



University of Zagreb

Faculty of Architecture

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**SPATIAL PLANNING CRITERIA FOR
RELATION ENHANCEMENT BETWEEN
URBAN AND NATURAL LANDSCAPE
OF THE EAST ADRIATIC COAST**

DOCTORAL DISSERTATION
Book I

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Supervisor:
Full Professor Bojana Bojanić Obad Šćitaroci, PhD

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Sveučilište u Zagrebu

Arhitektonski fakultet

Ana Sopina

**PROSTORNOPLANERSKI KRITERIJI
ZA UNAPRJEĐENJE ODNOSA
URBANOGA I PRIRODNOGA PEJSAŽA
ISTOČNE JADRANSKE OBALE**

DOKTORSKI RAD
Knjiga I

Mentor:
Prof. dr. sc. Bojana Bojanić Obad Šćitaroci

Zagreb, 2024.

Acknowledgements

Greatest thank you to my mentor who has seen the uniqueness in my weaknesses and allowed me to develop my own perspectives on Nature, Earth, and Life itself into doctoral research.

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Thank you for your continued support over the past years.
My success belongs to all of you as well.

Supervisor CV

Full professor Bojana Bojanić Obad Šćitaroci, PhD, is a graduate architect and has a scientific master and doctoral degree in the field of architecture and urban planning. She is a retired professor at the Faculty of Architecture of the University of Zagreb, the Department of urban planning, spatial planning, and landscape architecture. She speaks English, French, German, and Italian, and can use Spanish, Latin, and old Greek.

In 1974 she enrolled the Faculty of Architecture of the University of Zagreb where she graduated in 1980. During the year 1982 she did a scientific and expert advanced training in Montreal (Canada). She earned her M.Sc. in 1986 at the Architectural heritage post graduate studies (Faculty of Architecture University of Zagreb), and in 1990 she obtained her D.Sc. Upon graduation, she worked as an architect and urban planner at the Croatian Urban Planning Institute. Since 1991, she has been working as an independent scientific researcher, urban and spatial planner. In the academic year 2007/2008 she was a part-time lecturer at the Faculty of Architecture University of Zagreb - Department of Urban planning, spatial planning, and landscape architecture, where she was employed as an Assistant Professor (1st July 2008), as an Associate Professor (18th July 2012) and as Professor (10th April 2018).

She is the author/co-author of five books, about forty scientific articles, ten scientific studies from the field of landscape architecture, forty urban plans and studies, and thirty designs from the field of garden and landscape architecture. She actively participates in national and international scientific research projects in the field of landscape architecture as well as in national and international scientific-expert conferences with topics related to landscape architecture and cultural heritage. She is a reviewer of scientific-research projects in the field of architecture and urban planning.

She has completed an international workshop Professionalization of PhD Supervision for mentoring in doctoral work. She has delivered lectures at the post graduate studies in Turin (Italy). At the Faculty of Architecture, University of Zagreb, she was teaching Theory and Design of Landscape Architecture and Space Syntax at the doctoral scientific studies (until 2018) and Module Scape at the Postgraduate doctoral scientific study: Architecture and Urbanism (until 2022). She gave lectures at the Postgraduate Specialist Study: Architecture and Urbanism; Spatial Planning, cycle: Strategic Planning and Sustainable Development (from 2018 till 2022). She lectured Landscape Architecture and managed the course of Landscape Design on the B.Sc. Architecture and Urban Planning Studies at the Faculty of Architecture in Zagreb, and lectured Contemporary Landscape Architecture, held Workshop of Landscape Architecture, and supervised graduate theses on the faculty's M.Sc. studies (all until 2023).

Abstract

The research phenomenon of the ‘urban and natural landscape relation’ testifies to 25 centuries of urban culture in the Mediterranean. It is a multidimensional changeability process that integrates spatial, temporal, and perception landscape characters, as well as functional and holistic principles fostered by the spatial planning point of view. The research is incited by the premise that urbanity has emerged from landscape, transforming and intertwining the natural with the cultural and urban landscape. The problems of extensive urban spread into natural resources indicate the disrupted relation between urban and natural landscape that is further intensified in the Adriatic Coast where cities are settled between two strong natural elements – the sea and the mountain - which limits spatial development and planning.

