concept of PED is that of a neighbourhood that produces more energy from renewable sources than is needed in another part, which is able to export energy to another part of the neighbourhood, balancing the overall demand and supply [4]. PEDs increase the quality of life in European cities, contribute to the achievement of COP21 goals and strengthen European capacities and knowledge to become a global role model [6]. PEDs and concepts such as Positive Energy Neighborhoods are now seen as strategic keys to decarbonising Europe’s built environment [7]. There is no single universally accepted definition of PED. The Horizon 2020 Making City project, which aims to promote the PED approach, defines a PED as an urban area with clear boundaries, consisting of buildings of different typologies that actively manage the energy flow between them and the larger energy system to achieve an annual positive energy balance [8].

One of the most important global trends is the dynamic growth of cities and the concentration of socio-economic functions in metropolitan areas. According to UN forecasts, the world’s population will increase to 8.9 billion by 2050, two-thirds of which will live in cities. The average population of the world’s thirty most populous cities will triple between 1965 and 2025 [9]. The 2015 Paris Agreement boosted international efforts to reduce CO<sub>2</sub> emissions, with urban areas playing a key role, accounting for 70% of emissions. The 11th UN Sustainable Development Goal is a sustainable cities and communities to support the transition to low-carbon cities. Thus, the development of cities in the coming years will determine progress in solving key environmental, economic and social challenges. So far, smart cities have been evaluated in the areas of energy, mobility and ICT, while integrated sustainable urban planning, spatial planning and urban planning are also very important for the design and implementation of smart cities. Sustainable urbanization is planned so that there is no commuting to cities and that the created neighbourhoods provide as many services as possible with an integrated approach, taking into account environmental, social, economic and spatial impacts. The challenge is that aspects of the smart city, such as decentralization and digitization of the energy sector, were not previously part of integrated planning and urbanism. Along these lines, PEDs can be seen as the basis of a highly effective and sustainable path to progress beyond current urban transformation plans, as PEDs are integrated mixed-use areas that have a positive impact within and beyond the district.

## **Tools and methodology**

The PED research around which this research paper is revolving around is based on the results of Making City Project that was aimed at developing PED methodology for fostering green and energy efficient transition for European cities. It is based on creating PED strategies for 2 lighthouse cities and 6 follower cities (one of the follower cities is located in Slovakia, the city of Trencin). These strategies are focused, on the one hand, on the modelling of PED districts in selected parts on the cities, reflecting on the positive experience from the follower cities that have been front-

runners in PED implementation and provide valuable lessons to be learned from the PED strategy creation and its implementation in practice.

On the other hand, the limited focus is on the soft side of the implementation of PED concept which includes understanding of citizens' motivation to be a part of the PED and green energy transformation that goes far beyond the economic aspects and is working with people's motivations to change their patterns of consumption and behavioural aspects of their energy use.

In this context, we are advocating for innovative participatory planning as a supporting factor in creating PED transition strategies. Including these aspects can deliver better results in the long-term horizon as it supports people's adoption of technologies and including them in their daily lives as a natural part of daily functioning as inhabitants of their homes, users of transportation and consumers of goods and energy.

We are using the term innovative participatory planning where innovation is understood as introducing a series of soft tools sensibly tailored to the specific needs of a given place, locality, community or regional context. For PED implementation this is a crucial aspect of implementation as the success of the operating a functioning technological solution is frequently context dependent, reflecting the local specifics including how the planning is done. This includes thinking about the plan making, the legal system in which planning is positioned and also aspects of people's involvement in plan preparation and plan implementation. Innovative planning is focusing on building active communities at the local and regional level, helping people shape better lives through participation, education, information, and the effective use of technologies. Sustainability of the community is directly linked to the sustainable territorial development and the development of local economies that are socially responsible, economically viable and environmentally sound. Multifocal process requiring practical cooperation and participation of many actors - public authorities, the private sector and inhabitants as a way to identify community needs and potentials, find appropriate interventions, and implement innovative solutions.

When discussing innovative participatory planning, it is important to differentiate between people's attitudes and public opinions. The most renowned definition states that attitudes are learnt predisposition to favouring or refusing reaction toward given object, person or event [10]. Generally, the attitudes are learnt, mutually consistent, stable in time and space and are concerning the positive or negative reactions. Each attitude has cognitive (opinion based on rationalities), emotional (feelings and emotions) and behavioural (willingness to act) dimension. Regarding the events related to increased risk, we can assume overproportional representation of emotional dimension. Ajzen and Fishbein formulated in 1980 the theory of reasoned action. Theory of Reasoned Action is based on the supposition that individual behaviour is based upon the intention to perform the behaviour and that intention is a function of individual set of attitudes. Expressed behaviour is always based on the intention which might be unconscious. Intention is thus the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. Attitudes are more difficult to research, because they might be hidden and invisible, they are stable in space and time, deeper anchored and usually are modified continuously. They are more consistent within each other and resistant to arguments. On the other hand, opinions are more rational and civil, more focused on external, non-personal issues (e.g. the right approach toward technical difficulties conducting the revitalization of urban area...) and more sensible toward contra-arguments.

We assume that the attitudes, opinions and leanings of actors are influenced mainly by the patterns and factors such as professional experience and background, situational context (whether the respondent/actor is now working on projects regarding the green energy transition, the po-



litical situation, previous experiences from similar projects etc.), personality of respondent (his/her personal values, characteristics, interests, hobbies), social desirability (tendency to answer in expected way, especially when the researcher is somebody who is personally known/respected by the respondent) and individual motivation and engagement of the actor.

In this context, one of the leading ideas of 21st century European spatial planning, just green transition, including technical aspects of energy production and consumption, as well as the element of justice understood as striving for fair distribution of cost and benefits among actors and communities, needs to be understood as a part of overall societal transformation. It is one of the major processes going beyond sectoral division and it involves all the relevant societal fields and all the actors. Just green transition and its results are dependent not only on technological and managerial maturity of selected approaches but nevertheless on commitment of communities and broader public. The attitudes and positive mindset of the public is one of the underlying preconditions of successful and smooth green transition.

### **Conclusions and recommendations**

In this paper we were discussing the current challenges facing European political and spatial development, highlighting the strain on democratic systems that are built on principles such as transparency and participatory decision-making. These challenges are attributed to negative megatrends and a volatile international environment, resulting in doubts about the efficacy of democratic decision-making in the face of rising nationalism, populism, and unilateral politics. This shift towards uncertainty and ambiguity affects various aspects of spatial development and planning, impacting regional competition and cooperation. Traditional normative tools are deemed inadequate in ensuring balanced and sustainable spatial development, prompting a shift towards softer tools that offer greater flexibility. To address these challenges, we argue for focusing on innovative planning and planning tools, including informal and soft approaches, within specific countries and regions. Emphasis is on the significance of planning culture, deeply rooted in European society, as a hallmark of democratic, participatory, and transparent decision-making processes.

Participatory planning culture is underscored as essential, especially in addressing contemporary challenges such as the transition to renewable energy sources. Open, democratic planning culture is a unique approach that superimposes democratic principles onto spatial development, influencing various aspects of the process.

We were presenting a comprehensive examination of the challenges and opportunities in European political and spatial development, particularly in the context of democratic values and participatory decision-making. Several key conclusions can be drawn from the discussion. The challenges to democratic systems - European democratic systems are facing significant challenges due to negative megatrends and a volatile international environment. The rise of nationalism, populism, and unilateral politics has led to doubts about the effectiveness of democratic decision-making processes. There is an overall shift towards soft tools in planning needed, not as a replacement of traditional approaches, but rather as an innovative addition aimed at improving the deficiencies of spatial planning - traditional normative tools are no longer sufficient to ensure balanced and sustainable spatial development. As a response to the unstable external environment, there is a growing shift towards softer tools that offer greater flexibility and adaptability.

Planning culture, deeply rooted in European society, is identified as a critical factor in shaping democratic, participatory, and transparent decision-making processes. Participatory planning culture is deemed essential in addressing contemporary challenges, including the transition to renewable energy sources. Effective conflict management is essential for regional competitiveness.

Transforming conflicts into mutually beneficial networks of common assets is key to success in regional competitions and partnerships. Consensus-oriented planning cultures rely on trust and tolerance among stakeholders. Democratic and transparent planning culture is recognized as a significant contributor to democratic decision-making and overall governance in Europe.

There is a need for Europe to adapt to the changing political and spatial landscape by embracing innovative and participatory approaches, while upholding democratic values. This approach is seen as essential for addressing complex challenges, promoting sustainability, and fostering social and territorial cohesion in the region.

## **Acknowledgement**

This contribution was supported by HORIZON 2020 project Making City No. 824418.

## **References**

- [1] Energy Performance of Buildings Directive (EPBD) Recast (2010). Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast). Off. J. Eur. Union 2010, 18, 2010.
- [2] European Commission. (2020). Questions and Answers on the Renovation Wave. [Online] 14 October 2020. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/QANDA\\_20\\_1836](https://ec.europa.eu/commission/presscorner/detail/en/QANDA_20_1836) (accessed on 30 October 2020).
- [3] Lindholm, O. and Reda, F. (2021). Positioning Positive Energy Districts in European Cities. *Buildings*, 11(1), 19, 2021.
- [4] Gabaldón Moreno, A., Vélez, F., Alpagut, B., Hernández, P. and Sanz Montalvillo, C. (2021). How to Achieve Positive Energy Districts for Sustainable Cities: A Proposed Calculation Methodology. *Sustainability* 2021, 13, 710. <https://doi.org/10.3390/su13020710>.
- [5] Clean Energy for All Europeans Package (2020). [Online] Available at: [https://ec.europa.eu/energy/topics/energy-strategy/clean-energy/all-europeans\\_en#documents](https://ec.europa.eu/energy/topics/energy-strategy/clean-energy/all-europeans_en#documents) (accessed on 4 June 2020).
- [6] European Commission (2018). European Commission's Directorates-General for Research and Innovation, Joint Research Centre. Set-Plan Action N°3.2 Implementation Plan; European Commission: Brussels, Belgium, 2018.
- [7] European Commission (2020). Questions and Answers on the Renovation Wave. [Online] 14 October 2020. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/QANDA\\_20\\_1836](https://ec.europa.eu/commission/presscorner/detail/en/QANDA_20_1836) (accessed on 30 October 2020).
- [8] Alpagut, B., Akyürek, Ö. and Mitre, E.M. (2019). Positive Energy Districts Methodology and Its Replication Potential. In *Multidisciplinary Digital Publishing Institute Proceedings* (Vol. 20, No. 1, p. 8).
- [9] Wołek, M., & Wyszomirski, O. (2013). The trolleybus as an urban means of transport in the light of the Trolley project. *Wydawnictwo Uniwersytetu Gdańskiego*, Gdańsk.
- [10] Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological bulletin*, 82(2), 261.

# **The challenges of applying Big Data in the urban planning practices for the developing countries. Case study in Albania.**

Ph.D. Candidate. Dhurata SHEHU<sup>1</sup>

Dr. Lucca LEZZERINI<sup>1</sup>

<sup>1</sup>*POLIS University, Albania*

DOI: 10.37199/c41000117

## **Abstract**

While urban populations are expanding, institutions are demanding more sustainable urban development, which has greatly increased urban planning complexity. The traditional urban planning method needs to shift in favor of an automated and optimized procedure due to the necessity to take into account social, legal, environmental, and economic factors. During the planning and decision-making phases of urban design, an important amount of data from multidisciplinary sources has to be constantly processed. Unfamiliar multidisciplinary data sets, on the other hand, can only result in confusion and ambiguity. Data Mining ensure a data-driven strategy to assist the urban design process. It refers to the process of searching for information hidden in a large amount of data through algorithms. Urban logistics can be planned more effectively using data mining technologies, which can also reduce logistics costs and speed up the development of the urban economy. A few nations are undertaking ambitious efforts to make use of this massive information bank for urban planning decision-making. But what are the pros and cons in this data-driven decision process? In Albania although ICT infrastructure is well-developed in urban areas, connection in rural areas is still a problem. Despite the significant advancements made in this field, the application of digital tools and technology in the context of urban planning difficulties is still not fully understood. The purpose of the study is to analyze the challenges of applying Big Data and Data Mining techniques in Albania and in other developing countries in the region.

## Keywords

Urban Planning, Data Mining, Smart city, Big Data, Urban Challenges

## Introduction

According to projections in the UN World Urbanization Prospects, 68% of the world's population would reside in urban areas by the year 2050 raising serious issues for urban management and placing a new level of demand on resources (up from 54% in 2016) (Ritchie & Roser, 2018). Also, economic and social pressures have increased as a result of population growth. On the other hand, because of problems with design, economic viability, decision-making theory, conflict resolution, advocacy, social equality, legal framework, and sustainability, urban planning has grown very complicated (Vera et al., 2011). Traditional design techniques, analogue systems, and document-based systems have all been put to the test by this complexity (Noardo et al., 2022). Traditional architecture design tends to concentrate on elements like practicality and aesthetics by incorporating quantitative criteria relatively late in the process (Turrin et al., 2011) (Miao et al., 2018). The fundamental drawback of this approach is that it is rigid and unable to address the complexities of contemporary urban planning.

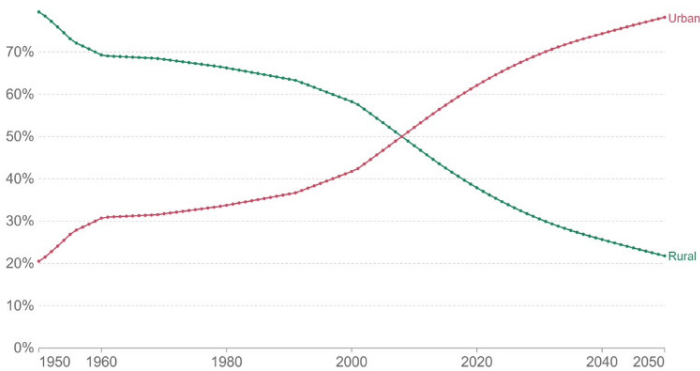


Figure 1: Albania urbanization 1950 to 2050 / Source: (Ritchie & Roser, 2018)

The city is experiencing a massive transformation currently. Building an intelligent network-based infrastructure is necessary for development. New cities should be built on top of technologies, and existing cities should include them. Based on the idea of an integrated strategy, these responsibilities can be resolved through the adoption of BDT (Big Data) technology (Ivanov & Gnevanov, 2018). Because of developments in technology, institutions, society, and business, new sources of Big Data are quickly developing. It has also aroused the curiosity of professionals and decision-makers looking for answers for the administration, planning, and management of numerous urban sectors. By utilizing new data sources, the growing discipline of urban informatics concentrates on exploring and comprehending urban processes. Urban Informatics and applications have the greatest potential in four areas: (1) improved dynamic resource management strategies, (2) conceptual awareness and familiarity with urban systems and patterns, (3) techniques for civic participation and urban inclusion, and (4) advances in planning for cities, management, and policy evaluation (Thakuria et al., 2016). In order to understand and handle complex areas including transportation, the built environment, housing, built environment, urban economics, environment, and health and geographic evaluation should use a variety of methodologies. As a result, decision-makers must consider a wide range of issues, such as: What approaches are required to run

cities profitably and effectively? How can the possible effects of complex social policy changes be assessed? How can we build cities that are resilient to shocks and what factors make an economy strong and resilient? Which approaches are required for civic engagement, community involvement, adaptability, and innovation? According to estimates, the adoption of new technologies will need reskilling for 50% of all workers by 2025. Modern urban planners must fully understand what BDT (Big Data Technology) technologies are, how to apply them, and how to visualize the outcomes of their use. With this new “scarce and plentiful” info, how will future generations deal? They will also need to incorporate learning and talent, two further facets of digital transformation. One of this paper’s goal is to examine how Big Data and Data Mining are used in urban settings by various professional and academic organizations, with an emphasis on Urban Computing. According to Thakurah et al. (2016), urban computing includes the analysis and comprehension of urban systems for the management of dynamic resources, the examination and comprehension of urban patterns and dynamics, urban dwellers’ involvement in politics and involvement, as well as the study of urban planning and policy. Both, theory and empirical based on data perspectives are used in urban computing research methods, which are cantered on new Big Data sources.

### **Data collection complexities in developing countries**

It is necessary to examine the different aspects of digital progress in various nations as ICTs become more crucial for achieving the Sustainable Development Goals by 2030. As the situation is evolving into a new normal where “digital” is not only a solution to an emergency but also a long-term investment against risk. The collecting of data stage typically presents researchers with significant difficulties. They must maintain the reliability of conclusions while also planning for unforeseen circumstances that can affect the outcomes. Preserving the validity of the data through an effective and accurate data gathering method is one of the most crucial aspects of preserving the reliability of research findings. When acquiring data in underdeveloped countries where respondents’ socioeconomic status, levels of education, and capacity for enumeration are all extremely diverse, the challenges multiply (Marthoenis, 2018). Collection of data is limited to state institutions in developing countries like Albania. These state-based statistical organizations deal with both internal and external issues. The external issues are the low literacy rate as well as the lack of awareness regarding the data collecting, while the internal issues are the lack of institutional setup and insufficient infrastructure. One of the most important issues facing our generation is the unequal distribution of possibilities to utilize the development-enhancing potential of ICTs, access information and knowledge networks, and contribute to and profit from them. A sizable fraction of the 2.9 billion people worldwide without internet access reside in the Least Developed Countries. Key players must understand the access constraints and available remedies to close the digital divide in order for nations to use ICTs for development (Session 286— ICTs Opportunities and Challenges in Developing Countries – An Academic..., n.d.). Although in Albania technological infrastructure is established in urban areas, connection in rural areas is still a problem. Some areas, particularly rural ones, may have high costs and poor penetration. “One of the major gaps” that prevents the country’s growth is the lack of connectivity in the rural areas (Digital Development Albania, n.d.). This can be explained in part by the following facts: many urban areas lack access to a wide range of ICTs applications, lack of user-friendly software, lack of understanding of the advantages associated with its use, growth in information and tools aimed at certain disciplines or fields, but missing an entire interdisciplinary vision of their usage etc. The Network Readiness Index (NRI) which is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world, ranks Albania

80th out of the 131 countries. The area where there is the most scope for improvement is technology (Albania – Network Readiness Index, n.d.).

<b>Dimension</b>	<b>Albania</b>	<b>Upper-middle-income countries</b>	<b>Europe</b>
<b>NRI</b>	<b>46.5</b>	<b>49.66</b>	<b>63.72</b>
<b>Technology</b>	<b>35.3</b>	<b>43.11</b>	<b>56.43</b>
<b>People</b>	<b>49.8</b>	<b>44.94</b>	<b>56.35</b>
<b>Governance</b>	<b>49.12</b>	<b>57.08</b>	<b>74.79</b>
<b>Impact</b>	<b>51.79</b>	<b>53.5</b>	<b>67.3</b>

Figure 2: Albania scores vs. averages of its income group and region / Source: (Empowering Youth in Least Developed Countries through ICT – Network Readiness Index, n.d., p. 74)

80th out of the 131 countries. The area where there is the most scope for improvement is technology (Albania – Network Readiness Index, n.d.).

It is significant to highlight that the rankings of those pillars may be impacted by the lack of data. Urban Computing’ use of big data raises significant philosophical concerns with relation to general forms of research inquiry, institutional structures, and the overall political economy with regard to access and usage. In previous years, quantitative urban research has used data from surveys, censuses, and specialized sensor systems. The availability of high-quality data for urban research, planning, and operations has faced significant challenges due to declining percentages of people responding to traditional surveys, rising costs associated with conducting the decennial census, and the need to maintain and replace sensor systems. Due to these difficulties, there is a growing interest in exploring additional options for enhancing the urban digital ecosystem. The development of smart cities has attracted a growing number of people who are interested in urban sensor systems, particularly in how to integrate them and improve their performance. Sources of urban data can be also governmental open data, administrative data, user generated content (social sensors) etc. Until that point, there have been substantial shifts in the methods that people exchange knowledge with each other, and a lot has been done about social media, volunteer geospatial data, and content generated by users (UGC) as a whole. Additionally, advances in technology for communication and information (ICT) have expanded the number and types of ways that individuals can take part in urban planning and design, cast votes for and discuss urban projects, and offer feedback on laws and proposals that might change how cities operate. Large amounts of data on urban systems are produced by sensors in the infrastructure related to urban transportation, climate, energy, water, waste, structures governance of the environment, and structure health monitoring, and other aspects. From a wide variety of actual and anticipated applications include cooperative or connected car systems, systems for connecting cars to the grid, grid-based innovations, and a variety helpful device for elders and persons with disabilities. They monitor a variety of urban phenomena, including as inanimate items, physical characteristics of urban regions (atmospheric conditions, water, vegetation, and land use), as well as movement of vehicles, people etc. Some of them can be in operation for a long time and may be either publicly or privately controlled with significantly varying access and data control requirements. Massive amounts of materials are also produced every second of every day as a result of consumers sharing

details about their life and their experiences online, which is related to retro UCG. But with the right information recovery and analytics methods, these data can enable the identification and observation of events and patterns of concern, in addition to the capacity to pinpoint interests and the needs of the public, particularly in response to information, disruptions in urban operations, and regulatory adjustments, for an understanding of urban transformations in actual time. Sensory systems with user participation, citizen scientists' initiatives, social media, browsing habits, GPS, online social networks, and other data collected by society are a few examples of these types of networks.

**Challenges**

Big Data for Data Mining presents a number of difficulties, including those that are technological, methodological, theoretical and epistemological, as well as political and economic in nature (Thakuriah et al., 2016).

<b>Challenges</b>	<b>Characteristics</b>
Technological	Information generation and capture Management Processing, Archiving Information sharing
Methodological	<u>Challenges in collecting data</u> Extraction of data and accessibility Information integration and data connectivity Cleaning, anonymizing, and evaluating the quality of the data Creating techniques for data-driven modeling and urban modeling using an enormous amount of data
Political economy	When using administration-related data for accountability and program review, privacy concerns and centralized systems of authority pose serious problems, but the availability of transactional information from the business community, privately-controlled sensor technology, and user-generated content (UGC) are open to promoting advancement.

Table 1: Data collecting challenges on developing countries / Source: Author

The requirement to develop, capture, manage, analyze, transmit, and discover urban information creates technological challenges especially in developing countries. Establishing an information network, using cloud storage and multi-cloud structures, language and execution environments, and multi-cloud architectures are a few of the primary information management difficulties. The graphical representations below depict the current state of Albania's telecommunications infra-

structure and. It highlights the important hurdles that must be overcome in order to achieve the necessary degree of quality in digital transformation. But, as demonstrated in the figure 4, it's important to point out that a lot of progress has been made on improving the network infrastructure in Albania.

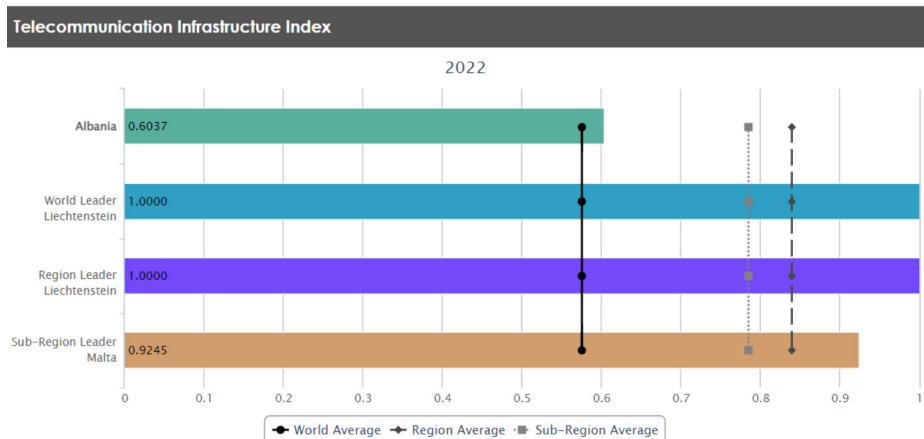


Figure 3: Albania Telecommunication Infrastructure Index / Source: Author

Telecommunication Infrastructure Index	2022	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Albania (Value)	0.60370	0.57850	0.43180	0.35296	0.35480	0.33702	0.16293	0.12508	0.06795	0.05778	0.04940

Figure 4: Albania Telecommunication Infrastructure/ Source: (EGOVKB | United Nations > Data > Country Information, n.d.)

Additional aspects include the software, hardware, and clearly defined interfaces for applications (API) needed to compile, organize, seek out, ask questions about, and assess the data. One of the biggest challenges is that the urban knowledge is frequently divided, cluttered and unorganized. With so many instances of large-scale information, confidentiality of information also becomes crucial. Albania faces the same shortage of cybersecurity experts as other countries. Having access to tools for finding resources of superior quality, ontologies for knowledge representation, and a data governance framework that includes the harmonization of standards, key terms, and operational aspects is another crucial factor in determining data access. Machine learning analytics frequently occur along with, information retrieval from the raw data streams when dealing with particular types of unstructured data. As a result, the collecting information and data examination elements of the process are much more closely related, necessitating the acquisition of new skills by urban researchers who intend to utilize these details or work closely with data scientists who possess these skills. In the other hand, retrieval of data using internet-based repositories and networking sites, as well as the analytics of the resulting user-generated content (UGC) that has been produced in the past, whether either immediately or from archival data, have exploded an important data-specific industry. However, access to the data directly has given rise to a new societal economy of massive information that is confined by the terms of service agreements demanded



## Conclusion

Developing countries are susceptible to circumstances that can limit the development of analytics in their respective industries. These nations face difficulties with IT adoption and transfer due to inadequate administrations, weak infrastructure, and a lack of proper education and qualifications. It is essential that developing nations acquire and implement the usage of information technology in order to achieve sustainable development. While there are several urban big data kinds that have been utilized for a while, such as administrative data and particular sensor systems, there are also many innovations, such as newly connected systems of sensors and related information produced by society or in a hybrid form, which produce data in new formats or structures. Due to the close relationship between gathering unstructured data and data analysis as well as the vast range of technological, methodological, and political economic challenges involved, a wide range of skills are required. Today, the professional community of architects and urban planners, as well as the government, business, and society as a whole, have an extremely limited chance to shape the character and layout of cities utilizing a tool like Data Mining. But there are a number of issues that must be resolved before this prospect can be fully achieved. First, there needs to be a standard that governs how Data Mining is used and applied on Big Data by the professional community. This requires modifications to the regulatory framework. Another problem is the requirement to combine the efforts of planners, urban planners, and urbanists during the phases of data collection and analysis. Third, is the need to understand how to use Data Mining effectively. Big Data technologies tend to be a significant part of urban planning since they have an enormous amount of potential for bridging the knowledge gap between urban real data gathered through different technical methods and conceptual understanding of cities.

## Bibliography

- Peng, Z.-R., Kaifa, L., Liu, Y., & Zhai, W. (2023). The Pathway of Urban Planning AI: From Planning Support to Plan-Making. *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X231180568>
- Dayalan, M. (2020). Top Challenges in Data Mining Research. *httpElezaj, O., Tole, D., & Baci, N. (2018). Big Data in e-Government Environments: Albania as a Case Study. Academic Journal of Interdisciplinary Studies, 7, 117–124. https://doi.org/10.2478/ajis-2018-0052*
- <https://doi.org/10.1729/Journal.19988>
- Laporte, B. (n.d.). Risk management systems: Using data mining in developing countries' customs administrations. 5(1).
- Kandt, J., & Batty, M. (2021). Smart cities, big data and urban policy: Towards urban analytics for the long run. *Cities, 109, 102992. https://doi.org/10.1016/j.cities.2020.102992*
- Albania – Network Readiness Index. (n.d.). Retrieved September 10, 2023, from <https://networkreadinessindex.org/country/albania/>
- Digital Development Albania. (n.d.). Retrieved July 24, 2023, from [https://albania.un.org/sites/default/files/2022-05/Digital%20Development%20Country%20Profile\\_Albania\\_final\\_02.22.pdf](https://albania.un.org/sites/default/files/2022-05/Digital%20Development%20Country%20Profile_Albania_final_02.22.pdf)
- EGOVKB | United Nations > Data > Country Information. (n.d.). Retrieved September 14, 2023, from <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/2-Albania/dataYear/2022>
- Empowering youth in least developed countries through ICT – Network Readiness Index. (n.d.). Retrieved September 10, 2023, from <https://networkreadinessindex.org/empowering-youth-in-least-developed-countries-through-ict/>
- Ivanov, N., & Gnevanov, M. (2018). Big data: Perspectives of using in urban planning and manage-

ment. MATEC Web of Conferences, 170, 01107. <https://doi.org/10.1051/mateconf/201817001107>

Marthoenis, . (2018). Challenges of Data Collection for Research in a Developing Country: Proceedings of the Aceh International Nursing Conference, 164–169. <https://doi.org/10.5220/0008396001640169>

Miao, Y., Koenig, R., Knecht, K., Konieva, K., Buš, P., & Chang, M.-C. (2018). Computational urban design prototyping: Interactive planning synthesis methods—a case study in Cape Town. *International Journal of Architectural Computing*, 16(3), 212–226. <https://doi.org/10.1177/1478077118798395>

Noardo, F., Wu, T., Arroyo Ogori, K., Krijnen, T., & Stoter, J. (2022). IFC models for semi-automating common planning checks for building permits. *Automation in Construction*, 134, 104097. <https://doi.org/10.1016/j.autcon.2021.104097>

Ritchie, H., & Roser, M. (2018). Urbanization. *Our World in Data*. <https://ourworldindata.org/urbanization>

Session 286—ICTs opportunities and challenges in developing countries – An Academic... (n.d.). WSIS Forum 2022. Retrieved September 10, 2023, from <https://www.itu.int/net4/wsis/forum/2022/Agenda/Session/286>

Thakuriah, P., Tilahun, N. Y., & Zellner, M. (2016). Big Data and Urban Informatics: Innovations and Challenges to Urban Planning and Knowledge Discovery. *Springer Geography*, 11. [https://www.academia.edu/17785970/Big\\_Data\\_and\\_Urban\\_Informatics\\_Innovations\\_and\\_Challenges\\_to\\_Urban\\_Planning\\_and\\_Knowledge\\_Discovery](https://www.academia.edu/17785970/Big_Data_and_Urban_Informatics_Innovations_and_Challenges_to_Urban_Planning_and_Knowledge_Discovery)

Turrin, M., Von Buelow, P., & Stouffs, R. (2011). Design explorations of performance driven geometry in architectural design using parametric modeling and genetic algorithms. *Advanced Engineering Informatics*, 25, 656–675. <https://doi.org/10.1016/j.aei.2011.07.009>

Vera, C. M. A., Mels, A. R., Keesman, K. J., & Rijnaarts, H. H. M. (2011). Resource management as a key factor for sustainable urban planning. *Journal of Environmental Management*, 92(10), 2295–2303. <https://doi.org/10.1016/j.jenvman.2011.05.016>

# **A PRELIMINARY INVESTIGATION INTO A VARIABLE SECTION BEAM USING ALGORITHM-AIDED DESIGN AS A WAY TO FACILITATE THE STRUCTURAL DESIGN PROCESS. Drafting Automation**

Ph.D. Candidate. Albi ALLIAJ<sup>1</sup>  
Ph.D. Candidate. Flogerta KROSI<sup>1</sup>  
<sup>1</sup>*POLIS University, Albania*

DOI: 10.37199/c41000118

## **Abstract**

The use of computational parametric design is known as algorithm-aided design. While designers generally rely on intuition and expertise to solve design challenges, computational design aims to enhance this process by codifying design decisions using computer language.

In this study, a useful tool that considers the structural aspects of a rectangular cross section of beam element was proposed. The process was conducted using the algorithm-aided design tool Grasshopper software. It involved determining a variable cross section of beam by facilitating the design phase. The proposed methodology can be particularly useful for practical applications, where numerous drawings have to be covered. In this scenario, the several cross sections generated by the software can alter various numbers of steel bars, ties and hoops. For upcoming CAD design proposals, it is suggested this procedure for automatically processing the results: extracting a wireframe and producing cross sections.

Three-dimensional finite elements now support the cross-section extraction. The skeletonization and vowelization of a finite element- and density-based topology optimization form the basis of the wireframe extraction. The geometrical parameters of each selected beam profile are then established utilizing at least square loss optimization and shape averaging based on image processing. Finally, a model that may be transformed into a parametric CAD model is accessible for use in future design work.

## Keywords

Automation, parametric design, variable section beam, algorithm-aided design

## Introduction

This paper investigates the method of algorithmic design as a way to facilitate the process of drafting of structural projects. The script was made from the author, using Grasshopper. The purpose of the script is to program the logic behind the drafting of reinforced concrete beams, according to Eurocode 2, in order for the program to draw itself all the possible scenarios of longitudinal sections and cross sections. The user can have the desired drawings by changing the values of the inputs, which are selected, keeping in mind the flexibility during work.

The inputs

The main problem, rather than creating the flow of the algorithm, was to decide the inputs. Since the drafting process has so many inputs, the author had to determine which input should the algorithm consider; Will it consider the material properties? What if it includes the bending moment? Should the script consider other inputs that are not destined to be chosen from Eurocode, like the maximal length of the rebars?

Programmers deal with similar problems all the time. The best solution to it usually is “What the client wants.” In this case, the author is the client, which is the best case, as the author is a structural engineer and the input were chosen based on the experience of an engineer.

Figure 1 – The inputs (1)

The algorithm is destined to be controlled by a structural engineer. Hence, it does not have inputs for automatically calculating the rebar dimensions or the concrete cover. This input values should be added manually into the script. It is because there are too many reasons why the size of the rebars chosen do not necessarily respect the Eurocode formulas, in practice. One reason can be the requirements from the public administration, or it can be the over-standardization of the elements to save time and money, or even the good practice of structural engineers, guided by their experience.

Another input is the length of the maximal rebars, which is often neglected when designing software. The typical limit is 12 meters. However, this length is sometimes not preferable, as the rebars

tends to buckle during their transportation in site or during their implementation. Therefore, the author made an input for the user to consider the maximal length of the rebars.

A lot of inputs are made for the geometry of the beam which, again, has to be putted manually by the engineer. BIM software deal with this issue differently, by having inputs for 3D objects and, afterwards generating the 2D drafting automatically. This is not preferable, not only in the Albanian community of engineers, but in many other countries in Europe, as the structural engineers have not yet overcome the transition from the 2D page to the 3D workspace and the chances are that this gap will not be overtaken in the recent future. To help them, the script is designed with inputs in 2D, similarly as if the drafting would be made in a worksheet plan in Autocad. The difference here is that, while the drawing is time consuming, not changeable and includes human mistakes, drafting using “buttons” from the script resolves these issues. It saves precious time!

Another important input is the scale button, which allows the user to change the scale of the cross section, without changing the size of the text or symbols. The current programs need additional steps to make the dimensions and symbols immutable, while growing or lowering the size of the geometry. This script surpasses this limit. The last input is the “Bake” button. This tool allows the user to decide whether or not to let the program draw the beam. After the Bake process, the beam is not changeable, but the lines itself can be modified manually, as if they were drawn in Autocad

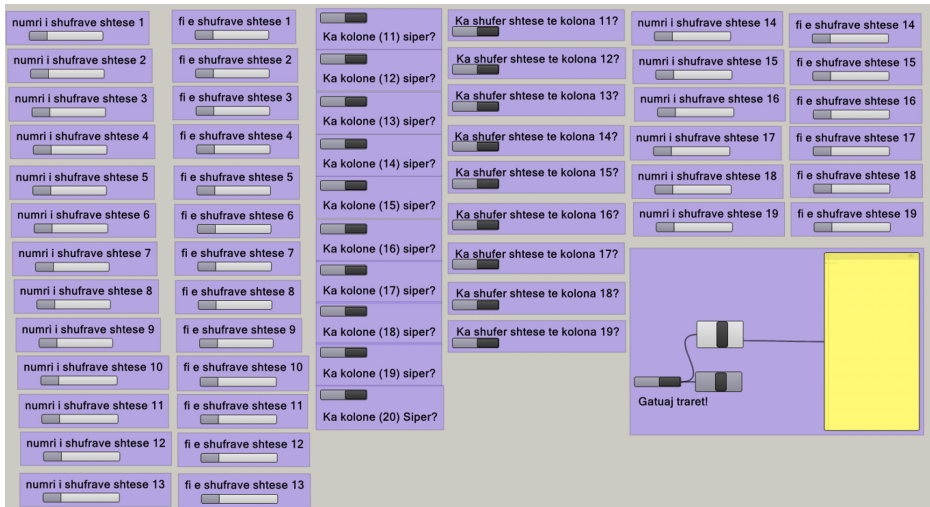


Figure 2 – The inputs (2)

(they can also be generated on Autocad).

## The flow

Because of the large number of the inputs, the flow takes its time to amalgamate into a single output. The main issues here were to keep track and to manage all the possible connections between the inputs. Therefore, the author uses panels for the unwanted inputs and number sliders for the important ones. Another solution to this problem is the use of groups, clusters and scribbles inside the script.

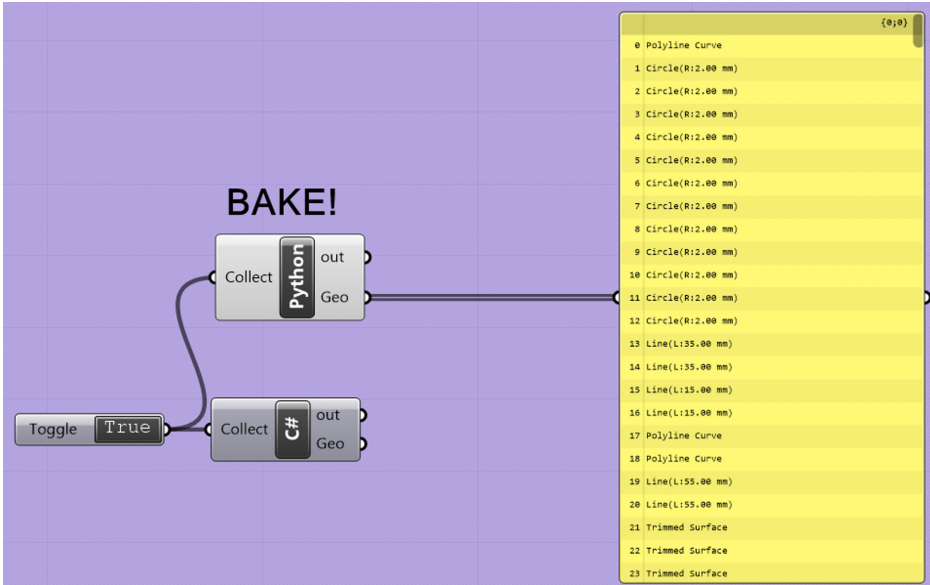


Figure 3 – The “Bake” button

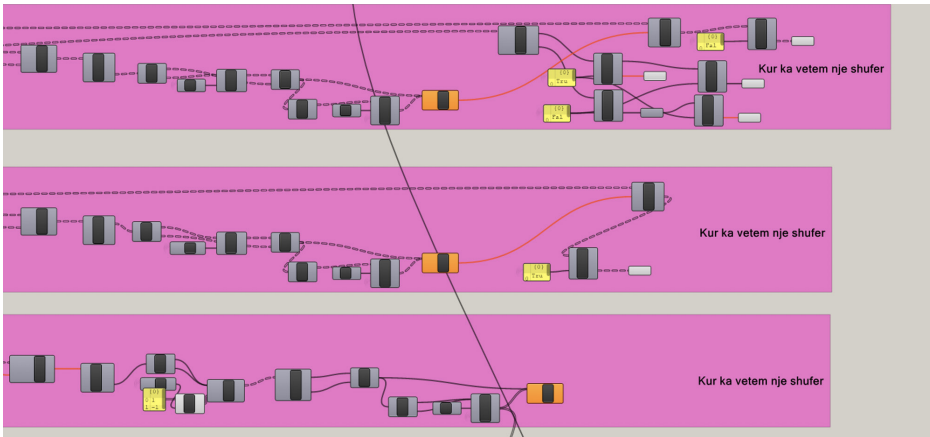


Figure 4 – Managing the script with groups and scribbles

Again, some of the possible inputs were deleted, because of the engineer’s judgment. For example, considering the minimal distance between the rebars in the cross section, the script has a conditional clause that set the bars in one layer or in two or more layers automatically. Similarly, the algorithm considers not having rebar joints in short beams. Moreover, the script makes all the rebar lengths rounded by numbers fully distributed by 5, by not changing the joint length between them. In this case, the center of the joints is not on the axis for the lower bars and not on the exact middle of the span for the upper bars. Instead, these points move a little. It is important to not that this given tolerance is trivial to the integrity of the structure.

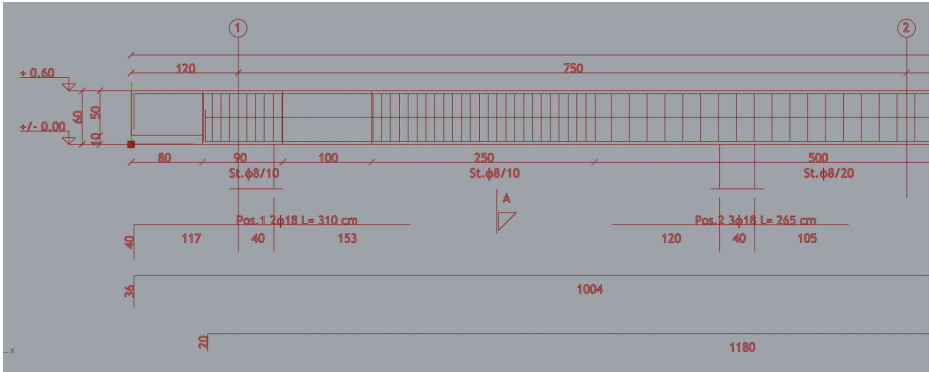


Figure 5 – The output bars are all rounded

Furthermore, when considering the additional upper bars, their lengths is set automatically, based on the Eurocode 2. They are rounded by numbers fully distributed by 5, as well. This round is important especially for projects in Albania, where the bars are cut on site. If bars have miscellaneous lengths, it results in a lot of wasted material.

Another automatic draw which the script realizes (though we are just scratching the surface here, as the script includes an enormous range of flows, regarding the engineer requirements), is the middle bars into the section beam, which are made with a conditioning clause, depending on the height of the beam. If the beam is deep enough, it will suffer from the out-of-plane moment and the stirrups will suffer from buckling. To prevent possible local failures in this particular cases, the script considers the drawing of middle bars. Also, according to Eurocode 8, upper bars should be connected with the lower bars with additional ties. The algorithm is designed to automatically draw ties and to connect at least one bar out of two of them in a row.

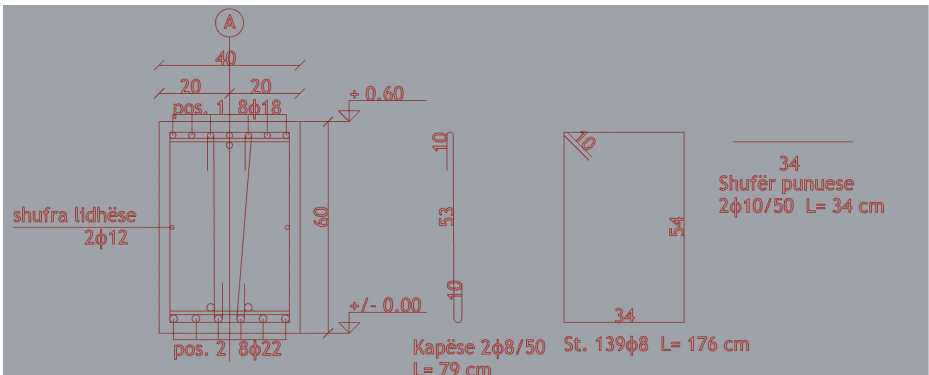


Figure 6 – The output of the cross section, with additional bars and ties

Lastly, the most important feature of the script is his flexible nature. Let's imagine a normal day of work in an engineering office. The drawings are made for the team leader. After his corrections, they are re-done, this time hoping that the client wont make changes. Usually, this is not the case, as clients tend to be volatile and they can be the reason for the project to change through all the

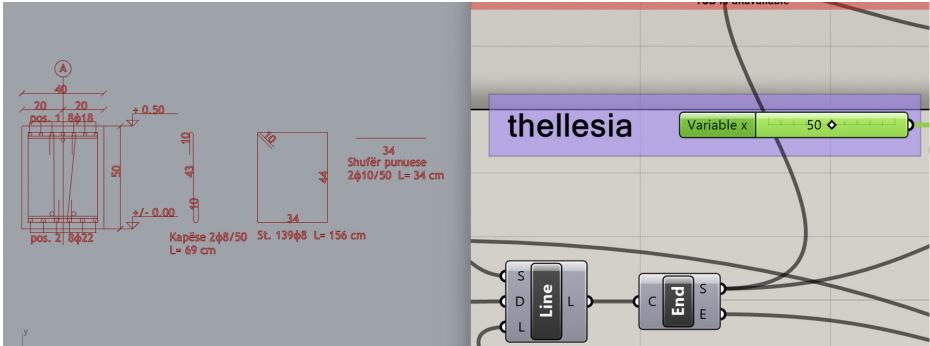


Figure 7 – An example of the work flexibility, where the drawings and the dimensions adapt to the new depth

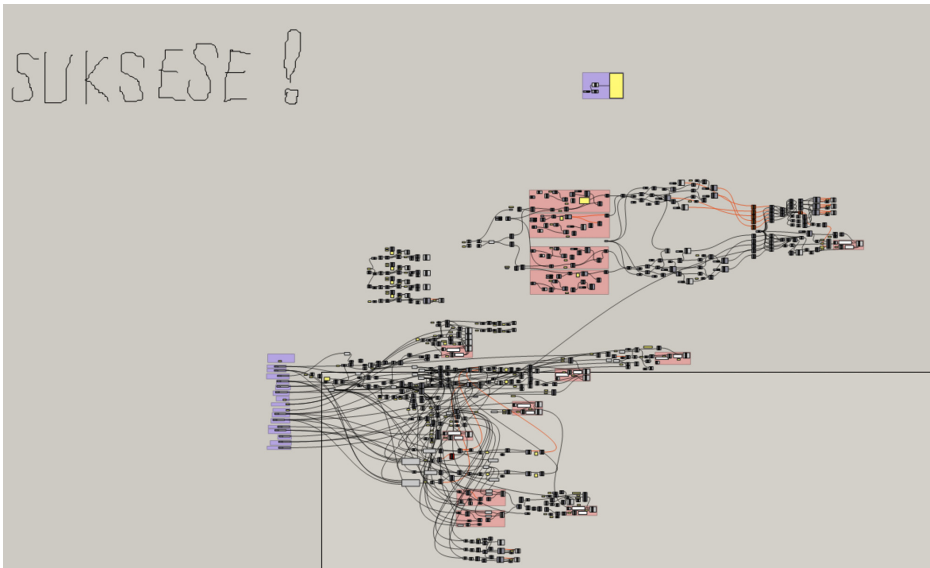


Figure 8 – The demo script given to the student in TAW 2023

steps of its design. However, the municipality tends to change the projects, as well. The projects can also change in site. Usually in Albania all of the above happen. The project may change even while finishing the floors (this is a crazy world we are living in). Sometimes not only the elements, but the entire project changes.

To prevent the possible mental breakdown during these changes, the script allows the user to be flexible and change only the corresponding inputs, not the entire project. The drawings, afterwards, adapt to the changes in an automatic way, by saving a lot of time.

Lastly, the script prevents human mistakes. The test was made during a workshop in Tirana Architecture Weeks 2023. A simpler version of the script was given to the students of the first year of civil engineering class and they were assigned to draw all the cross sections of beams of a five-



floor complex structure. Students lacked the skills to do this task with a conventional software. Moreover, they did not have the capabilities to understand the meaning behind the drawings. Nevertheless, the result was outstanding. It took only one day to explain the problem to them. They completed the drawings in four days. Also, the drawings themselves had less mistakes than the real drawings, which were done by experienced engineers.

## Conclusion

Automating the boring stuff is the main issue this paper tackles. To do so, the author designed an algorithm and tested it. The results were promising, as the drawings were done with less mistakes and in a shorter time than with the conventional software. Also, an important task of this paper is deciding the inputs to use, which, in programming, has the same importance as designing the outputs. This issue is considered on accordance with the Eurocodes and the good practice. The algorithm considers only the drawing of the concrete beams. However, a similar algorithm can be made even for the other structural elements.

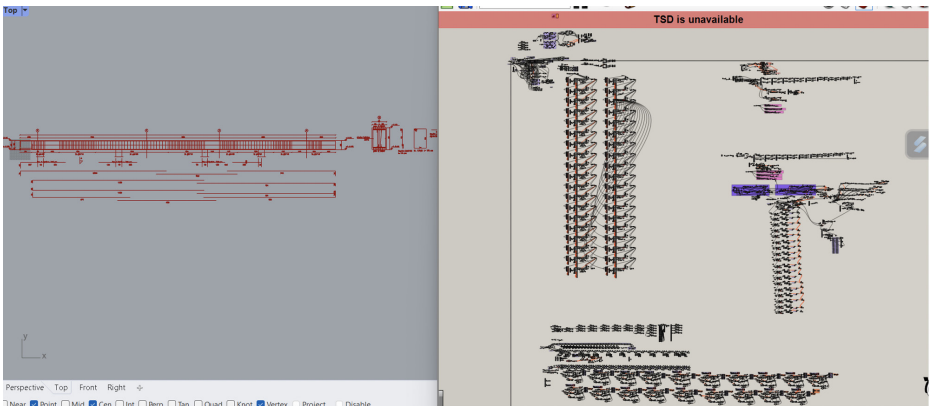


Figure 9 – The algorithm

## REFERENCES

- [1] Tedeschi A. (2014) Algorithmic Aided Design: Parametric Strategies Using Grasshopper. Le Penseur.
- [2] E. C. of Standardization, “Eurocode 8: Seismic Design of Buildings Worked examples” 2002.
- [3] E. C. of Standardization, “Eurocode 2: Design of concrete structures” 1992-2:2005

# **Human Agency, Knowledge and Space in Bratislava Socio-spatial analysis of innovation in a capital city**

Sila Ceren VARIS HUSAR<sup>1</sup>

Milan HUSAR<sup>1</sup>

Vladimir ONDREJICKA<sup>1</sup>

<sup>1</sup>*Slovak University of Technology in Bratislava*

DOI: 10.37199/c41000119

## **Abstract**

The effect of the time and space on people and the knowledge production is examined with various methods and approaches in different disciplines as economics, geography, development studies, planning and the like. From the socio-spatial perspective, regional development is related in one dimension of how the individual links to one's environment, both individually and within a community. This research is a part of a wider research project, called REGINNO 1 delves into the regional innovation capacity in Slovakia, specifically explores the interrelation of human agency and local development from the socio-spatial perspective specific to capital city of Bratislava. Human agency refers to the individuals' capacity and perspective to be involved in the creation of novel ideas and contribution to local knowledge. The socio-spatial perspective acknowledges the interplay between social structures and spatial arrangements, exploring the role of physical environments shape social relations and opportunities for the aforementioned individuals. Human capital capacity fosters a favourable setting for innovation by enabling the sharing of knowledge and resources, and facilitating the formation of networks and partnerships. Based on the findings of this research, there are a number of recommendations of this research for policymakers, and practitioners to foster environments, spaces and planning strategies that empower individuals, promote inclusion, and address socio-spatial diversities in local context.

## Keywords

Human agency, regional development, innovation, capital city, Slovakia.

## **Introduction**

The study presented in this research paper delves into the multifaceted dynamics of regional development, human agency, local knowledge, and socio-spatial innovation within the context of Bratislava, the capital city of the Slovak Republic. This introduction serves as a foreword to our work, providing an overview of the theoretical underpinnings that form the foundation of our research, as well as a brief introduction to the case study of Bratislava.

This research is a part of a wider research project, named REGINNO delves into the regional innovation capacity in Slovakia, specifically explores the interrelation of human agency and local development from the socio-spatial perspective specific to capital city of Bratislava. This research proposes the development of regional innovation policies primarily in Slovakia with the help of the spatial and statistical analysis of local dynamics. These analyses are assumed to be based on the forms of production in the regions, the technology, knowledge, and R&D intensities of the sectors and people.

In this discussion, specifically, we explore the relationship between innovation and socio-spatiality, examining it from the perspectives of inequality and sustainable transitions. We investigate how innovation can both exacerbate and alleviate inequalities, as well as how it can drive sustainable transitions. Through local examples and general theoretical frameworks, we aim to understand what type of role innovation can have for change in socio-spatial dynamics.

## **Theoretical background**

This part is the theoretical groundwork for our research. Here are the various concepts of regional development and the scope of our project, explaining the importance of regional development and transformation within the broader framework of socio-economic change. While discussing these concepts we also focus on human agency, examining the role of individuals and communities in shaping the development trajectory of regions, and how their actions contribute to or impede innovation and progress. We underline the significance of local knowledge as a driving force behind regional development, emphasizing its role in fostering unique solutions and approaches that cater to the specific needs and challenges of a region.

## **Regional development and scope of the project**

Regional development can be understood and influenced from the perspectives of human agency and local knowledge, which play pivotal roles in shaping the trajectory of regions. A spatial unit of any kind and anywhere is not the sole responsible for producing innovation activities when measuring the innovation performance of a region. Regional innovation performance is the responsibility of the actors in the region (Brenner and Broekel, 2011). Therefore, the focus of this research is to analyze the relation between innovation and human at regional level. Human agency literature (Karnøe and Garud, 2012; Grillitsch and Sotarauta, 2020; Grillitsch et al., 2021; Blažek and Květoň, 2022; Grillitsch and Sotarauta, 2023) refers to the capacity of individuals, communities, and organizations to act purposefully and make decisions that impact and change their environment. In the context of regional development, human agency plays a significant role in several ways:

- Individuals and entrepreneurs within a region can drive economic growth and development by starting businesses, creating innovative products or services, and generating employment opportunities as change agents (Roebke et al. 2022; Wirth et al., 2023). Their initiatives can lead to the emergence of new industries and the revitalization of existing ones.
- Local leaders, government officials, and community organizers have agency in shaping regional

development policies and strategies. Effective governance can create an environment conducive to investment, infrastructure development, and social progress.

- Communities (Magis, 2010) themselves can actively participate in shaping their regions. Through community-based initiatives, citizens can improve infrastructure, promote cultural preservation, and enhance the overall quality of life within their areas.

- Investing in education and skills development at the local level can boost human capital (Capello, 2019; Lenzi and Perucca, 2020). A well-educated and skilled workforce can attract businesses and industries seeking a qualified labour force, thus fostering regional development.

Local knowledge refers to the unique insights, traditions, and expertise possessed by residents and communities within a region. This type of knowledge is often rooted in the historical, cultural, and environmental contexts of a specific area. In the context of regional development, local knowledge plays a vital role in several ways:

- To promote environmental sustainability
- To contribute to regional identity and development
- To offer unique solutions to region-specific challenges
- To become more resilient in the face of environmental or economic challenge

In essence, human agency and local knowledge are interconnected drivers of regional development. Individuals and communities with agency can leverage their local knowledge to make informed decisions, implement innovative solutions, and create sustainable development pathways that align with the unique characteristics and aspirations of their regions. These perspectives highlight the importance of recognizing and harnessing the capabilities and wisdom of people and communities in the pursuit of regional progress.

### **Socio-spatial perspective on innovation**

The characteristics and level of national economic growth are often correlated with the nature of urbanization and the associated urban formations. The requirement to accommodate growth while retaining the quality of the urban environment is likely to dominate urban systems and challenges in nations with strong economies that are at the forefront of economic development. For example, Yoo & Lee (2016) imply that spatial and non-spatial elements at the neighborhood level can influence the establishment of social capital, which affects social sustainability.

Regions are the crucial elements of innovation, where diverse actors interact, networks form, and knowledge is generated, diffused, and exploited. At the heart of these intricate processes are the economic agents that underpin the very fabric of regional ecosystems. Actors, ranging from firms and entrepreneurs to universities and research institutions, play pivotal roles as catalysts of innovation and drivers of competitiveness within their respective domains

### **Case study of Bratislava**

This section brings us to the heart of our investigation – the case study of Bratislava. Here is a brief historical overview of the Slovak Republic, shedding light on the historical context that has shaped the nation and its regions. Bratislava, the capital city, has its pivotal role as an urban hub that not only reflects but also influences the broader regional development landscape.

### **Short history on Slovak Republic**

The Slovak Republic, often simply referred to as Slovakia, is a landlocked country located in Cen-

tral Europe. Its history is rich and complex, with influences from various cultures and empires throughout the centuries.

In Early History, Slavic tribes settled in the area, laying the foundation for the modern Slovak culture and language. During the Middle Ages, Slovakia was part of the Kingdom of Hungary within the larger Austro-Hungarian Empire. It remained under Hungarian rule for nearly a thousand years, with significant cultural and political ties to Hungary. In the 16th and 17th centuries, the Habsburg Monarchy, which ruled over a vast part of Central Europe, including Hungary, held sway over Slovakia. This period saw significant socio-political changes and religious conflicts. After World War I, the Austro-Hungarian Empire collapsed, leading to the formation of Czechoslovakia in 1918. Slovakia became one of its constituent parts, coexisting with the Czech lands. This union lasted until 1939 when Nazi Germany invaded and established a separate state for Slovakia. After World War II, Czechoslovakia was reestablished, and it came under communist rule in 1948. For over four decades, Slovakia was a part of the Eastern Bloc under the influence of the Soviet Union. In 1989, the Velvet Revolution marked the end of communism in Czechoslovakia. The country transitioned to democracy, and in 1993, it peacefully split into two separate nations, the Czech Republic and the Slovak Republic.

After gaining independence, Slovakia underwent significant political and economic reforms. It became a member of the European Union (EU) in 2004 and adopted the euro as its currency in 2009. The country has since experienced economic growth and modernization. In recent years, Slovakia has continued to develop its economy and strengthen its ties with Western Europe. It has played a role in regional stability and has become an active member of various international organizations, including NATO.

Today, the Slovak Republic is known for its picturesque landscapes, historic towns, and a unique blend of cultural influences, making it a fascinating and diverse country with a rich history that has shaped its identity in the heart of Europe.

### **Bratislava as a capital city**

After the Velvet Revolution in 1989, which marked the end of communism, Bratislava became the capital of an independent Slovakia in 1993 when the country peacefully split from the Czech Republic. Since gaining independence, Bratislava has experienced economic growth and urban development. It has become a political, cultural, and economic centre of Slovakia and is known for its historical landmarks, vibrant cultural scene, and its location along the banks of the Danube River. Today, Bratislava stands as the capital and largest city of Slovakia, playing a pivotal role in the nation's political and cultural life.

When considering the development transformations and development dilemmas of Bratislava, it is necessary to reflect some broader contexts of social processes (their political, economic, cultural or otherwise defined aspects), in which the city functions as a system. A new phenomenon of the growth of Bratislava (as well as other post-communist cities), initiated by transformational changes, are the transformations of their centers and the creation of new centers with the specifics of their users. Old, historically established centers are strengthening their service, symbolic and leisure-knowledge functions. At the same time, luxury stores are entering here, and especially in the 1990s, financial institutions, as well as newly emerging diplomatic missions in connection with the establishment of the Slovak Republic, entered significantly. The residential function is shrinking on the one hand and undergoing a significant revitalization on the other hand. This leads to an increase in the standard, but at the same time it is connected with gentrification processes, when there is a change of the existing population in favor of the more solvent one (Faltan, 2009).

With high growth dynamics, there is a new distribution of functions in the urban space. Some of the administrative and service functions are being moved to new urban areas. Both the financial sphere and the headquarters of important foreign or multinational companies are concentrated in them. Large shopping centers are growing in the outskirts of cities. In connection with Bratislava, it should be said that with the development of socio-cultural, restaurant-café, leisure and business-service functions in Petržalka, especially in its waterfront part, it is gradually possible to talk about the city “on the Danube” more fully. The mentioned new distribution of functions in the city space also conditions changes in the movement of user groups within the city. The fact that Bratislava has “run away” from the rest of Slovakia in terms of development dynamics, that the economic shocks from the transformation processes of the 1990s, but also from the global crisis at the end of the first decade of the 21st century, do not affect it to the same extent as other regions of Slovakia, create aversion to the city (Faltan, 2009).

### **Socio-spatial analysis of Bratislava**

The Danube river is a vital and integral part of Bratislava’s identity and urban landscape. The Danube River, which flows through the city, not only provides a picturesque backdrop but also plays a crucial role in shaping the city’s history, culture, and socioeconomic development. Its waterfront areas have been focal points for recreation, transportation, and urban planning, making it a defining feature of Bratislava’s socio-spatial fabric.

There are number of existing research on Bratislava from socio-spatial perspectives. These research give extremely valuable insights about the Bratislava and Slovak context.

Despite the Danube River’s significant political, economic, and symbolic importance for a large portion of Europe, and despite the size of its drainage basin, which spans 19 countries on both sides of the historical border separating Eastern and Western Europe, research has shown that residents of its Western part perceive the river’s course as being unknown, in contrast to students from Eastern Europe who more accurately recognize the river (Padlo et al., 2021).

The research by Šveda et al. (2016), aims to pinpoint the crucial elements influencing the emergence of specific suburban areas in Bratislava, thereby enhancing comprehension of the factors significantly moulding the socio-spatial structure of hinterlands in contemporary post-socialist urban environments. This research employs a methodological approach that examines Bratislava’s hinterland by analyzing aspects such as in-migration, housing development, property costs, and land utilization. It utilizes different types of analyses within the framework of factorial ecology, a method that helps identify and describe key components of socio-spatial structure. This analysis relies heavily on data input, including information from censuses, to generate meaningful insights into the hinterland’s characteristics. They conclude that their analysis for Bratislava validates the findings of prior studies conducted in the CEE region, which indicate that individuals with higher levels of education and belonging to more affluent social groups are typically the primary participants in suburbanization. The emergence of a well-educated and prosperous ‘suburban ring’ contributes to the clustering of socio-economic groups within suburban spaces. For Bratislava case, this research reaffirms the role of education level in influencing individuals’ choices regarding their socio-spatial locations.

In their research on “Behavioural mapping and online data as tools for socio-spatial analysis of public spaces – Bratislava, Slovakia waterfront case study”, Petrtylová and Jašo (2022) provide valuable insights into the dynamics of public spaces in Bratislava, using innovative methods of analysis.

The exploration of Bratislava waterfront via the presented methodology shows the difference

between Bratislava left and right bank waterfronts. They remain distinctive places with (partly) separate historical, morphological as well as socio-cultural development. While the left bank is a “face of the city”, the primary place of the dialogue between the city and its inhabitants/visitors, the right bank has gone through a long transformation process especially during the last two decades. Once the mere borderline between land and river, it is becoming the place, the spot to go for nature, leisure time activities and culture. Its semiotics are dynamically evolving, enriching the city identity with new connotations. For many people, the left bank is a scenographic element of their everyday movement within the city (driving the car along the waterfront, walking through the old city) while right bank remains more of a “place to go”, agreeable spots of activities which are irregular or are bound to specific purpose (jogging, cycling).

## Discussion

Through this exploration, we aim to shed light on the intricate interplay between human agency, local knowledge, and socio-spatial innovation in the context of regional development, ultimately contributing to a deeper understanding of the factors driving regions like Bratislava.

Based on the findings of this research, there are a number of recommendations of this research for policymakers, and practitioners to foster environments, spaces and planning strategies that empower individuals, promote inclusion, and address socio-spatial diversities in local context.

Recommendations:

- Spatial analysis of social dynamics which have an impact on innovation
- Longitudinal research and data collection on chosen individuals or institutions
- More focus on understanding the socio-spatial dynamics impact on research, novel ideas and progress

The ongoing nature of this research underscores its continuous evolution and the anticipation of further steps in the journey to deepen our understanding of human innovation within urban spaces from a socio-spatial perspective both in Bratislava, Slovakia and CEE countries. As urban environments continue to transform and adapt, researchers remain committed to unraveling the intricate dynamics that drive innovation, inform urban policies, and enhance the quality of life for urban dwellers. Future investigations will undoubtedly uncover new insights, refine methodologies, and propose innovative solutions to address the evolving challenges and opportunities presented by our ever-changing urban landscapes.

## References

Blažek, J., & Květoň, V. (2022, May 5). Towards an integrated framework of agency in regional development: the case of old industrial regions. *Regional Studies*, 57(8), 1482–1497. <https://doi.org/10.1080/00343404.2022.2054976>

Brenner, T., & Broekel, T. (2011). Methodological issues in measuring innovation performance of spatial units. *Industry and Innovation*, 18(1), pp. 7-37. <https://doi.org/10.1080/13662716.2010.528927>

Faltan, L. (2009). Bratislava–dilemy súčasného rozvoja (reflexia socio-priestorových súvislostí). *Sociológia-Slovak Sociological Review*, (4), 329-353.

Grillitsch, M., & Sotarauta, M. (2020). Trinity of change agency, regional development paths and opportunity spaces. *Progress in Human Geography*, 44(4), 704–723. <https://doi.org/10.1080/00141801.2020.1811111>

org/10.1177/0309132519853870

Grillitsch, M., Asheim, B., Isaksen, A., & Nielsen, H. (2021, November 10). Advancing the treatment of human agency in the analysis of regional economic development: Illustrated with three Norwegian cases. *Growth and Change*, 53(1), 248–275. <https://doi.org/10.1111/grow.12583>

Karnøe, P., & Garud, R. (2012). Path creation: Co-creation of heterogeneous resources in the emergence of the Danish wind turbine cluster. *European Planning Studies*, 20(5), 733–752. <https://doi.org/10.1080/09654313.2012.667923>

Lenzi, C., & Perucca, G. (2020). The nexus between innovation and wellbeing across the EU space: What role for urbanisation? *Urban Studies*, 57(2), 323–349. <https://doi.org/10.1177/0042098018818947>

Magis, K. (2010). Community Resilience: An Indicator of Social Sustainability. *Society & Natural Resources*, 23(5), 401–416. <https://doi.org/10.1080/08941920903305674>

Myint, S. W. (2008). An exploration of spatial dispersion, pattern, and association of socio-economic functional units in an urban system. *Applied Geography*, 28(3), 168–188. <https://doi.org/10.1016/j.apgeog.2008.02.005>

Pađło, T., Struś, P., & Gil, A. (2021). Danube as a symbol of Europe. Perception of the river from varied geographical perspectives. *PLoS ONE*, 16. <https://doi.org/10.1371/journal.pone.0260848>.

Petrtylová, R., & Jaško, M. (2022). Behavioural mapping and online data as tools for socio-spatial analysis of public spaces-Bratislava, Slovakia waterfront case study. *GeoScape*, 16(1), 39–54. <https://doi.org/10.2478/geosc-2022-0004>

Roebke, L., Grillitsch, M., & Coenen, L. (2022). Assessing change agency in urban experiments for sustainability transitions. *Environmental Innovation and Societal Transitions*, 45, 214–227. <https://doi.org/10.1016/j.eist.2022.10.007>

Sotarauta, M., & Grillitsch, M. (2023). Studying human agency in regional development. In *Regional Studies* (Vol. 57, Issue 8, pp. 1409–1414). Routledge. <https://doi.org/10.1080/00343404.2023.2217224>

Šveda, M., Madajová, M., & Podolák, P. (2016). Behind the differentiation of suburban development in the hinterland of Bratislava, Slovakia. *Sociologicky Casopis*, 52(6), 893–925. <https://doi.org/10.13060/00380288.2016.52.6.290>

Wirth, S., Tschumi, P., Mayer, H., & Bandi Tanner, M. (2023). Change agency in social innovation: an analysis of activities in social innovation processes. *Regional Studies, Regional Science*, 10(1), 33–51. <https://doi.org/10.1080/21681376.2022.2157324>

Yoo, C., & Lee, S. (2016). Neighborhood Built Environments Affecting Social Capital and Social



Sustainability in Seoul, Korea. *Sustainability*, 8, 1346. <https://doi.org/10.3390/SU8121346>.

# **Examining the Use of VR Technologies to Improve Architectural Visualization and Immersive Design Experiences Virtual Reality for Architectural Visualization**

Andia VLLAMASI<sup>1</sup>

Anxhela ASIMI<sup>2</sup>

<sup>1</sup>*POLIS University, Albania*

<sup>2</sup>*B-Services, Albania*

DOI: 10.37199/c41000120

## **Abstract**

When we think about architectural design what comes to mind is the final result, this being the visualization of the proposed structure, which enables architects to successfully present their concepts to customers, stakeholders, and the general public. Advancements in technology systematically keep transforming the way architects present their work, from traditional methods such as drawings, renderings and physical models to digital representation. Although these techniques offer useful presentation, they frequently fail to capture the real spatial experience and sense of immersion that buildings offer. Today, Virtual reality (VR) technologies offer an either further advancement, and are effective tools for improving architecture visualization and offering immersive design experiences. This paper will look into the potential of VR for architectural visualization as well as its effects on how architects communicate and make decisions.

By building immersive, engaging, and realistic virtual worlds that closely mimic the sensation of being inside a built location, virtual reality presents a potential to reduce this gap. The study evaluates the effect of VR on architectural vision from various angles. What are the benefits of VR? Does virtual reality truly capture an authentic spatial experience? This prompts the need to assess how VR can enhance design communication. This involves facilitating interaction and immediate input among stakeholders like architects, clients, and others. Additionally, it requires contemplating how VR can facilitate collaborative design procedures. One way it achieves this is by aiding architects in appraising design alternatives and experimenting with light conditions.

However, while presenting opportunities, the pragmatic application of VR includes many obstacles to its acceptance. These considerations encompass factors such as accessibility and the necessity for specialized knowledge and tools. The study also outlines fundamental principles and optimal approaches to effectively integrate VR into architectural visualization workflows. This is realized by conducting a thorough examination of existing literature and case studies. The investigation delves into various VR techniques and their real-time interactivity, along with their impacts on architectural design and communication. In addition, the human elements that influence VR experiences will be taken into account such as user comfort, presence, and the risk for cognitive overload. The results of this study demonstrate how virtual reality can revolutionize architectural visualization. Suggestions for architects, designers, and stakeholders include how to use virtual reality (VR) to improve decision-making, increase design communication, and provide more captivating and immersive architectural experiences.

Keywords

Virtual Reality (VR), Visualization, Architecture, Digital Tools, Spatial Experience

## Introduction

Virtual Reality (VR) has emerged as an advanced technological field that is reshaping a multitude of industries, and the domain of architecture is no exception to its transformative influence. Characterized by its capacity to forge immersive and interactive digital environments, VR has led architects into a new era of visualizing and conveying design concepts. This research delves deeply into the applications of VR within the architectural domain, emphasizing its pronounced role in amplifying architectural visualization and creating immersive design experiences. By analyzing the assimilation of VR technologies into the architecture profession, this study seeks to illuminate the potential advantages, challenges, and far-reaching consequences of this technology-driven metamorphosis.

Within the realm of architecture, the task to create intricate design visions and spatial ideas to clientele and stakeholders has conventionally relied upon 2D drawings and static 3D models. Although these conventional depictions have yielded valuable insights, they often fall short in demonstrating the complexities in architectural spaces. This shortcoming can breed misconceptions, misinterpretations, and a deficiency of stakeholder engagement, potentially impeding the decision-making course and the overall triumph of a project.

With the invention of Virtual Reality, an innovative technology that has unfurled a horizon of opportunities, enabling architects to submerge their clients within a virtual dimension where architectural visions take tangible form. Through the adept utilization of head-mounted displays (HMDs) and motion-tracking controllers, Virtual Reality (VR) ushers in an unmatched ambiance of presence and interaction, enabling users to traverse and engage with architectural realms in ways that previously existed solely in the realm of imagination. With its prowess to replicate authentic lighting scenarios, detailed textures, and even ambient sounds, VR emerges as a practice that offers a genuine portrayal of conceived structures, elegantly improving the features of traditional static presentations.

The incorporation of Virtual Reality (VR) technologies into architecture has introduced a fresh dimension to the narrative of architectural representation. Architects and their clients are now afforded the opportunity to digitally explore architectural structures, gaining direct exposure to aspects like size, proportions, and spatial relationships. This interactive journey not only captivates clients' interest but also equips them with the capacity to form knowledgeable assessments regarding design complexities, materials, and spatial arrangements. This empowerment fosters a deep sense of engagement and cooperation during the design journey, amplifying collaborative efforts and cultivating a stronger connection with the creative evolution.

Beyond its role in visualization, Virtual Reality (VR) means a transformative stance in the realms of design iteration and exploration within architecture. It empowers architects to prototype and delve into a spectrum of design alternatives in real-time, thereby making easier and more efficient decision-making. This iterative design process is becoming crucial for enhancing the creative ideation and encouraging the exploration of unconventional ideas that could have eluded attention within the constraints of traditional design methodologies.

Furthermore, the potential of VR unfurls in the domain of collaborative design experiences. It creates an environment wherein multiple stakeholders, architects, and designers collaborate within a shared virtual realm concurrently. This real-time collaborative discourse overcomes geographical constraints, nurturing a seamless exchange of communication and feedback even for teams spread across global precincts. Harnessing the collective reservoir of expertise, this mode of interaction refines designs, mitigates concerns, and achieves consensual convergence more efficiently, resulting in architectural outcomes of heightened distinction.

However, using new technology like virtual reality in architecture comes with problems that need careful thinking. When architects start using VR in their work, they might need to spend a lot of money on special equipment and software. Also, changing from the usual way of designing things to using VR might mean that architectural companies have to train their staff a lot and provide them with extra help. It's really important to deal with these issues so that we can make the most out of VR's amazing possibilities. This could lead to a big positive change in how we visualize and design buildings, like a new era of creativity.

As Virtual Reality (VR) continues to make a significant impact on the field of architecture, it becomes essential to thoroughly explore its various uses and consequences. This paper work aims to comprehensively examine the many ways VR technology is being employed in architecture. It seeks to uncover the advantages, challenges, and potential future possibilities of integrating VR. By carefully studying real-world examples and instances of success, our goal is to provide strong evidence for the benefits that arise from incorporating VR into architectural practices. In doing so, we hope to inspire architects to embrace this transformative tool, enhancing the way designs are visualized and bringing about a new era of immersive experiences that hold remarkable potential.

### **Literature review**

The integration of Immersive Mixed Reality (IMR) technologies has been acknowledged in various studies [2, 8, 9, 10, 11] as significantly beneficial across design, construction, and operational domains. These technologies have lots of benefits, like safety assessment, training people better, planning spaces more efficiently, and designing things to work well. They can also help with other important aspects like lighting, interior design, and managing buildings. But even though IMR has brought great ideas to architecture and construction, the arrival of Virtual Reality (VR) technology has opened the door to even more exciting possibilities. This new technology lets us experience things in an even more advanced and sophisticated way.

The use of Virtual Reality (VR) in the field of architecture dates back to the late 19th century, marked by early attempts that featured basic simulations employing low-resolution visuals [1]. As technological progress was made, particularly in terms of enhanced computer processing capabilities and graphics performance, VR underwent a transformation, facilitating the development of detailed applications in architecture. In the contemporary context, VR has become a key instrument in architectural design. Its usefulness has been increased by advancement of powerful Graphics Processing Units (GPUs), the availability of high-resolution Head-Mounted Displays (HMDs), and the evolution of real-time rendering engines, contributing altogether to its integration.

IMR is a larger term that includes a variety of reality technologies, from fully virtual to completely real-world scenarios. Within this spectrum, virtual reality (VR) is a technology that creates fully artificial virtual worlds in order to offer immersive experiences. VR is one of the layers of IMR, which also covers other forms of immersion. IMR technologies enable dynamic engagement in design and construction tasks, while VR's immersive characteristics encourage transparent communication and enthusiastic participation. According to Regenbrecht and Donath, "the component of communication which takes place in a computer-generated synthetic space and embeds humans as an integral part of the system".[2]

However, Portman et al. (2015) presented one of the most recognized definitions of VR, stating that VR is a computer generated and simulated environment where individuals can perceive an exceptionally realistic experience.[3]. In contrast to other visualization methods, VR shifts its users from being passive onlookers to active actors.

The level of immersion experienced by users in VR environments is influenced by various elements such as display resolution, user interface, field of view, and lighting realism [4]. Particularly, the ability of HMDs to deliver complete immersion plays a crucial role in establishing a sense of presence within virtual spaces [5]. Presence, in this context, refers to the extent to which users feel connected to the virtual environment, distinct from the physical surroundings. The term immersion is sometimes mistaken to describe the experience of presence. In fact, these terms refer to quite different things. The term immersion refers to the physical extent of the sensory information and technology characteristic of the sensory modalities, while presence is a perceptual parameter. [6]

Despite the growing interest in immersive technology applications in the architectural and construction sectors, there have been very few studies that have examined the major difficulties that come with their use and lack of results or information. This study conducts a comprehensive analysis of the available research data to close this knowledge gap and provide a better understanding of the state-of-the-art immersive technology use in the architecture and construction industry. It creates a general classification with a variety of dimensions based on a wide range of academic articles. The results of the search revealed these challenges:

1. **Cost and Infrastructure:** The initial cost of purchasing VR hardware and software might be high. Some of the most important infrastructural issues and challenges are device weight, display brightness, view angle, and device portability. [12][13][14]

2. **Hardware and Compatibility:** High-performance hardware, such as potent computers, graphics cards, and VR headsets, are necessary for VR systems to function properly. It can be difficult to make sure that various hardware components work together seamlessly and are compatible. It is crucial to address the issue of interoperability between different construction design tools, such as Autodesk Revit, and VE game engines, like Unity 3D and Unreal Engine, in order to streamline the workflow of architecture and construction.

Many software providers have recently tried to close this gap via middleware, including Unity. These advancements need more polishing and iterations using middleware programs because they are still in the early stages. Additionally, the transfer of BIM models and their meta-data into the Unity game engine to offer an immersive experience has been simpler with the release of Unity Reflect. It is still difficult to create interactivity, which necessitates customized algorithms. [15][16]

3. **Algorithm development:** It might be difficult and time-consuming to create VR applications and simulations for architectural reasons. Specific development skills are needed to create a virtual environment that is interactive, educational, intuitive, immersive, and illustrative.

4. **Learning Curve:** The ability to navigate and engage with VR environments may be something that architects and other stakeholders need to master. The uptake and effectiveness of VR technology in architectural workflows may be impacted by this learning curve.

Collaboration is essential to overcoming these challenges. To reduce the initial high costs, improve device compatibility, and streamline procedures, stakeholders must engage closely with technology providers. In addition, nurturing skill development is essential to maximizing the potential of immersive technologies, particularly in the area of algorithm development. Finally, reducing the learning curve and guaranteeing a more seamless integration of immersive technology into architectural practices will be made possible by spending money on thorough training and user-friendly interfaces. The design and construction industry can take full use of immersive technology and stimulate innovation and efficiency in the built environment by understanding and addressing these issues.

## **Methodology & Tools**

We conducted a thorough analysis of the most recent literature in order to uncover important insights and achieve our study goals. This required carefully analyzing a number of academic papers, studies, and real-world examples that provided light on the use of virtual reality (VR) in the field of architecture. Our goal was to gain a solid understanding of how VR is enhancing the way we construct architectural plans and interact with immersive environments by deeply engaging with this vast body of knowledge.

Through the implementation of surveys and engaging in interviews with professionals spanning architects, designers, and experts specialized in VR technology, we have acquired direct and first-hand information. This dataset, once acquired, will undergo a comprehensive analysis, delving deep into its results. This analysis aims to bring to light important conclusions concerning the tangible elements, advantageous outcomes, and potential obstacles entailed in the seamless integration of VR into the multifaceted procedures within the field of architecture.

We will closely analyze the data from the survey responses to uncover common themes, noticeable shifts, and connections between different pieces of information. This research project aims to draw firm and reliable conclusions about how valuable VR technologies are when it comes to showing architectural ideas visually and creating immersive design experiences. By blending the findings from the surveys with the information we gathered from reading existing studies, we want to gain a clear understanding of the role VR plays. The outcomes will shed light on the current status of using VR, pinpoint the places where it has made a big positive impact, and also bring attention to problems that need solving to make VR a more integral part of the field.

## **Conclusions and recommendations**

The survey conducted among Virtual Reality (VR) users has shed light on diverse perceptions, experiences, and anticipations linked to the implementation of VR within architectural contexts. The investigation sought to unravel whether VR genuinely captures spatial experiences, and a significant 62.5% affirmed its effectiveness, further fortified by an additional 25% strongly agreeing (Figure 1).

Focusing on the realm of immersion, the survey uncovered crucial factors contributing to the sensation of being immersed in virtual surroundings. Around 52% attributed their immersion to top-notch visual quality, underscoring the crucial role of high-quality graphics. Field of view also grabbed attention, with 50% acknowledging its impact, followed by head tracking with the same value. Moreover, the liberty to move and interact, encapsulated by freedom of movement, was chosen by 23% of participants as a crucial enhancer of their immersive experience. (Figure 2) The potential of VR technology in architectural design studios emerged with overwhelming positivity. A high group of 42.5% strongly agreed, while 52.5% agreed on the effectiveness of VR-based applications, indicating a widespread consensus on its valuable contribution. (Figure 3)

The survey further emphasized the educational value of VR, with a significant majority – 65% in agreement and 12.5% in strong agreement – advocating for its integration into academic instances. This endorsement of VR's potential to enrich teaching methods and educational contexts was noteworthy. (Figure 4)

Examining the question as to why VR is gradually integrating into architecture, the participants' responses exhibited a nearly equal distribution among a range of influential factors. These factors include challenges such as constraints within technical infrastructure, the complexity of learning curves, reluctance towards adopting change, noticeable gaps in practicality, insufficient awareness, and a lack of educational resources. Together, the fusion of these factors outlines the combined

obstacles that collectively prevent a smoother and quicker adoption of VR within the domain of architectural practice.

Derived from the study's insights and wider research landscape, it's evident that VR possesses transformative potential in architectural design studios. Meeting benchmarks, spanning design innovation, representation, and communication, VR emerges as a more dynamic, interactive, and captivating design process. Its role as a complement to established methods, rather than a replacement, is undeniable. This offers pathways for real-time rendering, parametric exploration, and sensory feedback, enriching architectural creation and communication.

To sum up, virtual reality won't take the place of the current screen-based design review process. VR, however, offers a useful addition to the conventional methods.

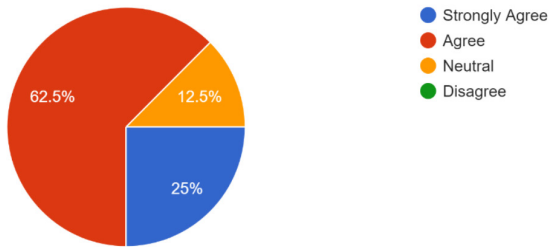


Figure 1: Does VR really encapsulate the real spatial experience? / Source: VR Survey

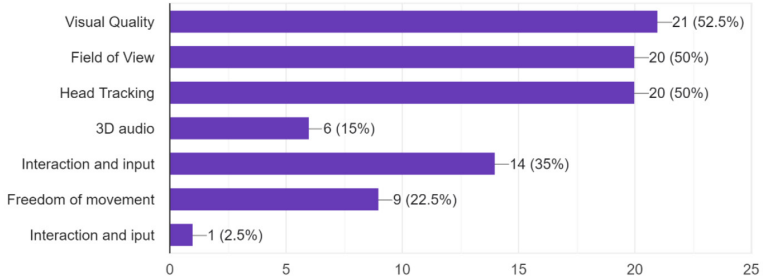


Figure 2: What elements of the VR experience contributed most to your sense of immersion? / Source: VR Survey

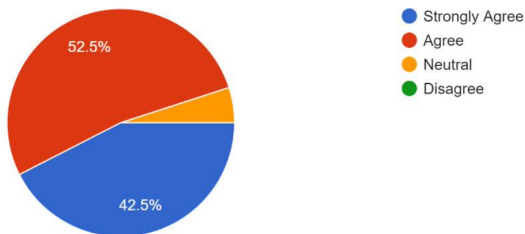


Figure 3: Do you think that the application of VR-based technologies in architectural design studios can be effective? / Source: VR Survey

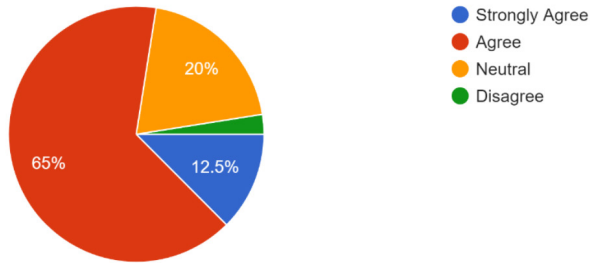


Figure 4: Do you believe that VR should be integrated in teaching and other academic instances? / Source: VR Survey

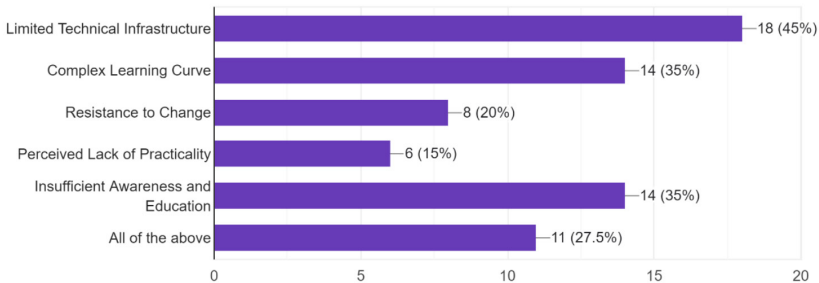


Figure 5: Why do you think the adoption and implementation of Virtual Reality (VR) technologies in the field of architecture have been relatively slow compared to other industries? / Source: VR Survey

## References

- [1] Gębczyńska-Janowicz, A. (2020). Virtual reality technology in architectural education. *Architectural Science Review*, 18(1), 24–28.
- [2] Regenbrecht, H., & Donath, D. (1997). Architectural education and virtual reality aided design (VRAD). In *Designing Digital Space-An Architects Guide to Virtual Reality* (pp. 155-176).
- [3] Portman, M. E., Natapov, A., & Fisher-Gewirtzman, D. (2015). To go where no man has gone before: virtual reality in architecture, landscape architecture and environmental planning. *Computers, Environment and Urban Systems*, 54, 376-384.
- [4] Ruddle, R. A., Payne, S. J., & Jones, D. M. (1999). Navigating large-scale virtual environments: what differences occur between helmet-mounted and desk-top displays? *Presence: Teleoperators and Virtual Environments*, 8(2), 157-168.
- [5] Slater, M. (2009). Place illusion and plausibility can lead to realistic behaviour in immersive virtual environments. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 364(1535), 3549-3557.
- [6] Cummings, J. J., & Bailenson, J. N. (2016). How immersive is enough? A metaanalysis of the effect of immersive technology on user presence. *Media Psychology*, 19(2), 272-309.
- [7] Prabhakaran, A., Mahamadu, A. M., & Mahdjoubi, L. (2022). Understanding the challenges of immersive technology use in the architecture and construction industry: A systematic review. *Automation in Construction*, 137.