The methodological research approach integrates three research steps - theoretical analysis of the existing knowledge, spatial comparison of case studies with field research of landscape relation perception, and spatial planning criteria for evaluation and enhancement of the urban and natural landscape relation. The comparison of the urban and natural landscape relation as landscape setting is conducted on Mediterranean (26) and Adriatic (36) research cases presented in tables and landscape photographs. Spatial planning criteria for relation enhancement integrate spatial, perception, and identity criteria for evaluating the landscape relation that are verified in spatial planning documents of representative cases of Ancona, Italy; Rijeka, Croatia; and Budva, Montenegro. The spatial planning research of the landscape relation has its methodological background in the *Heritage Urbanism* approach and the *Urbanscape Emanation* concept in overlapping different perspectives and multiple landscape layers to plan the holistic balance between urban and natural landscape.

The spatial planning criteria for the enhancement of the urban and natural landscape relation result from theoretical, spatial, and spatial planning research as well as from: (i) administrative setting, (ii) geographical setting, (iii) continuity of historical setting, (iv) heritage setting, (v) interaction of anthropogenic and ecological networks, (vi) transformations of landscape setting, (vii) visual (scenic) setting, (viii) communication setting, (ix) identity setting, (x) vivacity setting, (xi) endogenous setting, and (xii) spatial planning setting. The doctoral research is finalised by setting the spatial planning criteria which advance resilient development, foster the quality of life in concordance with spatial planning goals of sustainability and contribute to raising awareness of landscape values.

Key words: Landscape Heritage, Landscape Perception, Setting Criteria,
Adriatic Coastal Mountains, Mediterranean Cities

Kratki sažetak

Istraživački fenomen ‘odnosa urbanog i prirodnog pejisaža’ svjedoči o 25 stoljeća urbane kulture na Mediteranu. To je višedimenzionalni proces promjenjivosti koji integrira prostorni, vremenski i perceptivni karakter pejisaža te funkcionalna i holistička načela prostornog planiranja. Istraživanje je potaknuto premisom da urbanost proizlazi iz pejisaža, istovremeno preobražujući i ispreplićući prirodni s kulturnim i urbanim pejisažem. Problemi ekstenzivnog urbanog širenja u prirodne resurse ukazuju na narušeni odnos urbanog i prirodnog pejisaža. Odnos pejisaža dodatno je intenziviran na jadranskoj obali, gdje su gradovi smješteni između dva snažna prirodna elementa – mora i planine – koji ograničavaju prostorni razvoj i planiranje.

Metodološki istraživački pristup integrira tri istraživačka koraka – teorijsku analizu postojećeg znanja, prostornu usporedbu studija slučaja s terenskim istraživanjima percepcije pejisažnih odnosa te prostornoplanske kriterije za evaluaciju i unapređenje odnosa urbanog i prirodnog pejisaža. Usporedba odnosa urbanog i prirodnog pejisaža kao pejisažnog smještaja provedena je na mediteranskim (26) i jadranskim (36) primjerima gradova prikazanim tablicama i fotografijama pejisaža. Prostornoplanski kriteriji za unapređenje odnosa integriraju prostorne kriterije te kriterije percepcije i identiteta za evaluaciju odnosa pejisaža koji su verificirani dokumentima prostornog planiranja reprezentativnih primjera Ancone u Italiji, Rijeke u Hrvatskoj i Budve u Crnoj Gori. Istraživanje odnosa urbanog i prirodnog pejisaža ima metodološku pozadinu u pristupu *Urbanizma naslijeđa* (*Heritage Urbanism*) i konceptu *Emanacije urbanog pejisaža* (*Urbanscape Emanation*) u preklapanju različitih perspektiva i višestrukih slojeva pejisaža kako bi se planirala holistička ravnoteža između urbanog i prirodnog pejisaža.

Prostornoplanski kriteriji za unapređenje odnosa urbanog i prirodnog pejisaža rezultat su teorijskih, prostornih i prostorno-planerskih istraživanja koja promoviraju sljedeće sastavnice pejisažnog smještaja: (i) administrativni smještaj, (ii) geografski smještaj, (iii) kontinuitet povijesnog smještaja, (iv) naslijeđe smještaja, (v) interakcija antropogenih i ekoloških mreža, (vi) transformacije pejizažnog smještaja, (vii) vizualni smještaj, (viii) smještaj komunikacija, (ix) identitet smještaja, (x) životnost smještaja, (xi) endogeni smještaj te (xii) prostorno-planerski smještaj. Zaključak doktorskog istraživanja donosi pregled prostornoplanskih kriterija koji potiču otporan razvoj, njeguju kvalitetu života u skladu s ciljevima održivosti prostornog planiranja te doprinose podizanju svijesti o vrijednostima pejisaža.