- [8] Lucas, J. D. (2018). Immersive VR in the construction classroom to increase student understanding of sequence, assembly, and space of wood frame construction. *Journal of Information Technology in Construction*, 23, 179-194.
- [9] Spaeth, A. B., & Khali, R. (2018). The place of VR technologies in UK architectural practice. *Architectural Engineering and Design Management*, 14(6), 470-487.
- [10] Zhang, Y., Liu, H., Zhao, M., & Al-Hussein, M. (2019). User-centered interior finishing material selection: An immersive virtual reality-based interactive approach. *Automation in Construction*, 106, 102884.
- [11] Shi, Y., Du, J., Ahn, C. R., & Ragan, E. (2019). Impact assessment of reinforced learning methods on construction workers' fall risk behavior using virtual reality. *Automation in Construction*, 104, 197-214.
- [12] Arthur, K. W. (2000). Effects of field of view on performance with head-mounted displays. (Unpublished doctoral dissertation). The University of North Carolina at Chapel Hill.
- [13] Metz, C. (2017). A chip revolution will bring better VR sooner than you think. *Wired*.
- [14] Coburn, J. Q., Freeman, I., & Salmon, J. L. (2017). A review of the capabilities of current low-cost virtual reality technology and its potential to enhance the design process. *Journal of Computing and Information Science in Engineering*, 17(3), 031013.

**Issues of the Territorial-Administrative Reform in Albania.  
A comparative analysis on the progress of reform with other formerly-centralized economies: Estonia and Moldova, and the need for a more ample and innovative approach.**

Prof. Dr. Besnik ALIAJ<sup>1</sup>,  
Dr. Ledio ALLKJA<sup>2</sup>,  
<sup>1</sup>*POLIS University, Albania*  
<sup>2</sup>*Co-Plan, Albania*

DOI: 10.37199/c41000121

**Abstract**

Albania has gone through different reforms of decentralization and territorial administrative since the 1990s. Especially after 2013, these reforms have reshaped the layout of the local territorial administration in Albania. The outcomes of these reforms nevertheless remain questionable. Additionally, considering the EU integration process, the regionalization reform and the regional development reform are still in a critical juncture. This paper analyses the main events during the territorial administrative reform and the regionalization process in Albania. Its analysis tries to highlight the main issues and some recommendations for future action to deepen decentralization and improve local governance in Albania. This is done by comprehensive analysis of the reform based on research and contribution of POLIS University 1 and Co-PLAN Institute for Habitat Development 2 as key local stakeholders. In addition, the Albanian case (Western Balkan Countries) is compared to 2 other case studies of formerly centralized economies (Eastern-Europe) with relatively similar historic stability problematics, economic background, and country/population size, but with geographic location differences (South, North, East) and other differences, such as with regard European integration progress. This includes Estonia (Baltic Countries) and Moldova (Eastern Partnership Countries). Then the comparison is done via i) Local administrative reform; ii) Regionalization and regional development; iii) Analysis of the reform and its challenges; iv) and a matrix-based qualitative conclusion. Albanian case includes desk and field work, while Estonian and Moldavian cases are based on desk research.

Keywords: decentralization, local governance, regionalization, territorial administrative reform, comparison, Albania, Estonia, Moldova,

## Introduction

The main objective of a territorial administrative reform is to establish better and more capable local governance, that in return can improve all aspects of social-economic life via good governance instruments, so that people and communities can live well and fair. From a political perspective, territorial-administrative reform is a political process designed to adjust the relationships between certain bureaucracy with other elements of a society, or within the bureaucracy itself, in each a certain time or historic moment. Some countries might do it in a crucial moment of imposed reorganizations (such as independence from a bigger federal units – British or Ottoman Empire, Soviet Union, Yugoslavia, etc. (Brusis., 2001); or joining new and bigger federal entities like EU, or simply for improving the efficiency of their economy, demographic trends or regional balance, developmental aspects (Mehta, Vinod 2000) (Baldersheim et al., 1996).

However, such reforms go beyond economic dimensions, by targeting objectives that concern the improvement of public life, fighting corruption, nepotism, and patronage, fostering participation of citizens and communities in governance and increasing their representativeness, thus enhancing accountability, transparency of the local democracy. According to United Nations' Economic and Social Council (2005), a successful territorial-administrative reform must be a conscious and well-considered change (transformation) that is carried out by responsible institutions and organizations of the public administration and/or other systems, whose main objective is indeed to improve its own structure, operations, and labor force. It's about the efficiency of the state apparatus, especially at local and regional level. That is why such reform requires strong leadership and management at the central level of governance and policymaking, clear division of responsibilities and effective coordination and cooperation among government institutions, opposition, and other internal external stakeholders interested on such reforms.

According to Bresser-Pereira the main principles of territorial-administrative reform are: i) transparency and accountability; ii) participation and pluralism; iii) subsidiarity; iv) efficiency and effectiveness; v) equity and access to services (Bresser-Pereira, Luiz Carlos; 2005). Meantime the usual goals of a territorial-administrative reforms are summarized under these themes: a) relevance; b) values; c) social equity; d) change; e) client focus.

**Albania** - has gone through various reforms in public administration with the aim of decentralizing power and increasing the competences of local governance. It is a country of a bit more than 2 million people (official statistics show more, but the country lost great percentage of population cause of emigration over the last decade), and it constitutes around 28,000 km<sup>2</sup>. Almost 85% of the population support EU integration. The territorial administrative and local governance reforms started from the early 1990s with the political decentralization, as for the first time, in 1991, local elections were conducted, and mayors were established as leaders of local authorities (Aliaj et al. 2009). Albania was organized in 372 local units, composed of Municipalities (the urban areas) and Communes (the more rural part). This reform was further deepened by the end of the 1990s, following experiences gained over a decade (ibid). In 2000, a new law was drafted on local governance. This law brought about a new territorial organization, such as "Qarks", ideated to be as second tier local governance. Their role was more of a coordinative nature while most of the powers continued to rely with municipalities and communes (Aliaj, 2008). During this time there was a strong discussion on creating regional authorities. However, they were considered as premature for the state of development of the country. Hence, "Qarks" were somewhat designed as an

intermediary and temporary solutions to give time to Albanian authorities to understand better territorial, social and economic dynamics before delving into a further reform (Toto R., 2010). In 2013, a territorial and administrative reform was initiated with the aim of consolidating territorial administration and at the same time further decentralization (PM, 2013). This reform was finalized in 2015, with the main outcome being the consolidation of local governance from 372 units to 61 municipalities. While before there was a clear division between urban and rural areas, the 61 municipalities represented a more comprehensive territorial and social features, bringing together a highly diverse space (Toska & Bejko, 2018). At the time, there was again a discussion regarding regional governance. Although different proposals came to the table, in the end it was decided that still the time was not right to continue with this reform. Some argued that this was a missed opportunity considering that Albania was advancing quickly in joining the EU. At the same time considering the state of development of Albania, with a highly monocentric structure and hyper concentration in Tirana, regional development guided by regional authorities would be a sensible step to counterpart this aspect of development.

**Estonia** – a former centralized economy/country, after the independence from URSS entered a total transformation. Nowadays a member of EU, embarked on a territorial-administrative reform during 2017. It is a Baltic region country of less than 1.5 million inhabitants and a territory of around 45,300 km<sup>2</sup>. The administrative reform resulted in new administrative units, where most of the old units agreed voluntarily to join the new and bigger units. Also, here a consolidation process happened, as a total of 79 units were established as an outcome (15 out of them of urban character, and 64 with rural features) instead of 213 units before 2017. In total 185 municipalities agree to be reorganized, while municipalities did not merge (Haldusreform.fin.ee - in Estonian).

**Moldova** – a former centralized economy/country, after the independence from URSS entered a volatile transition, and nowadays faces the turbulences of being close by a war region among Russia and Ukraine. Not to forget its mutual historic affiliation with neighboring Romania a member country of EU, and almost 20% of Russian and other community living there. All in total the country remains highly divided with 52% of people supporting EU integration. It comprises a territory of around 33,800 km<sup>2</sup> and 2.5 million inhabitants. It has joined the Eastern Partnership Countries agreement with EU.

This paper, brings together an analysis of the Albanian development vis-à-vis the different territorial administrative reforms and the aims of decentralization. The paper will focus on two main issues such as the recent territorial administrative reforms in the respective countries and the discussions on regional development. In the end a series of recommendations are given to overcome the challenges of decentralization and sustainable development of Albania, based on the results of the analysis and the case studies from Estonia and Moldova. These reforms proceed through iterative cycles until a social and political balance is achieved, as evidenced by experiences from other nations. The current outcome of this reform in Albania after several years of implementation enables us to evaluate what has been accomplished thus far as well as action is necessary now.

## **Theoretical Framework and Methodology**

Decentralization, deconcentration and devolution are important concepts associated with good governance. Especially for countries such as Albania, which come from highly centralized systems, these have been to the forefront of administrative reforms in order to bring governance and decision-making closer to the citizens. There can be various political, administrative and fiscal

motives for decentralisation reforms. In some countries, decentralisation can be seen as a counter-reaction to previous strong centralisation and even authoritarianism (Hooghe et al., 2016). In these countries, decentralisation has been, at least partly, a way to ensure that the democratisation development will not be reversed.

Some definitions of decentralization include:

- “Decentralization is a mixture of administrative, fiscal and political functions and relationships. In the design of decentralization systems all three must be included” (UNDP,1998, p1)
- “Decentralization, or decentralizing governance, refers to the restructuring or reorganization of authority so that there is a system of co-responsibility between institutions of governance at the central, regional and local levels according to the principle of subsidiarity, thus increasing the overall quality and effectiveness of the system of governance, while increasing the authority and capacities of sub-national levels” (UNDP 1997, p.4)
- “Decentralization stimulates the search for program and policy innovation, first of all because it is, per se, an innovative practice of governance. Second, because through its implementation, local governments are required to assume new and broader responsibilities in order to provide public services for all. The assumption of new responsibilities through decentralization often requires improved planning, budgeting and management techniques and practices; the adoption of new tools; and the development of improved human resources to operate the decentralized programmes” (United Nations 1996, p26)
- ... “decentralisation as measures that transfer a range of powers, responsibilities and resources from central government to subnational governments, defined as legal entities elected by universal suffrage and having some degree of autonomy” (OECD, 2019, p.1)

On the other hand, “Deconcentration” is often considered to be the weakest form of decentralization and is used most frequently in unitary states-- redistributes decision making authority and financial and management responsibilities among different levels of the central government. It can merely shift responsibilities from central government officials in the capital city to those working in regions, provinces or districts, or it can create strong field administration or local administrative capacity under the supervision of central government ministries. Meanwhile “Devolution” is a third type of administrative decentralization is devolution. When governments devolve functions, they transfer authority for decision-making, finance, and management to quasi-autonomous units of local government with corporate status. Devolution usually transfers responsibilities for services to municipalities that elect their own mayors and councils, raise their own revenues, and have independent authority to make investment decisions. In a devolved system, local governments have clear and legally recognized geographical boundaries over which they exercise authority and within which they perform public functions. It is this type of administrative decentralization that underlies most political decentralization.

As it can be seen from the above definitions, Decentralization encompasses a highly complex process composed of different elements, including deconcentration and devolution. Additionally, forms of decentralization include:

- Administrative Decentralization
- Fiscal or Financial Management Decentralization
- Political or Democratic Decentralization
- Services Delivery Decentralization
- Decentralization of Participatory Mechanisms and Citizen Feed-Back Systems

Hence, from the above, it is the combination of the above that can guarantee the success of decentralization reforms as well as their depth and breadth.

Based on these definitions, the paper aims to analyze the decentralization process in Albania vis-à-vis the different forms of decentralization in order to understand whether the attempts of policy reform have met their target or not. In order to better understand the success of these stories, a comparison is made with countries in similar situations such as Albania, being Estonia and Moldova. Post-socialist countries show similar trends when it comes to decentralization, often regarded as a counter measure to the decentralized state. It is very often this type of conceptualization of decentralization that leads to the failure of reforms and the reason why the comparative perspective becomes important to understand the pitfalls and success of the reforms in Albania.

From a methodological perspective, the paper is mainly based on content analysis and review of different documents, especially for the comparison of Albania, Moldova and Estonia. Meanwhile, for the analysis of the Albanian case, this is based on expert opinion through semi-structured interviews as well as the first hand experience of the authors in the decentralization reforms.

### **Local Administrative Reform in Estonia and Moldova**

Estonia – According to the Ministry of Finance of Estonia the administrative reform in Estonia started since 2015 with several political preparations, as most of the Reform Party created a new government and had enough votes in parliament. The preparation process was completed by mid-2017, and the government approved immediately all local government mergers that it had initiated.

As the new government imposed the establishment or joining of the existing services, new regional public transport centers were imposed on all municipalities, with few exceptions. Also, obligation for local authorities to develop the joint business environment was introduced, but not imposed. Between 2016-2017, other political changes happened with Centre Party now leading the reform (Sulev Valner, 2018). This means that the preparatory period of more than two years may be considered optimal for a normal participation process. There is still some criticism: that not enough time was spent on preparation, and not all stakeholders were involved and the analysis phase. However, one must keep in mind that the longer the preparation period, the more likely the risk of changing political circumstances and coalitions could freeze or block such sensitive and politicized process. In addition, ambiguous statements by central politics and government helped meantime several heads of local government to develop a strategy that their municipalities would not be merged after all. So, the concept of voluntary merging was successfully introduced in the case of Estonia, to cool down potential social and political disagreement. Still, the main obstacles to the reform process remained the periodical changes in the central government, as well as the fact that the Supreme Court did not reach a decision on the Administrative Reform Act. Indeed, the Act was contested at least by 26 municipalities by mid-2016, and before the end of the “voluntary merging phase” of the reform. Without such circumstances the share of self-initiated mergers would have been much higher (Pesti, Cerlin; Randma-Liiv, Tiina (2018).

Some of the critical points to highlight in the Estonian process of the territorial-administrative reform are:

- Contrary to one of the most common criticisms, the reform process and its outcome were not really impacted by insufficient analysis of the existing situation. The Reform was also in line with EU recommendations and guidelines for governance improvements, and therefore had good political support.
- Another typical criticism on policymaking has been that there was lack of stakeholder

engagement during the reform design and approval. While the preparations for the 2017 reform placed a great effort on engagement, it often emerged that the information disseminated at meetings with heads of local government, had not reached all local authorities and officials. But if engaged too early, the stakeholders could often end up dissatisfied because the message in this initial phase is vague, and with no firm decisions. On the other side, if engaged too late, after the decisions are already made, their feedback could not be used to (re-)formulate the decisions.

- Although the administrative reform concept document was ready and presented to the government by end of 2015, it still lacked sufficient support in 2017 during approval, as the government had not approved it, nor did it offer ready-made solutions for all the components of the reform. There existed also lack of information, or criticisms, about the transfer of responsibilities or changes especially in the financial arrangement's terms, which were not yet politically decided. Meantime, the general principles and plans also did not provide enough certainty to support the reform.

- Another crucial factor remained the considerable distrust that exists between the central government and local authorities, while plans that have been prepared but not approved by the government were seen with high skepticism and therefore not accepted after the reform.

**Moldova** – The Territorial-Administrative Reform in Moldova shows strong correlation between the territorial-administrative fragmentation, and the problems of everyday life facing local authorities and communities. According to UNDP (Adrian Ionescu, Sasa Drezgic, Iulian Rusu 2015), some of the critical issues for the Moldavian case remain: i) economic inefficiency, ii) low fiscal capacity, iii) high administrative expenses, iv) vertical fiscal imbalances, iv) lack of basic local service provision, etc. The rural areas where a majority (of around 66 %) of the country's population lives, are the most desperate ones for change. There exists an absence of institutional structures and capacities to ensure service provision and access. The inability of local and regional governments to facilitate economic development is evident, while local government and democracy are meaningful only if they fulfil the functions and responsibilities that are entrusted to them. To overcome the above-mentioned problems, and to stimulate the necessary conditions for incremental growth of basic services to all citizens, authorities have drafted and analyzed: A) 3 alternatives for the first level of local territorial administrative units; B) and 9 alternatives for the second level. The alternatives aim at high-efficiency mandatory consolidation of the first level government, accompanied by the restructuring of the second level government in 3 regional governments. Such consolidation requires amalgamation of small communities into larger municipalities, from the inherited 898 units to 111 units. In this case the average population per unit will be around 23,800 (excluding capital/main cities). It calls for abolishing the current regions/raions, and strengthening municipalities by providing a broader number of public services. The economic simulations based on consolidation show 70-80% reduction of administrative costs. The model requires a transition period for maintenance (CUATM (2019)).

The reform also involves a regional level of government: with 3 "regions" (Nord, Centru, Sud). They have the highest potential for regional integration, balanced development, operational feasibility, administrative costs, regional offices, EU funding and economic benefits, while meeting the best EU criteria for NUTS regions. Consolidation in Moldova is seen as the only way to achieve important savings by reducing the administrative expenses and reallocating the resources freed in this process in favor of service delivery. The responsibility to provide local services belongs now to local authorities, which already have the administrative and institutional capacity to deliver such services or will be able to strengthen those capacities by attracting skilled and knowledgeable staff.

In this case local authorities will be able to expand the delivery of existing functional communal services (like waste management) towards neighboring rural communities and implement projects to build the necessary infrastructure for the provision of services. However, among new local authorities, only 30-40 towns already have the institutional structures and capacities to provide the full range of services required by the law.

The remaining 70-80 local authorities were trained via capacity building programs to allow them to become effective and efficient services providers in mid-terms. The average number of staff per municipality will increase to 40 staff out of the current average 6 staff. But the restructuring risks diminishing inclusive democratic representation and participation in local decision making. The elected councils leading the new local governments not always have representatives from all participating communities/localities. Meantime, consolidation seems not to result in reducing the total number of jobs at local government. The nature of jobs changed, resulting in forced functional specialization. Therefore, a program for (re-)training gradual reassignment of staff towards consolidated units and regions' administrations is desperately needed. Some of the region's staff had to be reassigned to the emerging de-concentrated offices of the state (example: Finances and Treasury offices, etc.). The resulting larger local territorial and regional administrative units have sufficient territorial coverage and more resources to plan and facilitate economic development (Autoritati Publice Locale (2010)).

Some of the newly created local government finance systems made a big step by providing better predictable, stable and transparent streams of revenues to local governments and increasing local autonomy and accountability. The territorial-administrative reform, through consolidation mechanisms, took a second big step by increasing funds for communal services from economies achieved through reduction of administrative expenses, and giving responsibility for service provision to a manageable number of stronger local authorities, or those whose institutional capacity can be truly strengthen. The new territorial-administrative units also improved conditions for the provision of the most important local services. Communal services, like water, sewerage, and waste management, require larger areas to be economically provided, in line with the regionalization concepts and decentralization strategies. While environmental protection needs certain scale, which is better provided by the larger territorial administrative units. Culture is managed from the center of the units, as the culture institutions are located physically already within the territory. Education and social services, previously the responsibility of the region, is brought closer to the citizens, while allows the necessary scale for optimization of the services or catchment areas (Adrian Ermurachi 2022).

However, the reform in Moldova requires several affirmative actions, steps and programs to be undertaken to ensure successful implementation and transition:

- As the reform is still lagging, a more pragmatic, strategic, and comprehensive communications campaign is needed to better explain the objectives and benefits of the reform. The general population, local government staff and elected officials must be targeted with clearer and earmarked messages.
- A possible update of the electoral system to ensure representation of all localities in the new local councils is desperately needed in the country. A plan and methodology for the consolidation process is also needed (business/corporate like attitude). A political and legal agreement for the allocation of responsibilities and possible adjustment of local finance system is also needed urgently. It must be associated with a program for institutional and organizational development of the reformed units, including technical assistance and consultancy for general administration, local financial management, as well as service provision.



- A plan for (re-)assigning staff and departments from the inherited local authorities to the new ones, is still missing although there exists training. It calls for the establishment of a redundancy fund/program with regard to human resource development and capacity building. In addition, availability of supplementary funds for tangible transformation calls for the establishment of a “National Transformation Fund”. It also needs planning and funding for restructuring the de-concentrated state services.
- As regarding “asymmetric decentralization” it does not respond to the main principles laid out in the national decentralization strategy and will require radical changes in the local government finance system. It risks consecrating most local authorities to a limited set of simple responsibilities and requires strengthening of the regions. Meantime, inter-municipal cooperation is not yet a model for administrative-territorial re-organization, rather a short-term instrument. It seems such cooperation cannot yield significant, nation-wide, positive results within a certain political mandate.

### **Local Administrative Reform in Albania**

Albania - All political parties recognized the need for the territorial and administrative reform that was drafted between 2013 and 2015, and there have generally been no reservations about it. To provide Albania, the chance to perform to its full potential in this area, this atmosphere galvanized high expectations from the public opinion and garnered a significant lot of support from donors.

The reform, besides the territorial division of Local Governance, aimed to offer solutions for a series of highly important issues related to decentralization and local development (GoA 2016):

- High fragmentation of local governments, as 75% of LGUs have less than 5000 inhabitants
- Low human capacities at the local level, especially in smaller communes or rural municipalities
- Further administrative and fiscal decentralization
- The unclear role of “Qarks” in local governance
- The necessity for a need to regional development according to EU needs.

The undertaking and implementation of RAT and other decentralizing reforms was preceded and based on relevant empirical findings. The great demographic changes that characterized the history of the two post-communist decades, the fragmentation of local government in the provision of local public services and the democratic representation of voters, the poor efficiency in the provision of public services, the inability to promote and support local economic development and the inequalities created among local units, were the basic arguments that led territorial consolidation into 61 new municipalities in 2014 (Toska & Bejko, 2018). Although intentions were good, soon the reform started to shift from its initial aims. Thus, the opposition at the time decided to withdraw for recognized reasons and did not participate in the process. In these circumstances, territorial consolidation and the number of municipalities dominated the public and political discourse, while the governance structure and the division of powers at the central-local level received little attention.

Hence, there were several discussions regarding the division, purely focusing on population and borders, rather than the functioning of the municipalities. Additionally, the discussion regarding the competences and further decentralization had less focus. The administrative reform resulted that the distribution of the population according to the 61 municipalities in the country presents marked differences from a minimum population level of about 5,165 inhabitants in Pustec municipality to about 763,297 inhabitants in Tirana municipality, with most municipalities below the

national average of about 71,467 inhabitants. More than 50% of the municipalities in Albania have hilly and mountainous surface and territory, which means that access to infrastructure, access to communication for the very nature that Albania has is very limited. All these create a vacuum or a low level of local democracy in the country. Hence, the issue of fragmentation was not actually solved, but in fact created a further division between “super” municipalities and weaker municipalities. The deepening of inequalities between municipalities in terms of fiscal capacities (their ability to generate income from their own local resources):

-This is also dictated by the depopulation (in residents and businesses) of the territories, which mathematically makes it impossible to create income - here it is enough to look at the INSTAT data on the stock of active enterprises by municipalities and the population data by districts.

-These inequalities translate into the inability of the municipalities to provide a list of local public services that number more than 43 according to law no. 139/2015 “on local self-government” to be provided by the 61 municipalities.

-The pronounced differences in the distribution of the population in the territory carry important implications in terms of costs and the provision of local public services, which in theory should all be provided with the same standard regardless of the size of the municipality or its territorial extent.

Additionally, although in nominal terms municipal incomes have increased, the disparities between municipalities continue to be present. Most of the smaller municipalities are highly dependent on national transfers and are unable to provide the basic services to their inhabitants. The financial dependence of municipalities on funds transferred from the central government is high and does not represent a significant improvement from the RAT post, despite the fact that it is one of the objectives of the reform. The indicator of income from local own resources to total financial resources in 2015 was 26% - in 2021 it is 29%, with a difference of only 3 percentage points while:

-An increase of almost all local taxes and fees was applied in all municipalities for the period under consideration. It is enough to mention only the tax on the impact on the infrastructure from new constructions and the property tax (building), which experienced the greatest increase.

-This increase is dedicated only to developments in Tirana municipality: if we were to exclude the income of Tirana municipality, the indicator of income from its own local resources to total financial resources in 2015 was 16% - in 2021 it is 12%, decreasing with 4 percentage points.

Additionally, they can't cover the investments needed to boost local economic development. The continuous migration, from peripheries towards Tirana, or abroad, means that the human capacities continue to remain low. Their ability to attract investments is low. Hence, instead of further fiscal decentralization, the reform is producing further centralization and dependency from central government.

## **Regionalization and Regional Development in Albania**

The quest for regionalization in Albania has been long standing. It emerged as a discussion in the end of the 1990s, however, at the time it was considered pre-mature for the stage of development of the country and postponed for a later stage (Aliaj, 2008); (Shutina et al., 2012). With discussions on territorial administrative emerging post 2013 the debate for regionalization came to the forefront again. Different studies were conducted, highlighting different aspects regarding potential regional divisions in Albania and the potential role that regions could play as an administrative unit and for achieving sustainable development of the country (Aliaj et al 2014). One of the most notable studies conducted by Co-PLAN highlighted different elements that could be used to

achieve regional division such as:

- Based on Agricultural character of the area (considering that agriculture is one of the key economic sectors)
- Marketing of regions
- Regional Division based on natural resources (especially on river basins)
- Regional division based on statistical criteria.
- Regional division according to EU criteria and development characteristics

To support these types of regional divisions, besides the above-mentioned criteria, a series of other factors were used such as historic networks, existing administrative boundaries, economic and social interactions as well as infrastructural development in terms of access (transport) and access to services (Co-PLAN, 2014). The below diagrams show the different potential administrative divisions that could work as regions:

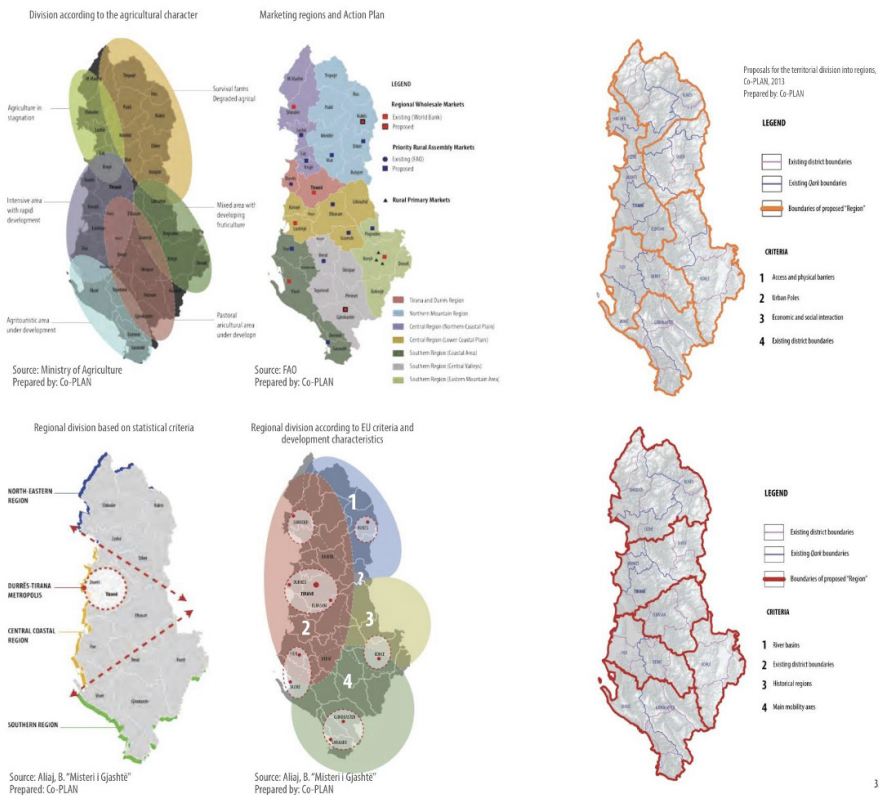


Figure 1- (Left) Alternatives for Regional Division in Albania (Co-PLAN, 2014)

Figure 2- (Right) Proposals for regional division according to different criteria (Co-PLAN, 2014)

In the end, two main divisions were proposed to the Albanian Government and Parliament because of this comprehensive study. A division of 6 regions and a division of 4 regions. The division of the regional reform was also supported with a comprehensive set of recommendations in terms of the role of the regional authorities in territorial governance of the country.

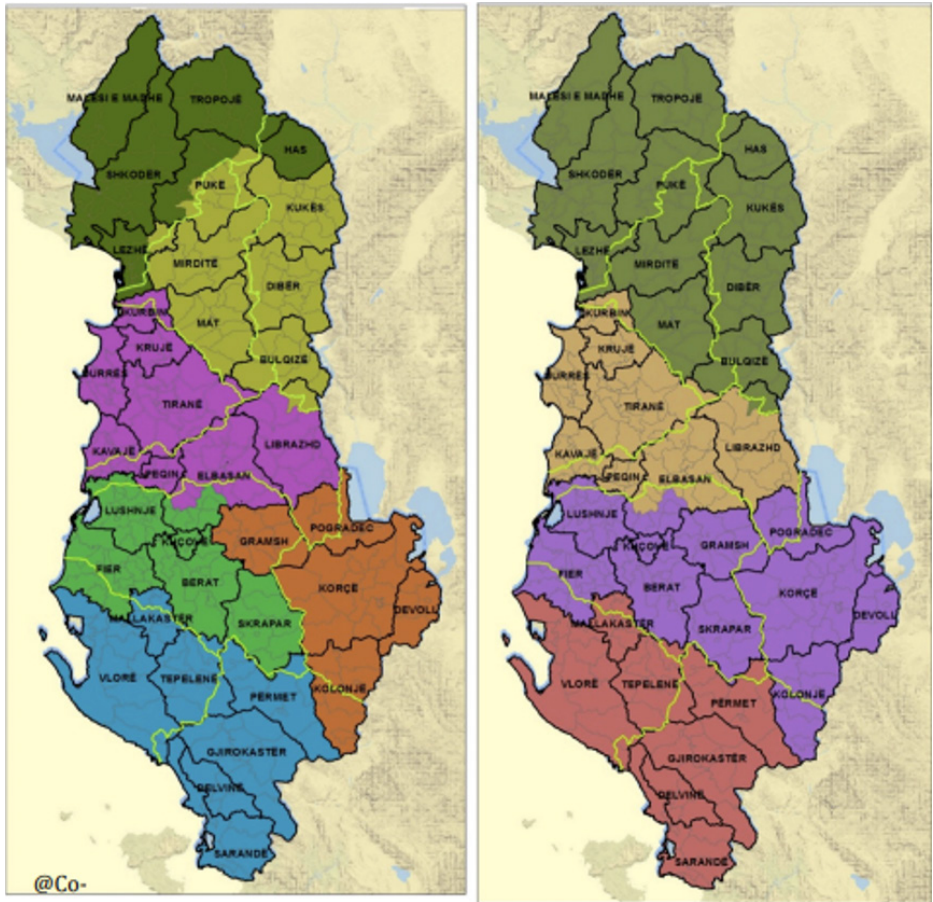


Figure 3- Final Proposals for regional division in Albania (Co-PLAN, 2014)

Although there was a lot of momentum for fostering the regional reform as part of the overall territorial and administrative reform, in the end, due to a shift of attention for reasons mentioned above, the regional reform too was postponed. Instead, it was continued only with the local administrative reform (Shutina, 2019). On the other hand, in 2014, the Albanian Government undertook a reform to further push the Regional Development and developed a Regional Management Mechanism, by aimed at promoting common economic development. In 2015, were determined Regional Development Zones (without powers administrative). Moreover, in December 2015 it was approved by Decision of the Council of Ministers regional development institution. As

a result, it was created the National Agency for Regional Development, Agency Regional Economic Development and 4 Agencies Regional Development.

However, in June 2018, the Albanian Government abolished DCM no. 961/2015, “On the establishment of Regional Development Agencies and Regional Development Zones”, through DCM no. 438/2018 “On the transfer of the functions of the National Agency for Regional Development (NADHR), the Regional Economic Development Agency (RDA) and regional development agencies (RDA) to the Albanian Development Fund (ADF)” which provides for the transfer of the functions of regional development at the Albanian Development Fund. The situation remains unclear regarding regional development areas or Regional Development Agencies, the latter legally defined only in the now abolished legal framework. Additionally, a law on Regional Development was also approved. As it can be seen, between 2014-2018, regional development although has had some progress, remains unclear regarding its execution (Imami, et al., 2018). From the changes, there seems to be a struggle between centralization (or treating regional development as a central government policy) rather than deconcentrating and decentralization. Interestingly, the proposal by Co-PLAN for the 4 regions has been used as a basis for the “Regional Agencies”.

### **Analysis of the reforms and challenges in Albania**

Currently, it appears that there are four key challenges with the reform that all decision- and policymakers must address that are discussed below.

#### **5.1 The Issue of Representation**

While the reform was being written, experts labored to come up with a “set of criteria” that would be used to implement the territorial reform. These factors were not considered as much as they ought to have been since there was not a political balance (also because the opposition did not participate in this debate). Instead, the desire for political representation in terms of elections won out.

The marginalized communities before the reform appear to be even more disenfranchised now since the territorial consolidation, which was required at the time, has skewed the representation of communities inside the major territorial municipalities. For instance, some municipal councils do not represent rural or very remote communities by having members solely from urban areas. Today, local councilors no longer visit certain communities and regions.

The centralization of the provision of services in the municipality center has increased the distance between the citizens, that is, the municipality has moved away from the citizen. Based on the objective of the RAT to reduce the fragmentation of local self-government units (which happened with the consolidation from 373 municipalities and municipalities to 61 municipalities), and to increase comparability, today we find ourselves in a situation where the municipality is further away from the citizen than ever (Allkja, 2020). In this way, he is unable to understand his real needs and address them. The municipality focuses on the urban area close to the center and passes the rural and more remote areas on a secondary level. All this is completely contrary to the theory in favor of decentralization and the benefits it brings to the citizen.

This paradigm has strengthened urban centers that have already been consolidating, but it has depopulated small and secondary cities, rural areas, and particularly hinterlands. It takes hours to access basic amenities at the closest location, and services in these locations are all but “dead.” It is no coincidence that it was impossible to keep track of the number of deaths during Covid-19 in these locations.

The north, northeast, and southeast of the nation are currently deserted. People still live in condi-

tions reminiscent of the Middle Ages in some of the most isolated parts of the nation. Emigration has grown significantly in popularity. Over 750,000 Albanians have left the country for the EU and other nations since the reform's inception up to the present.

The reform wiped these areas off the map, but the resources and economic potential remain there. Countries like ours have not made this mistake. They have either drafted positive “discriminatory” policies or apply the principles of asymmetric decentralization.

In short, correcting representation is a pressing issue that, in theory, must guarantee local self-government for every village and outlying area, as well as the provision of basic infrastructure, services in the areas of agriculture, health, and education, and the encouragement and retention of young people and businesses.

### **The Issue with Increasing Decentralization**

While territorial consolidation dominated discussions of the reform, other, even more significant issues were formally addressed in the new Local Government Organization Law. These issues included the range of competences, functions, and services that the local government should have in the territory.

RAT is aimed at increasing the efficiency of municipalities in the use of available financial resources and reducing personnel expenses.

-In 2021, the 61 municipalities count around 34,804 employees, in progressive growth in the last three years (data from the Ministry of Finance and Economy, the report of the Association of Municipalities and the Status Report of Local Finances). So, not only do we not have a decrease in the number of employees, but it is growing progressively. However, to remove the effect of the transfer of new functions (which was accompanied by new staff) the indicator of the number of employees per 10,000 inhabitants shows that in more than 10 municipalities we are in the presence of overemployment situations (using Census data of 2011).

-Personnel costs have increased: from 31% of total expenses incurred in 2015 to 46% of total expenses incurred in 2021 (from 10 billion ALL in 2015 to 21 billion ALL in 2021). The increase in personnel costs could be to some extent “rational” if the citizens had been served and served better by the municipalities, that is, there would have been an improvement in service coverage and an increase in their quality. Studies in this direction show that citizens are dissatisfied with the provision of public services for all services provided by municipalities (Overview: Citizen perception on local taxation and public services). Also, in the perception of citizens, the money is not used for the provision of public services, the money is wasted, and the local administration is perceived as incapable of performing the duties and functions assigned by the law.

-Investments with the municipalities' own funds are fluctuating and at low levels: in 2015, the municipalities allocated about 38% of the budget for investments, in the following period this percentage has gradually decreased in favor of current expenses and in 2021 the expenses for investments were 21% of total expenses relative to the domestic product.

In practice, centralization of power in decision-making still exists (Allkja, 2020). An urgent restoration of decentralization is required in this situation. It was accomplished in Albania in the 2000s because of a cooperative politico-parliamentary process, which regrettably still stands as an isolated example of comprehensive changes with strong political will today.

At least four in-depth studies have been conducted by local and international expert groups, and according to three of them, Albania could be divided into 80 to 90 municipal units while still recognizing the value of functional regions and the need to implement asymmetric decentralization principles.

## **Regional Developmental Inequality**

According to what has been observed thus far, urban regions and the nearby rural suburbs that performed better before the reform continue to do so after it. Even though the urban-rural areas with historical development issues still have them, they are now substantially worse.

This demonstrates that the topic of shifting borders should not be the sole focus of any future discussions of reform. Today, it is evident that we are dealing with systemic issues in the examples, which cannot be resolved until the governance structure and local and regional representation are changed first.

In these circumstances, it is advised that the leitmotif of the reform should place more emphasis on the need to examine the governance model, the representation model, and the country's democracy than it should on changing the country's borders and electoral map.

## **Investments in territorial and regional development**

In the conditions of regional inequality that exists in the territory, it is necessary to reevaluate the entire process of drafting development policies at the local and regional level, for development priorities and investment benefits to be determined by the interests of the communities and not to be imposed from "above," as it currently happens.

Even the Regional Development Fund must be completely reformed precisely on this principle.

In the meantime, the Law on the Development of Regions should be expanded upon and implemented in a practical and significant manner. Partnership and subsidiarity are two concepts that shouldn't just exist on paper.

There is no need to invent the wheel in this situation either. Two of the four recommendations made by domestic and foreign experts that address this issue concur that the nation should be divided into 4-6 regions. The country's history appears to be at an end.

At this point in the country's development, the country should be reorganized into 80-90 municipalities and 4-6 regions with direct elections. This would better position the nation for democratization and rapprochement with communities and regions on the one hand, and for EU funding on the other.

A reorganization into 4-6 smaller municipalities, comparable in size to other municipalities in the country, in the case of the current Tirana Municipality, which is disproportionately large in terms of population and economic potential compared to the average of other current municipalities. This would be coordinated with a regional coordinating authority for Greater Tirana (Tirana, Kamëz, Krujë, Vorë), which could be one of the 6 new regions with direct elections.

## **Conclusions**

**Albania** – Though widely discussed across the political spectrum, the TAR and other decentralization reforms converge on the main goal of strengthening local government by creating conditions for increasing local capacities in delivering quality services and increasing efficiency in managing available resources. The Reform is not "black and white." Of course, there have been some successes; any changes should not seek to undo or start over, but rather to rectify and improve in accordance with the needs of the nation, economy, and communities. Without getting into specifics or numbers, it is important to stress that all the evaluations to date—both donor-funded and independent—have demonstrated that the reform has "lights and shadows" and has not yet achieved the goals for which it was intended. In essence, it results in a considerable rise in both the cost of services and the number of people in the administration.

A few final remarks on the steps and core concepts of a thorough planning and implementation

process for the evaluation of the model of governance and representation:

-Maintain the cooperation with the Strategic Actors from the International Community, especially those who have backed the reform. Decision-making cannot be conducted as if everything is new because donors have been involved in this process for a long time. In addition, the international partners operate as a sort of de facto “guarantor” between the political parties in the nation, handling changes that go beyond the purely formal and biased electoral perspectives.

-To expand the conversation beyond the “Bi-Partisan Commission” for Reform, it is important to acknowledge that all political forces in the parliament are not fully and comprehensively represented by this Commission. Numerous justifications are possible, but none of them are helpful. If there is political will, this issue can and should be remedied right away, through a consensual spirit. Additionally, any truly inclusive commission can and should seek input from all parties who have contributed to this subject thus far, compiling a list and matrix of concepts, successes, and issues.

-A comprehensive definition of the reform’s mandate must be provided by the “All-Inclusive Bi-Partisan Commission” after the appropriate consultations have been held.

The government, or specific political forces, can resolve this issue on their own and without the assistance of other actors if the political elements determine that the primary issue is just the feature of political representation. Of course, by keeping also the obligations brought forth by unilateral decision-making. However, this formula would only address the following electoral issue; it would not ensure national stability, vision, or development goals.

-If the modification of the governance and representation model would be the main objective, I advise that the “Bi-Partisan Commission” establish as soon as possible an “expert team” that would be affiliated with this Commission and that was proposed by all the parliamentary parties.

-In the instance of the decentralization reform, the team would develop a specific proposal for the reform based on clear principles regarding the goal and anticipated outcomes of the reform. This would be done using the political consensus model that was developed in the 2000s. Of course, taking this route calls for a work schedule that extends beyond the politician’s present 3-month projection. The outcomes of these reforms nevertheless still remain questionable and need more ample and innovative correction measures.

**Estonia** – As a final conclusion on the Estonian reform, it could be said that although there existed a relatively good process of participation, one can notice that the engagement process might have been much more effective, if the government initiated a public and political debate earlier in the preparation stage, and if they formally approved ahead the guidelines for the remaining issues addressed in the administrative reform document, since 2015. This could have avoided the disputes over the responsibilities and financing during the legislative process for both: the Administrative Reform Act, and the specific detailed legislation after. Furthermore, debates over the financing and the transfer of responsibilities to local authorities could have been more in-depth and more thoroughly prepared if the government had included this in its agenda before 2016. However, this could have allowed for less flexibility in decision-making process, for the specific changes during the approval of Reform So the preparations of the Estonian reform can be evaluated nowadays, as adequate, or good. The approval has been relatively discussable, but politically supported. The way in which the changes were prepared and implemented during the reform, and how they affected the organization of local government, as well as the people’s everyday lives, is a separate discussion that deserves more analysis in the future (Rivo Noorkõiv, 2021)

**Moldova** – As conclusion on the Moldavian case study, it seems that the “voluntary consolidation” and “partial amalgamation” strategy on territorial administrative units (especially those that



do not meet legal criteria for viability), will achieve minor savings of administrative costs, and will not create sufficient conditions for the improvement of local public services in most of local governments in Moldova. So, the restructuring remains still not comprehensive. There is a high risk that soon the population might become unhappy with the results of reform, and resistance for another wave of restructuring will build up. The strongest barrier for the consolidation process of first level territorial-administrative units, is not driven from the legal, administrative, or functional push-factors, rather than from political consequences of the diminishing the numbers of locally elected officials. The inherited 898 local councils provided so far political positions and leading community roles to 12,000 representatives, mostly elected on party/political connections. Meantime a rational consolidation because of the reform might result in approximately 3,000 elected positions – a drastic reduction of political jobs and positions of influence offered to local party elites, that silently seem to oppose the reform (Adrian Ermurachi 2022). Scenarios for the future remain still not clear. Since the political feasibility of the optimal territorial administrative restructuring is still to be decided, below are few alternative scenarios for the fate of the territorial-administrative reform process in Moldova:

- The actual proposed scenario involves mandatory consolidation of the first level of the local government, and creation of a regional level of government instead of the inherited “regions/raions”. Short term risks involve the political changes in government and parliament, as it needs at least a year to put the pieces together, and then work on capacity building again.
- Another scenario of the territorial administrative reform is its blocking or sabotage both by internal or external factors (including the regional/neighboring instability). In case nothing is done to progress on the territorial administrative reform, the pragmatic solution will be to temporarily use the inter-municipal cooperation instruments. After the elections this might create new room for re-initiating the consolidation process. Such scenario has the minimal political cost, and the most marginal impact.
- As far as there is no yet guarantee that the parliament and government will have territorial-administrative reform as a priority, limited consolidation and reforming steps will happen.

As a final conclusion (see also Annex):

- Estonia seems to be much better and progressed with regard the reform design and implementation. Local governments are empowered. Positive results could be also justified by the political commitment and by the fact the reform is happening in a country that is member of EU, benefiting from European reforms in general.
- Albania and Moldova are still lagging behind, and more work is needed to push ahead substantial reform, or correct negative effects created so far.
- Albania has a relative progress with the reform. It was about time. But it faces problems with 3 principles indicators and 4 goals indicators. The reform for some reasons happened without the participation of opposition and further one seems politicized. Independent sources show indicators with issues to be dealt for further improvements.
- Moldova seems to have more problems with the reform, although the issue is in the table now. It has problems with 4 principles and 5 goals, and political consensus is needed to pus further reform in a country facing serious instability on the region.

## References

Aliaj, B., 2008. Misteri i Gjashtë - Cili është kurthi që mban peng zhvillimin dhe integrimin e ekonomisë shqiptare me botën moderne? (The Sixth Mystery - What is the Trap that holds back the Development and the Integration of the Albanian Economy in the Modern World?). Tiranë: POLIS Press.

Aliaj, B., Dharmo, S. & Shutina, D., 2009. Midis Vakumit dhe Energjisë (Between Vacuum and Energy). Tiranë: POLIS Press.

Aliaj, B., Janku, E., Allkja, L. & Dharmo, S., 2014. Albania 2030 Manifesto: A National Spatial Development Vision. Tiranë: POLIS Press

Allkja, L. (2020). Unraveling the complexity of Europeanization of spatial planning systems, the case of Albania [Dissertation, Technische Universität Wien]. <https://doi.org/10.34726/hss.2020.84704> <https://repositum.tuwien.at/handle/20.500.12708/16029>

Autoritati Publice Locale (2010). - Government of Moldova Archived from the original on 28 August 2010. Retrieved in 2010.

Baldersheim, Harald, Michal Illner, and Audun Offerdal. 1996. Local Democracy and the Processes of Transformation in East-Central Europe. Boulder: Westview Press.

Bresser-Pereira, Luiz Carlos (2004) - Democracy and Public Management Reform. Oxford: Oxford University Press.

Brusis, Martin. 2001. Institution Building for Regional Development: A Comparison of the Czech Republic, Estonia, Hungary, Poland and Slovakia. In J. Beyer, J. Wielgoths, and H. Wiesenthal, eds., Successful Transitions: Political Factors of Socioeconomic Progress in Postsocialist Countries. Baden-Baden: Nomos.

Co-PLAN, 2014, Rajonalizimi i Shqiperise – Reforma qeverisese, administrative dhe territoriale qe i duhet Shqiperise ne nivel rajonal. Co-PLAN, Instituti per Zhvillimin e Habitatit

CUATM (2019), Clasificatorul unitatilor administrative-territorial, Retrieved from the original 2019.

Ermurachi Adrian 2022 - The first steps in implementation of the local public administration reform. Commentary: [https://www.ipn.md/en/the-first-steps-in-implementation-of-the-local-public-7978\\_1093937.html](https://www.ipn.md/en/the-first-steps-in-implementation-of-the-local-public-7978_1093937.html)

Haldusreform.fin.ee 2017 (in Estonian) - Vabariigi Valitsuse määruse, Haanja valla, Misso valla, Mõniste valla, Rõuge valla ja Varstu valla osas haldusterritoriaalse korralduse ja Vabariigi Valitsuse 3. aprilli 1995. a määruse nr 159, Eesti territooriumi haldusüksuste nimistu kinnitamine muutmine eelnõu seletuskiri

Hooghe, L. et al. (2016), *Measuring Regional Authority: A Postfunctionalist Theory of Governance*, Oxford University Press.

Groenland, Edward.; (2014) - Employing the Matrix Method as a Tool for the Analysis of Qualitative Research Data in the Business Domain, SSRN 2014 [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2495330](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2495330)

Groenland, E. A. G. (2014). - The problem analysis for empirical studies. *International Journal of Business and Globalization*. 2014.

Gordon, W., & Langmaid, R. (1988). *Qualitative market research. A practitioner's and buyer's guide*. Farnhem, United Kingdom: Gower Publishing.

Rivo Noorkõiv (2021) – How Estonia's reforms empowered local government, retrieved from <https://decentralization.gov.ua/en/news/13820>

Imami, F., Bejko, A., Shutina, D., (2018) *Challenges of Regional Development in Albania*, *Annual Review of Territorial Governance in Albania*, I, 2018, Page 08-23

GoA, 2016. *National Strategy for Development and Integration*, Tiranë, Albania: Qendra e Botimeve Zyrtare.

PM, 2013. *Programi i Qeverisë 2013 - 2017 [The Government Program 2013 - 2017]*, Tiranë: Këshilli i Ministrave.

Mehta, Vinod (2000). - *Reforming Administration in India*. Har-Anand Publications. ISBN 9788124107058. Pesti, Cerlin; Randma-Liiv, Tiina (2018). - "Estonia" @ Thijs, Nick; Hamerschmid, Gerhard,; (eds). *Public administration characteristics and performance in EU 28*. Luxembourg: Publication office of EU. ISBN 9789279904530.

OECD (2019), *Making Decentralisation Work: A Handbook for Policy-Makers*, OECD Multi-level Governance Studies, OECD Publishing, Paris, <https://dx.doi.org/10.1787/g2g9faa7-en>.

Shutina, D., Toto, R., Aliaj, B., 2012, *Roli dhe Kompetencat e Qarkut dhe te institucioneve te tjera (mbeshtetese) lidhur me zhvillimin rajonal*, in *Politikberes apo Politikndjekes 2- Analiza dhe Rekomandime per qeverisjen terriitoriale ne Shqiperi*, Co-PLAN dhe POLIS, Tirane.

Shutina, D (2019) *Territorial Rescaling for Polycentric Governance: the case of Albania*. [https://issuu.com/polisuniversity/docs/dritan\\_shutina\\_phd\\_thesis\\_28februar](https://issuu.com/polisuniversity/docs/dritan_shutina_phd_thesis_28februar)

Toska, M., Bejko, A., (2018) *Territorial Administrative Reform and the Decentralization Strategy – Progress towards the Desired Objectives after a Governing Mandate*, *Annual Review of Territorial Governance in Albania*, I, 2018, Page 69-83

Toto R (2010) "Rajonalizimi i Shqiperise perkundrejt Reformes Territoriale", in Toto and Shutina (eds) (2010) "Politikendjekes apo Politikeberes!" Botime Afrojdit, Tirane

United Nations 1996 (DDSMS and UNDP), Report of the United Nations Global Forum on Innovative Policies and Practices in Local Governance, Gothenburg, Sweden, 23-27 September 1996, ref St/Tcd/Ser.E/46,

UNDP 1997, Decentralized Governance Programme: Strengthening Capacity for People -Centered Development, Management Development and Governance Division, Bureau for Development Policy, September 1997

UNDP (1998), Factors to Consider in Designing Decentralized Governance Policies and Programmes to Achieve Sustainable People -Centered Development, Management Development and Governance Division, February 1998,

United Nations' Economic and Social Council (2005) - "Bottom-up Approaches and Methodologies to Develop Foundations and Principles of Public Administration: The Example of Criteria-Based Organizational Assessment". Document presented to Committee of Experts on Public Administration, Fourth session, New York, 4-8 April 2005 (E/C.16/2005/3).

Valner, Sulev. (2017) Administrative Reform 2017 in Estonia - Collection of Articles, decisions, backgrounds, implementation - Editor: Sulev Valner, English translation: Refiner Translations Translation consultant: Ave Viks, Ministry of Finance in Estonia, 2017, ISBN 978-9949-549-93-1

**Annex - A matrix-based conclusion:** Usually strategies for the analysis of qualitative data, and a particular qualitative analysis method, goes without the numerical precision logic of the quantitative analysis methods (Gordon, W., & Langmaid, R. (1988)). Having said this, the research uses such principle while carrying out a qualitative analysis. In this case, in the absence of time and resources, our analysis is guided by the logic, consistency, and coherence, and such analysis are also qualified as truly scientific as such (Groenland, E. A. G. (2014)). Consequently, the outcomes of study, and their ensuing recommendations, are understood to be a reference in the midterm of reform, while encompassing tremendous directional potency for authorities, stakeholders and community at large (Groenland, Edward.; (2014)). More concretely we asked a balanced number of professionals, researchers, academics and public administrators in three countries to evaluate (1-5) the relation of each principle with each goal of the reform, and the outcomes are summarized in the table below.

<i>Indicator on Principles (right) &amp; Goals (below)</i>	<i>Transparency and accountability</i>	<i>Participation and pluralism</i>	<i>Subsidiarity</i>	<i>Efficiency and effectiveness</i>	<i>Equity and access to services</i>	<i>TOTAL Each Goal indicator on Principles</i>
<b>Relevance</b>	A5 E5 M3	A1 E4 M3	A5 E5 M5	A5 E5 M5	A4 E5 M3	<b><u>A20/25</u></b> E24/25 M19/25 <b>Av. 21.3/25</b>
<b>Values</b>	A3 E4 M4	A2 E5 M3	A4 E5 M3	A3 E4 M3	A3 E3 M3	<b><u>A15/25</u></b> E21/25 M16/25 <b>Av. 17.3/25</b>
<b>Social equity</b>	A4 E4 M3	A3 E4 M3	A3 E3 M2	A3 E3 M3	A2 E4 M2	<b><u>A15/25</u></b> E18/25 M13/25 <b>Av. 15.3/25</b>
<b>Change</b>	A5 E5 M1	A1 E3 M1	A1 E4 M2	A3 E2 M2	A2 E3 M1	<b><u>A12/25</u></b> E17/25 M7/25 <b>Av. 12/25</b>
<b>Client focus</b>	A1 E3 M2	A1 E3 M2	A1 E3 M1	A1 E3 M1	A1 E2 M2	<b><u>A5/25</u></b> E14/25 M8/28 <b>Av. 9/25</b>
<b>TOTAL Each Principle indicator on Goals</b>	<b><u>A18/25</u></b> E21/25 M13/25 <b>Av. 17.3/25</b>	<b><u>A8/25</u></b> E19/25 M12/25 <b>Av. 13/27</b>	<b><u>A14/25</u></b> E21/25 M13/25 <b>Av. 16/27</b>	<b><u>A15/25</u></b> E17/25 M14/25 <b>Av. 14.7/25</b>	<b><u>A13/25</u></b> E17/25 M18/25 <b>A.16/25</b>	

Table 1: Comparative analysis of the impact of administrative territorial reform implementation in Albania (A), Estonia (E) and Moldova (M) – Evaluation from 1-5 (poor, well, good, very good, successful)

# Planning for disaster risk management: the perspective of Greece and Albania on envisioning resilient futures

Ph.D. Candidate. Varsami (Ersi) ZAFEIRIOU<sup>1</sup>

Prof. Dr. Besnik ALIAJ<sup>2</sup> Prof. Dr. Pantoleon SKAYANNIS<sup>3</sup>

<sup>1</sup>*Leibniz Institute for Ecological Urban and Regional Planning (IOER)*

<sup>2</sup>*POLIS University, Albania*

<sup>3</sup>*Professor, POLIS, Emeritus Professor, UTH*

DOI: 10.37199/c41000122

## Abstract

Climate change has (according to many) intensified natural hazards, and exacerbated natural disasters and their human and economic consequences. International organizations (United Nations Office for Disaster Risk Reduction- UNDRR, Intergovernmental Panel on Climate Change – IPCC, etc.) have established frameworks for disaster prevention, mitigation, reaction, and recovery. At the same time, the Sustainable Development Agenda 2030 recognizes the need for Disaster Risk Reduction for sustainable transformation, with cities being the focal point for achieving safety, inclusiveness, resilience and sustainability on a global level (United Nations, 2015, p. 24). Governments, planners, and academics have also been concerned about the issue of resilience and especially in cities for which there have been projects, such as the exemplary one for the 100 Resilient Cities (2022). Nonetheless, the complex interrelationships between resilient and sustainability goals raise the question of whether the two are complementary or contrasting qualities for planning agendas (Ahern, 2011; Saunders & Becker, 2015; Grum & Grum, 2023). Scientific knowledge on disaster risk management and supporting policy discourse are therefore growing, however, losses from natural disasters worldwide increase (CRED, 2022). Different policies are implemented by different governments, but in most cases, they have a common element, an *ex-post* approach, since they focus on the restoration of disaster damages and rarely include planning for the future (Skayannis & Zafeiriou, 2021). This paper attempts to see the phenomenon from the perspective of two countries (Albania & Greece), to discuss the basic policies for risk management and planning applied in the cases of disasters (except earthquakes), of the two countries and to find the pros and cons of the policies applied, based on a set of criteria.

These criteria are focused on:

- The institutional capacities for socio-ecological and spatial resilience planning in the two countries.
- The level of knowledge (including the transfer of both scientific and indigenous/local knowledge transfer) of stakeholders on hazards, exposure and disaster risk.
- The spatial planning practices for sustainable development and management of uncertainties for disaster risk prevention, and mitigation of future impacts.

The ultimate aim of this paper will be to outline:

- how do the two neighbouring countries shape their disaster risk management visions (where is the focus? on sustainability or resilience? links between them?) • the role of spatial planning in the process of “fabricating” the visions (based on the former criteria).

Keywords: Disaster Risk; Resilience Planning; Sustainability Policies; Greece; Albania

## Introduction

Climate change has intensified natural hazards and exacerbated natural disasters and their human and economic consequences. While not all natural hazards are related to climate change and weather (e.g., earthquakes, volcano eruptions, tsunamis), it was the weather-related that revealed the misconceptions of the socio-technical risk approaches (IPCC, 2014, p. 53; IPCC, 2023) to disaster risk management. Climate-related disasters have accounted for 91 per cent of the recorded disaster events over the past 20 years (UNDRR, 2018). The hazards and the degree of vulnerability of a system or population exposed to the hazard, are the most critical factors for risk - the interaction between natural hazards, with exposed communities and systems, and their associated vulnerability, lead to a natural disaster (O’Keefe, et al., April 15 1976; Hewitt, 1983) or an increased disaster risk.

Disaster risk (DR) is the “likelihood over a specified time period of severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic or environmental effects that require an immediate emergency response to satisfy critical human needs and that may require external support for recovery” while disaster risk management (DRM) is the “processes for designing, implementing and evaluating strategies, policies and measures to improve the understanding of current and future disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, prevention and protection, response and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life and sustainable development (SD)”(IPCC, 2012,p:5).

International organizations (e.g., United Nations Office for Disaster Risk Reduction- UNDRR, Intergovernmental Panel on Climate Change – IPCC, etc.) have established frameworks for disaster management (prevention, preparedness, emergency reaction, and recovery). More holistic management of disaster risks was introduced by the Sendai Framework for Disaster Risk Reduction 2015–2030, with the proposed actions representing a shift from coping with disasters to an approach of a better understanding of disaster risks inherent to the decisions and actions within social, economic, political, and environmental systems across diverse geographies and spatial scales. Around the same time, the 2030 Agenda for Sustainable Development stresses how essential safety, inclusiveness and sustainability can be hindered by disaster risk (UN, 2015). Except for the policies, plenty of initiatives and networks conceptualized the integral role of resilience for cities (e.g. Rockefeller Foundation, 2019) and regions (RESILIENCE, 2022) as a pathway of coping, adapting and transforming spatial entities in the face of rapid shocks (natural disasters) and long-term stressors (climate change).

By engaging in spatial planning, the potential disaster risks posed by extreme events and the vulnerability of individuals and infrastructures (such as buildings and roads) to crises and disturbances, can be mitigated. Resilience has gained momentum in spatial planning research, policy, and practice due to the need for adapting to climate change and disaster management insights in complex adaptive systems- CASs (Batty,2013; Folke,2006). In the context of international policies and academic discourse, spatial planning as a cross-cutting field of intervention in spatial structures and development is, therefore, considered a critical parameter in both managing and reducing the disaster risks of a potential natural disaster (e.g., Alexander, 2000; UNISDR, 2015,

<sup>1</sup>Socio-technical risk assessments are those based on objective elements of risk, like the evaluation of statistical data to make predictions on potential hazards (Renn, 2008).

<sup>2</sup>Risk is defined as a simplified equation of hazard and vulnerability (as first proposed by Fournier d’Albe, (1985,p.77) for seismic risk and then adopted by UNISDR, 2004. The capacity was added later to the equation, and it sometimes is considered a component of vulnerability (IPCC, 2012).

At the same time, sustainability has gained popularity as disaster risks and natural disasters pose a great threat to the goals and strategies for sustainable development. Nonetheless, the complex interrelationships between resilience and sustainability goals raise the question of whether the two function complementarily or conflictively in planning agendas (Ahern, 2011; Saunders & Becker, 2015; Grum & Grum, 2023).

The purpose of this paper is to research the novel approaches in planning for disaster risk management in Greece and Albania, their institutional capacities for resilience planning, the level of transferable knowledge on the core components of disaster risk management, and their potential in the context of resilience planning practices for sustainable development, in an era of growing uncertainty of today's decisions for the future. For the current practice on disaster risk management to be explored in this paper, four components are considered integral: policy (translated into laws and regulation), agencies and actors, data gathering, monitoring and evaluation, and participatory planning and communication of knowledge and information (Fig.1). In the first session, the strategic policy progress in DRM and its' integration and/or contribution to spatial planning is discussed. Subsequently, the agencies and actors' responsibilities, jurisdiction, and roles are identified; the extent of data availability, accessibility, and distribution is under question; the participation of different stakeholders and the quality of communicating knowledge and information are finally investigated. The second session discusses if, in current disaster risk management practices, resilience and/or sustainability initiatives can be implied, to outline what future visions are driven by spatial planning and policy for disaster risk management. To conclude, a discussion about common elements and differences in the approaches of the two countries is presented, with a focus on spatial planning's role in disaster risk management.

### **Disaster risk management and spatial planning: current practice in Greece and Albania**

To conceptualize how current DRM practice in Greece and Albania is integrated into spatial planning, it is necessary to initially review the related policy involvement in the two countries, the actors and agencies involved, the data acquisition, accessibility and assessment methods and tools, the participation in disaster risk management and the communication of information and knowledge. These are related to spatial planning since each element contributes to spatial structure change and spatial development (Fig.1).

Policies offer guidelines and instructions for incorporating DRM into spatial planning. These policies are formally expressed through laws and regulations, which establish clear responsibilities for all involved agencies and actors. The different agencies and actors in the processes of developing institutional arrangements and outlines of operational procedures in the field of DRM will be also identified. Seamless exchange and sharing of data, between the different relevant agencies is a crucial step in the potential integration of DRM in spatial planning since it leads to more informed decisions for spatial structures and spatial development. Furthermore, the integration of disaster risk management into spatial planning requires the active involvement of multiple government agencies and public engagement, and the creation of community networks for distributing knowledge or information. To facilitate this process and enable smooth data sharing and exchange, novel ways of participation and communication of knowledge can be employed, such as platforms and hands-on workshops.

### **Strategic policy**

One of the Sendai Framework's seven targets was to substantially increase the number of countries with national and local disaster risk reduction (DRR) strategies by 2020, as a prerequisite



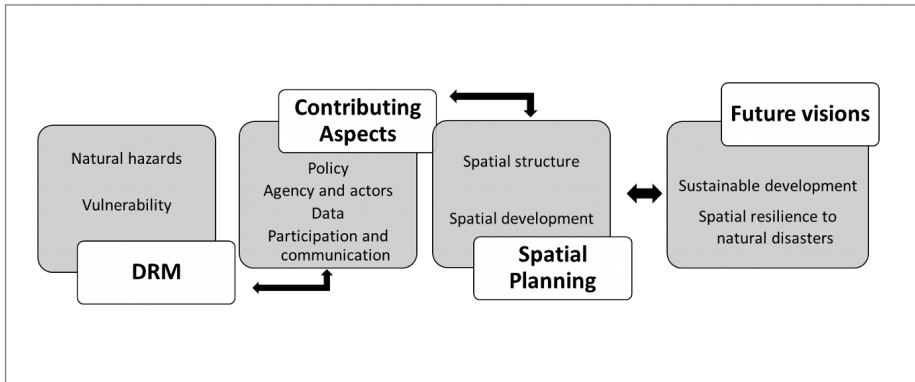


Figure 1: Conceptual analysis framework / Source: Authors

to achieving the Framework's other targets by 2030. By August 2020, 93 countries had a national DRR strategy, while 72 had local DRR strategies in place—a 111% and 85% increase, respectively, since 2015 (UNDRR, 2020). The number of countries with national DRR strategies (Target E) increased from 55 in 2015 to 125 in 2021. Greece and Albania both signed the Sendai Framework back in 2015. According to this guideline, Albania has recently developed its national strategy for DRR (2023), which will be followed by a National Civil Emergency Plan. For the time being, Greece lacks a strategy at a national level, but instead has a General Civil Protection Plan “Xenokratis” (Government Gazette 423B, 10.04.2003) since 2003, which only defines, however, the actions for emergency responses to a natural disaster, with a technocratic division of the roles and responsibilities of agencies involved in civil protection in the country.

Except for the national strategies, an additional need to create hazard-specific plans, since every hazard requires different measures and policies, and to denote the complementarity between these plans arises in the face of increasing impacts of natural disasters impacts. In Greece, “Xenokratis” plan has been the basis for the generation of a series of other Civil Protection Plans, based on the type of hazard, which follows the same purpose (giving directions and clarifying the actions to take place by each responsible agency). These plans (e.g., “Dardanos” Plan for Floods, “Iolaos” Plan for Fires, etc.) do not offer a thorough analysis of either the challenges or the preparedness measures in case of the hazards. In Albania, there have been studies and recommendations by research institutes or donor organizations that address specific hazards (e.g., flooding or wildfires), but there are not any hazard-specific plans at present, with the exception of the Municipality of Lezha, which has drafted vulnerability assessments, a DRR strategy, and a Civil Emergency Plan, as required by the Albanian legislation, and the qark of Shkodra as well, which has a flood management plan (Toto, 2020).

More localized DRR plans, in municipalities and/or regions (qarks for Albania), are equally necessary for the vision of achieving disaster resilience and sustainability. In Albania, all municipalities are legally obliged to draft vulnerability assessments, DRR strategies, and Civil Emergency Plans. Furthermore, risk assessment and risk reduction plans are obligatory at the national level and municipal level in Albania, covering all hazards, however, they are not yet implemented horizontally. In Greece, both municipalities and regions are legally obliged to have their civil protection plans, while the Directorate of Civil Protection reports directly to the Coordinator of the Decentralized Administration and is responsible in particular for the planning and organization in matters of

prevention, information and response to disasters or emergencies in accordance with the current legislation, as well as for the coordination of all the Services of the Decentralized Administration to ensure preparedness, disaster response and damage recovery. The Decentralized Administration agencies create two types of plans:

- A. general plans for an emergency response to a disaster, and
- B. a memorandum of emergency actions between the different administrative levels and public agencies.

The plans produced, use the legal basis and the same approach as the aforementioned (national) civil protection plans. The above legal basis offers the framework of responsibilities and roles in disaster management in the two countries. In Greece, it is a strictly technical approach of dividing the duties, while in Albania the recent steps and obligations (such as the inclusion of vulnerability assessment in DRR municipality strategies) show a more preparedness-oriented approach.

For both countries, only in the case of earthquakes and flooding can an intensive and systematic effort to create disaster risk management strategies be detected. To date, only the Municipality of Lezha has drafted all three policy documents required by the legislation and some “plans” as well, like the flood management plan for Shkodra (Toto, 2020). The rest of the municipalities adopt a Civil Emergency Plan, without employing an appropriate methodology for disaster risk and vulnerability assessment. Greece has completed the Preliminary Flood Risk Assessment for each River Basin and the identification of Potentially Flooding Zones of High Flood Risk (December 2012), the preparation of Flood Risk Maps and Flood Risk Maps (March 2017) as well as the preparation of Flood Risk Management Plans (FMPs) for Potentially High Flood Risk Zones (July 2018), as it was a directive for EU-member states (Government Gazette 1108/B/ 21-07-2010, 2010).

Due to their geotectonic position, the exposure of the two countries to seismic risk is high. Devastating earthquake occurrence with environmental and infrastructural damage and loss of life and property is a rather frequent phenomenon (i.e., Papazachos & Papazachos, 2003, Freddi et al., 2021). As this is the case, EPPPO (Earthquake Planning and Protection Organization), the Greek state authority for planning and monitoring the implementation of the earthquake policy at all levels (Law. 1349/1983), has shifted its focus to a socio-ecological approach, by aiming to strengthen the resilience of the earthquake affected systems (communities, people, institutions, etc.) and be capable to cope and recover efficiently from the impact of a disastrous event, enhancing risk assessments by individualization of the policy and trying to build a seismic culture based on the bottom-up approach with a degree of flexibility, decentralized actions and public participation (Mavroulis et al., 2022). For other hazards, there is an essential gap in disaster risk strategy and policy, with the research being held in academic or other institutions having no substantial impact on policy for disaster management. Furthermore, strict seismic codes have been introduced in 1959 and revised, notably after major earthquake events, in 1985, 1995 and 2000. In Albania, the devastating effects of the earthquake of 26 November 2019, called for action and it was a high-impact cost (loss of lives, property, infrastructural damages, etc.) “window of opportunity” for a recovery plan (Venghaus, 2021). The Albanian government facilitated detailed local plans for the intensively impacted areas, through public-private partnerships to ensure housing for the affected population.

## **Agencies and Actors**

The responsibility of disaster risk management is shared by different administrative government

<sup>3</sup>Vulnerability assessments, DRR strategies, Civil Emergency Plans

levels in the two countries, while non-government organizations and institutions are acting complementarily, with funding, research, data acquisition and assessments, consulting, initiatives, and roles. At this point, it is important to note that the structure and hierarchy of the policy-making and action mainstreaming for DRM, vary depending on the governmental system and spatial planning format adopted by each country. This is not an exhaustive review of the different agencies, but rather the basic agencies involved.

Greece has an arrangement of administrative governance levels, including municipal, regional, and national, and an additional intermediate level between regional and national, the Decentralized Administration for certain purposes. Albania follows a system consisting of municipal and national levels, with an intermediate administrative level called “qark”. Nevertheless, central government laws and regulations play a crucial role as a comprehensive framework, offering directives for actions taken by local governments. Three stages are employed here for a clearer analysis of the responsibilities of administrative levels and the roles of other actors: the strategic, the operational, and the tactical (Fig.2).

In Greece, on the strategic level, the responsible governmental agency is the General Secretariat for Civil Protection (GSCP), a departmental division of the Ministry for Climate Crisis and Civil Protection (Government Gazette 161/A, 9.9.2021), to plan and coordinate actions regarding DRM, to accumulate the necessary information and data for disasters/ emergencies, to monitor the results and the impacts of the actions, and to communicate the knowledge acquired or to notify the public in case of an emergency. An additional agency functions at a national level- the Civil Protection Operations Center (CPOC) for the management of resources in emergencies (response to a natural hazard) and coordinates the army and the civil protection bodies that are included in the emergency-response stage (namely: the Armed Forces, the Hellenic Police, the Hellenic Fire Service and the Hellenic Coastal Guard)(Gountromichou et al., 2014). Municipalities and regions

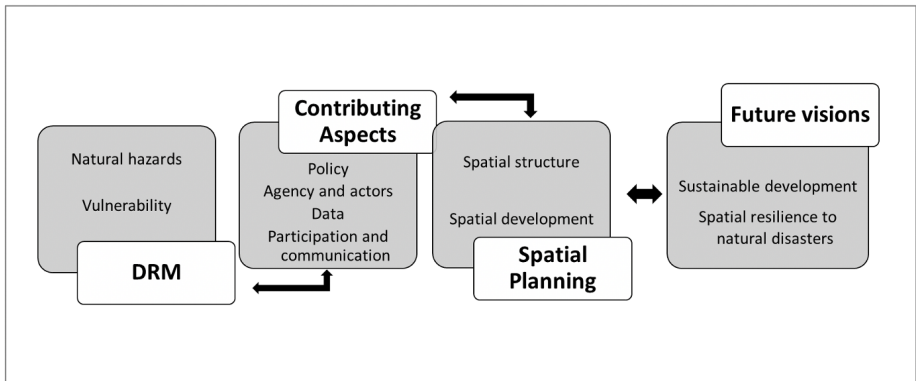


Figure 2: The three levels of policy in DRM / Source: Aniskoff & Lumpkins, 2011, edited by authors

also have specialized agencies for civil protection, which are assigned to supervise and coordinate the necessary actions in case of an emergency, the allocation of resources and to integrate other activities in the plans for disaster risk management (i.e., voluntary activities, private sector funding and initiatives). Furthermore, the municipality and regional administrative government agencies for civil protection address the necessities of personnel, equipment, and recourses for effective disaster risk management and must collaborate with the civil protection bodies. However, the staff is usually inadequate to perform effectively their operational and tactical duties (e.g., Skayannis

& Zafeiriou,2021). As far as funding is concerned, there is an annual budget (national) for prevention actions and disaster risk reduction purposes (not standard, it varies), which is distributed to municipalities by the Minister of Interior. The prevention measures are focused mostly on wildfires, floods, and earthquakes (General Secretariat for Civil Protection, 2005). DRM strategy development can also be funded by research projects or local authorities and relative bodies.

In Albania, the responsibilities and the planning for disaster risk management are more decentralized. The strategic planning level for disaster risk management derives from the National Agency for Civil Protection, embedded within the Ministry of Defence. This Agency had only 9 employees, while in the municipal departments, the number of employees ranges from 7 (in Tirana) to 1 (Toto, 2020). Each municipality should have a directorate or department and an established permanent civil protection committee that is responsible for civil protection and emergency management, but most of their duties so far focus on identifying losses and other impacts after the disaster and on participation in emergency response (Toto, 2020). The local agencies are obliged to plan an emergency fund of 4% of the annual budget. This fund can be used to invest in capacity development, research, preventive measures for hazards, etc. Nevertheless, most municipalities do not use the fund because they save it for emergencies and risk response if needed.

The problem of understaffed agencies and lack of expertise of the personnel is common in the two countries. Furthermore, limited funding for DRM actions hinders additional actions towards creating and implementing radical interventions. Another issue is the verticalization of actions between the three levels of DRM and with spatial planning and development policies.

### **Data acquisition, availability, and assessment**

One of the big challenges in managing disaster risk and adopting a resilient and sustainable spatial development vision is addressing the absence of standardized data (historic and current organized in timelines), at a national, regional, and -most importantly- local scale. Due to physical proximity, municipalities and regions can have instant access to information. In both countries, data may be available at local administrative departments, but not organized in databases, sometimes not even digitalized and, therefore, ineligible for giving feedback to planning and management policy making.

In Albania, over the last few years, there have been several efforts to establish means of acquiring and gathering information and knowledge. At the national level, the database of the Institute of Geosciences (IGJEUM), the reports from the National Operational Centre in the Ministry of Internal Affairs, and the National Archive, gather bad process data, but the lack of accuracy and continuity can hinder their efficiency and efficacy in successful DRM and spatial planning policy. In Greece, likewise, fragmented and heterogenous data (different standards, forms, and organization) can be found in municipal and regional archives, in printed documents or in maps. There are certain institutes, like GINOA for the monitoring of seismicity in Greece, which report to national and international authorities or the Institute of Geology and Mineral Exploration (IGME) that conducts assessments of soil properties, land and water contamination, etc. Several other networks (seismological, meteorological, radioactivity telemetric, etc.) were established for monitoring and mapping different types of risk (Mavroulis et al., 2022). However, a systemic way to communicate the findings and translate them into policy for the present and the future is not established, yet. Furthermore, COPERNICUS emergency management service - a European programme -mapping based on satellite Earth Observation and in situ data- provides the ability for public authorities to manage emergencies, and to develop disaster risk mitigation and adaptation strategies.

Furthermore, the Hellenic National Platform for Disaster Risk Reduction under the responsibility of GSCP is set up as an open-source network and a forum of governmental agencies and other stakeholders, as a national platform on the prevention web of the United Nations Office for disaster risk reduction, already since 2012. Albania also reports on the progress in DRR, in Prevention-Web, with the help and funded assessments of international donors like the World Bank, or the Global Facility for Disaster Risk Reduction.

In line with the global targets of the Sendai Framework to DRR, both countries can utilize the Monitor, and its sub-system Disaster Loss Data Collection online tool (“DesInventar Sendai”) for creating and maintaining fully compliant databases, that will have time-continuity and the required standardization to monitor progress in the 7 targets and the 38 indicators of the framework, but also as a source of valuable information for developing relevant policies (UNDRR, 2018). So far, Greece has not reported any data from 2005-2023, whereas Albania initiated reporting in 2018 and did again in 2022.

For both countries, local- and hazard-specific standardized data about disaster risks and different types of vulnerability, in time and type consistency, must be held, to develop up-to-date information systems that can lead to scenario building and real-time planning, and more informed decisions and implementation of interventions. The communication of this knowledge and the distribution of the findings with the public combined with community access to decision-making, can build resilient future visions and encompass sustainable development pathways.

### **Participation and Communication**

Knowledge management, education, training and informational programs on disaster prevention, preparedness, and mitigation were highlighted as key areas for disaster risk reduction and DRM since the previous century when the first systematic effort for addressing increasing disaster risk took place (Plate & Kron, 1994). Since then, international strategies and initiatives have acknowledged the important role of key stakeholders in disaster management. To investigate the communication of information for DRM and the possible participatory capacities in DRM policy, access to information and decision-making processes, will be reviewed for the two countries.

Community access to information for DRM is of vital importance from the prevention until the recovery stage of a disaster, however, access to information gains a prominent role in the emergency stage. Early warning systems (EWS) have been developed in recent years, since the mass use of mobile phones, the wide use of the internet, and social media, can offer the opportunity for in-time notification of the public. Sadly, neither Greece nor Albania has an early warning system for any type of hazard (as an integrated system of hazard monitoring, forecasting and prediction (1), disaster risk assessment (2), communication and preparedness activities (3) and processes that enable the public to act before a hazardous event (UNISDR, 2009). In Greece, only for some weather-related hazards, the public is notified by 112 (the European emergency number) to, for example, evacuate or not to cross bridges, or park vehicles under trees, in the face of a serious emergency. A recent study by UCL and the European Centre for Training and Research in Earthquake Engineering revealed that an earthquake EWS could give over 10 seconds of warning time at different locations around Europe (Cremen et al., 2022). During a recent earthquake on the island of Euboea (2023), a new EWS from Google was activated and mobile users received notifications if they enable them on the settings of their phone and have internet access at the time of the disturbance (<https://en.roua.gr/>, 2023).

In Albania, a recent law (No.45,2019) clearly states the need for establishing an integrated information system. Combined with an EWS, this can be the basis for the reduction of the impacts of disaster risk. As far as participation is concerned in disaster risk management, the two countries are in similar low-level terms.

There is no specific, transparent way of how the public's contributions are taken into account during the decision-making processes. In Greece, decisions are made at the high institutional level and posted online (DIAVGEIA) and, there, the public can express their opinions or opposing views. Some workshops or day conferences are held under public, or private initiatives, to inform and educate people in Greece (e.g., the "Inclusive and Collaborative Systems for Heat and Wildfire Risks Governance" forum, in October 2022). In Albania, the municipal, permanent, and civil protection committees are supposed to engage members beyond the municipal staff, while voluntary engagement is rather stigmatized (because of the communist inheritance) (Toto, 2020).

These fragmented initiatives and the lack of actual dissemination of new knowledge hamper the transferability of information to the general population, while the communication channels with experts in the fields of DRM are not as constructive as they could be. Furthermore, the proactive approach to disaster management is not supported and there is an orientation to reactivity -measures and actions after the hazards strike. The lack of inclusiveness, combined with the limited data access and availability, the narrow technocratic approach to risk management by the responsible authorities, and the inability to keep up with contemporary needs for disaster resilience and sustainable development, can jeopardize the future safety levels and well-being of Greeks and Albanians.

### **Planning for resilience to disaster risk and sustainable development**

In defining resilience, it is important to specify whether resilience is being viewed as a quality, a process, or an outcome. Here resilience is dealt with both as a process for the territories to achieve a new set of functions towards disaster risk management and as a desired outcome (resilient communities, socio-ecological systems, cities, etc.), for "presenting resilience exclusively as a process, policy agendas and goals, can be unhelpfully abstracted" (Matyas & Pelling, 2015). For this paper, resilience is discussed in the frame of disaster risks and spatial planning, hence it employs a socio-ecological system (SES) and a complex adaptive system (CAS) perspective.

Resilience scholars define "general resilience" as the system's ability to withstand shocks and stresses while maintaining system properties, and "specific resilience" as the system's ability to cope with a specified stressor or stressors (Carpenter, et al., 2001). However, the social-ecological understanding of resilience (Folke, 2006) emphasizes another perspective. In addition to the idea of specific resilience, it considers the generic and emerging properties of CAS, which are capable of adapting, transforming and learning while navigating unpredictable evolution trajectories (Gallopín, 2006). Spatial resilience refers to the capacity of a territorial system to recover and restore its desired functions following unforeseen shocks and disruptions and aims to enhance the system's ability to adapt and transform, enabling all its physical and non-physical elements to evolve into a new organizational structure for the territory (Brunetta & Caldarice, 2020).

In a similar context, for many ecology scholars and environmental thinkers, sustainability conveys the idea that certain (unsustainable) human activities threaten to create ecological crises, like climate change, biodiversity loss, or resource depletion. It seems safe to claim that accounts of sustainability vary in their relative emphases of two aspects that seem equally inherent to the concept: the social impacts on natural systems and their moral consequences. Sustainable development emphasizes the idea that the continuity and well-being of society depend on abandoning or

transforming those activities and maintaining or restoring the natural processes now endangered, as argued in the Brundland Report (WCED UN, 1987).

There has been much discussion on the relationship between resilience and sustainability (Mee-row et al., 2016; Moser et al., 2019). Human societies and their respective activities are sustainable, if they do not create or augment current risks for themselves and future generations, and they are resilient if they manage to respond to rapid shocks and then “go back to normal”. For this analysis, we can be led to the interpretation that sustainability concerns the human origins and the consequences of environmental risks; but derivatives of resilience, like robustness or antifragility, refer only to the risks, shocks, or stressors to the system.

In the context of the two countries’ approaches to the concept of resilience, adaptive planning (to the risks, shocks, and stressors) is not embedded fully in sectoral policies, neither institutionally, nor in practice. The horizontal collaboration between different institutions is not satisfactory, however, resilience ideas have been incorporated in various sectors related to disaster risk fields. Specifically, from a disaster-context scope the law on civil protection in Albania was enhanced to include SENDAI framework principles, unlike Greece, where the civil protection law refers only to the institutional structure of the responsible authorities in case of a disaster.

### **Spatial planning**

Spatial planning fails to address the challenge of resilient landscapes with a risk-proof-oriented approach in both countries (except for the building codes and binding anti-seismic rules). In Greece, there are three scales of spatial planning: national (mostly sectoral plans for energy, industry, tourism, etc.), regional (for all the regions except Attica and Thessaloniki, where a different format is applied, because of their larger size and population), and local plans. At the national level, the National Spatial Development Strategy, (the new version after institutional reform, replacing the national spatial plan- not yet issued) and the sectoral spatial plans, have not taken under consideration the hazards and the vulnerability to disasters in their decision processes, whereas the Regional Plans (13,1 per region) have an analysis about the microclimate and other qualities of the region (like biodiversity, flora, fauna, etc.), and geomorphological analysis, as a prerequisite for regional spatial planning, there is no information about the disaster risk the regions might face in the near and long-term future, nor are there any actions outlined to eliminate or mitigate the risk or its impacts.

At the local level, since the 1980s (1337/83- housing law and E.E.A.) and the 1990s (L. 2508/97 for sustainable spatial development), the legal framework provides generic prevention measures for the mitigation of risk and for safer planning (by forbidding e.g., residential/industrial uses on hazard-prone areas), but with it being often applied differently in practice. A recent reform on Spatial Planning Laws (Law 4759/20), Local Urban Plans (LUPs) (Law 4759/2020, Article 10) will be prepared at the level of the municipal unit for all municipalities in the country and through them measures to adapt to climate change, measures to support emergencies, and manage the consequences of natural and technological disasters will be institutionalized, whereas Special Urban Plans (SUPs) (Law 4759/2020, Article 11) (the area of application does not have to be identical to an administrative unit like LUPs) can also be prepared for environmental protection or disaster relief programs and critical spatial problems that require immediate treatment or prevention of completed situations due to lacking urban planning (in case of natural disasters like fires, earthquakes etc.)(Vassi et al., 2022).