Ključne riječi: naslijeđe urbanog pejisaža, percepcija pejisaža, kriteriji smještaja, planine obale Jadrana, gradovi Mediterana

Breve Sintesi

Il fenomeno della relazione tra paesaggio urbano e paesaggio naturale testimonia 25 secoli di cultura urbana nel Mediterraneo. È un processo multidimensionale che integra dimensioni spaziali, temporali e percettive, nonché principi funzionali e olistici promossi dal punto di vista della pianificazione territoriale. La ricerca è indotta dalla nozione che l'urbanità è emersa dal paesaggio, trasformando il paesaggio naturale in paesaggio culturale e urbano.

La relazione tra paesaggio urbano e paesaggio naturale presenta una risorsa spaziale e patrimoniale unificata e non rinnovabile che viene esplorata sovrapponendo diverse prospettive. La ricerca utilizza l'approccio *Heritage Urbanism* e il concetto *Urbanscape Emanation* per mirare all'equilibrio della pianificazione spaziale e raggiungere l'olismo tra più strati paesaggistici. L'approccio di ricerca si articola su tre livelli sovrapposti: teorico (conoscenze esistenti), spaziale (confronto di casi di studio e ricerca sul campo) e pianificazione territoriale (criteri di valutazione e aumentare). La ricerca di casi di studio è condotta su ventiquattro (24) casi di ricerca mediterranei, trentasei (36) adriatici e tre (3) rappresentativi provenienti da Italia (Ancona), Croazia (Rijeka) e Montenegro (Budva) che dimostrano la modelli di relazione spaziale e problemi relazionali percepiti.

I principali obiettivi della ricerca includono: (O1) L'identificazione dei problemi di relazione paesaggistici, (O2) La definizione di fattori di identità e criteri di valutazione per (O3) Lo sviluppo di criteri di pianificazione territoriale per l'aumentare delle relazioni del paesaggio urbano e naturale della Costa Adriatica Orientale. I risultati della ricerca verificano che identificati problemi di relazione paesaggistici e i criteri per valutare la relazione paesaggistici da studi teorici, casi di studio e ricerche sul campo devono essere affrontati dalla pratica di pianificazione spaziale per migliorare la relazione tra il paesaggio urbano e naturale. I criteri di pianificazione territoriale per migliorare la relazione tra il paesaggio urbano e naturale promuovono criteri di assetto: (i) Assetto amministrativo, (ii) Assetto paesaggistico, (iii) Continuità dell'assetto storico, (iv) Assetto patrimoniale, (v) Interazione tra reti antropici ed ecologici, (vi) Trasformazioni dell'assetto paesaggistico, (vii) Assetto visivo, (viii) Assetto della comunicazione, (ix) Assetto dell'identità, (x) Assetto della vivacità, (xi) Assetto endogena e (xii) Assetto della pianificazione spaziale.

Parole chiave: Patrimonio paesaggistico urbano, Percezione del paesaggio, Criteri di assetto, Montagne mediterranee, Montagne costiere adriatiche

Extended (structured) summary

SPATIAL PLANNING CRITERIA FOR RELATION ENHANCEMENT BETWEEN URBAN AND NATURAL LANDSCAPE OF THE EAST ADRIATIC COAST

The research phenomenon of the ‘urban and natural landscape relation’ testifies to 25 centuries of urban culture in the Mediterranean. It is a non-renewable spatial and heritage resource that includes landscape reality and its representation as well as interconnects urban development processes and natural landscape transformations. The research premise is that urbanity has emerged from landscape, transforming and intertwining the natural with the cultural and urban landscape.