In Albania’s General National Territorial Plan, climate change is explicitly addressed as a subchapter, and hazards are related to each of the macro-sectors it assesses. Nevertheless, the implemen-

tation is not coherent with the strategic overview. Instead of regional plans (since there is no such level of administration in the country), there are 3 intersectoral plans drafted by the government, covering specific parts of the territory (the Alpine area, the coastal area and the Tirana-Durres region), where the protection against natural hazards and mitigation of effects of climate change is addressed as a subchapter and integrated into recommendations. As for the local-scale plans, Law no. 107/2014 on territorial planning and its bylaws specify the structure of each planning document at the local level. Natural hazards are not specifically required as part of the structure, but there is an obligation from all municipalities to address: analysis of areas with conditionalities of development, environmental analysis: topographic, climatic, hydrogeological, geo-engineering, micro-seismic zoning; use of natural resources; environmental problems; pollutants, etc.

Resilience planning and sustainability approaches are integrated into the spatial plans of both Albania and Greece, but differences arise due to geographical location, socio-economic conditions, and governance structures. Variations exist in their risk profiles, climate change adaptation strategies, governance systems, infrastructure resilience, stakeholder engagement, and regional considerations. Identifying certain common elements in the spatial planning approach of the two countries would reveal the inadequate public participation in the processes, the lack of essential data for informed decisions and the mismatches in the horizontal application of resilience approaches and intersectoral sustainable development goals. However, since resilience and sustainability are commonly identified as processes, too, the two countries try to “bounce forward” (Manyena, 2006) and make systemic changes to be able to plan for a resilient future.

## **Discussion**

In recent years much effort has been made to plan for sustainable and resilient cities and regions in Greece and Albania as well. However, the components of DRM are not recognized as vital components of sustainable development or resilience building in spatial planning practice but are only mentioned as wishful goals, with no specific focus or scope in the planning practice. Risk assessments are not playing the important role they should when planning for resilience. For both countries, spatial planning is strongly linked to and heavily dependent on the institutional framework (plan by decree). By extension, the legal traditions of each country influence the way spatial policies are carried out as well as the result at the level of produced space. In fact, the spatial planning laws, especially those for urban areas, that are characterized by higher complexity compared to those of rural, reflect the lack of flexibility in going along with dynamic changes in the legal systems of the respective countries.

The spatial plan formats in the two countries were recently revised to include either the concept of resilience, or environmental protection, however, an implemented result in practice is yet to be seen. Holistic integration of hazard prevention/ mitigation and natural disasters preparedness requires 1) a different planning culture, when special plans for the different special scales will take under consideration risk assessment, historic data analysis, and prediction models to be effective for the future, 2) greater interaction with the priority axes (whether spatial or developmental) of the plans, than the simple listing of the risks and related indicators of each spatial unit, 3) actual implementation of the plans before they become obsolete, over time, allowing urban systems to become more sustainable and resilient, in the present and future as well.

The two countries, share certain common hazards (e.g., earthquakes, heat waves), but Albania has taken many steps forward in the disaster management pathway. A vivid example is the monitoring data that UNDP uses via the Sendai Framework Mechanism for monitoring progress related to the Targets set in the strategy. Albania is an active participant in the platform, while Greece has



never reported any data. Furthermore, the Albanian government has now a National Strategy for Disaster risk reduction (2023), which will be followed by a National Civil Emergency Plan, while in Greece a similar plan is in place for two decades now, without further updates to the constantly changing and dynamic changes in the risk and hazard patterns. At the local government administrative level, Albanian municipalities are obliged by law to establish risk reduction platforms by assessing disaster risks and related vulnerabilities, and by adopting disaster risk reduction strategies and emergency plans, while in Greece a plan must share the jurisdictional roles between civil agencies. These are important steps for resilience building towards disasters and for developing coping and adaptive capacities of different spatial entities, since by establishing monitoring mechanisms and ensuring access to information, knowledge on the matter is enhanced, and can be utilized for more informed decisions in policy making.

Even though the laws in both countries clearly define the duties and roles of the authorities in disaster management, the linkages and collaborations of the different governance levels remain weak and unclear. In Greece, strategies are decided at the central level (state), with regions and municipalities having (if they do) a supporting role and, regarding the participatory procedures, follow an electronic, few-day stay posting of the decisions, where citizens can express their opinions online, without any proof of their contribution to the result. In Albania, all DRR processes need to have coordinated decision-making through the establishment of a Civil Emergency Council, with actors from the government and civil society. In practice, these councils are not operative and the process of DRR planning is mostly developed top-down, through donor support.

Scientific knowledge is included on an arbitrary basis, because of the lack of integrated disaster risk management databases (available for the public). Participatory processes occur on a sporadic basis, mostly for data triangulation and participatory mapping of hazards, when necessary. If we argue that resilience is a specific outcome in a certain space and time, not being able to transfer knowledge and communicate it at the multiple levels of the social system and governance, is a serious challenge that both countries should invest in.

Local governments can make a big difference in disaster management and socio-ecological and socio-technical resilience, due to the physical and cultural proximity of the place. However, their role in resilience building is weak in the two countries. As resilience should be addressed territorially and on an intersectoral basis, municipalities must instigate resilience and adaptation efforts in all sectors in terms of disaster risk reduction, hazard-prone areas (as areas of focus and not of administration), of spatial planning, and participatory risk assessments, which would constitute a valuable tool in completing knowledge beyond political jurisdictions and is now missing in the two countries' disaster risk reality.

Another major handicap is the absence of standardized data. There are very limited capacities at the local and national levels, and limited monitored data to assess the ecosystem's quality, and environmental performance, let alone to become the basis for a risk mitigation planning and management strategy. National, governmental, and research institutes responsible for monitoring and conducting studies on climate, hydrology, geology, seismic events, etc., maintain their databases that are not as a whole easily accessible to municipalities in real-time.

At the local level, municipalities can play an instrumental role in establishing and implementing strategies and plans focused on DRM, so that local preparedness will improve, both technically and financially, while also facilitating effective communication with communities and non-state actors. Municipalities, in both countries, should also prioritize the establishment of well-equipped civil protection departments, ensuring they have a diverse range of experts and ongoing training. These departments should collaborate with other sectors to address various aspects of local

resilience. It is essential for municipalities to create their databases, incorporating historical data on hazards, disaster risks, and vulnerabilities specific to their territories. Utilizing information systems would enable real-time planning, scenario building, and informed decision-making. The national government can assist by providing information, tools, and methodologies for different territorial and social scales.

However, they should not solely rely on these databases but also gather local information and engage with citizens. Municipalities, with the support of other stakeholders, should establish local resilience dashboards with dynamic indicators to benchmark and compare different local governments and territories, and to monitor early prevention efforts. Actively participating in international initiatives and joining resilience and adaptation networks would enhance their knowledge and access to financial and technical support and pave the way for a more sustainable future.

However, technical resources for resilience planning are scarce, because of a lack of capacities and lack of integration between the planning department and civil protection department at the local level. Many initiatives, like participating in resilience projects, and preparing useful studies and reports to inform civil society for DRR and management in this regard are supported by research institutes and local NGOs through donor funding. Nevertheless, a comprehensive network of systematic knowledge transfer is missing.

In conclusion, the policy objectives of territorial resilience to disaster risk in Albania and Greece are not clearly defined, while the capacities of the two countries in DRM, despite the progress noted, remain weak (in policy, agency, data, and participation). While the concept is mentioned in the DRR relevant legislation (laws on civil protection), it is expected to be addressed in the national strategy for civil protection. However, it is uncertain whether this strategy will encompass objectives and measures that extend beyond the civil protection sector, indicating an integrated approach to resilience.

A national policy is required to foster socio-ecological and territorial resilience as a pathway to sustainable development, in Albania and Greece. Civil protection strategies might be instrumental in this effort, but it is crucial for governments to facilitate coordination and collaboration across various sectors and administrative levels. This entails integrating policies and actions related to climate adaptation, spatial planning, infrastructure, water resources, energy, forests, fisheries, and more, aligning them towards resilience goals. Adopting a territorial perspective and blending diverse sectoral perspectives across all administrative levels for DRM, could be an approach that promotes a holistic planning mindset and the sustainable utilization of natural resources.

## References

- Ahern, J., 2011. From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world. *Landscape and Urban Planning*, 100(4), pp. 341-343.
- Alexander, D. E. (2000). *Confronting Catastrophe: New Perspectives on Natural Disasters*. Oxford University Press. <https://books.google.de/books?id=kw-tQgAACAAJ>
- Aniskoff, P. & Lumpkins, D., 2011. *Comprehensive Preparedness Guide (CPG) 101, Version 2.0: Developing and Maintaining Emergency Operations Plans Overview Briefing [presentation]*, s.l.: FEMA.
- Batty, M., 2008. *Cities as Complex Systems: Scaling Interactions, Networks, Dynamics and Urban Morphologies*. UCL Working Paper Series.
- Brunetta, G. & Caldarice, O., 2020. Spatial Resilience in Planning: Meanings, Challenges, and Perspectives for Urban Transition... In: W. Leal Filho , και συν. επιμ. *Sustainable Cities and Communities.. επιμ.* s.l.:Springer, Cham., p. 628–640.

- Carpenter, S. R., Walker, B. H., Anderies, J. M. & Abel, N., 2001. From metaphor to measurement. Resilience of what to what?. *Ecosystems*, Τόμος 4, pp. 765-781.
- CRED, 2022. 2021 Disasters in numbers, Brussels: CRED.
- Cremen, G., Galasso, C., & Zuccolo, E. (2022). Investigating the potential effectiveness of earthquake early warning across Europe. *Nature Communications*, 13(1), 639. <https://doi.org/10.1038/s41467-021-27807-2>
- Folke, C., 2006. Resilience: The emergence of a perspective for social-ecological systems analyses. *Global Environmental Change*, 16(3), pp. 253-267.
- Fournier d'Albe, E. M. (1985). The quantification of seismic hazard for the purposes of risk assessment. 77–84.
- Freddi, F., Novelli, V., Gentile, R., Veliu, E., Andreev, S., Andonov, A., Greco, F., & Zhuleku, E. (2021). Observations from the 26th November 2019 Albania earthquake: The earthquake engineering field investigation team (EEFIT) mission. *Bulletin of Earthquake Engineering*, 19(5), 2013–2044. <https://doi.org/10.1007/s10518-021-01062-8>
- Gallopin, G. C., 2006. Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, 16(3), pp. 293-303.
- General Secretariat for Civil Protection, 2005. Report and information on disaster reduction for Greece for the World Conference on Disaster Reduction (Kobe-Hyogo, Japan, 18-22 January 2005), Athens: General Secretariat for Civil Protection.
- Gountromichou, C., Manousaki, M., Doga, A., & Eythimios Lekkas. (2014). SEISMIC DISASTER PREPAREDNESS POLICY IN RISK MANAGEMENT PLANNING -GREECE. <https://doi.org/10.13140/2.1.1054.3365>
- Government Gazette 1108/B/ 21-07-2010, 2010. Gov 2010. Flood risk assessment and management, in accordance with the provisions of Directive 2007/60/ EC 'On flood risk assessment and management', of the European Parliament and of the Council of 23 October 2007. Ath, Athens: Greek Government.
- Government Gazette 423B, 10.04.2003. Approval of the General Plan of Civil Protection on 7.4.2003 codenamed 'Xenocrates', Athens: Greek Government.
- Government Gazzette 161/A, 9.9.2021. Establishment of the Ministry of Climate Crisis and Civil Protection, transfer of services and responsibilities between Ministries., Athens: Greek Government.
- Grum, B. & Grum, D., 2023. Urban Resilience and Sustainability in the Perspective of Global Consequences of COVID-19 Pandemic and War in Ukraine: A Systematic Review. 15. 1459. 10.3390/su15021459. *Sustainability*, 15(2).
- Hewitt, K., 1983. Interpretations of Calamity. Boston: Allen and Unwin.
- <https://en.rua.gr/>, 2023. Google Sends an Earthquake Alert: How to Activate the App. <https://en.rua.gr/>.
- IPCC. (2012). Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Special Report of the Intergovernmental Panel on Climate Change (C. B. Field, V. Barros, T. F. Stocker, & Q. Dahe, Eds.; 1st ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9781139177245>
- IPCC. (2023). IPCC:2022, Climate Change 2022: Impacts, Adaptation and Vulnerability (p. 3056) [Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change]. Cambridge University Press.
- Manyena, S. B. (2006). The concept of resilience revisited: The Concept of Resilience Revisited. *Disasters*, 30(4), 434–450. <https://doi.org/10.1111/j.0361-3666.2006.00331.x>

Matyas, D., & Pelling, M. (2015). Positioning resilience for 2015: The role of resistance, incremental adjustment and transformation in disaster risk management policy. *Disasters*, 39(s1), s1–s18. <https://doi.org/10.1111/disa.12107>

Mavroulis, S., Ilgac, M., Tunçağ, M., Lekkas, E., Püskülcü, S., Kourou, A., Sextos, A., Mavrouli, M., Can, G., Thoma, T., Manousaki, M., & Karveleas, N. (2022). Emergency response, intervention, and societal recovery in Greece and Turkey after the 30th October 2020, MW = 7.0, Samos (Aegean Sea) earthquake. *Bulletin of Earthquake Engineering*, 20(14), 7933–7955. <https://doi.org/10.1007/s10518-022-01317-y>

McGahan, P., 1986. *Urban Sociology in Canada*. Toronto: Butterworth and Co., Ltd.

Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. *Landscape and Urban Planning*, 147, 38–49. <https://doi.org/10.1016/j.landurbplan.2015.11.011>

Moser, S., Meerow, S., Arnott, J., & Jack-Scott, E. (2019). The turbulent world of resilience: Interpretations and themes for transdisciplinary dialogue. *Climatic Change*, 153(1–2), 21–40. <https://doi.org/10.1007/s10584-018-2358-0>

O’Keefe, P., Westgate, K. & Wisner, B., April 15 1976. Taking the Naturalness out of Natural Disasters. *Nature*. 260.. *Nature*, Band 260, p. 566–567.

Papazachos, B. & Papazachos, C., 2003. *The earthquakes of Greece*. In Greek επιμ. Thessaloniki: Ziti Publications.

Plate, E. J., & Kron, W. (1994). The international decade for natural disaster reduction (IDNDR): A challenge to science. *Soil Dynamics and Earthquake Engineering*, 13(1), 45–48. [https://doi.org/10.1016/0267-7261\(94\)90040-X](https://doi.org/10.1016/0267-7261(94)90040-X)

RESILIENCE. (2022). RESILIENCE, 2022, Resilience planning & development needs of regional authorities and stakeholders (D1.1, p. 66). RESILIENCE Consortium, 2021. [https://regilience.eu/wp-content/uploads/2022/12/REGILIENCE\\_D1.1-Resilience-planning-development-needs-of-regional-authorities-and-stakeholders.pdf](https://regilience.eu/wp-content/uploads/2022/12/REGILIENCE_D1.1-Resilience-planning-development-needs-of-regional-authorities-and-stakeholders.pdf)

Renn, O., 2008. Concepts of Risk, An Interdisciplinary Review - Part 2: Integrative Approaches. *GAIA - Ecological Perspectives for Science and Society*, 17(2), p. 196–204.

Rockefeller Foundation. (2019). Resilient cities, resilient lives: Learning from the “100RC network” (p. 140). Rockefeller Foundation. [https://resilientcitiesnetwork.org/downloadable\\_resources/UR/Resilient-Cities-Resilient-Lives-Learning-from-the-100RC-Network.pdf](https://resilientcitiesnetwork.org/downloadable_resources/UR/Resilient-Cities-Resilient-Lives-Learning-from-the-100RC-Network.pdf)

Saunders, W. & Becker, S., 2015. A discussion of resilience and sustainability: Land use planning recovery from the Canterbury earthquake sequence, New Zealand. *International Journal of Disaster Risk Reduction*, Τόμος 14, pp. 73–81.

Skayannis, P. & Zafeiriou, E., 2021. Risk – Uncertainty – Complexity and Foresight as alternative planning tools for natural disasters: The Medicine ‘Ianos’ in Greece. *Annual Review of Territorial Governance in the Western Balkans*, Τόμος 3.

The Rockefeller Foundation, 2022. 100 Resilient Cities, s.l.: s.n.

Toto, R., 2020. *Building Resilience For Local Governments In Albania: Legal And Institutional Challenges*, s.l.: Co-PLAN Resilience Series.

UN. (2015). *Transforming our World: The 2030 Agenda for Sustainable Development*. UN. [sustainabledevelopment.un.org](https://sustainabledevelopment.un.org)

UNDRR, 2018. [sendaimonitor.undrr.org](https://sendaimonitor.undrr.org), s.l.: UNDRR.

UNISDR, 2009. *2009 UNISDR Terminology on Disaster Risk Reduction*, Geneva, Switzerland: United Nations International Strategy for Disaster Reduction.

United Nations, 2015. *Transforming our world: the 2030 Agenda for Sustainable Development*,

s.l.: UN General Assembly.

Vassi, A., Siountri, K., Papadaki, K., Iliadi, A., Ypsilanti, A., & Bakogiannis, E. (2022). The Greek Urban Policy Reform through the Local Urban Plans (LUPs) and the Special Urban Plans (SUPs), Funded by Recovery and Resilience Facility (RRF). *Land*, 11(8), 1231. <https://doi.org/10.3390/land11081231>

Venghaus, G., 2021. Final Evaluation of the 2019 Albania Earthquake Emergency Appeal, s.l.: IFRC.

WCED UN, 1987. Our common future—The Brundtland report, Oxford, UK: Oxford University Press.

# The influence of climate change on drought occurrences and the measures taken to alleviate drought in Albania.

Prof. Dr. Sherif LUSHAJ<sup>1</sup>, Anira GJONI<sup>2</sup>, Enkelejda KUCAJ<sup>2</sup>

<sup>1</sup>POLIS University, Albania

<sup>2</sup>Polytechnic University of Tirana, Albania

DOI: 10.37199/c41000123

## Abstract

Drought is an extreme weather condition marked by prolonged periods of no precipitation and dry weather. It affects the hydrological balance, soil moisture, temperature, water supply, and river flow rates. Land degradation, biodiversity loss, and significant economic sectors are negatively impacted. Despite its small size, Albania is distinguished by its separation into 13 subzones and 4 phytoclimatic zones, which exhibit noticeable variances in terms of climate indicators and extreme weather occurrences. The seasonality of the yearly rainfall, which falls 80% of the time between October and April, the dry summer, and human activities that harm the environment are further factors contributing to drought in Albania. Albania is one of the nations whose dry and semi-arid regions, which make up around two-thirds of its surface, are experiencing drought and the desertification process. Even on a worldwide scale, nearly one-third of the land is degrading. When compared to the 30-year average, meteorological data from Albania suggest that climate change, the phenomenon of drought, and land desertification are increasing. Therefore, in 2020, the amount of precipitation was 14.4% less at 10 meteorological stations around the nation, and the average maximum temperatures increased by +2.8°C, over the multi-year average of 1961–1990. As a result of the escalation and disastrous effects of drought, climate change is considered a “hot” topic that has attracted the attention of governments, institutions worldwide, and international organizations. This will be done through an in-depth analysis of indicators and indices of climate, hydrological and meteorological drought, exposed economic sectors, and land. Additionally, the key findings of the reduction of environmental, ecological, and agricultural drought, adaptation to climate change in relation to drought protection for the soil, and in particular for agricultural land, will be highlighted.

Keywords

climate change, desertification, drought, resilience, meteorological condition

## **Introduction**

According to the United Nations Convention on Desertification (entered into force 1996) “drought” means the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems” (UNCD, 1996). Meanwhile, the World Meteorological Organization (WMO) defines drought as a prolonged dry period in the natural climate cycle that can occur anywhere in the world. Drought is caused by high temperatures and lack of rainfall and soil moisture, decreasing water reserves and insufficient water sources. Drought is caused by high temperatures and lack of rainfall and soil moisture, decreasing water reserves and insufficient water sources to fulfill the needs of the economic and social sectors for water.

Drought is a general world phenomenon, expressed to different level between countries and regions, depending on climatic features, geographic latitude, altitude above sea level, relief, atmospheric circulation, land cover, marine, human activity as well as the level of planning and implementation of measures to combat drought, desertification, land and environmental degradation. Climatic factors and human activities are dominant in soil drought.

During the period 1961-2013, the area of drylands in drought has increased on average by slightly more than 1% per year, with large inter-annual variability (IPCC, 2021). In general, the territory of the country, with an average height of 708 m above sea level, is characterized by a Mediterranean-Atlantic climate, with winters with heavy rainfall and hot and dry summers, often with extreme weather events, especially floods and droughts. Drought is also influenced by the mountainous relief in about ¾ of the country’s territory, changes in the territory’s height from 0-2700 m above sea level, climatic zones and subzones, as well as the planning and implementation of preventive and mitigating measures against drought.

In the territory of the country, in seasonal conditions, in extended periods throughout the country, almost all types of droughts operate: meteorological drought expressed in high temperatures and extreme rainfall deficit in a region or on a national scale, agricultural/ecological droughts, where the lack of rainfall creates a lack of soil moisture necessary for natural vegetation and agricultural crops. Hydrological drought is also present during the summer, which is characterized by the drying up of mountain streams and dry rivers such as (Drino, Kiri, Dukati, etc.), the reduction of flows according to the main rivers during the summer season to the extent of 4-7 times less than other seasons, the reduction of water in the 700 irrigation reservoirs in agriculture and the reduction of underground water.

## **Literature review**

Climate change, drought, land degradation and desertification are currently a “hot” topic of discussion and debate at the global level and as a need for deepening scientific research, strategies and action plans. The United Nations Convention to Combat Desertification (UNCCD), adopted in 1994, is a binding international agreement linking environment and development to sustainable land management.

Europe is warming faster than some other regions (EEA, 2021a), experiencing more summer heatwaves, heavy rainfall and droughts, and sea level rise (IPCC, 2021). According to the (IPCC, 2021) report, South East Europe is predicted to have a warming of up to twice the global average, and with some estimates predicting more than 1.5°C for the region by the end of the 21-st century. These trends are expected to continue to grow in the coming years. As a result of rising temperatures, the region may face a significant increase in the number of fires, droughts, food shortages and environmental and human risks (Kučaj E., et al, 2022). According to UNDP (2016), more

frequent droughts will increase competition for water resources, especially between agricultural irrigation needs and water resources. Heavy rains, floods and soil erosion put urban and rural infrastructure at risk, (Ciardini, V. et al, 2016) moreover, the increase in drought events and drought conditions will affect agriculture and increase risks of food insecurity.

Also, the National Strategy (2018) is built on five objectives, one of which is the reduction and management of disaster risk for drought and floods, the increase scientific knowledge on water and climate issues. According to the Lushnje Agricultural Research Institute, it has been proven that in conditions of prolonged drought and insufficient use of water for irrigation, production in some crops decreases by 40-60% (Dhima K, Gjergji LL, 1980). While in the total absence of irrigation and rainfall, agricultural production can be completely destroyed (Kučaj E, 2022). Soil degradation and erosion, worsens from repeated floods and drought affects agricultural production, coastal areas, water resources and is likely to further negatively affect livelihoods (3rd National Communication, 2016).

The concentration of pollutants in the soil brings serious consequences to the well-being of the inhabitants (Kučaj E., et al, 2023). Degradimi dhe erozioni i tokës, të përkeqësuar nga përmytjet e përsëritura dhe thatësira në mënyrë negative ndikon në prodhimin bujqësor, zonat bregdetare, burimet ujore dhe ka gjasa të ndikojë më tej negativisht në mënyrën e jetesës (3rd NC, 2016).

## **Method and Methodology**

This study is based on the analysis of climate data before and after 1990, through the comparison of periods, the analysis of indicators and the connection with drought, desertification and land degradation. Rainfall and temperature data for 2020 and 2021 were studied, compared with the 30-year average 1961-1990, which show the trend of climate change in Albania and the impacts on drought. Several meteorological measurements have been selected for different climatic zones and subzones of the country, in which the differences for the same periods are evaluated. Some of the influencing factors in soil drought and climate change such as fires, lack of plant cover, water resources and impacts on the environment, soil, desertification, degradation, salinization and loss of productive capacity of the soil have been evaluated.

Through analyzes of soil moisture in several areas of the country, at a depth of 0-30 cm, a correlation has been established between temperature, soil moisture and soil characteristics, as well as soil moisture differences between seasons and different areas. In addition, a review of the literature on the connection between drought and the impacts of climate change on land drought has been done.

## **Phytoclimatic zones, subzones and seasonal changes of climate indicators**

Studies show that drought is a natural feature of climate variability and the water cycle and can occur in all climate zones. It originates from a temporary reduction in the normal rainfall regime over a large area, but other climatic factors, such as high temperatures and winds, low relative humidity, can exacerbate the severity of the event (Vörösmarty et al., 2000, Tallaksen et al., 2004). Although Albania is a small country, it is characterized by 4 phyto-climatic zones and 13 sub-zones, with distinct climatic features. Climate indicators in Albania show marked differences between phytoclimatic zones and subzones, in extreme events as well as in impacts on the environment, economy, infrastructure, agriculture, public health and tourism development (table no. 1).

In table 1, the significant difference of climate indicators between 4 climate zones and 13 subzones is distinguished. E.g., in the southern pre-montane Mediterranean area, from 650-750 mm of precipitation per year, average annual temperature 9.5-10.5 °C, minimum temperature 0.5-2 °C and



85-95 annual days with precipitation. In the northern submontane Mediterranean area 2000-2500 mm of precipitation per year, average annual temperature 4-6 °C, minimum temperature -4 to -6 °C and number of rainy days 110-140.

Changes in the level of indicators in the phytoclimatic areas of the country require special attention in the planning of measures to prevent, mitigate and combat the summer drought through the improvement of the irrigation infrastructure and provision of water resources, preservation of plant cover, improvement of plant cultivation practices”, etc.

Climatic zone	Climatic subzones	Average annual temp. °C	Minimum temp. °C	Amount of Rainfall (mm)	No. of rainy days
<b>Mediterranean lowland area</b>	North	15.0-16.0	4.0-5.0	1500-2000	107-115
	Central	15.0-16.0	6.5-7.5	1500-1700	85-100
	South	16.0-18.0	8.0-10.0	1600-1800	95-100
<b>Mediterranean hilly area</b>	North	11.0-14.0	2.0-4.0	1300-1800	95-100
	Central	11.0-13.0	4.0-6.0	1100-1300	95-105
	Southeasterly	14.0-15.0	4.0-5.0	1500-1700	110-120
	Southwest	13.0-15.0	5.0-7.0	1700-2000	110-120
<b>Mediterranean submontane zone</b>	North	10.0-11.0	(-2.0)-(-3.0)	1700-1900	110-115
	South	9.5-10.5	0.5-2.0	650-750	85-95
<b>Mediterranean mountainous area</b>	North	4.0-6.0	(-4.0)-(-6.0)	2000-2500	110-140
	Eastern	2.0-6.0	(-4.0)-(-6.0)	1300-1800	100-125
	Southeasterly	3.0-6.0	(-5.0)-(-6.0)	900-1200	100-110
	South	6.0-10.0	(-1.0)-(-2.0)	1400-2000	85-95

Table 1: Phytoclimatic zones and subzones in Albania / Source: Statistical Yearbook and year processing by the authors

Meteorological measurements	Koplik	Shkodër	Ura Shenjëtë	Bushat	Velipojë	Lezhë		Likmetaj	Kamëz	Tiranë	Sukth
Precipitation mm	1645	2065	<b>2732</b>	1641	1522.8	1463.5		1099.4	1299.8	1271.5	1108.6
Meteorological measurements	Kavajë	Vrap	Elbasan	Peqin	Lushnjë	Kuçovë		Fier	Ballsh	Ulakatund	Vlorë
Precipitation mm	1055.3	1567.8	1209.1	1065.5	962.9	927.6		985,3	1048.1	1016,2	<b>954,8</b>

Table 2: Average multi-year precipitation amount 1951-1980 in 20 measurement sites. / Source: Statistical Yearbook and year processing by the authors

Also, the territory of Albania is historically characterized by marked changes between meteorological, hydrological, agricultural, ecological, environmental drought seasons, mainly in the summer season, with high temperatures and low rainfall. In the period November-April in Albania, an average of 70-80% of annual rainfall falls, the country is affected by frequent floods, soil salinization intensifies during the summer in the coastal area. While in the other period of the year, only 20-30% of rain falls, a period in which temperatures are high, water evaporation from the ground is high and the demands of economic sectors are in difficulty for water.

According to the measurements carried out in 20 meteorological stations distributed throughout the country, the average amount of rainfall for 30 years (1951-1980), according to the stations, varies from 954.8 mm in Vlora to 2732 mm in the Ura e Shenjte meteorological station (in the north of the country).

The distribution of precipitation according to the seasons in the 30-year average 1951-1980, in 20 stations, the average amount of precipitation in the summer season (June, July, August) according to the stations results from 7.14-12.37% of the annual amount, while in winter, autumn and spring together with 87.63-92.86% of precipitation. Precisely in this period, when average monthly temperatures are higher than in other seasons, drought intensifies, water evaporation increases, soil loses water, water demands increase, extreme events require measures and interventions to protect social life, water needs in agriculture and water balance in the soil.

### **Intensification of drought under climate change conditions and driving factors**

During the last decades, due to the expansion of cities, changes in land use and land cover, emissions of greenhouse gases, warming of the atmosphere, drought and desertification of the land, “urban hot islands” and natural hazards have increased. Albania is one of the countries affected by climate change and land desertification. OBM (2016) and national Hydro-Meteorological institutions have prioritized the global agenda for adaptation to climate change and drought reduction. How are the main climate indicators changing in Albania?

Through an analysis of the maximum and minimum air temperatures, in 10 measurement sites distributed in different areas and sub-areas, it results that, during 2020, the average maximum annual temperatures marked an increase of +2.8° C above the multi-year average 1961-1990 and

No	Average maximum temperature (°C)			Average minimum temperature °C			
	Stations	1961-1990	2020	2021	1961-1990	2020	2021
1	Belsh	20.1	22,9	22.1	10	11.5	11.3
2	Brataj	20.0	23.1	23.2	8	9.9	10.3
3	Çukë	20.6	22.5	22.3	9.8	10.9	11.3
4	Dardhe	12.4	15.2	14.6	4.2	5.6	5.3
5	Liqenas	15.1	17.7	17.6	6.1	7.4	7.3
6	Petresh	18.0	20.9	20.3	10.5	11.5	10.7
7	Rapsh	14.4	17.6	16.7	6.8	8.22	8.3
8	Shupenzë	16.6	19.7	19.6	5.4	5.8	5.5
9	Tirane	20.7	23.3	23.0	11.0	11.3	11.1
10	Tropoje	16.5	19.4	19.1	6.6	7.2	6.7

Table 3: Average maximum and minimum air temperature for the years 2020, 2021 and multi-year average 1961-1990 in 10 meteorological locations

the average amount of precipitation has decreased by 300 mm per year (table no. 3, graph 1). For the same measurement locations, the average value of the minimum air temperatures marked an increase of +1.1 °C over the multi-year average value (1961 - 1990) (table 3). The trend of increasing temperature and decreasing rainfall is also observed in 2021, where the average maximum temperature increases by 2.3 °C, the minimum temperature by 0.9 °C. One of the factors of the increase in the maximum air temperature remains the frequent fires as a global and local phenom-

enon, which destroy the land cover, the increase in evaporation, the decrease in soil moisture, heat waves and the intensification of drought. On the Mediterranean coast, more than 300 thousand km<sup>2</sup> are subject to desertification also due to burning by fires. Albania is considered one of the countries most at risk from climate change. In the period 2007-2020, the burnt areas in Albania mark about 356915 ha of forest land, or 30-35% of the total forest area.

In the conditions of lack of rainfall and rising temperatures, the flow level of all rivers almost decreases significantly in the summer season. In all the rivers of Albania, in the river Shkumbin, e.g. in the Uren e Rogozhina measurements, the average water flows m<sup>3</sup>/sec in the summer season (June-August) occupy only 8% of the annual flows and 77% in winter-spring (Lushaj et al, 2004). Drino River (Ura Leklit station) flows in the summer season account for only 6% of the flow, in the winter and spring seasons 81.2% (Lushaj Sh, Toto R, 2018). According to JRC Report, in Europe “Groundwater levels remained lower than normal across of the continent for the whole summer 2020” (Barbosa P. 2021).

In Albania, it is necessary to review the National Action Program in the fight against desertification at the national and local level, with the aim of increasing management capacities and the role of local communities, identifying problems and areas affected by drought and desertification, planning measures from the bottom-up and deepening scientific research. Although Albania has made progress in drafting legislation in this area, implementation is at a low level.

### Loss of soil moisture

Soil moisture is an indicator of the productive capacity of the soil, and varies depending on the amount of precipitation and air temperature. The loss of soil moisture is an indicator of the intensification of environmental, agricultural and ecological drought, mainly due to the decrease in the amount of precipitation and the increase in air and soil temperatures. From the analysis of 14 soil samples, in different areas and periods, it results that the moisture content changes in correlation with the season, the area, and the air temperature (table 4).

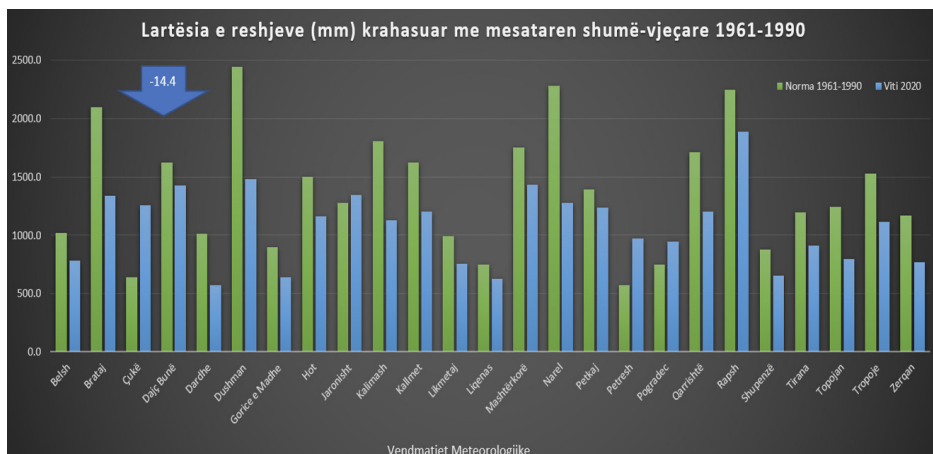
Soil samples	Stations	Depth cm	Date of sampling	Soil moisture %
1	Vlore	31-60	6.08.2019	8.75
2	Bexull (Tirane)	0-60	17.04.209	19.8
3	Gjirokaster	0-30	25.7.2020	12.48
4	Zheje (Lac)	0-30	24.12.2020	27.2
5	Qerret (kruje)	0-30	10.06.2020	15.8
6	Xhafzotaj	0-30	19.08.2020	12.23
7	Mamuras	0-30	10.02.2021	19.6
8	Dorez	0-30	26.02.2021	17.51
8	Kelcyre	0-60	25.03.2022	17.9
10	Libohove	0-60	25.03.2022	19.4
11	Grabian	0-30	28.03.2022	14.9
12	Katundi Ri	0-30	21.08.2023	4,81
13	Fushe-kuqe	0-30	21.08.2023	12.25
14	Kutalli (Berat)	0-30	21.08.2023	7.34

Table 4: Soil moisture in different periods 2019-2023.

In table 4, the samples analyzed during the months of December-February, the soil moisture content is 16.35-27.2%, in March 14.9-19.4%, in June 15.8% and in August 4.81-12.2% (samples 1, 6, 12, 13, 14). The reduction of precipitation, which is predicted to decrease up to 8% by 2050, as well as the increase of transpiration and evaporation of water from the ground, the decrease of the snow cover, will cause in Albania a moisture deficit of up to 18% or 700 m3 of water/ha for agricultural use. Due to the reduction of rainfall and the increase in temperatures, the intensification of drought and the lack of water for irrigation, the agricultural production per unit area varies to decrease up to 25-35%. Measures to increase investment in irrigation remain important, as the actual irrigation of agricultural land varies up to 35-40% of the surface from 65.8% in 1990.

No	Stations	1961-1990	2020 mm	Difference 2020/61-90	Stations	1961-1990	2020 mm	Difference 2020/61-90
1	Belsh	1022	781	-240	Mashtërkorë	1750.	1432.	-318.
2	Brataj	2098	1337	-761	Narel	2279.2	1274.4	-1004,8
3	Çukë	641	1257.	616	Petkaj	1396.	1240.	-156.
4	Dajç Bunë	1623	1429.	-194	Petresh	1622.	969.	349.
5	Dardhe	1012	575.	-436	Pogradec	747.8	942.5	194.7
6	Dushman	2443	1484.	-959.7	Qarrishtë	1711.7	1201.1	-510.6
7	Gorrie	897.0	641.2	-255.8	Rapsh	2244.4	1890.8	-353.7
8	Hot	1500.3	1161.6	-338.7	Shupenzë	879.7	652.7	-227.0
9	Jaronisht	1277.9	1343.0	65.1	Tirana	1198.3	909.4	-288.9
10	Kalimash	1807.1	1130.9	-676.2	Topojan	1245.9	797.4	-448.5
11	Kallmet	1622.6	1202.8	-419.8	Tropoje	1527.7	1116.7	-411
12	Likmetaj	996.2	755.0	-241.2	Zerqan	1168.3	772.4	-395.9
13	Liqenas	752.1	629.2	-122.9				

Table 5: Amount between annual rainfall mm, in 25 meteorological stations of the country in the years 2020, 1961-1990 / Source: IGJEU 2020, Statistical Yearbook 1961-1990



Graph 1: Amount of precipitation, annual average year 2020, compared to the 30-year average 1960-1990 / Source: Institute of Geosciences

## Climatology of precipitation in Albania

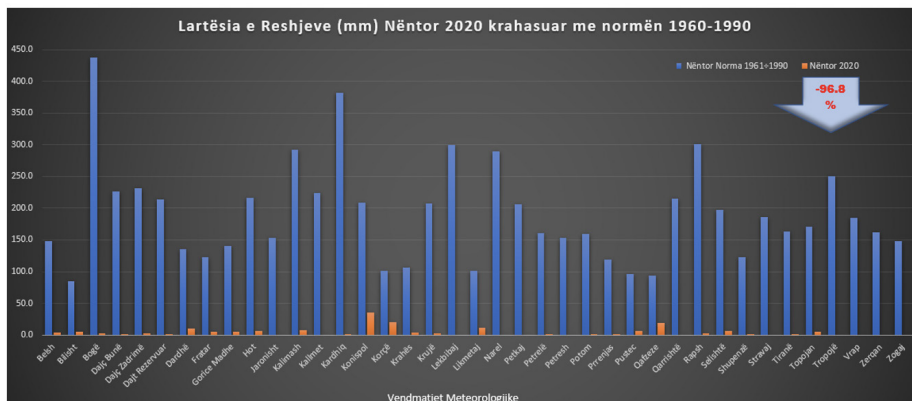
The spatial and temporal distribution of atmospheric precipitation in the Albanian territory depends on many factors, the most important of which are the phytoclimatic zones and subzones, the circulation of air masses, the height above sea level, the distance from the coastline, etc.

These and other local factors cause the amount of precipitation to be around 3000 mm per year in the northern Alps of the country, while in the southeastern areas falls average of 700 mm. Evaluating the situation in 2020 with the study of 25 meteorological measuring sites, distributed throughout the country, results that the amount of precipitation is decreased by 14.4%, compared to the multi-year average 1961-1990 (table 5, graph 1). The amount of precipitation in 21 stations for 2020 ranges from 122.9-959.7 mm less than the 30-year averages from 1961-1990 and only in 4 stations is higher.

Thus, from the analysis of the indicators, the year 2020, in 39 meteorological measurement sites, shows that in 21 stations the precipitation in November is lower than the 30-year average of the same month 1961-1990, creating a deficit of 96.8% of the multi-year average and (in 12 stations no rainy day occurred), in 13 stations up to 3 mm per month and in 14 stations with more than 3

Amount of precipitation (mm), November 2020				Rainfall height mm			
No.	Stations	1961-1990	2020	No.	Stations	1961-1990	2020
1.	Belsh	148.2	3.7	13	Lekbibaj	299.5	0
2.	Bilisht	85.1	4.8	14	Narel	290.3	0
3.	Bogë	437.2	3	15	Petkaj	206.7	0
4.	Dajç Bunë	226.9	0.5	16	Petrelle	160.6	0.8
5.	Dajç Zadrimë	231.1	2.3	17	Pertesh	153.0	0
6.	Dajt Rezervuar	213.7	0.2	18	Stravaj	186.3	0
7.	Dardhë	135.5	10.5	19	Tropoje	250.9	0
8.	Fratar	123.4	5.7	20	Vrap	184.4	0
9	Hot	216.5	7.0	21	Zerqan	162.1	0
10	Kalimash	292.1	8.1	22	Zogaj	148.4	0
11.	Kallmet	224.3	0.0	23	Kruje	207.6	3.0
12.	Kardhiq	382.4	0.3	24	Jeronisht	153.5	0

Table 6: Average rainfall for November 2020.



Graph 2: The amount of average annual precipitation in November 2020 / Source: Institute of Geosciences

mm. The precipitation values of 2021 indicate a decrease in the number of rainy days compared to the 30-year average of 1961-1990 with a negative impact on droughts.

### **Impacts of drought on productive capacity, desertification and land degradation**

Extreme weather events have drastic impacts on land (especially agricultural land), the environment and the Albanian economy. In the conditions of climate change, intensified extreme weather events cause impacts on the territory, especially on agricultural land, such as: Frequent flooding of lands in extreme conditions up to 100 thousand ha, extreme high temperatures and heat waves, droughts prolonged seasonal in the summer-autumn period, frosts, storms, forest fires.

Land desertification has affected 2/3 of the total surface, erosion and landslides, land degradation and loss of biodiversity and productive capacity. After 1990, with the privatization of land, the irrigation capacity of agricultural lands from 65.8% of the total area currently occupies about 35-40% of the area, the irrigation forms and technology that are applied lose 55-65% of the water in the network, in the reservoirs, in which about 50% of the water used for irrigation is provided.



Source: Web

In the territory of the country, after 1990, it is planned to build over 400 small hydropower plants using the water of rivers, mountain streams, where the construction of dams, hydrological modifications and the use of water negatively affects the biodiversity of the area, etc.

All scenarios according to the IPCC reports show that the territory of Albania is likely to become warmer. Increasing trends in annual and seasonal temperatures, both in minimum and maximum and extreme values, are expected to increase. Projections show that the amount of precipitation has a negative trend for all seasons, a tendency for intensification of drought, erosion and landslides, coastal erosion and salinization. After 1990, with the interruption of the coastal land desalination program in Albania, in the absence of irrigation, in the Karavasta area, the salt content reached 9.96%, or 10 times higher than the maximum salinization limit (Lushaj Sh, 2021). The lands of Albania will be affected by drought and climate changes, and in particular the agricultural lands, where over 50% of the surface lies in the coodrine-mountainous area and with very limited irrigation. Agriculture is a primary economic activity affected by drought and climate change, which is applied to about 35-40% of the surface from 65.8% in 1990.

### **Housing-drought-climate change correlation**

According to the literature “Housing relates to climate change not just as a contributor to greenhouse gas emissions but also as a factor that both exposes us to and protects us from climate-related risks, depending on where it is sited and how it is constructed” (OPD&R, 2022). Many countries are experiencing extreme droughts, massive fires, floods and erosion even in residential areas, built without foreseeing the risks and principles of urban planning and the consequences of drought. Therefore, the planner is required to exclude the development in the endangered areas

as well as the way of building houses, to contribute to the reduction of greenhouse gas emissions and atmospheric warming. Albania has all the opportunities and resources to increase renewable energy, including the geothermal energy of the earth at small depths of 8-10 m for the supply of housing and the reduction of greenhouse gas emissions in the atmosphere.

## **Conclusions and Recommendations**

Albania is a country affected by meteorological drought, as a result of the decrease in the amount of precipitation by about 10-15% and the general tendency of the increase in temperatures to 1.5-3 degrees, compared to the 30-year average 1961-1990. From hydrological drought as a result of the reduction of water flows and reserves, agricultural drought, environmental drought as well as from the economic, social and environmental impacts of drought. In 2020, the average maximum temperature is 2.8 degrees higher than the 30-year average 1961-1990. The drought is expected to intensify, given the fundamental differences in climate indicators between the 4 phyto-climatic zones and 13 subzones of the country.

Land drought and impacts on agriculture have intensified. From the analyzes of soil samples in different areas and periods of the country (2019-2023), the moisture content results from 4.81% in August to 27.2% in December. To cope the expected climate changes, it is necessary to increase investments for increasing irrigation capacity, at least 2.5 times higher than at present, improving irrigation technology, increasing water efficiency 3-5 times, compared to traditional irrigation that is widely applied.

The National Action Program needs to be reviewed, for combating drought and desertification, adapting to climate change at the national and local level, the establishment of specialized structures, preferably a specialized unit for drought, to build qualified capacities in this field for the implementation of measures, national programs with international protocols.

The objectives of combating drought, which are included in the 15-year General Local Plans of the municipalities, must be integrated with the implementation plans. Meanwhile, the risks caused by drought (flooding areas, risks from fires, erosion and landslides, etc.), should be foreseen in urban development plans as dangerous areas for housing. Drought monitoring should be perfected as a coordinated system, including other indicators, creating an identifying database with a scientific context.

Control over the territory, water resources, cutting and burning of forests, re-issuance of building permits for HCs after 1990, hydrological modifications and water depletion of rivers and streams negatively affects aquatic and agricultural ecosystems and intensification of drought. Albania must develop a strong international cooperation, in informing and implementing joint plans and protocols in the fight against drought and land desertification.

## **References**

- [1] Tallaksen, L. M., van Lanen, H. A. J. (Eds.), 2004. Hydrological Drought: Processes and Estimation Water Sci. 48, Elsevier, Amsterdam
- [2] Barbosa P., Masante D., Arias Muñoz C., Cammalleri C., De Jager, A., Magni D., Mazzeschi M., McCormick N., Naumann G., Spinoni, J, Vogt, J-JRC, 2021, TECHNICAL REPORT, Droughts in Europe and Worldwide 2019-2020,
- [3] Lushaj Sh, Aliaj B, 2018 "Th rol of Green and Landscape Planning in urban policies: the case of Tirana" publication on the procensing of TAW 2018 International scientific Conference, Polis PRESS -ISBN 9789928 4459 40), pages 139-1510.

- [4] Kucaj E., Osmani M., Phytostabilization Potential of *Salix alba* as Biomonitors of Heavy Metals in Soil Pollution near the Erzeni Riverbank. *International Journal of Environmental Science and Development*. International Journal of Environmental Science and Development (IJESD), ISSN: 2010-0264, Scopus.DOI: 10.18178/ijesd.2023.14.1.1411, Vol.14 No. 1, 2023. pp.30-36.
- [5] Kucaj E., Osmani M., Assessment of Physico-Chemical Characteristics of Lana, Tirana and Ishmi Rivers Using IDW Interpolation. *International Journal of Environmental Science and Development (IJESD)*, ISSN: 2010-0264, Scopus.DOI: 10.18178/ijesd.2022.13.6.1397, Vol.13 No. 6, 2022. pp. 223-230.
- [6] Akademia e Shkencave, Instituti Hidrometeorologjik, 1975, *Klima e Shqipërisë*
- [7] Akademia e Shkencave, Instituti Hidrometeorologjik, 1975 *Atlasi Klimatik i RPSSH, Korrik 2021 Albania's First Biennial Update Report*.
- [8] Instituti Gjeoshkencave, 2020-2021, *te dhena meteorologjike*.
- [9] Christensen, J., Christensen, O., 2007. 'A summary of the PRUDENCE model projections of changes in European climate by the end of this century'. *Climatic Change* 81, 7-30.
- [10] Dhima K, Gjergji LL, 1980, "Report of experimental tests of the effectiveness of irrigation in agricultural crops".
- [11] IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems, 2021.
- [12] Kucaj E, 2022 Monograph "Rehabilitation Technology for the Protection of the Erzen River from Erosion". Toena Publications, Tirana 2022, ISBN: 978 9928 376 28 2.
- [13] Lushaj Sh, Laze P, Kovaci V, Dukoli S, Lleshi B, Dhimitri A, Cukalla M, Mema I, Caushi A, Xhelepi S, Bogdani M, Kurteshi F, Dedej Z, Qokaj A, 2004, " Study reports for each watershed: "Assessment of the consequences of the environmental impact, hydrodynamic problems and rehabilitation of the condition of all riverbeds in the watersheds" Drin - Bune, Seman, Mat, Vjosë, Erzen, Shkumbin." me VKM nr.760, datë 13.11.2003).
- [14] Lushaj Sh, Toto R, 2018 "The final report of the Strategic Environmental Assessment of the Local General Plan, Dropull Municipality"
- [15] Lushaj Sh, 2021 "Salinization of agricultural land in the coastal area Lushnje-Vlore and measures to prevent further salinization" (Lushaj Sh, 2021, Raport)
- [16] OBM, 2016, Buletini, Handbook of Drought Indicators and Indices,
- [17] Vörösmarty, C.J., Green, P., Salisbury, J., Lammers, R. B., 2000. Global water resources: vulnerability from climate change and population growth. *Science* 289, 284-288
- [18] Albania (2018). National Strategy of Water Resources Integrated Management 2018–2027. URL: <http://extwprlegs1.fao.org/docs/pdf/alb181221.pdf>
- [19] Ciardini, V. et al. (2016). Global and Mediterranean climate change: a short summary. *Annali*. 52(3). URL: <https://annali-iss.eu/index.php/anna/article/view/471>
- [20] Office of Policy Development And Research, "The Role of Housing in Climate Change Mitigation and Adaptation". Summer 2022. <https://www.huduser.gov/portal/periodicals/em/Summer22/>
- [21] UNDP (2016). Risk-Proofing the Western Balkans. URL: [http://hdr.undp.org/sites/default/files/risk\\_proofing\\_the\\_western\\_balkans.pdf](http://hdr.undp.org/sites/default/files/risk_proofing_the_western_balkans.pdf)



# **The Smart Tourist Spanish Destination Program Critical Success Factors**

Carmen DE-PABLOS-HEREDERO<sup>1</sup>

Miguel BLANCO-CALLEJO<sup>1</sup>

<sup>1</sup>Rey Juan Carlos University, Spain

DOI: 10.37199/c41000124

## **Abstract**

Smart Tourist Destinations (STD) are innovative tourist destinations highly enabled by technological infrastructures, aimed to assure the sustainable development of tourism, allowing full accessibility, and making easier for visitors to interact with elements in destination. Literature review evidence shows how these destinations apart from increasing the quality of tourists' experiences at destinations, improve the quality of life among residents. In the last decade, a great investment has been done in the creation and maintenance of STD. Spain is the second world power in tourism, and it has recently put into action the STD Program. This program is oriented to develop a management model of tourism that includes different dimensions: governance, innovation, technology, sustainability, and accessibility oriented to create and preserve STD. It is supported by a method concerned with providing recommendations, action plans and a system to monitor final outcomes. In this paper, the Spanish STD Program is described, and a case of success is presented, focusing on the main benefits of the method such as the fact that it is a powerful tool to prioritize some innovative actions, the achievement of greater competitiveness because of a rational use of tourism resources, the improvement in the quality of stay of visitors and the increase in terms of residents' quality of life. Long term positive impacts in the environmental areas are also analysed from a sustainable perspective.

## **Keywords**

Smart Tourist Destination, governance, innovation, technology, accessibility, sustainability

## **Introduction**

The Smart Tourism Destination (STD) is an emerging paradigm for optimizing the use of touristic resources, enhancing tourism experiences, increasing destination competitiveness, and improving residents' quality of life [1]. The scientific debate developed since 2015 is rooted on the application *mutatis mutandis* of the concept of smart city and its main features to the tourism domain [2]. Today, the concept of STD is directly linked to that of smart city where sustainability is the main strategic aim of the tourism planning process [3]. A growing number of academic studies have been attempting to analyse empirically the technological and business foundation of this concept [4]. As claimed by [5], the STD concept is the result of two converging trends: on the one hand eTourism [6], [7], [8] and on the other hand, the opportunities generated by the adoption of the smart city paradigm to optimize the use of tourist resources, enhance tourist experiences, increase the competitiveness of destinations and improve the quality of life of residents [9].

The STD is built on a shared platform of state-of-the-art technologies that integrates information on tourism businesses and use of resources; interconnects dynamically all the stakeholders to share relevant knowledge; manages big data and data analytics tools for decision-making and tourism experience co-creation [10], [11], [12].

The following characteristics are necessary for smart tourism: integrated technological environments, responsive micro- and macrolevel processes, end-user devices, and stakeholders that actively utilise smart digital platforms [13].

To increase the competitiveness of destinations it is necessary to connect stakeholders dynamically allowing that the instantaneous exchange of information and accessibility is guaranteed from a variety of end user devices. The emphasis is mainly on the so-called "smart tourism experiences" [14]. The connected tourist interacts, participates, and shares more easily, increasing the co-creation level of the tourism product and adding new value for all [15], [16], [17]. Moreover, the intensive use of technological infrastructure enhances the consumer perspective, improving the tourist experience of visitors in terms of co-creation and customization [18].

Despite the numerous theoretical contributions on smart destination, it is still an emerging topic in the literature that requires the combination of knowledge from different disciplines [18] not only from information systems, tourism management, marketing, urban planning, destination management and governance but also from data processing and analysis. Moreover, there are no studies that propose a process model providing an operational path for transforming a destination into a smart destination and that suggest best practices to ensure its sustainable management [19]. This study was therefore carried out to contribute filling this research gap by presenting Spanish's Smart Tourist Destination program as well as a case study in Spain: the Valencia region, which capital city, Valencia was elected European Smart Capital in 2022.

The rest of the paper is organized as follows. To begin with Spanish Smart Tourist Destination Program is presented. After that, the paper describes the case of Valencia Region as a benchmark in STD. Finally, conclusions, limitations, and future research lines are suggested.

## **Smart Tourist Destination Program**

The Smart Tourism Destination Program (STDP) is a Spanish Government Initiative, started in 2012, within the 2012-2015 National Integral Spanish Plan for Tourism (PNIT), promoted by the Spanish Secretary of State for Tourism (SETUR) and managed by the State Society for the Management of Innovation and Tourism Technologies (SEGITTUR). Its main objective is to help make tourist destinations more competitive and improve the quality of life of their residents by focusing on five key areas of action: governance, innovation, technology, sustainability and ac-

cessibility [20]. It also seeks to create a homogeneous framework that establishes the minimum requirements to classify tourist destinations as “Smart Destinations” (SD).

The STDP ranks tourist destinations as innovative ones based on a state-of-the-art technological infrastructure, thus guaranteeing the sustainable development, being accessible to anyone, enabling visitors to integrate and interact with their surroundings, raising the quality of their experience at the destination, and improving quality of life among residents [16] [20].

STDP seeks to implement a management model that considers the cross-cutting nature of tourist activity and the differentiating characteristics and features of each destination. It relies on a diagnostic methodology, which leads to a set of recommendations, an action plan and a monitoring system, thus facilitating a process of continuous improvement, tailored to the present and future challenges of the tourism industry [20].

From the practical perspective, the SPTD counts on with a tool to support destinations that have compromised to implement the Intelligent Tourism Destination (ITD) diagnosis and action plan. The Network of Smart Tourism Destinations enables synergies and knowledge transfer, maximizing the benefits of the ITD model. Normalization is key to work in the most objective possible way towards an increasing level of “intelligence” of the destination. The Spanish Standardisation Association (AENOR) has published some innovative standards that will contribute to the positioning and global recognition of an ITD: Standard UNE 178501:2018 Management system for smart destinations, Standard UNE 178502:2018 Indicators and tools for smart tourism destinations, and Standard UNE 178503 Smart Tourist Destinations. Semantics applied to tourism. The methodology to become an ITD works around a lifecycle composed by 2 cycles and 5 phases (Figure 1):



Figure 1: Smart Tourist Destination lifecycle / Source: Ministry of Industry, Trade and Tourism (2023)

Cycle 1, Diagnosis and planning, starts with a diagnosis request from the destination, which undertakes to implement the Smart Tourist Destination action plan and formalise its membership in the Smart Tourist Destinations Network. Once that the acceptance has taken place, the Diagnostic Phase (Phase 2) starts with the main objective of initiating the recognition of the destiny as a STD. In this phase 97 requirements and 261 indicators are measured to analyse the degree of maturity

of the destination. A list of recommendations is also generated oriented to draw up an action plan. The third phase 3, Strategy and Planning, starts the process for implementing the actions aligned with the recommendations established in the previous phase. They are scheduled according to identified priorities and through the involvement of those responsible, including investment needs. Once these phases have been completed, the destination can be recognized as a Smart Destination by achieving a degree of compliance equal to or higher than 80% of the requirements. If it falls short of this percentage, it will qualify as an Affiliate Smart Tourist Destination. In both cases, the process follows in cycle 2, Implementation and Monitoring. Those destinations that have obtained a score in the degree of compliance with the requirements of the ITD methodology, equal to or greater than 80%, are recognized with the STD badge. In these cases, the destinations start a process of continuous improvement during two years. In this time, destinations are expected to working continuously to improve in terms of tourist quality.

Cycle 2. Implementation and monitoring. During this cycle, the action plan is implemented and the accreditation undergoes regular monitoring and renewal. In this cycle, Associated Smart Tourist Destinations move to phase 4 and proceed to implement the proposed actions. Once the Action Plan has been put in place and the necessary degree of compliance has been achieved, they will get the Smart Tourist Destination accreditation, thus moving on to Phase 5 – Renewal. This last phasetakes place every two years to validate compliance with all Smart Tourist Destination requirements and indicators.

Below, a summary of the national and international destinations that have completed the diagnostic process following the ITD methodology are enumerated (Table 1).

Once the Spanish STD Program has been presented in the next section, we will describe one of the most successful initiatives that have been developed at the regional level in the country so far.

### **Valencia Region: a case of success in the implementation of the ITD Model**

The Valencia Region is located in the East of Spain, bordered by the Mediterranean Sea, divided into three provinces: Castellón, Valencia and Alicante. Its climate with winters of temperatures around 11 and summers around 25 Celsius degrees make the region a striking area for sun and beach tourism and, although this type of tourism is the most exploited there, we also find rural tourism, mountain and hiking trails in the inland areas of Castellon, business tourism, festivals, concerts and congresses, and cruise tourism, mainly located in the city of Valencia. Valencia region generates 9.6% of the national GDP [21]. Valencia was awarded as European Capital of Intelligent Tourism in 2022 [22] and it will become Green European Capital in 2024 [23].

Valencia joined the ITD Network in 2019, and got the ITD mention in 2022. Environmental, social and economic sustainability are at the heart of a tourism strategy designed to become an ITD [20].

It established the Network of Intelligent Tourist Destinations Valencia (Network ITD-CV), as an union of destinations created to start a collaborative learning environment. Promoting the collaboration amongst members to push the digitization of tourism activity as an instrument that serves efficiency and effectiveness in tourism management, the structuring, implementation of the ITD-CV model and preventing the digital rupture between rural and urban destinations are amongst the main short term actions in this network.

Following, the different actions taken in the Valencia Region for each of the five dimensions of the

Destination	Year of first evaluation
International destinations	destinations and years of first evaluation
Asunción (Paraguay)	2023
Bogota (Colombia)	2021
Medellin (Colombia)	2020
Montevideo (Uruguay)	2023
Santiago de Cali (Colombia)	2022
Tequila (México)	2020
National destinations (per regions)	destinations and years of first evaluation
Andalucía	23 destinations from 2019 to 2022
Aragón	4 destinations from 2019 to 2022
Canary Islands	7 destinations from 2019 to 2020
Cantabria	2 destinations in 2019
Castilla-La Mancha	3 destinations from 2019 to 2020
Castilla-Leon	9 destinations from 2019 to 2022
Cataluña	10 destinations from 2019 to 2022
Ceuta	1 destination in 2021
Navarra	2 destinations from 2019 to 2022
Madrid	6 destinations from 2019 to 2022
Valencia	4 destinations in 2019
Extremadura	9 destinations from 2018 to 2023
Balear Islands	3 destinations from 2019 to 2020
La Rioja	1 destination in 2021
Basque Country	5 destinations from 2019 to 2022
Asturias	4 destinations from 2019 to 2020
Murcia	6 destinations from 2019 to 2022

Table 1: International and national destinations evaluated under the ITD methodology / Source: Data extracted from the ITD main web page <https://www.destinosinteligentes.es/destinos-inteligentes/>, 10th August, 2023

ITD Model are presented.

### **Governance dimension**

Governance refers to a government practice that can be measured and it is oriented to effectively manage the tourism sector at different levels of government through efficient, transparent and accountable forms of coordination, collaboration and cooperation, to achieve the goals of collective interest shared by the networks of actors that influence the sector, in order to achieve solutions and opportunities, based on agreements focused on the recognition of interdependencies and shared responsibilities [24] [25].

The Valencia Region includes this aspect of governance both in Law 15/2018, of 7 June, on tourism, leisure and hospitality and in the White Paper on Tourism of the Valencia Region [26] on a

more operational basis, which contains the different tourism governance and revitalization plans and the ITD master plans, among other planning resources. The proposals in the White Paper fall into three areas: the territory and tourist destinations, tourism organisations and competition, and tourism markets and products [27].

### **Sustainability dimension**

The development of tourism activities in the Valencia Region has historically stimulated an intense process of urbanization in coastal areas, with different levels of intensity (human tension in the territory) and different modes of occupation. In this situation, the evolution of sustainable tourism exceeds the policies of the tourism sector and is directly related to different regional and departmental policies. The spatial planning policy determines the territorial model at regional level through the Territorial Strategy of the Valencia Region including objectives related to tourism activities: to restore the coasts as a territorial resource, promoting the tourism model towards sustainable land use schemes. Territorial policy tools, particularly territorial and sectoral plans, impact in the organization of the tourist territory: the Territorial Action Plan of the Coastal Green Infrastructure of the Valencian Community (PATIVEL), seeks to protect the green infrastructure of the Coast, thus avoiding and correcting municipal planning dysfunctions. Law 5/2014 on spatial planning, urbanism and landscape of the Valencia Region incorporates landscape conservation policies, using three specific tools: landscape research, integration and planning management. Policies related to nature reserves have played a fundamental role in the development of sustainability, because it affects 39.25% of the soil of the Valencia Region. Other policies also have a significant impact on tourism activities, such as infrastructure and water management [27].

The White Paper on Tourism highlights interinstitutional collaboration as the main factor for the development of actions that can be implemented in the territory, to provide the tourism model with sustainable and competitive conditions through four objectives: updating and diversification of mature coastal areas, integration of the tourist function in cities and metropolitan areas, nature reserve tourism, internal structure approved through tourist centers and geographic complementarity promotion as differential value in travel offers. The management of the tourist area is completed with initiatives for prevention and adaptation to climate change, incorporation into the Code of Ethics of Tourism of the Valencia Region, raising awareness of demand and creating products that adapt to the concept of sustainability [28].

### **Accessibility dimension**

The Valencian Community, has promoted the Strategic Plan of Accessible Tourism. This document serves to promote accessible tourism and to perform a strategy of dissemination of accessible tourism in Valencia destinations. In recent years the region has drawn up proposals to promote the improvement of the accessibility of the destination, such as the introduction of magnetic loops in the Tourist Info Network, the Qualitur certificate that sets standards of accessibility and the modification of bathing places. The Good Practices Guide for tourist establishments in the Valencia Region includes accessibility criteria for places and resources [29] [30]. The White Paper on Tourism of the Valencian Community includes also some aspects related to accessible tourism. The Law 15/2018, of 7 June, leisure and hospitality in Valencia region refers to accessibility too.

### **Innovation dimension**

The Valencian Tourism Agency has performed interesting initiatives regarding innovation in the

Region. First, the creation of the Valencian Institute of Tourism Technologies (Invatur.es), which has been promoter for innovation. Amongst main initiatives done so far, we find the application of business intelligence methods to support tourist info, big data projects, booking monitor tools, social networking barometers and the involvement in ITDs. In addition, the network of CdT centres (Centres de Turisme) (<https://cdt.gva.es/red-de-centros>), carries out a great job of training quality and differentiated human resources, which invests in the professionalization of the sector. Along with this initiative, in the last two years the Accetur program is also gaining strength to support projects of entrepreneurs in tourism.

## **Technology dimension**

The tourist intelligence for a ITD consists in choosing the most important data for the local managers and businesses. Its analysis and integrated management system based on key indicators provides competitive advantages to support the smart actions carried out. This intelligence is a key factor of the

ITDs, as reflected in the Operational Manual for the configuration of ITDs [31]. Two advanced practices concerning technology have been developed in the region: Benidorm and Big Data, is one of the most interesting tourism intelligence projects of the region, which has initiated Big Data techniques to better know customers, with the aim of improving the tourist experience and their online marketing processes. [32]. Through the analysis of the data collected on social networks, Benidorm aims to know the needs of the tourist to improve their experience and focus on promotion and sales campaigns. The other practice is the Open Data Strategy in the Tourist Info Network, oriented to make easier the information managed by the public administration. Any person or company can examine, reuse and redistribute data, producing new services and improving transparency (open government) and to increase wealth generation through the intelligent organisation of resources (smart governance). The Valencian Tourism Agency, in collaboration with the Intelligent Data Analysis Laboratory of the University of Valencia, developed the tool Open Data Tourist Info. Citizens and businesses can reuse this data to produce economic value [33].

## **Conclusions**

Governments have invested in recent years to create models of sustainable, technological and efficient tourist cities. In this scenario, the ITDs emerge, that is, innovative territories, reaffirmed on an advanced technological structure, which take advantage of the growth of ICTs to offer efficient services. Its purpose is to ensure the sustainable development of the territory, accessible to all and contribute to the relationship and integration of the visitor with the environment.

Spain has created different mechanisms to transform tourist destinations into ITD. Some key regulation mechanisms around the Standard UNE 178501 Intelligent Tourist Destination Management System have also been built, aimed to regulate and establish a unique framework for destinations to be considered “smart”.

Bearing in mind that this form of management calls for an open information and communication system and collaboration between actors, smart destination networks have also been developed, to bring together destinations to help them transform, allowing an exchange of information and experiences, developing joint projects and creating instruments or tools that facilitate the evaluation and detection of opportunities for improvement.

The Valencia Region has taken very big steps to become the territory that it is today, creating its own model based on the dimensions of the Spanish Smart Tourism Destination Program (STDP): governance, sustainability, accessibility, innovation and technology. It can become an inspiration

so that other regions can find a right track to become an intelligent territory.

This paper just shows the application of the STDP to a region, recognized as successful. Future analysis should show some other initiatives. Best practices can be of help for the development of Smart Tourist Destinations anywhere.

## References

- [1] Gretzel, U., Werthner, H., Koo, C., & Lamsfus, C. (2015). Conceptual foundations for understanding smart tourism ecosystems. *Computers in Human Behavior*, 50, 558-563. <https://doi.org/10.1016/j.chb.2015.03.043>
- [2] Ivars-Baidal, J.A., Celdr\_an-Bernabeu, M.A., Maz\_on, J.N. and Perles-Ivars, Á.F. (2019). Smart destinations and the evolution of ICTs: a new scenario for destination management? *Current Issues in Tourism*, 22(13), 1581-1600. <https://doi.org/10.1080/13683500.2017.1388771>
- [3] Khan, M.S., Woo, M., Nam, K. and Chathoth, P.K. (2017). Smart city and smart tourism: a case of Dubai. *Sustainability*, 9 (12), art. 2279. <https://doi.org/10.3390/su9122279>
- [4] Baggio, R., Micera, R., Del Chiappa, G. (2020). Smart Tourism Destinations: a critical reflection. *Journal of Hospitality and Tourism Technology*, 11(3), 559-574. <https://doi.org/10.1108/jhtt-01-2019-0011>
- [5] Errichiello, L. and Micera, R. (2017). Smart tourism destinations: advancing theory and practice. *European Journal of Tourism Research*, 17, 5-6. <https://doi.org/10.54055/ejtr.v17i.290>
- [6] Buhalis, D. (2003), *eTourism: Information Technology for Strategic Tourism Management*, Harlow: Pearson/Prentice-Hall.
- [7] Buhalis, D. and Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the internet – the state of eTourism research. *Tourism Management*, 29 (4), 609-623.
- [8] Buhalis, D. and Jun, S.H. (2011). *E-Tourism*, Contemporary Tourism Reviews, Oxford: Good-fellow Publishers.
- [9] Lopez de Avila, A. (2015). Smart destinations: XXI century tourism, Paper presented at the ENTER2015 conference on Information and Communication Technologies in Tourism, Lugano, CH, (February 4-6).
- [10] Wang, D., Li, X. R., & Li, Y. (2013). China's "smart tourism destination" initiative: A taste of the service-dominant logic. *Journal of Destination Marketing & Management*, 2(2), 59-61. <https://doi.org/10.1016/j.jdm.2013.05.004>
- [11] Lamsfus, C., Martín, D., Alzua-Sorzabal, A., & Torres-Manzanera, E. (2015). Smart tourism



destinations: An extended conception of smart cities focusing on human mobility. In *Information and Communication Technologies in Tourism* (pp. 363-375). Springer International Publishing.

[12] Del Chiappa, G. & Baggio, R. (2015). Knowledge transfer in smart tourism destinations: analyzing the effects of a network structure. *Journal of Destination Marketing and Management*, 4(3), 145-150. <https://doi.org/10.1016/j.jdmm.2015.02.001>

[13] El Archi, Y.; Benbba, B.; Nizamatinova, Z.; Issakov, Y.; Vargáné, G.I.; Dávid, L.D. (2023) Systematic Literature Review Analysing Smart Tourism Destinations in Context of Sustainable Development: Current Applications and Future Directions. *Sustainability* 15, 5086. <https://doi.org/10.3390/su15065086>

[14] Buhalis, D., & Amaranggana, A. (2015). Smart tourism destinations enhancing tourism experience through personalisation of services. In *Information and Communication Technologies in Tourism* (pp. 377-389). London: Springer International Publishing.

[15] Del Vecchio, P., Mele, G., Ndou, V. and Secundo, G. (2018). Creating value from social big data: implications for smart tourism destinations. *Information Processing and Management*, 54 (5), 847-860. <https://doi.org/10.1016/j.ipm.2017.10.006>

[16] Almobaideen, W., Krayshan, R., Allan, M. and Saadeh, M. (2017). Internet of things: geographical routing based on healthcare centers vicinity for mobile smart tourism destination. *Technological Forecasting and Social Change*, 123, 342-350. <https://doi.org/10.1016/j.techfore.2017.04.016>

[17] Buonincontri, P. and Micera, R. (2016). The experience co-creation in smart tourism destinations: a multiple case analysis of European destinations. *Information Technology and Tourism*, 16(3), 285-315. <https://doi.org/10.1007/s40558-016-0060-5>

[18] Vargas-Sanchez, A. (2016). Exploring the concept of smart tourist destination. *Enlightening Tourism: a Pathmaking Journal*, 2, 178-196.

[19] Boes, K., Buhalis, D. and Inversini, A. (2016). Smart tourism destinations: ecosystems for tourism destination competitiveness. *International Journal of Tourism Cities*, 2 (2), 108-124.

[20] Ministry of Industry, Trade and Tourism (2023). *Destinos turísticos Inteligentes*, accessed from <https://www.destinosinteligentes.es> at 8th August, 2023.

[21] Valencia Region (2023). Valencia region main web page. Accessed at <https://www.comunitat-valenciana.com/en/home>, 14th August, 2023.

[22] European Commission (2021). Valencia, capital of Intelligent Tourism, 2022. Accessed at: [https://spain.representation.ec.europa.eu/noticias-eventos/noticias-0/valenciacapital-del-turismo-inteligente-2022-2021-10-29\\_es#:~:text=El%20pasado%2027%20de%20octubre,por%20parte%20de%20ambas%20localidades.](https://spain.representation.ec.europa.eu/noticias-eventos/noticias-0/valenciacapital-del-turismo-inteligente-2022-2021-10-29_es#:~:text=El%20pasado%2027%20de%20octubre,por%20parte%20de%20ambas%20localidades.), 14th August, 2023.

- [23] European Commission (2022). Valencia, European Green Capital 2024. Accessed at: [https://environment.ec.europa.eu/news/valencia-elsinore-and-velenje-win-2024-european-green-city-awards-2022-10-28\\_en](https://environment.ec.europa.eu/news/valencia-elsinore-and-velenje-win-2024-european-green-city-awards-2022-10-28_en), 14th August, 2023.
- [24] World Trade Report (2013). Factors shaping the future of the World Trade. Geneve, Schwtzeland.
- [25] Duran, C. (2013). Governance for the tourism sector and its measurement. UNWTO Statistics and TSA. Issue Paper Series, 1-34.
- [26] Valencian Community (2016). Tourism White Book in the Valencian Community. Valencia: Generalitat Valenciana.
- [27] Mesa, R.; Esparcia, J. (2018). Rural-Urban Governance Arrangements and Planning Instruments Global Strategic Plan for Tourism in the Valencian Community (2010-2020), Rural-Urban Outlooks: Unlocking Synergies (ROBUST) Project, EU Report.
- [28] Perles-Ribes, J.F., Ivars-Baidal, J.A., Ramón-Rodríguez, A.B., & Vera-Rebollo, J. F. (2020). The typological classification of tourist destinations: The region of Valencia, a case study. *Tourism Economics*, 26(5), 764-773. <https://doi.org/10.1177/1354816619838413>
- [29] Generalitat Valenciana (2019). 100 Recommendations for tourist destinations in the region of Valencia, Report, Valencia: Generalitat Valenciana.
- [30] González-Reverté, F. (2019). Building sustainable smart destinations: An approach based on the development of Spanish smart tourism plans. *Sustainability*, 11(23), 6874.
- [31] Invattur (2023). <https://invattur.es/>, accessed 16th August, 2023.
- [32] Neuhofer, B., Buhalis, D. and Ladkin, A. (2012). Conceptualising technology enhanced destination experiences, *Journal of Destination Marketing and Management*, 1 (1-2), 36-46. <https://doi.org/10.1016/j.jdmm.2012.08.001>
- [33] Gretzel, U.; Zhong, L.; Koo, C. (2016) Application of smart tourism to cities. *Int. J. Tour. Cities*, 2 (2), <https://doi.org/10.1108/ijtc-04-2016-0007>

# **Evaluating Ecosystem Services Through Cross-cutting Methods Case Study: Kune-Vain Lagoon, Assessment of Carbon Storage and Sequestration Ecosystem Service**

Ph.D. Candidate. Rea MUKA  
*Co-Plan, Albania*

DOI: 10.37199/c41000125

## **Abstract**

The wetland ecosystems are home to multiple species of flora and fauna and provide a myriad of ecosystem services from which people directly and indirectly benefit. By nature, ecosystem services are intrinsic characteristics of such areas and only recently their values have been recognized as beneficial, for local communities in particular. Despite such benefits, those areas are often threatened by new development and land-use practices, favouring quick economic growth, especially true in developing countries like Albania. Yet another threat to such ecosystems is climate change, further underlining the imminent need to protect them. Such a task is difficult to perform when the awareness level of the community for these topics is low and the scarcity of data is evident.

This paper explores how to tackle those two challenges, low community awareness and data scarcity, by intertwining different methods with the specific aim of evaluating ecosystem services. To better illustrate the process of data generating and the methods used, this paper will focus only on one ecosystem service, which is carbon storage and sequestration. Through it, we will analyse the different methods available for generating such data and ultimately give a specific value to this ecosystem service, to make it comparable with other economic activities. The methods that will be analysed vary from the use of available open data sources to field measurements. This research was conducted in the frame of the WBC-RRI.net Horizon 2020 Project.

## **Keywords**

Ecosystem services, carbon storage and sequestration, data scarcity, citizen science

## Introduction

Habitats such as wetlands or lagoons offer a bundle of ecosystem services from which people directly or indirectly benefit. In general, ecosystem services are described as ecological structures and functions that contribute to human well-being (The National Wildlife Federation, 2023). As a result, those services are frequently categorized as supporting, providing, regulating, and cultural services. The advantage offered by ecosystem processes that control natural phenomena is referred to as a regulatory service (The National Wildlife Federation, 2023). Pollination, decomposition, water purification, erosion and flood management, carbon sequestration and storage, and climate regulation are all examples of regulating services (The National Wildlife Federation, 2023). In this paper, we will focus on the regulatory service of carbon storage and sequestration, through which we will analyze the different methods to assess it.

The protected area under study was formerly divided among three lagoons: Tale, Vain, and Kune. The protected status of Tale Lagoon was removed as a result of permanent anthropological changes, such as modifications to land use and development plans. With a current extent of about 4,393 acres, the protected area in question is known as Kune-Vain Lagoon (Ministry of Tourism and Environment, 2020). Broadleaf and mixed woods, with about 330 plant species (Mullaj, Bici, & Sanxhaku, 2022), make up the lagoon's biodiversity, which also includes Mediterranean woodlands and Illyrian deciduous forests.

In the Kune-Vain Lagoon, the service of carbon storage and sequestration is provided by three main components which are:

- The forest is comprised mostly of pine trees of different species (*Pinus halapensis*, Aleppo pine, etc.) and in some areas we find mixed forests. The forest area covers roughly 0.7 ha of the lagoon.
- The aquatic vegetation or the marshland, is characterized by low vegetation and it covers an area of roughly 446 ha.
- The soil is the last component and is the one that stores the largest amount of carbon. Wetlands are substantial reservoirs of carbon, which despite occupying only 5-8% of the Earth's land surface, hold between 20 to 30% of all estimated organic soil carbon, according to research (Neufeld, 2022).

## Tools and Methodology

To map and assess carbon sequestration for Kune-Vain Lagoon was quite challenging and it required a number of alternative methods to cover each component that needed to be addressed for this specific ecosystem service.

At first, it was important to assess if the Kune-Vain Lagoon had sustained any drastic changes through the years. To cover this component a number of methods were deployed. Firstly, old forestry maps from 1985, provided by the Regional Agency of Protected Areas, were digitalized and analyzed. Secondly, available ortho imagery and old military maps, from official sources (State Authority for Geospatial Information ASIG, 2023), were also analyzed. To perform a complete timelapse of the lagoon, from 1940 (the year it gained its status as a protected area) until today (2023), available satellite images from the Google Earth platform were also taken under consideration. Lastly, a drone survey was performed in the main forest areas creating an updated ortho imagery of those areas. This way we could better grasp the situation about the forest area inside the lagoon.

Assessing the carbon stored in the soil component is a quite difficult task. Normally, it is advised to collect random soil samples inside the perimeter of the lagoon and analyze them in a lab to assess the amount of CO<sub>2</sub> it can store. However, this process is time-consuming and has a rela-

tively high cost. In this context, other methods were used to assess this component. There are a number of available databases for the classification of soil. After some research ARIES platform (Ecoinformatics Collaboratory, University of Vermont, 2012) was selected to perform this task since it intersects the available databases of soil with the evaluation of ecosystem services through an AI system. Of course, it has its limitations. ARIES is a platform that is still in its beta phase, it uses worldwide open-source datasets which are not extremely accurate for small areas, and does not perform well in coastal areas. Despite those limitations, it proved to be the most accurate platform for the task at hand, giving a rough estimation of the amount of carbon stored from the soil component of the Kune-Vain Lagoon. Specifically, ARIES calculates the carbon stored in the first 200 cm of soil, using the information in a global database under the International Soil Reference and Information Centre (ISRIC). SoilGrids (ISRIC — World Soil Information, 2023) is a system for automated soil mapping based on state-of-the-art spatial prediction methods. It serves as a collection of updatable soil property and class maps of the world at 1 km / 250 m spatial resolutions produced using automated soil mapping based on machine learning algorithms. The generated map for soil storage created through the ARIES platforms is made of pixels containing the necessary information to make a rough estimation of this component in the study area.

For the other two components, high vegetation (forest area) and low vegetation (aquatic plants), the instructions provided by TESSA were followed. The Toolkit for Ecosystem Service Site-Based Assessment (TESSA) was designed for those without substantial technical expertise or financial resources, to provide practical guidance on how to assess and monitor site scale flows of ecosystem services and some of the stocks of underlying natural capital (Peh, et al., 2022). The instructions provided by this toolkit were used essentially to create a database for the specific site of the Kune-Vain Lagoon. Then this dataset was intersected with other methods or open-source databases to assess the amount of carbon sequestered and stored by those two components.

For building the database for the forest component, a citizen science approach was implemented. The preliminary work required creating a grid of 5x100 meters rectangles (500 m<sup>2</sup>) on 5 pine forest parcels (2 in Vain Lagoon and 3 in Kune Lagoon) and for each parcel were selected 5 rectangles at random to perform the field measurements. Then, for the field measurements, groups of 2-3 people were formed by Co-PLAN experts, students from Polis University and volunteers from RAPA. Thus, the volunteers that participated helped to build the dataset and, in the process, learned what is needed to create it, helpful for similar endeavours in the future. The final product of this endeavour is an Excel sheet with the number of trees, the code of the parcel and sample, the type of tree, the Latin name of the tree, the perimeter in centimetres, the diameter in centimetres, the age of the tree, the height of the tree and actual conditions of the tree.

To assess the amount of sequestered carbon for each sample, two proven methods were used to ensure accuracy:

- First method - the accumulated data was inserted in a global database of trees called i-Tree Eco (USDA Forest Service, 2006) which determines the amount of sequestered carbon by each type of tree, necessary to assess the amount of sequestered carbon by the pine forest inside the perimeter of the lagoon.
- Second method - each calculation was performed manually, following the instructions of the paper 'Calculating tree carbon' (Trees for the Future, 2020), written by Trees for the Future, whose research and methodology are based on research papers, university publications, and other information freely available on the Internet. The process consists of: a) Determine the total (green) weight of the tree; b) Determine the dry weight of the tree; c) Determine the weight of carbon in the tree; d) Determine the weight of carbon dioxide sequestered in the tree; and e) Determine the

weight of CO<sub>2</sub> sequestered in the tree per year.

The two methods gave slightly different final results, the differences being on average 3.4 tons for the storage component and 0.2 tons for the sequestration component per sample. Hence, an average of the two results was used to assess the amount of sequestered carbon from the pine forest in the lagoon.

In the case of the aquatic vegetation, the TESSA methods (Peh, et al., 2022) instructed to take random samples from a grid of 1 meter square. At this point, 10 random samples were collected and brought to a lab to be analyzed. The samples were fragmented into three parts, namely dead material, stems and green leaves. Before fragmenting the sample, the total fresh weight of all clippings from each plot was measured. Sub-samples, weighing no less than 100g, were selected to be dried in the oven at 105°C to obtain constant dry weight. After applying the necessary conversion factors and performing the calculations, the above-ground biomass carbon stock is obtained.

The final step is to evaluate the ecosystem service of carbon storage and sequestration provided by the lagoon. Since we have the amount of carbon stored and sequestered, the question is how much is it worth in the market. Carbon, like other goods, has a different price in different markets. For the purpose of this study, the Action Clearing Price of CO<sub>2</sub> in Euro/t of The European Energy Exchange (EEX) was used. The EEX is the leading energy exchange that builds secure, successful and sustainable commodity markets worldwide, including environmental markets like the emissions market (The European Energy Exchange (EEX), 2023). According to EEX the price of carbon on 19 December 2022 was 84.1 Euro/t.

## **Main Findings**

Changes in the Kune-Vain Vegetation 1940 – 2022

To see how the protected area had changed through the years, a catalogue of topographic maps, satellite images and orthophotos of the Kune-Vain Lagoon was collected and a drone survey of the main forest areas was performed. The main changes evidenced by this procedure are as follows:

-In 1944 the Kune-Vain-Tale Lagoon was at its natural peak.

The first pressures on the lagoon came from intensified agricultural activity through the years -1959 – 1985 when Tale Lagoon lost most of its natural properties and the Kune-Vain Lagoon gained a well-defined and rigid border.

As a support to the agricultural activities, a network of drainage and irrigation canals was built which connected the agricultural land with the lagoon.

-An infrastructure of embankments was also created to better mitigate flood events.

-Second pressure came from new development for touristic purposes through the years 2000 – 2022, which are more evident in the Kune Lagoon.

-Natural pressures regard mostly the periodical changes in the coastal line of the lagoon, the location of the communication canals between the lagoon and the sea and climate change effects (which is a global trend, worsened due to human activities).

-On the other hand, the vegetation component of the lagoon, including forests and water vegetation, has undergone very few changes through the years, making the Kune-Vain Lagoon one of the most preserved coastal protected areas in the country.

It was not possible to make an accurate estimation of the changes in vegetation inside the Kune-Vain Lagoon by using a geographic information system (GIS) based program, given the constant natural changes in the coastline of the lagoon. Also, the format of the collected aerial images and their resolution were not always the same, hindering the task.

Below are some examples of the ortho imagery generated through the drone survey. 12 areas



Figure 1: The catalogue of historical maps and images of the Kune-Vain Lagoon from 1944 – 2022, (18 in total) / Source: ASIG Geoportal (State Authority for Geospatial Information ASIG, 2023), Satellite imagery from Google Earth (Google, 2023); Author's processing

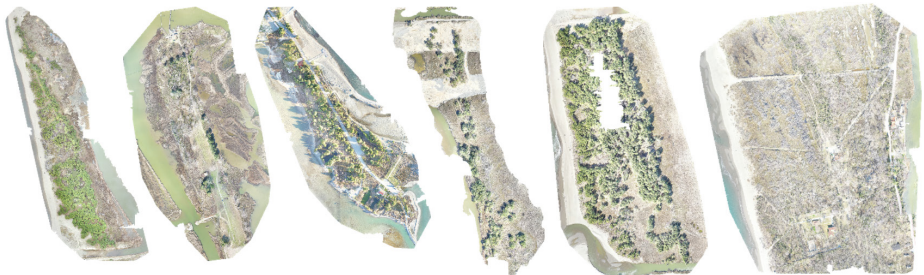


Figure 2: Ortho Image generated from drone MAVIC 2 Pro, Kune - Vain Lagoon / Source: Co-PLAN archive

were mapped through this method in total, using a MAVIC 2 Pro drone type. The process had its difficulties (like battery span, memory issues, weather obstacles, etc.) and it was quite time-consuming, but it enables updated photography of the current situation in usually inaccessible areas.

### The amount of carbon stored in the soil component

As mentioned before, to estimate this component the ARIES platform was chosen. ARIES uses a system called SoilGrids to determine how much carbon is stored in the top 200 cm of soil for the soil component. It is an automated soil mapping system built on cutting-edge spatial prediction

techniques. Predictions from SoilGrids are based on models that have been globally fitted using data from soil profiles and environmental covariates. At the moment, SoilGrids.org provides a collection of spatial resolution maps of 1 km / 250 m for soil property and class of the world that are currently updateable. These maps were created utilizing automated soil mapping techniques based on machine learning algorithms. Under the terms of the Open DataBase License, SoilGrids data is accessible to everyone (Ecoinformatics Collaboratory, University of Vermont, 2012).

The data shown below was extrapolated from the map of carbon storage, generated by the ARIES Platform. The map is made of cells with an approximate size of 15x20 meters (300 m<sup>2</sup>), containing information about the overall stored carbon in that specific area. ARIES automatically divides the cells in intervals, as shown in the table below. The selected area has a total of 197,239 cells with information, which is equivalent to 5,917.2 ha of land. Each section of cells, that belongs to a specific interval, was converted into surface and then multiplied with the average amount of stored carbon, specific to the interval. The final step is to convert the stored carbon into monetary value, which was done by using the Auction Clearing Price of CO<sub>2</sub> of the European Energy Exchange platform (The European Energy Exchange (EEX), 2023), which was 84.1 Euro/t CO<sub>2</sub> on 19 December 2022.

Example from the first interval 308 – 528.4 t/ha:

Area in ha = (No. of Cells x 300 m<sup>2</sup>) x 0.0001 ha = 137,266 \* 300 m<sup>2</sup> \* 0.0001 ha = 4,118 ha

Stored Carbon in Vegetation and Soil = Area in ha x Average t/ha = 4,118 ha \* 409.55 t/ha = 1,686,518.7 ton/year

Auction Clearing Price = Stored Carbon in Vegetation and Soil x 84.1 Euro/t CO<sub>2</sub> = 1,686,518.7

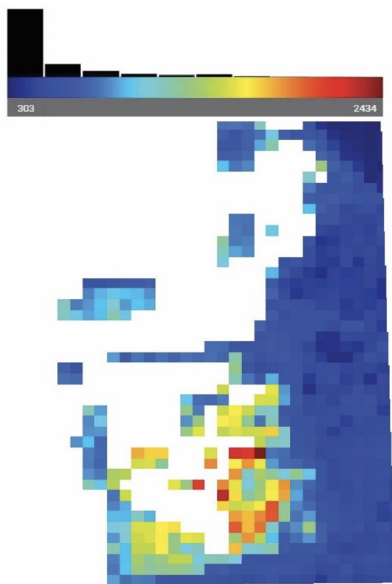


Figure 3: The amount of carbon stored in the first 200 cm of soil. Data in t/ha. ARIES Platform, 2023 / Source: ARIES Platform (Ecoinformatics Collaboratory, University of Vermont, 2012)



Interval in t/ha	Average t/ha	No. of Cells	Area in m2	Area in ha	Stored Carbon in Soil, ton/year	Auction Clearing Price €/year CO2
303 - 516.1	409.55	137,266	41,179,800	4,118.0	1,686,518.71	141,836,223.43
516.1 - 729.2	622.65	26,198	7,859,400	785.9	489,365.54	41,155,642.00
729.2 - 942.3	835.75	13,654	4,096,200	409.6	342,339.92	28,790,786.85
942.3 - 1155.4	1,048.85	6,390	1,917,000	191.7	201,064.55	16,909,528.23
1155.4 - 1368.5	1,261.95	4,446	1,333,800	133.4	168,318.89	14,155,618.73
1368.5 - 1581.6	1,475.05	5,767	1,730,100	173.0	255,198.40	21,462,185.48
1581.6 - 1794.7	1,688.15	2,438	731,400	73.1	123,471.29	10,383,935.57
1794.7 - 2007.8	1,901.25	673	201,900	20.2	38,386.24	3,228,282.57
2007.8 - 2220.9	2,114.35	264	79,200	7.9	16,745.65	1,408,309.33
2220.9 - 2434	2,327.45	144	43,200	4.3	10,054.58	845,590.51
Total		197,240	59,172,000	5,917.2	3,331,464	280,176,102.72
*Cell size is approximately 15x20 meters						
*EEX Auction Clearing Price on 19 December 2022 was 84.1 Euro						

Table 1: The amount of CO2 stored in the soil component / Source: Data extracted by ARIES Platform (Ecoinformatics Collaboratory, University of Vermont, 2012) and processed by author

ton/year \* 84.1 Euro/t CO2 = 141,836,223.43 Euro/year

In the case of stored carbon in the soil, in 5,917.2 ha of area is stored 3,331,464 tons of carbon annually, which has an approximate value of 280,176,102.72 Euro annually. This can be translated into 47,349.4 Euro per hectare. Since the lagoon has a surface of 4,393 ha, the ecosystem service value performed by the component of soil in the lagoon is approximately 208,005,914.2 Euros per year.

### The amount of carbon stored and sequestered by the forest

The forest area inside the Kune-Vain Lagoon is approximately 41.2 ha and is mostly made up of pine trees. As mentioned before, to calculate the amount of carbon sequestered and stored by the forest were used two methods, which gave slightly different results:

-Cross-cutting the created database from field measurements with the database of i-Tree Eco (USDA Forest Service, 2006).

-Manually calculating the stored and sequestered carbon by following the instructions of the paper 'Calculating tree carbon' (Trees for the Future, 2020).

The average of both methods, as indicated in the table below, was used to evaluate this ecosystem service in order to ensure accuracy. The pine forest around the lagoon stores 6,299.9 tons of CO2 yearly on average, and it also sequesters 454.9 tons of CO2, for a combined value of roughly 529,817.8 euros per year for carbon storage and 38,258.9 euros per year for carbon sequestration.

Data		Ecosystem service	
		Carbon storage (t/year)	Carbon sequestration (t/year)
Kune Lagoon	Kune 9	3.33	0.30
	Kune 12	7.99	0.49
	Kune 14-1	4.87	0.35
	Kune 14-2	8.53	0.60
Vain Lagoon	Vain 2-1	2.78	0.27
	Vain 2-2	8.66	0.72
	Vain 2-4	2.49	0.37
	Vain 2-5	2.15	0.23
	Vain 2-6	2.94	0.23
	Vain 4-1	4.84	0.22
	Vain 4-2	7.99	0.92
	Vain 4-3	9.18	0.58
	Vain 4-4	3.85	0.39
	Vain 4-5	13.67	0.60
Average from the samples		5.95	0.45
Total from the samples		83.28	6.26
Area covert from the samples (ha)		0.7	
The total area of pine forest in the lagoon (ha)		41.2	
Total carbon storage and sequestration by pine forest (t/year)		4,901.78	368.36

Table 2: Summary of the findings from the first method using the i-Tree Eco program / Source: Data extracted by i-Tree (USDA Forest Service, 2006) and processed by author

### The amount of carbon stored by the aquatic vegetation

Being a marshland, the lagoon's water vegetation is primarily made up of herbaceous plants and occupies a space of about 452.6 acres. A grid of squares with a size of 10x10 meters was created using a GIS application, and 10 random samples with an area of 1x1 meters each were taken to evaluate the ecosystem service of carbon storage. After collecting the samples in the field, they were weighed and divided into three main parts, leaves, stems and dry parts, following the instructions of TESSA (Peh, et al., 2022).

Following this stage, 100-gram sub-samples were randomly chosen from the total quantity of frag-

Data		Ecosystem service	
		Carbon storage (t/year)	Carbon sequestration (t/year)
Kune Lagoon	Kune 9	4.08	0.29
	Kune 12	17.43	1.23
	Kune 14-1	6.88	0.48
	Kune 14-2	11.59	0.82
Vain Lagoon	Vain 2-1	4.01	0.27
	Vain 2-2	12.49	0.88
	Vain 2-4	3.52	0.25
	Vain 2-5	4.10	0.29
	Vain 2-6	6.65	0.47
	Vain 4-1	6.12	0.42
	Vain 4-2	20.32	1.43
	Vain 4-3	13.58	0.96
	Vain 4-4	4.07	0.29
	Vain 4-5	15.95	1.12
Average		9.34	0.66
Total		130.79	9.20
Area covert (ha)		0.7	
The total area of pine forest in the lagoon (ha)		41.2	
Total carbon storage and sequestration by pine forest (t/year)		7,697.93	541.49

Table 3: Summary of the findings from the second method using the instructions from the paper 'Calculating tree carbon' (Trees for the Future, 2020) / Source: Author's processing

mented pieces (dead material, stems, and green leaves). The sub-samples were chosen, and then they were dried for 48 hours at 105°C in an autoclave (thermostat) to maintain a constant dry weight. We developed conversion factors for each sample component from this sub-sample phase (dry weight of sample / wet weight of sample = conversion factor). It is important to determine the mean dry mass of all the sampling plots and divide this result by 100 to express it in dry mass per hectare, after applying the conversion factors to each sample. The carbon stock from above-ground biomass is then estimated to be 47% of the total dry mass.

The entire carbon stock of the marshland cover in the Kune-Vain Lagoon is estimated to be 4,222.96 tons, as can be seen in the summary table. As was done for the forest component, the value of the ecosystem service given by the water vegetation in the lagoon is 355,150.94 Euros, or 80.8 Euros/ha, using the EEX Auction Clearing Price EUR/t CO<sub>2</sub> of 84.1 Euros/t.

Ecosystem Service	1 Method (t/year)	2 Method (t/year)	Average (t/year)	Value of the ecosystem service (Euro/year)
Carbon Storage	4,901.78	7,697.93	6,299.85	529,817.75
Carbon Sequestration	368.36	541.49	454.92	38,258.93
*Sample size is 0.7 ha				
*Pine forest area in the lagoon is 41.2 ha				
*EEX Auction Clearing Price €/t CO <sub>2</sub> is 84.1 Euro/t				

Table 4: The value of Carbon Storage and Carbon Sequestration by the forest in the Kune-Vain Lagoon / Source: Author's processing

Dry weight of tons/ha	Vain (ha)	Total Carbon Waste (tons)	Kune (ha)	Total Carbon Kune (tons)	Total Carbon Lagoon (tons)
9.47	326	3,086.74	120	1,136.22	4,222.96

Table 5: Final results for the marshlands carbon storage in the Kune-Vain Lagoon

## Conclusions and Recommendations

From the findings, we can conclude that the lagoon stores approximately 2,483,781.81 tons of CO<sub>2</sub> per year, a service that can be valued at approximately 208,890,882.94 EUR per year. This proves what we already know and often take for granted, that ecosystems such as wetlands provide invaluable services from which we benefit.

Evaluating the carbon storage and sequestration ecosystem service provided by the Kune-Vain Lagoon required a lot of research on the available methods, manpower for conducting field measurements, time to generate a reliable dataset for the vegetation component, and skill to operate different programs. The absence of periodical data, given the fact that it is a protected area, added to the difficulty of the task. Given their value, the well-being of such ecosystems should be monitored periodically by the responsible agencies. At least for protected areas, there should be a database with the number of trees in the area, all species of vegetation, the area they occupy, their age and their conditions periodically to conduct proper research on the ecosystem services provided by them.

The engagement of different actors in the process proved beneficial for all parties. The local experts provided significant input on the local vegetation, local fauna and the accessibility of specific areas. The field measurements phase proved to be a useful arena for mutual learning for the involved participants, especially for students. It offered an interactive way of teaching about the benefits of the ecosystem and at the same time provided the necessary dataset for the research.

However, the methods illustrated in this paper are not the only ones that exist and are not infallible. The margin of error exists and varies from accuracy to the human factor. Having said that, endeavours such as this help to better visualise and grasp the vastity of the service that such ecosystems provide, from a monetary perspective.



Figure 4: Map of water vegetation in the Kune-Vain Lagoon  
/ Source: Author's processing

## References

- Ecoinformatics Collaboratory, University of Vermont. (2012). ARIES: ARTificial Intelligence for Environment & Sustainability. Retrieved September 1, 2023, from ARIES Integratedmodelling: <https://aries.integratedmodelling.org/>; <https://klab.officialstatistics.org/modeler/ui/viewer?session=s2t3dblo2gc9&token=9e0bdcbd-7060-46c6-b4ef-d8385fa43dae>
- Google. (2023, September 22). Google Earth. Retrieved from Google Earth: <https://earth.google.com/web/@41.74882367,19.60162626,-8.01027682a,20387.54150854d,35y,347.61133885h,0t,0r/data=CjISMBIgNTQ0MGExNzMxYzI1MTFLYTk0NDM4YmI2ODk0NDUyOTciDG1haW5Ob-1JhbmRvbQ>
- ISRIC — World Soil Information. (2023, September 1). SoilGrids. Retrieved from SoilGrids.org: <https://www.soilgrids.org/>
- Ministry of Tourism and Environment. (2020). Description of the Current Network of Protected Areas. Tirana: Ministry of Tourism and Environment.
- Mullaj, A., Bici, M., & Sanxhaku, V. (2022). Flora, vegetation and natural habitats of the Kune-Vaini wetland complex (Lezha). In F. o. University of Tirana, Kune-Vaini wetlands (Lezha, Albania) - ecological approach (pp. 336-406). Tirana: University of Tirana, Faculty of Natural Sciences.
- Neufeld, D. (2022, January 22). Visualizing Carbon Storage in Earth's Ecosystems. Retrieved from Visual Capitalist: <https://www.visualcapitalist.com/sp/visualizing-carbon-storage-in-earths-ecosystems/>
- Peh, K. S.-H., Balmford, A. P., Bradbury, R. B., Brown, C., Butchart, S. H., Hughes, F. M., . . .
- Walpole, M. (2022). Toolkit for Ecosystem Service Site-based Assessment (TESSA). Toolkit, Cambridge, UK. Retrieved from <http://tessa.tools>
- State Authority for Geospatial Information ASIG. (2023, September 1). Geoportal ASIG. Retrieved from [geoportal.asig.gov.al](https://geoportal.asig.gov.al): <https://geoportal.asig.gov.al/sq/sherbimet>
- The European Energy Exchange (EEX). (2023, September 1). EEX. Retrieved from EEX: <https://www.eex.com/en/market-data/environmentals/eu-ets-auctions>
- The National Wildlife Federation. (2023, September 1). The National Wildlife Federation. Retrieved from <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Ecosystem-Services#:~:text=A%20regulating%20service%20is%20the,carbon%20storage%20and%20climate%20regulation.>
- Trees for the Future. (2020). How to calculate the amount of CO2 sequestered in a tree per year.
- USDA Forest Service. (2006). i-Tree. Retrieved from i-Tree Tools: <https://www.itreetools.org/>

# **Disaster Risk Reduction within Complex Urban Systems. The importance and challenges of holistic approaches**

Dr. Endri DURO  
*POLIS University, Albania*

DOI: 10.37199/c41000126

## **Abstract**

In the dynamic realm of urban systems, it is well known that natural disasters impose great challenges that hinder the sustainable development of such systems. The initial approaches towards cities and their sustainable development had the tendency of a fragmentary analysis. Thus, urban elements of different scales were seen separately without carefully considering the interdependency. Modern approaches tend to analyze such systems as a whole, complex unit in which every constituting element in different scales is analysed in relationship to other elements as part of a greater system. Nevertheless, disasters seem to be on rise worldwide (Gaillard and Mercer, 2012) reflecting an inability to properly adapt to such hindering hazardous events. The aim of this paper is precisely to reflect on the importance of holistic approaches and the challenges such approaches impose from knowledge and implementation point of view taking into account the multiscale dynamics of cities. Through an analysis of the current state-of-the-art, the paper tries to give an overview on “knowledge” and “implementation” point of view in terms of Disaster Risk Reduction(DRR) and the complexity within Urban Systems.

## Keywords

Resilience, Disaster Risk Reduction, Complex Urban Systems, Holistic approach

## **Introduction**

Cities represent complex structures composed of several systems and subsystems organized in different ways. Due to the complex relationship and interdependencies between the elements of urban systems, the behaviour of such systems in the case of a possible natural hazard imposes a challenge. While fragmentary approaches are widely used by experts, there is still a lack of fully understanding how such elements being part of a single complex system would interact with one another during an external shock.

Disasters through the years have caused major disruptions which seems to be on rise worldwide (Gaillard and Mercer, 2012) even though there has been significant improvement in tools and specially data due to the digital era. One of the main reasons for the lack of efficiency in properly tackling issues related to natural disasters are exactly these fragmentary approaches that have failed to analyse cities as single complex units having interdependent elements in different levels from operational to local scale. The issue of scale represents a debate and the modelling of cities is accepted to sit naturally at the edge between a macro and micro analysis (Galloti, Sacco and Domenico, 2021). In addition, the urban problems involve a myriad of aspects; social, economic, physical and environmental. Working with these diverse elements represents a challenge that is not only related to the scale, but also to the way such components are related to one another imposing therefore a multi-disciplinary approach.

Due to the aforementioned issues in the last 20 years the notions of urban resilience, resilient cities and disaster risk reduction have raised a great interest from the research point of view. Thus, the aim of this paper is to analyse and give an overview on the approaches towards such concepts and the importance of aiming towards holistic approaches rather than fragmentary analyses.

## **Urban System Resilience**

### **Urban Resilience**

Both, natural and man-made hazards are among predominant factors that shape the cities and impose a necessity to adapt and be able to response in effective manner towards such distresses. When dealing with hazardous events and their potentiality of leading to a disaster there is the need to deal with many concepts; some of them being abstract and used interchangeably leading to confusion among researchers and practitioners. Among this concept is resilience, which derives from Latin and it simply means “to bounce back” or represents the ability to recover from some shock, insult or disturbance (Cimellaro, 2016). The term is actually widely used from different point of views; social, ecological or physical.

When talking about resilient cities a combination of the concepts from the engineering perspective and socio-ecological perspective is needed as cities represent sustainable network comprised of physical elements and human communities which need to be capable of managing extreme events (Rus, Kilar and Koren, 2018). In a definition by (Bozza et al., 2017) an urban system consists of non-homogeneous components that interact and coexist to withstand an external stress and to bounce back to an equilibrium state or bounce further to an improved condition.

Urban resilience is characterized by a scale dimension and more importantly by a time dimension; therefore, it is analysed before the shocking event, at the time of the shocking event and after such event. Within this time dimension it is important to emphasize how resilience itself is related to risk. To better understand this relationship, the resilience curve by (Cimellaro, 2016) can be used. As a time-dependent function, resilience is dependent of risk, which on the other hand represents the potential degree of losses (economic, physical, social, cultural, environmental) due to a combination of the conditions of a system with the probability of occurrence of an event. In simple



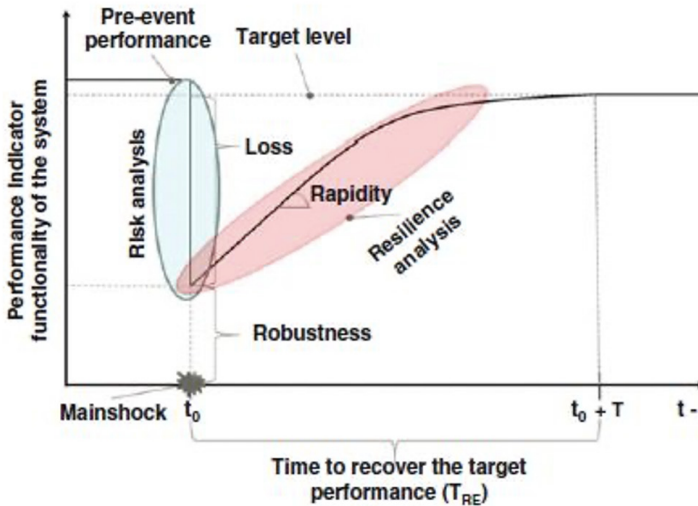


Figure 1: Risk and resilience analysis / Source: Cimellaro, 2016

terms, the level of risk would characterize the impact a main shock might have on the selected performance level of an urban system and directly on the rapidity levels, or the time needed to regain such pre-event performance level.

### Disaster Risk Reduction and Urban Risk

When talking about resilient urban systems it is of extreme importance to understand how such target is part of what is widely known as Disaster Risk Reduction, which as defined by UNISDR represents the concept and practice of preventing new or reducing existing disaster risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.

The same as resilience, risk should be assessed at a range of scales and tackle all relevant complexities that arise from factors as; multiple hazards, multiple sectors that are at risk, multiple assets and multiple stakeholders. In order to properly evaluate urban risk within the aim of urban resilience it is important to take into account the dynamic character of the cities. Based on such aim (Dickson et al., 2009) proposed a flexible approach that facilitates improved understanding of a city's risk known as URA (Urban Risk Assessment).

Such risk assessment is based upon three main pillars; institutional, hazard impact and socio-economic each one of them associated with three levels of complexity as shown in Figure 2.

(Palliyaguru et al., 2014) tried to establish a holistic approach to DRR by emphasizing its importance for the vulnerability reduction since such understanding would enable decisions to be made on which Disaster Risk Reduction strategies could address triggering agents, functional areas, actors etc. In this context the DRR strategies are categorized in such way as to overcome several factors that generate vulnerabilities. Such strategies include: Policy and planning strategies, physical strategies, emergency preparedness strategies, natural protection strategies and knowledge management strategies.

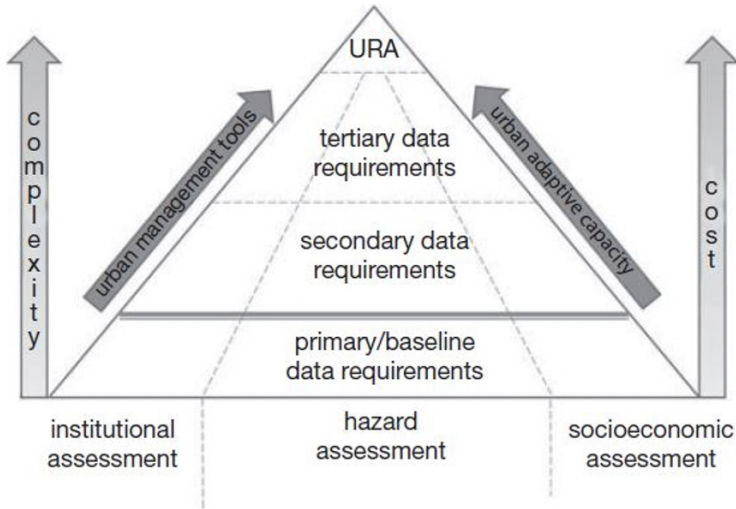


Figure 2: Urban Risk Assessment Approach (Dickson et al., 2009)

		On		
		Civil Life	Industry	Lifeline
Dependency of	Civil Life	<b>① Within civil life</b> · means-ends dependency · resource-sharing/conflict · geographical dependency	<b>② Civil life on industry</b> · dependency on supply · geographical dependency	<b>③ Civil life on lifelines</b> · dependency on supply · geographical dependency
	Industry	<b>④ Industry on civil life</b> · dependency on demand · dependency on labor supply · geographical dependency	<b>⑤ Between industries</b> · demand-supply/means-ends dependency · alternative/competitive · geographical dependency	<b>⑥ Industry on lifelines</b> · dependency on supply · geographical dependency
	Lifeline	<b>⑦ Lifelines on civil life</b> · dependency on demand · dependency on labor supply · geographical dependency	<b>⑧ Lifelines on industry</b> · dependency on supply/demand · repair dependency · geographical dependency	<b>⑨ Between lifelines</b> · dependency on supply/demand · alternative/competitive · geographical dependency

Table 1: Categorization of multiple interdependencies between subsystems (Kanno et al., 2018)

### Urban System Interdependencies

As aforementioned cities represent complex system composed of several elements physical and social which have a dynamic interaction. Several studies have tried to quantify and analyse such interaction and interdependencies and most of them are focused on physical elements only. For

instance, (Huang et al., 2014) proposed a method for exploring the interdependencies and interactions of critical structures which are defined as physical and logical systems with major importance for public welfare. Such structures are considered that interact at different levels and different scales and a failure in any type of such infrastructure would have an impact on the proper functionality of the others.

Through a detailed literature review (McClymont et al., 2022) emphasized the relationship between resilience and complex system thinking where resilience is not only about resisting change and conserving, but also about adaptability through the recognition of the interplay between fast changes and longer-term sources, acknowledging therefore a cross-scale interaction. In order to explore interactions across different spatial and temporal scales the concept of hierarchy is very important, where each element should also be understood as a nested whole that requires identifying which scale analysis is needed within that hierarchy, whilst keeping in mind the wider context. Another attempt to model urban systems and emphasize the interdependencies is proposed by (Kanno et al., 2018) in which three major subsystems are considered: civil life, various industrial companies, and physical lifeline infrastructures. Such modeling framework is human-centered as human life and its activities are the most important part of the society and its important to consider such activities and enhance the functionality. The categorization of the dependency between the major subsystems is given in Table 1:

### **Urban Scale Seismic Risk Assessment**

Based on the objectives and principles posed by the SENDAI Framework for Disaster Risk Reduction, with a specific focus on seismic events as they represent one of the most severe forms of natural disasters due to the unpredictable nature focusing on the topics of holistic approaches, multi-scale and resilience objectives (Duro, 2023) proposed a methodology for the integration of seismic risk assessment within an urban context. The methodology aimed to bridge what is often referred by (Gaillard and Mercer, 2012) as a gap between knowledge and implementation in DRR by focusing on the issues of multi-scale and multi-disciplinary. It is based on the Analytical Hierarchy Process (Saaty, 1980) and on Spatial Multi-Criteria Evaluation (SMCE).

The first step consisted on the definition of relevant indicators that would be used to characterize elements of hazard, vulnerability and exposure of a built system to a seismic hazard. A total of 14 indicators are selected based on the criteria of complexity, information and importance and organized in 5 levels of hierarchy. The indicators are used to characterize information at an operational (building) scale, but also at a local scale. For instance, building density, street network configuration, open spaces accessibility are selected among the indicators. As such methodology is focused on decision-making the need for a common language to communicate such information among different stakeholders required the definition of standardized values for each of the selected indicators. The process of switching from a variable of a certain nature to unified variables is defined as standardization process and is done by the means of value functions which are mathematical representation of human judgements (Beinat, 2012).

On the other hand, to specify the relationship between variables in different levels and their importance in the final value of risk (at a local urban scale) pairwise comparison matrices are used based on the AHP.

Finally, the produced information is aggregated by the means of the weighted linear combination (Malczewski, 2000).

Intensity of importance	Definition	Explanation
1	Equal Importance	Two activities contribute equally to the objective
2	Weak or Slight	
3	Moderate Importance	Experience and judgement slightly favor one activity over another
4	Moderate plus	
5	Strong Importance	Experience and judgement strongly favor one activity over another
6	Strong Plus	
7	Very strong or demonstrated importance	An activity is favored very strongly over another; its dominance demonstrated in practice
8	Very, very strong	
9	Extreme Importance	The evidence favoring one activity over another is of the highest possible order of affirmation

Table 3: The scale of relative importance (Saaty, 2008)

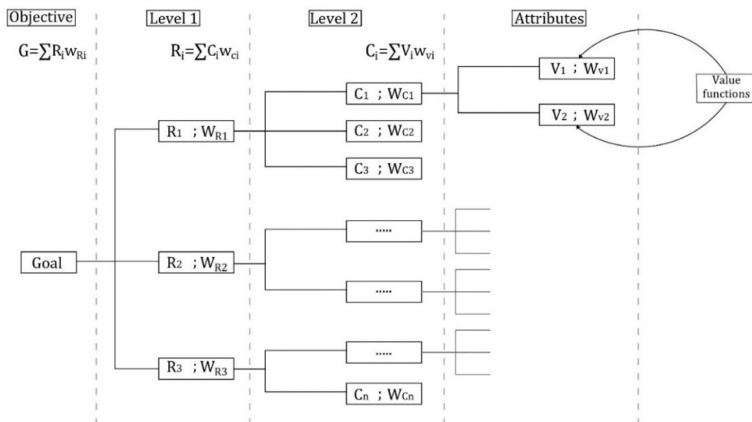


Figure 3: Simplified scheme of the aggregation process (Duro, 2023)

The results of such methodology are believed to foster top-down and bottom-up approach because the data collection and elaboration is context specific giving an output to local and national authorities, while on the other hand such approaches require an understanding of the event at a regional and national scale, implying the need for coordination and information in these levels. In addition it imposes a vast majority of stakeholders. On one hand there is the local community, which is directly affected from such events and on the other hand there are local and national institutions. In addition, social and physical scientists are the other important actors. The proposed

methodology for risk evaluation represents a tool which can be easily adapted and improved by these scientists by adding the necessary information and variables and re-interpreting the hierarchy system. The scientists and specialists in collaboration with local institutions can foster the adaptive capacities of the local community since the results can be translated in interventions like prioritization, evacuation routes, faster responses and better dissemination of information. The facility in such communication process would enhance the resilience of the entire urban system as it would impact in the effectiveness of transmitting such information and therefore improve preparedness level of such complex systems.

## Conclusions

This paper aimed to give an overview on one of the most important and debated topic as that of urban resilience and disaster risk reduction. From the resilience point of view there is clearly a dependency on time scale and spatial scale therefore it is important to focus on dynamic frameworks and methodologies that precisely aim to target such variability. By doing so, there is the need to also take into consideration that urban systems need to be analyzed as a whole unit composed by several components that interact and are dependent on one another rather than analyzed as a mix of fragments in which elements are seen independent. Such approaches certainly affect the complexity of the problem, but would enhance the resilience level of urban systems towards external shocks in short and long term.

## References

- [1] Beinat, E. (2012). *Value Functions for Environmental Management*. Dordrecht: Springer.
- [2] Bozza, A., Asprone, D., Fabbrocino, F. (2017). Urban Resilience: A civil engineering perspective. *Sustainability* 103(9). doi:10.3390/su9010103
- [3] Cimellaro, G. P. (2016). *Urban Resilience for Emergency Response and Recovery. Fundamental Concepts and Applications* (1 ed.). Switzerland: Springer Cham. doi:<https://doi.org/10.1007/978-3-319-30656-8>
- [4] Dickson, E., Baker, J., Hoornweg, D., & Tiwari, A. (2012). *Urban Risk Assessment. Understanding Disasters and Climate Risk in Cities*. Washington: The World Bank.
- [5] Duro E. (2023). A multi-criteria methodology for the integration of Risk Assessment into Spatial Planning as a basis for territorial resilience. The case of Seismic Risk. PhD Dissertation. Ferrara, Italy.
- [6] Gaillard, J. C., & Mercer, J. (2012). From knowledge to action: Bridging gaps in disaster risk reduction. *Progress in Human Geography*, 37(1), 93-114. doi:10.1177/0309132512446717
- [7] Gallotti, R., Sacco, P., De Domenico, M. (2021). *Complex Urban Systems: Challenges and Integrated Solutions for the Sustainability and Resilience of Cities*. Hindawi Complexity. <https://doi.org/10.1155/2021/1782354>
- [8] Huang, Ch., Liou, J., Chuang, Y. (2014). A method for exploring the interdependencies and importance of critical infrastructures. *Knowledge-Based Systems* 55. <http://dx.doi.org/10.1016/j.knosys.2013.10.010>
- [9] Kanno, T., Koike, S., Furuta, K. (2018). Human-centered modeling framework of multiple interdependency
- [10] in urban systems for simulation of post-disaster recovery processes. *Cognition, Technology & Work*. <https://doi.org/10.1007/s10111-018-0510-2>

- [11] Malczewski, J. (2000). On the use of Weighted Linear Combination Method in GIS: Common and Best Practice Approaches. *Transaction in GIS*, 4(1), 5-22.
- [12] McClymont, K., Bedinger, M., Beevers, L., Visser-Quinn, A., Walker, G.H. (2022). Understanding urban resilience with the urban systems abstraction hierarchy (USAH). *Sustainable Cities and Society*. <https://doi.org/10.1016/j.scs.2022.103729>
- [13] Palliyaguru, R., Amaratunga, D., Baldry, D. (2014). Constructing a holistic approach to disaster risk reduction: the significance on focusing on vulnerability reduction. *Disasters* 38(1). doi:10.1111/disa.12031
- [14] Rus, K., Kilar, V., & Koren, D. (2018). Resilience Assessment of complex urban systems to natural disasters: A new literature review. *International Journal of Disaster Risk Reduction*. Elsevier. <https://doi.org/10.1016/j.ijdr.2018.05.015>
- [15] Saaty, T. L. (1980). *The Analytic Hierarchy Process*. New York: McGraw-Hill.
- [16] Saaty, T. L. (2008). Decision making with the analytic hierarchy process. *International Journal Services Sciences*, 83-98.

# **Air Quality Status of Tirana. Temporal effects of COVID-19 restrictions on the decrease of urban air pollution.**

Ph.D. Candidate. Rodion GJOKA  
*Co-Plan, Albania*

DOI: 10.37199/c4100012

## **Abstract**

This research paper builds on the analytical work conducted by Co-PLAN, Institute for Habitat Development under the “Green Lungs for Our Cities” project, supported by the EU Delegation in Albania. This specific publication consists of the analysis of data from a dedicated ground-based monitoring process conducted from March 11th to May 11th, 2020 in 4 different locations of Tirana on PM2.5, PM10 and NO2, based on the protocol and practice established by the Alternative Monitoring Methodology of the Green Lungs project ([link](#)). This in the perspective of the effect that quarantine had on specific pollutants in comparison with before and after the period of restrictions. Other sources, such as publications from the World Bank “Regional Note on Air Quality Management in Western Balkans”, +IQAir “2019 World Air Quality Report”, European Environmental Agency “Air Quality in Europe – 2019 Report” and “Assessing Air Quality through citizens science”, were also consulted during the analysis of data from this 62-days monitoring practice. The data provide an overview of how concentration levels of the selected air pollutants changed during the lockdown phase and after the removal of measures. The purpose of the monitoring process and the report was threefold

- (i) to verify the direct linkages between air pollutants and sources of pollution,
- (ii) raise awareness of air pollution among state and non-state actors,
- (iii) propose relevant measures to reduce urban air pollution for the near to mid-term future.

Keywords: Air Pollution, Monitoring, Pandemic, Urban Mobility and Form

## Introduction

Air pollution in Albania constitutes one of the most pressing environmental and urban health risks with regard to public health quality. Ambient air pollution (AAP) is a serious local health problem that accounts for an estimated 5350 premature deaths per year and an average of 184 days of life loss country-wide [1] (European Environmental Agency, 2019). The most common health implications related to high concentrations of pollutants in the air are; acute lower respiratory infections, increased risk for lung cancer, strokes, ischemic heart disease, chronic obstructive pulmonary disease, and increased stress level. Polluted air damages vegetation and habitats whereas most commonly it leads to a severe decrease of ecosystem services especially those close to urban and industrial areas. In Albania air pollutants originate from a range of sources that can be ranked by their impact:

- Combustion from vehicle engines combined with low fuel quality.
- Construction sector and heavy industry.
- SME that operates Medium and/or Low Combustion Plants.
- Illegal burning of waste and agriculture corps.

It is mandatory that for most pollutants (Sulphur Dioxide SO<sub>2</sub>, Nitrogen Dioxide NO<sub>2</sub>, Ozone O<sub>3</sub>, and Particulate Matter PM, Carbon Monoxide, and Dioxide CO & CO<sub>2</sub>) monitoring practice have to report more than 75% of the time during a year (6570 hrs. per year) so that it meets the requirements of the Ambient Air Quality Directive (European Union, 2008). From 2015 there was no accredited station in Albania that monitors and reports statistically accepted data on air pollution. Therefore, most of the citations on Albania's air pollution in any status reports from EU agencies, the World Bank, and WHO refer to information more than 5 years old. In the meantime, it is exactly the period between 2015 and 2020 when uncontrolled emissions have increased significantly and pollution concentration is considered to be the most important environmental risk to human health especially in Tirana and Elbasan. Given the contexts where the Albanian public has not been informed in specific regarding the status of urban air quality and regarding urban and environmental health for years now, citizen science and initiatives to fill this gap have contributed to a level in factorizing Air Pollution as a main concern in Tirana. Nowadays there are main sources of information and fully accessible to the public at large, namely:

i. Green Lungs for Our Cities. A project funded by the EU Delegation in Albania and implemented by Co-PLAN Institute for Habitat Development and Milieukontakt Albania. Indicatively monitoring the concentration of 8 different types of pollutants in Tirana, Durres, Elbasan, and Shkoder Municipalities. Providing information via the dedicated Online Platform link regarding 2340 monitoring practices and results.

ii. Air Quality monitoring also on 8 components, conducted by cooperation between Vodafone Albania and Tirana Municipality for a total of 3 stations in Tirana. Providing real-time information via the dedicated app Tirana Ime.

As for the state institutions, there have been very few to no publications of any monitoring practice nor a status report on air quality. During the last years, the national and social media was fed by civil society initiatives whilst only in 2019 this issue was highlighted through more than 45 articles and broadcasts dedicated to this topic. On the other hand, communities are now fully aware of the unhealthy status of the urban air in Tirana and other main cities. Immediate effects in the decrease of pollution concentration were seen and sensed by all, due to the restrictions imposed in March 2020 amid the global pandemic caused by COVID-19.



### Unique evidence-based research.

Methodologically this research is based on the interpretation of evidence-based data which were collected through site-monitoring practices following the Alternative Air-Monitoring Methodology used by the Green Lungs Project which is available at the platform as referend by the link in the Abstract section. By conducting regular daily monitoring practices from March 11th to May 11th, 2020 for a total of 62 days, to identify the changes in Air Pollution in Tirana for NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> and address indicatively the correlation between measures and pollution level. Four locations were selected for this monitoring campaign, following the project findings from 2019 whereas these areas were all exceeding the allowed standards both in terms of concentration and days exposed. These locations are situated on the western part of Tirana's ring, namely Vasil Shanto crossroad, 21 Dhjetori crossroad, Architecture and Civil Engineering crossroad, and Zogu Zi roundabout. A total of 681 monitoring practices were conducted for an overall coverage of 10% of the total day-night time.



Figure 1: Photos from the monitoring locations / Source: Author, March 17th 2020

To fully interpret the findings, a detailed correlation with imposed restrictions by the central government was kept. Chronologically on March 11th public transport, construction sector, and public gatherings were halted until a second notice. Two days later the full quarantine was imposed and there was no activity happening anywhere in the city. The very first finding can be addressed to the decrease of pollution level by 12.7% two days after public transport and heavy vehicles were not circulating in the city. Following the second finding, it took just one week without vehicles and construction for the pollutants (NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>) concentration to drop below the EU standards in the Albanian Capital. On March 14th a high concentration of smog was inexplicably present in the city during the afternoon and evening. None of the sensors used during this

campaign indicated any increase, as it was for the odor of Sulphur that oriented us to measure and control in various resources the real-time concentration of the Sulphur Dioxide. The result was that from 18.00 to 23.00 the SO<sub>2</sub> concentration reached a peak of 166 µg/m<sup>3</sup>. Even though few media were reporting the unprecedented situation, none of them explicitly identified the source causing this pollution. Nevertheless, it can be addressed to the waste being burned either in Tirana or Durres Municipality due to the increased amount of waste generated from over-consumption that characterized the first days of quarantine in our country. This research results indicate a difference of 14% from day to day in terms of pollution concentration decreasing in the monitored areas. From April 5th to 7th it was registered a record low pollution level in all the locations. The results are as follows:

- a. PM<sub>10</sub> = 6µg/m<sup>3</sup> (6 times lower than the EU standard and 3 times lower than the WHO standard)
- b. PM<sub>2.5</sub> = 1.5µg/m<sup>3</sup> (13 times lower than the EU standard and 7 times lower than the WHO standard)
- c. NO<sub>2</sub> = 7µg/m<sup>3</sup> (6 times lower than the EU and the WHO standard)

From the second week of April, when the construction sector restarted their work at full capacity and private vehicles were more and more present on the streets, until the end of my monitoring campaign it can be noted that slight increase in pollutant concentration daily with a moderate factor of 9% difference from day to day. It can also be noted the impact that strict measures on closing activities and movement during weekends had regarding the significant and rapid decrease of pollution concentration in the city. To conclude with the fact that it was unprecedented for Tirana citizens to experience healthy air quality for a consecutive 52 days in a row. It is also important to note that from the last week of April activities and circulation were moderately open without time restriction, besides public transport (urban-interurban and schools) that is foreseen to reopen on the 15th of June. Nevertheless, the increase in concentration during the second week of May is not only attributed to the mass opening of all activities and transport in the city rather than to the meteorological conditions that characterized the whole Balkan Peninsula with the Sahara Sandstorm. Which for the sake of the citation were present for 10 days and more aggressive in terms of fine dust particles present in the air and later covering urban and natural surfaces after the rainfall.

## **Findings.**

A more specific interpretation for each of the monitored pollutants:

- a. PM<sub>10</sub> average from March 11th to May 11th was 25.76µg/m<sup>3</sup> and the lowest registered value was 6µg/m<sup>3</sup> (6 times lower than the EU standard and 3 times lower than the WHO standard)

Therefore, indicating a substantial decrease of 41% compared to the 2019 yearly average and standing at least 36% below the EU standard while it didn't meet the WHO standard whereas even during COVID-19 in Tirana we were at least 6% above their exposure standard. Tirana was reported to have a yearly average concentration of PM<sub>10</sub> = 50.6µg/m<sup>3</sup> in 2016 (RGJM, 2017). While the same source reported an increased concentration during 2017 PM<sub>10</sub> = 62.4µg/m<sup>3</sup> which is also the last report on Air from the state authorities. On the other hand, from the Green Lungs project the same component, we registered an average yearly concentration of 43.8µg/m<sup>3</sup> during 2019.

Given the context where numerous researchers have cited a direct link of PM (particular matter) to the aggravated effects of COVID-19, such pollutant in my case indicates a substantial decrease by 31% compared to the 2019 yearly average and standing at least 25% below the EU standard but it didn't reach to meet the WHO standard whereas even during COVID-19 in Tirana we were at

least 91% above their exposure standard. Tirana has not reported a yearly average concentration since 2015 therefore we can refer only to the data provided by the Green Lungs platform. During 2019 we registered an average yearly concentration of 27.8 $\mu\text{g}/\text{m}^3$ . It is important to note that the second week of May was characterized by meteorological conditions caused by the Sahara Sandstorm that was present in the whole region.

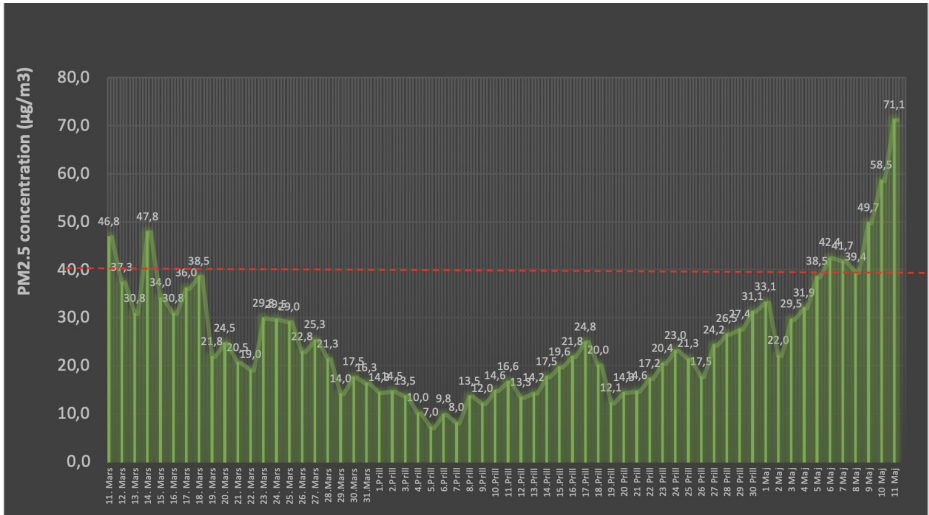


Figure 2: Daily concentration of PM10 during the lock-down period in Tirana (11. March.2020 – 11. May.2020) / Source: Author chart of the daily monitoring results.

b. PM2.5 average from March 11th to May 11th was 19.1 $\mu\text{g}/\text{m}^3$  and the lowest registered value was 1.5 $\mu\text{g}/\text{m}^3$  (13 times lower than EU standard and 7 times lower than WHO standard)

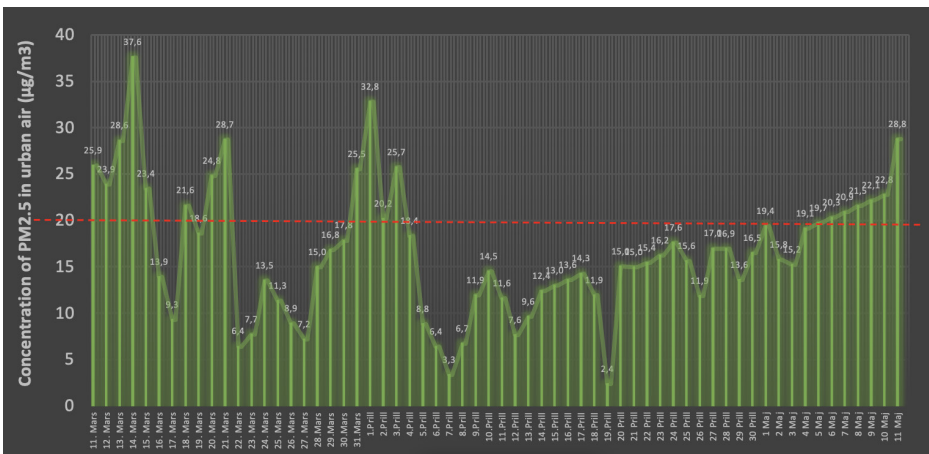


Figure 3: Daily concentration of PM2.5 during the lock-down period in Tirana (11. March.2020 – 11. May.2020) / Source: Author chart of the daily monitoring results.

c. NO<sub>2</sub> = average from March 11th to May 11th 42.1µg/m<sup>3</sup> and the lowest registered value 7µg/m<sup>3</sup> (6 times lower than EU and WHO standard)

Nitrogen dioxide has been considered to be the main problem in Tirana for the last 5 years. It is directly linked with two acute problems that our city faces daily. Low level of mobility within the city whereas traffic congestion constricts most of the drivers and passengers to endure 200 hours of traffic per year and an average of 244 liters of fuel being burned in traffic (GJOKA, 2020). The second problem consists of a worst-scenario combination for a city as dense as Tiana, where low-quality fuel is being burned in ICE vehicles that are part of one of the oldest fleets in the region.

As a first finding, it can be stated that even though we experienced around 35 days in a row with NO<sub>2</sub> concentration below the EU and WHO standard of 40µg/m<sup>3</sup> the overall average of these monitoring campaigns stands at 5.3% above the EU and WHO standards. In terms of comparison with the concentration of previous years. Tirana was reported to have a yearly average concentration of NO<sub>2</sub> = 24.5µg/m<sup>3</sup> in 2016 (RGJM, 2017). While the same source reported an increased concentration during 2017 NO<sub>2</sub> = 67.5µg/m<sup>3</sup> which is also the last report on Air from the state authorities. On the other hand, from the Green Lungs project. on the same component, we registered an average yearly concentration of 112µg/m<sup>3</sup> during 2019. Finally, we can state that enforced restrictions banning all transport means in Tirana contributed directly by reducing the NO<sub>2</sub> concentration in urban air by 62% from the previous year. Nevertheless, it should be mentioned that by the end of the monitoring campaign, when transport means were gradually open in full (besides public transportation) the concentration started to increase by an average of 1.47 µg/m<sup>3</sup> per day.

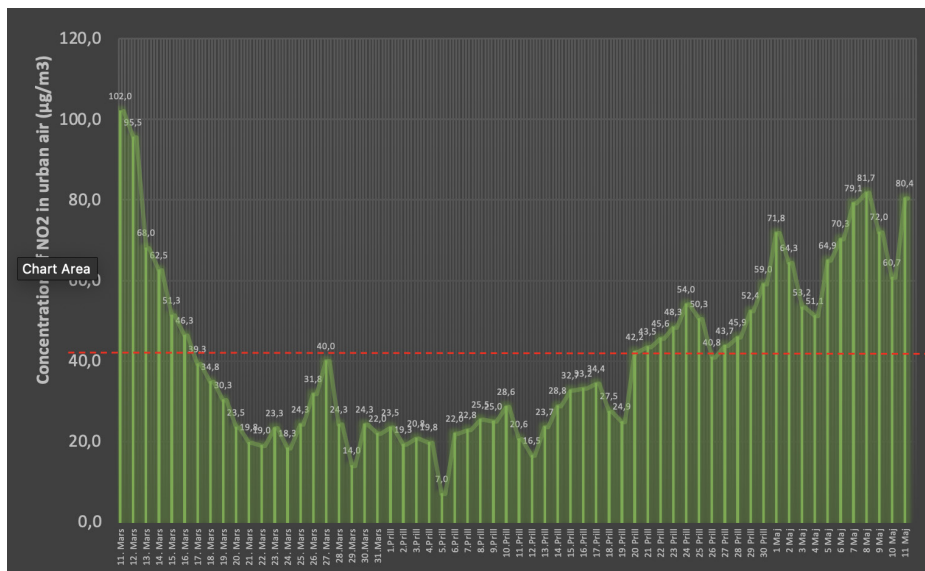


Figure 4: Daily concentration of NO<sub>2</sub> during the lock-down period in Tirana (11. March.2020 – 11. May.2020) / Source: Author chart of the daily monitoring results.

## **Conclusions.**

From the very beginning of the global pandemic caused by COVID-19, two major effects have been assumed by communities situated in large and dense cities in Europe. The first consists of the rapid decrease of pollution right after the quarantine was imposed and the other was rather argumentative at the time since preliminary data of grave clinical effects of the virus was linked with populations being extensively exposed to urban air pollutants. For example, there were even figures indicating that someone who lived for decades in a county with high levels of fine particulate pollution was at least 8% more vulnerable to experiencing mild and strong effects from COVID-19 than someone who lives in a region that has just one unit (one microgram per cubic meter) less of such pollution (Harvard University, 2020). Across Europe, the EEA database with more than 4,000 monitoring stations indicated in real time how the NO<sub>2</sub> concentration decreased by 24% in Milan, 40% in Barcelona, and 56% in Madrid compared to the same period of 2019. Similar air quality information was visually provided by Copernicus Atmosphere Monitoring Service via Sentinel 5 satellite that indicated in detail the decrease of pollutants especially in highly dense urban areas. Tirana on the other hand registered a record decrease of 64% which once more indicates that the pollution load emitted from fuel burning in the transport sector and construction are the sole reason for air pollution in our city.

There is an increased risk that cities of the Western Balkans could suffer an increased pollution load being emitted to their cities where the energy systems depend on Thermal Power Plants. Quarantine during the spring of 2020 indicated a significant increase in energy demand by households. Cities such as Prishtina, Belgrade, Skopje, and Sarajevo local and central governments should be prepared if there should be a second wave of the pandemic and requiring people to quarantine during wintertime. This means that emissions from the coal/lignite power plants will increase significantly. In the case of Albania, the central government should be prepared to avoid such a situation in cities such as Korca, Pogradec, Kukes, Tropoja, Dibra, and Shkodra, where citizens are still using wood, coal, and pellets with very low calorific input also not applying any standard of emissions from these products being traded in the upper mentioned locations. The World Bank report "Regional Note on Air Quality Management in the Western Balkans" not only requires increased efforts to avoid the potential increase of pollution during winter time but also reflects on a larger scale that such emissions will affect the neighboring countries (World Bank, 2020).

This said, in specific for Albania as we do not have a coal-based energy system, we are more likely to face an increased pollution concentration since early winter 2020. Also, more emissions are expected to increase the concentration of urban air pollutants, especially during the daytime since most of the activities will be conducted during active day hours. Nevertheless, we already have to face the situation of NO<sub>2</sub> concentration being 2-times above the National, EU, and WHO standards of 40µg/m<sup>3</sup>, with toxic emissions (dioxins and furans) from waste being burned in incinerators and open dump sites, public works and private construction activities that do not invest any cent in terms of reducing their air pollution footprint.

Nevertheless, the current crisis, besides its multiple impacts on our socio-economy, offered a glimpse of what a resilient and sustainable society should look like once the Paris Agreement commitments are met and the EU Green New Deal is implemented.

Decarbonization of energy, transport, and industry sectors appears clearly to be the most resilient solution for a sound socio-economic shift toward a climate-friendly and clean future.

## **Policy Suggestions:**

- a) There is an emergent need that Albania to invest and establish an Air Quality monitoring and reporting network in line with the National Strategy for Air Quality DCM No. 594, dated 10.9.2015, and National Plan for the Management of Air Quality DCM No.412/2019.
- b) Finalize full transposition of the following directives in the Albanian Legislation:
- 2008/50/EC on Ambient Air Quality
  - 2016/2284/EC on National Emission Ceiling
  - 2016/802/EC on Sulphur Content
  - 2009/126/EC Stage II of VOCs from petrol
  - 2015/2193/EU Directive on Medium Combustion Plants
  - 2010/75/EU Directive on Industrial Emissions Directive
- c) Capacitate and enable close cooperation of NEA and IPH where from one part there is a scientific interpretation of the pollution concentration and the other evaluates economic value in terms of the welfare-based approach of pollution exposure and overall urban-environment health status.
- d) Transition toward a low-carbon economy will significantly decrease most fossil fuel combustion sources. This should be a mid-term objective, therefore investments should be oriented and defined at a central level with a climate-neutral approach. Investments cannot continue to be made without an orientated decision-making process, whereas in Albania and mostly in Tirana we are still not aware of both immediate and long-term footprints that private and public investments have in terms of Air Pollution and Ecosystem Services. There is by far not a single practice of Benefit-Cost Analysis that includes ES, Air Pollution, and Urban Health in the exercise.
- e) The local government of Tirana and its Council should immediately emphasize restricting air pollution from public and private transport, traffic congestion, construction, and industrial sector, as these appear from the last 5 years to have become very well-known stationary sources.
- f) In Tirana, the most exposed category of the population toward the exceeding concentration of pollution daily is disproportionally distributed. There should be a feasible solution so that any action taken to reduce air pollution does not burden poor and vulnerable people.
- g) Public investments should be oriented toward climate-friendly interventions therefore a National Emission Target should be set after the Air Monitoring Network is established and the National Emission Analysis is conducted.

## **Recommendations:**

Emission from public transport is assessed at 22kilo-ton per year in Tirana, sourcing by a fleet of only 305 busses. An immediate renewal of these fleets should be subject to Tirana Municipality. Either any bus part of the public transport fleet meets EURO-6 standard or we attempt to electrify the fleet or the system. An alternative for public transport could consist also of developing the appropriate infrastructure that either Tram, Train, Metro, or Trolley is offered for Tirana outer Ring, Kombinat Kinostudio, Inner Rign, Train Station to Rinas Airport (along the economic area of the Highway) All these combined could reduce by half the usage of the private cars in Tirana for daily basis purposes.

Emissions from heavy vehicles mostly used for public service operations and largely nowadays by the construction sector do not meet at least the EURO-3 standard of emission. Therefore, both central gov. institutions in collaboration with local authorities should enforce that these operators either meet the emission criteria to operate within the highly dense urban area or they will be subject to a polluter pay tax for the air emissions.

Emissions from private vehicles and motors are subject to technical control by the SGS company that licenses the vehicle's technical conditions. Their practice includes a quantitative measurement of the exhaust system. Therefore, we insist that is important for each vehicle to be monitored for each of the specific pollutants causing problems with air pollution in Tirana (PM, NO<sub>2</sub>, VOC, SO<sub>2</sub>, HC, CO). Whoever does not meet the threshold of EURO-IV or above should not be provided with a renewed license.

Electric vehicles are more present in Tirana more than ever before, introduced in large by Taxi companies that immediately felt the opportunity and now are expanding as they appear to be economically benefiting and facing traditional ICE with unequal competition. Fiscal policies should be drafted so that private owners of ICE vehicles can transit toward E-Vehicles. A practice now present in all EU countries whereas in some others there are objectives to phase out all ICE by 2030. For Tirana this would be the ultimate solution in terms of removing for good the main source of Urban Air Pollution but it would require that the whole mobility and accessibility system is revised as a new charging network would be needed in Tirana but also country-wide.

Given the increasing urbanization and density of Tirana combined with the lack of urban parks at a neighbourhood level, it would be beneficiary for citizens and also Urban Air to pilot and contextualize concepts similar to Low Emission Zones. Aiming to manage emissions through taxation of motorized vehicles entering these areas that do not meet EURO-5 standard or above and Ultra Low Emission Zones that either restrict any transport means operating with Internal Combustion Engines or regulate only the presence of E-Vehicles.

## References

- [1] European Environmental Agency, 2019. Air Quality Report, Copenhagen, Denmark: Publication office of the European Union. European Union, 2008. eur-lex. [Online] [Accessed 26 5 2020]. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0050&from=EN>
- [2] GJOKA, R., 2020. Wake Up/ Eksperti Gjoka: 200 orë humbje kohe në trafikun e Tiranës na kushton 400 mijë lekë [Interview] (21 January 2020).
- [3]Harvard University, 2020. Harvard.edu. [Online] [Accessed 17 May 2020 ]. Available at: <https://www.hsph.harvard.edu/news/hsph-in-the-news/air-pollution-linked-with-higher-covid-19-death-rates/>
- [4]RGJM, 2017. Agjensia Kombetare e Mjedsit. [Online] [Accessed 22 April 2020]. Available at: [http://www.akm.gov.al/assets/web\\_raporti-mjedisit\\_17.pdf](http://www.akm.gov.al/assets/web_raporti-mjedisit_17.pdf)
- [5]World Bank, 2020. Worldbank.org. [Online] [Accessed 28 May 2020]. Available at: <http://documents.worldbank.org/curated/en/330811585586168639/Regional-Note-on-Air-Quality-Management-in-the-Western-Balkans-Bosnia-and-Herzegovina-Kosovo-and-North-Macedonia>

# **Virtual Space in Smart Cities as a Public Space**

## **Does virtual space impact urban planning?**

**Dr. Luca Lezzerini, Dhutata Shehu**  
*Polis University, Albania*

DOI: 10.37199/c4100028

### **Abstract**

Due to the intensive use of ICT technology, Smart Cities are based on a huge volume of data that are exchanged between machines, between humans and between humans and machines. This enormous set of data, interactions and people generate a virtual world, often referred to today as cyberspace, that seems to be far away from physical reality. In this paper, this virtual world is explored to answer two questions: is this world a public space? Do urban planners have to consider it in their plans?

The paper examines the virtual world from the point of view of qualities that identify the public space, checking for each of them if the minimal conditions are met to consider the virtual world a space and then, a public space, in the sense given by architecture and urban planning. Resulted in it is a public space, further analysis is done to evidence the need for new urban planning techniques to consider it as a part of a new kind of urban space, made by both the physical and virtual spaces.

Keywords: Smart city, urban planning, public space, virtual space, cyberspace



## **1 Introduction**

### **1.1 Research questions and objectives**

The research questions explored in this paper are related to the meaning of the virtual spaces generated in a Smart City, although the results can be applied to many other cases.

The first question is about the virtual world generated by the huge amount of data and interactions made by humans and machines in a Smart City. Can this world be considered a public space?

This question is very important for two reasons. First, if it is a public space, it has an impact and social and political dynamics. Second, if it is a public space, should it be considered by urban planners in their plans? And this is the second question. This question is even more challenging than expected because it implies that, in the case, the answer is “yes”, a new set of tools and methodologies must be developed to plan considering this new type of public space.

The objectives of the research are a better qualification of the virtual space and the evaluation of the suitability of a new approach in urban planning in Smart Cities. Both objectives aim to define a better capability to support more effectively and efficiently, socio-political dynamics in a Smart City.

### **1.2 Methodology**

The methodology used starts from the definition of virtual space and then recovers from the literature the qualities that make something be considered a space, a place and a public space. For each of these elements and their related qualities, an analysis is done to see if these qualities are met.

After having evaluated all of them and concluded that virtual space can be considered, in many cases, a public space, some conclusions about urban planning are provided.

## **2 The virtual public space**

### **2.1 Virtual places**

The evolution of technologies about ICT has generated, in the last years, a new kind of public space that is not “real”, or “physical” but can be defined as “virtual” and is often referred to as “cyberspace”. But is it a “public” space?

In Smart Cities, this phenomenon reaches its maximum due to the pervasive and ubiquitous presence of digital elements. And seems to be the driver for the creation of new social groups and then, of new kinds of societies.

If this new kind of space can be considered a public space, it is evident that the urban space has another element of fragmentation. And if this is true, a change in the urban planners’ and designers’ methodologies could be needed.

What is worth to be considered is not the technological approach to this space but a sociological and anthropological review to include (or not) it in the “public space”. The aim is to confirm (or deny) the need for a new approach to urban design and urban planning.

Today there is a lot of attention around Metaverse. Many scholars are studying it and its implications, and it seems obvious that it is a public space. Also, cyberspace has become a largely used term and it is often considered a sort of public place.

But these and other terms are rarely considered “public” after a deep evaluation of their nature. In most of the cases, they are considered obvious, but they are not analysed below the surface. Consequently, urban planners and designers do not consider these forms of spaces in their planning or consider them occasionally and in an approximative way. In most cases, this is because it is hard to consider the virtual space a tangible thing for them. After all, they are used to deal with concrete items.

To approach the problem, we must return to the original definitions of both “public” and “space” to gather their essential and characterizing qualities to check if they are present in the virtual world.

The first trial in comparing virtual and real public space is due to Graham and Marvin (1996). They

proposed a synoptic view between “electronic spaces” and urban places that gave a sense of “concreteness” to the virtual (electronic) space by assuming a correspondence with elements of the real space. This qualification of virtual elements as a different sort of concrete elements caused the capability to describe them, and to involve them in real-world processes. According to them, this allowed to state that the electronic space can be considered a sort of “place” because it can be identified and perceived in terms of a specific identity.

This ability to identify and perceive can be used to evaluate if the virtual space contains the “thresholds” that, according to (Seamon and Sowers, 2008) cause an individual to perceive his state concerning the environment (in this case the virtual space). People feel in different states depending on their position regarding a space. For example, being inside or outside a place changes the individual’s behaviour. These features are reflected in the people’s behaviour in their relationship with the real, physical place. Also, the feeling of being deeply immersed in a space or being at its surface changes the state perceived by an individual. About this “depth”, it is important to underline that being “deeply” immersed in a space means that we perceive it as a place. This is exactly what happens with most virtual spaces, the person perceives them as “authentic”, in the sense that they are “true”, that they exist, even if they are made by bits, because actions can be taken, and thresholds can be passed.

An example of this form of perception of the public space as a real space is the current use of virtual conferences or virtual meetings. Participants feel to be in the “same place” even if they are far away. They can talk, exchange documents, and more, recreating in the virtual world an architectural concept like the meeting room. So, “entering” into the meeting room, “attending” a conference and other similar real-world sentences now get a new meaning, that is the same as that was in the real world but with no need for reality.

Digital twins are now spreading and are also a common tool, especially in smart cities. But they are not 2D or 3D reproductions of the city or a part of it, they are also elements by which it is possible to control something. So they are gaining the quality to be another example of a virtual element that can be considered real due to its effect on reality.

In many cases, we can also consider a sort of reality that does not exist, the so-called augmented reality. In this kind of virtual space, the digital twin of something real is empowered by adding many other elements that are not available in the real world. These new forms of virtual space have their language and give the perception of being in a real place.

From an urban planning point of view, the space has to be considered also for the socio-political impact that it has on people.

In this sense, it has to be considered (Habermas, 1991) that a public space is “a domain of our social life in which such a thing as public opinion can be formed”. This characterisation of the public space has also other constraints that are the freedom of opinion, the possibility to meet and exchange thoughts, the “rationality” of their discourses (in the sense that they are not random discourses but follow specific aims and paths, even when using irrational elements). All these conditions are also evidenced in Habermas (1994). In a few words, Habermas requires a group of people that can freely speak “rationally” somewhere. This somewhere is a place. In this sense, the virtual space can be considered a place. People meet in the virtual space, in groups, acquiring information from sources (social, digital newspapers, e-books, ...) and exchanging ideas and opinions about something.

## **2.2 Has the virtual space socio-political impact?**

Can the virtual world produce the socio-political discourse depicted by Habermas? It is evident that in any social network, this continuously happens. Evolving from Web 1.0, where the communication was mostly a one-way transfer (like books) the virtual space has moved towards Web 2.0, where users hat s

generate content, where this communication has become bidirectional, generating a lot of interactions. Web 1.0 cannot be considered a public space in the sense of Habermas while Web 2.0 can. But with Web 3.0, blockchain technology is providing the tools to automate a part of the discourse. So, with Smart Contracts, Decentralized Apps (Dapps) and Decentralized Autonomous Organisations (DAOs), a new form of public space is appearing. Web 2.0 was the digital version of the medieval square, where people could meet and exchange information, thoughts and goods. Web 1.0 was the digital version of Hyde Park's speakers' corner.

In Web 3.0 we have something never seen before in real public space, that is the capability to enforce agreed rules (i.e. Smart Contracts) and build even complex organisations between people that do not trust each other (DAOs). And the blockchain is something virtual because even money is virtual inside it (cryptocurrencies).

So, in Web 3.0 we have both social and political effects that fully cover the Habermas vision of socio-politics, but overcoming limits given by space (remote connections), trust (Smart Contracts and DAOs), physical goods (Non-Fungible Tokens and Cryptocurrencies), but in a form that cannot be considered as already present in the real world.

With Web 3.0 we have the apotheosis of a decentralized structure, fully immersed in virtual space, and this shapes new forms of communities.

The questions now are if it is possible (or mandatory) to redefine democracy and sociality, politics and even economics due to this decentralized and untrusted approach to reality if we need to start thinking of different social structures if we are facing the risk of emarginate some communities due to this virtual world interaction.

Major concerns have arisen around the generational digital divide. But also around the geographical digital divide, where many areas of the world have not been served by affordable and reliable connections.

For many years citizens have been thinking that the virtual space will allow a sort of direct democracy, letting them vote from home or implementing complex DAOs over the blockchain. But is this true? Telematic frauds have been evidenced in many cases, and attacks on ICT systems are a daily war that is reported by all media. DAOs are more robust than previous forms of virtual organisations but are far from supporting the needed complexity for a modern use case.

But, anyway, all these elements confirm that the virtual space (from Web 1.0 to 3.0) has socio-political effects. This implies that it is also a public space.

In any case, this new kind of public virtual space must be analysed to assess its risk. This is true from sociological and political perspectives, then it can interest urban planners who often must support some forms of sociological and political dynamics.

These dynamics mandatorily need a deep analysis of the impact of ICT on social and democratic life. However, this analysis can be conducted only as a qualitative one, not quantitative. Television, first, and smartphone last, have been accused of generating a social decline, driving people towards individualism, egoism and more. This single-individuals society has led to the erosion of social awareness and also to political indifference. This can be a risk also for any generic virtual environment.

These environments are often seen as post-industrial products that are used by consumers, to acquire their goods, but also from minorities or "losers" (i.e. oppressed people) that can find in this cheap and extended place a way to communicate, organise, and exchange information. But, over time, their impact has become evident because they generated a transformation that revealed itself in the real social structure, reproducing both already known and existing social dynamics.

With the COVID-19 pandemic, the struggle against the so-called "fake news" and the Twitter files

released by Elon Musk have demonstrated how powerful can be virtual space and how dangerous can be its misuse, from the social and democratic point of view.

Many communities have been born on the Web but they also have a real-world presence. An example can be the Italian “Cinque Stelle” movement, which started from a blog and spread up to the entire country up to the Italian Parliament. It promised direct democracy, and strong virtualisation and got enough votes to form a government.

Another example could be an anti-globalist movement that started on the Web and now is developing a strategy called “glocalization”, a proper combination of both local and global.

Both behaviours show that these communities are performing their acts in both spaces: virtual and physical, and that no one of these spaces can be considered more important than the other. They have become a sort of meta-public space composed of both virtuality and reality.

### **2.3 Identity of a place**

According to scholars, a place can be qualified by the ability to have an identity, that distinguishes it from the generic space and, at the same time, is provided by the users of the place. For example, according to Tuan (1977), “a place is a kind of object where values are concentrated”. According to him, the “meaning of the place is built through a reciprocal and embedded process that involves both the single human being and the collective intelligence of the users of the place”.

Continuing with Tuan, “emotions and thoughts are determined through the individual experience of place”. The experience is defined by him as the result of sensations and perceptions. Tuan considers this “experience” as mediated by the five senses, but this concept can be widened to fit the virtual space where mostly viewing and hearing are allowed, although other forms of interaction are emerging nowadays. Due to this limitation, the virtual world cannot be considered a “meaningful place” according to Tuan definitions, preventing it from being considered a physical place.

But Tuan is not the only one. According to other scholars, is the community that defines a “place”. So, the meaning and the existence of a place are defined by the collective action of the community. The meeting of people and their actions generates a social interaction that happens in a space, and this space can be considered a place. This causes that identity to be built among people sharing the same space, in the sense of the same portion of ground but can be extended to the same portion of the virtual space. This identity, built on sharing and interacting in a common environment, defines places and these places can be referenced as public places.

Another important element that characterizes the place is its stability. A place must be still, must be stable (Lefebvre 1996), and must be the opposite of something moving. The place is different from the space, and Lefebvre states that a place (and not a space only) allows people to generate an “oeuvre”. The oeuvre is the work, the effect, resulting from the collective identity existence. It is realized, according to Lefebvre, within the daily rhythm of life. And this rhythm is also combined with rhythms and practices generated by political elements (Lefebvre, 1996).

A virtual environment can be very different from a political project, it can be a simple sort of social aggregation, but in any case, it delivers new behaviours (habits and rites) that apply to a social environment, but also to political and even cultural spheres. This seems to suggest that a virtual community could be redefined, following Lefebvre's definition, a sort of generator of oeuvre. To check if this assertion can be considered true, we must consider the impact of this “virtual oeuvre” on reality. In a virtual community, its members experience a sense of freedom and a sense of power that, even if not always, in many cases has a direct impact on the individuals' behaviours in the real world. This impact, which sometimes is an illusion, often is concrete and gives stability to the virtual community, identifying the virtual space as a place.

## **2.4 Is urban space evolving through virtual space?**

Today, at the beginning of the XXI century, urban space in the city has been influenced and constrained by new dynamics generated by capitalism and technological evolution. ICT infrastructures have become a driver of the definition of the urban form, for example, due to the need to build where broadband connection is available.

Today, any city requires an adequate set of ICT services, mainly broadband and high-speed processing but also qualified workers. To provide these workers, for example, it is needed the development of specialized technical schools and universities. Songdo's experience (a Korean famous smart city built from scratch as a smart city) shows that workers and entrepreneurs must be attracted by the place and that it must be suitable also for their families. Modern cities are becoming important due to the number of PhDs and universities because they can provide support to industries based on communications and computer science (almost any kind of industry, today).

These new trends of industry planning, and their impact on residential and service areas, changed the patterns used by urban planners. Good ICT facilities, small office spaces, and teleworking are dramatically reducing the need for large buildings and today's working groups in companies are becoming virtual groups. Team members are far from the company, working remotely. The consequence is that many services like parking or transportation, like accommodation or food services are not needed anymore. Intensive information processing companies moved from the city centre to suburban or even, rural areas, sometimes causing city centre degradation. The key factors for this displacement are mainly good connections.

Consequently, local governments are trying to provide fast and reliable ICT services. This can lead to the rebirth of peripheries, and to assign to city centres different functions, mainly leisure and art, changing city centres into spaces more public than in the past.

People using ICT for their work will have more time for recreational activities, and this changes their behaviour.

In a few words, changes caused by virtual spaces have led to the need to change urban planning and design approaches.

## **2.5 Is there a new mission in urban planning and design?**

The participation issue has always been a key strategy in urban planning. Today an individual is more oriented to avoid participation or change it into violent forms (riots, rallies, ...). The contrast between building and dwelling (Sennet, 2018) has led to a loss of participation. In this sense, the participation needs to be reinforced and even empowered. Virtual spaces, on the one side, increase participation but, on the other side, they accentuate individualism and poor results. It is, then, mandatory finding for new ways of planning making it part of the democratic life (and participation in general) of modern societies. This means that, without distinguishing the concepts from the methods, some guidelines on how to act must be sought out, redefining, if needed, some aspects of urban planning and design professions.

One guideline can be the one that Habermas defined as "communicative action". Although his studies are not enough detailed, they identify such action as an important element of human action that involves participatory democracy.

Communicative action is a kind of action composed of the acts of the members of an inter-communicating community. He states that communicative action is the "island in the sea in human praxis" (Outhwaite, 1994).

This viewpoint has been hardly criticized because it seems to be based on a consensual position, meaning that it ignores conflicting forces (class, race, gender and culture) as drivers for participation in

Marxism states (Healey, 1998). Healey considers planning as a form of action that can be done only after a conflict (discussion). Healey also states that this debate should be managed by discussing “moral dilemmas”. Anyway, Habermas’s claims of comprehensibility, integrity, legitimacy and truth (1991) remain mandatory for this process.

Participation in planning has emerged following criticisms. These critics caused a change in the concept of planning from a top-down technocratic approach to one democratic bottom-up where participation is not an issue but the real focus of the process. Consequently, the planners’ role has changed into a shaper of alternatives suitable for different social groups.

Participation is a challenging issue to be dealt with in a political analysis framework. In the information age, public participation is made easier, and the use of information tools (including virtual spaces) can be one of the searched guidelines to empower it.

A quick review of the social, cultural and political evolution of cities in our age, discloses the political content of urban planning and design. The Internet-based communication technology lets local identities evolve to be more political and global but, on the other side, it creates many fragmented localities in the urban space. The 3D reality is now overcome by the n-dimensional virtual space and, consequently, urban planning and design requires a review to be more politically focused (hopefully in the sense of democracy, but in many cases some oligarchic and technocratic forces try to harness them, like in the past regime architecture). But we can go further in this approach forcing us to consider social issues in the spatial context more than in the past, changing urban planning and design into a policy-making process.

Even if it is almost always considered that the virtual environment cannot be a real replacement for physical urban space and face-to-face relationships, we must remark near all technological changes with serious impacts on social, cultural and economic relationships are in the context of virtual environments, that impact on physical space reducing its importance. E-commerce, E-mail, social networks, and teleconferencing, just to give some examples, have led to the construction of a new interpretation of the public sphere. This public sphere on one side causes an involution of the individual over itself, increasing individualism, but on the other side causes the birth of new kinds of relationships, in many cases used as a child (e.g. maniacally publishing selfies on Facebook) but in other cases creating new experiences that were impossible before.

This new concept of the public sphere is ready to be deployed to combine social justice and cultural differences in the urban context. Also, it is leading to new forms of virtual-real projects that can have an impact on public space and future planning and design of urbanity.

This evolution is leading to a new concept that has been proposed by some scholars that state that the protagonist of modern city building is not planners, but the “spaceless logic of networks” (Uçkan, 2000). This idea is surely applicable to the Smart City where networks have been present since its foundations. But networks must not be considered only in the sense of real, concrete nets like streets, cables, wireless, or computer networks. The network concept is extended to virtual environments where the possible combinations are almost infinite.

This issue should be not considered only in a social and political analytical framework, but also in the sense of a more practical and pragmatic perspective, due to the evolution of the profession of urban planners and designers caused by new (types and shapes of) urban dynamics. The “fall of public man” (Sennet, 1992), impacts the public space, leading it into a crisis, but this crisis is not the consequence of formal or spatial issues, but mostly because a new type of activity has generated activity-based criticalities. It should now be evident that urban planners and designers must take into account ICT (continuous and fast) evolution to redefine activity patterns in urban public spaces. The present time is forcing

all of us to merge physical and virtual spaces into a new concept. In this context, a relevant driver is an activity, whose design becomes a mandatory exercise especially, for example, for urban designers who are in charge of revitalizing or recovering urban space. This evidence implies that, while urban-architectural design can be even performed individually, an effective activity-based design needs public participation. But this, often, implies altering the behavioural patterns of different types of the space's users. Such change is a hard task, particularly today where immigration, urban culture fragmentation, family kernels collapse, and other social changes are increasing cultural diversities and, consequently, enhancing this problem.

Consequently, urban space design should promote real and effective negotiation among different types of user groups, because social diversity is considered an important element of urbanity (Butina, 1993). It should be underlined that it is expected that persons are interested in issues that impact their everyday lives and, consequently, in short-term planning decisions. Given this assumption, urban planners and designers should consider that trying to involve people in long-term macro planning decisions can be useless while staying close to their everyday lives both disciplines (but urban design in particular) can not only result in being very effective but also in helping to establish public participation. The urban transformation has demonstrated that the idea of "using computers for planning" has changed into "using planning for computers" since the end of the former century (Batty, 1995). With the aid of computers planners and designers understood and analysed urban structures in more effective and complex ways. In a Smart City, this phenomenon has exponentially grown and, given that with computer-aided urban planning and design the urban space has become computable, including numerous social, economic, political and spatial variables and their relationships together, a Smart City this feature goes far beyond the design and planning phase and is extended to the entire city life cycle. With the ability to read urban environment as a "datascape" and "infoscape", but especially through the immense data lake generated by a Smart City, it is now not only possible to avoid deterministic and static paradigms of urban planning and design and configure realistic and dynamic urban strategies, it is also possible to adapt to fast-changing requirements and technologies. By going beyond the traditional relational database paradigm, data has become easy to store and has been made available to a large public, enabling them even in a new form of the participatory process up to the decision-making stage and even further in change reaction steps.

## **2.6 Conclusions on the Impact of Virtuality on Physical Reality**

The questions to be answered, are:

- Does virtual space realize a form of the public sphere?
- Does it provide the notions of a collectively constructed place?
- Does it present the politically defined aura of publicness?

Answering "no" will mean that all ICT and other technological elements of modern society are just technicalities and have no impact on the socio-political components of our future.

If the answer is "yes", then it is possible to infer that such technologies have a socio-political impact and must be considered in the future evolution of societies and communities.

But answering "yes" generates concern about the side effects of these social and political impacts, about lights and shadows that can arise from them.

To approach this question, two extreme positions are available: the pessimistic one and the optimistic one. The pessimistic view sees only the shadows (i.e. the risks and the dangers) and opposes change. The optimistic one sees only the lights and has total faith in the goodness of development.

The first results in the wide use of virtual spaces (social networks, the Web, virtual reality, ...) have demonstrated that mankind is acting as a sorcerer's apprentice and uses these technologies ignoring or

not fully understanding the risks. Many advantages have been delivered by virtualization as many as new problems.

Even if in this phase both pessimistic and optimistic views have numerous supporters, what can be stated now is that there are no clear-cut answers about trends of the impact of ICT development on socio-political contexts. This element is even more uncertain in Smart Cities where the obsessive use of ICT enhances reasons for extremely pessimistic and optimistic reasons.

An example is Amersfoort, a town of about 150 thousand citizens in the Netherlands.

Amersfoort will not become a smart city, because citizens concluded that the risks are too high.

Amersfoort wanted to be one of the smart cities in the Netherlands, but the Amersfoort Smart City program was stopped at the beginning of 2023. Citizens have been feared when thinking about smart streetlights, Wi-Fi tracking, and algorithmic behaviour prediction. The municipality wanted to create an open "living laboratory" where to experiment with technologies, provided that no one could become a sort of guinea pig.

But suddenly Amersfoort cancelled the entire project because the costs and risks proved to be too high and too great.

The (former) project manager of the Smart City project, De Stadsbron, has gone beyond stating that, in his humble opinion, the smart city paradigm will not be applied in any other part of the country.

The first issue was the Wi-Fi tracking of people. This technology has repeatedly been the subject of privacy concerns. Enschede, another 150 thousand citizens' town, had already introduced WiFi tracking with the result of a fine of hundreds of thousands of euros to the municipality. The reason for such a fine was that in the city centre of Enschede, passers-by were counted using sensors. According to the Municipality, these counts were carried out "anonymously". Nonetheless, the personal data authority fined the municipality €600,000. According to the authorities, the citizens' privacy was not adequately protected, as they could be traced unnecessarily. In addition, the use of WiFi tracking is in itself a serious violation of the AVG (the Data Protection Regulation in the Netherlands), the authority said.

In the case of Amersfoort, the pessimistic perspective has prevailed but, on the other side, in the context of ICT, it seems reasonable to make optimistic projections about a sort of "new public man" concerning the social, political and spatial characteristics of virtual spaces. Such a perspective enables us to rethink the virtual sphere in a positive perspective considering the democratic vitality of the public way of life in real urban space as well.

The syntactic structure of the virtual environment has evolved and is moving away from the original conventional space conception. Today's spatial metaphor is secondary in the virtual environment due to the birth of a new spatial language derived from ICT technologies.

Abandoning this physical syntax, the phenomenon of the virtual space has been increasingly tied with the activity patterns that it supports, initially ruled by commercial and entertainment spaces, but now related to other forms, sometimes not existing before, of social and political activities.

It is time, now, to reconsider planning and design, defining them as socio-political actions, that integrate virtual space into the process of planning and design, supporting a social transformation that integrates into the public sphere both real and virtual environments. Considering the tools of cyberspace in the planning and design process widens the impact area of planning, increases the flexibility of the results, and improves long-term participation, including the "new public man" (the XXI century's citizen) into all phases of the feedback mechanisms, dynamically and continuously, in near real-time.

This will mean that not only the integration of both spaces must happen in technical terms, but also that is now possible the integration of the fragmented localities in urban space, which can now have a



democratic voice in the decentralized virtual environment, in social and political terms.

### 3. References

- Batty, M. (1995). The Computable City. <http://www.geog.buffalo.edu/Geo666/battymelbourne.html> (last accessed April 2021)
- Butina, G. (1993). Urban Space as a Negotiated Product. Second Symposium on Urban Design and Implementations
- Graham, S., & Marvin, S. (1996). Telecommunications and the city: Electronic spaces, urban places. London: Routledge. <http://dx.doi.org/10.4324/9780203430453>
- Habermas, J. (1991). The public sphere In Mukerji, C.; Schudson, M.(Ed.): Rethinking popular culture. Contemporary perspectives in cultural studies. Berkeley/Los Angeles: University of California Press.
- Healey, P. (1998). Building Institutional Capacity through Collaborative Approaches to Urban Planning. *Environment and Planning A: Economy and Space*, 30(9). <https://doi.org/10.1068/a301531>
- Healey, P., & Hillier (2010). *The Ashgate Research Companion to Planning Theory: Conceptual Challenges for Spatial Planning*. Farnham: Ashgate
- Lefebvre, H. (1996). *The Right to the City*.
- Outhwaite, W. (1994). Book Reviews. *Sociology*, 28(2). <https://doi.org/10.1177/0038038594028002027>
- Seamon, D. & Sowers, J. (2008). Place and Placelessness. *Edward Relph*. 10.4135/9781446213742.n5.
- Sennet, R., (2018). *Building and Dwelling: Ethics for the City*, Farrar Straus and Giroux
- Sennett, R. (1992). *The Fall of Public Man*. W.W. Norton Company
- Tuan, Y. F. (1977). *Space and Place: The Perspective of Experience*. Minneapolis, MN: University of Minnesota Press.
- Uçkan, Ö. (2000). Arachne Meets Daedalus: WebCity. *domus m*, October/December 7

**Abbreviations:**

AAQ	Ambient Air Quality
AM	Air Monitoring
AAP	Ambient Air Pollution
AKBN	National Agency of Natural Resources
CC	Climate Change
CO <sub>2</sub>	Carbon Dioxide
CO	Carbon Monoxide
COP	Conference of Parties
EC	European Commission
EU	European Union
EV	Electric Vehicles
HC	Hydro Carbons
ICE	Ignition Combustion Engines
IPH	Institute for Public Health
LEZ	Low Emission Zone
MIE	Ministry of Infrastructure and Energy
MTE	Ministry of Tourism and Environment
NO <sub>x</sub>	Nitrogen Oxides
PA	Paris Agreement
PM <sub>10</sub>	Particular Matter 10micrometer
ppm	Part Per Million
WB	World Bank
ULEZ	Ultra Low Emission Zone





**Scientific Academy of Albania**