The basis for determining landscape is acknowledged in action and interaction of the natural and/or human factors, relations between people and territory, and simultaneous consideration of urban, cultural, and natural landscape constituents. Urban landscape is identified in the form of the city as well as built and anthropogenic structures, extensions and metastases of urban structures and infrastructure, and transformed natural landscape in service of the city. Natural landscape presents predominantly natural landscape and includes all landscapes shaped by natural structures within the urban and extra-urban areas. Determining urban and natural landscape in this manner implies mutual influence, transformation, and co-development that form the (inter)relation between urban and natural landscape.

The interdisciplinary and comprehensive perspective on landscape and interactions between spatial, social, and symbolic landscape dimensions form the basis for holistic research of the landscape relation from the spatial planning point of view. The research is further focused by the spatial scope of the intensive urban setting between the maritime coasts and slopes of mountain hinterlands that provides a unique place identity. This intensive urban setting additionally intensifies the spatial condition of extensive urban spread into natural landscape and causes numerous limits on spatial development and planning. The urban setting between two strong natural elements of the sea and the mountain is recognised in the wider spatial context of the Mediterranean coast and specific context of the Adriatic coast with the mountain hinterland of the Apennines in the west and the Dinarides in the east.

The theoretical, spatial, and spatial planning incentives are identified as research problems that are based on the objectives of European and international policy documents and relevant literature on protection, management, and planning of urban and natural landscape, as

well as on spatial and spatial planning conditions between cities and their (predominately) natural setting within the Mediterranean and the Adriatic. The theoretical research gap indicates that the research phenomenon of the ‘urban and natural landscape relation’ as well as its changeability process are neither determined nor systematically analysed within the scientific field of spatial planning. Spatial problems of extensive spread of cities, towns, and settlements into natural resources disrupt the balance between the landscape relation. The spatial planning challenges concern (besides the existing strategies, criteria, and indicators) the missing spatial planning criteria for the enhancement of the landscape relation that contribute to a comprehensive understanding of landscape and developing a holistic balance between urban development and natural landscape transformations.

The research aims to investigate how spatial planning evaluates and guides the changeability process of urban and natural landscape relations in the specific context of Adriatic coastal cities, towns, and settlements. This main research aim is explored through theoretical, spatial, and spatial planning objectives: (i) to identify and define relation problems between urban and natural landscape, (ii) to determine identity factors and establish criteria for evaluating the urban and natural landscape relation, and (iii) to develop spatial planning criteria for planning the enhancement of the urban and natural landscape relation of the East Adriatic Coast.

The scientific research of the landscape relation from the spatial planning perspective is conducted as qualitative research of the research phenomenon within its setting. The research is based on the comparative case study method complemented with the main research methods of logical argumentation, literature review, interpretative historical method, and field research. Research tools for the analysis of research materials and synthesis of research results include research catalogues, tables, schemes, and landscape photography. The scientific research of developing the spatial planning criteria for the enhancement of the landscape relation has its methodological background in the *Heritage Urbanism* approach that promotes identity factors, evaluation and enhancement criteria, and enhancement models as methodological steps and the *Urbanscape Emanation* concept in overlapping different perspectives and multiple landscape layers for holistic planning of urban and natural landscape.

The structure of research design in establishing groups of criteria for evaluating and enhancing urban and natural landscape sets theoretical, spatial, and spatial planning research steps that are presented in two books. Book I – Doctoral Dissertation consists of research chapters 1-9 that are complemented by research catalogues 1-7 of Book II - Appendix. The

theoretical research (Chapters 1 – 3) analyses the comprehensive and interdisciplinary concept of landscape within the theoretical framework and spatial planning policies to determine theory-based criteria for evaluating and planning the enhancement of the landscape relation (Theoretical research catalogues 1 and 2). The **spatial research** explores spatial characteristics of twenty-six Mediterranean Overview Examples (Spatial research catalogue 3) and thirty-six Adriatic Research Cases (Spatial research catalogue 4) to identify spatial criteria for evaluating urban and natural landscape relations. The perception characteristics of Representative Research Cases of Ancona, Italy; Rijeka, Croatia; and Budva, Montenegro (Field research catalogue 5 and Perception research catalogue 6) are explored to identify the perception and identity criteria for evaluating urban and natural landscape relations. The **spatial planning research** (Chapters 7- 9) explores historical and contemporary spatial plans of Representative Research Cases (Spatial planning research catalogue 7) to establish the existing and missing spatial planning criteria for the enhancement of the landscape relation.

The **research introduction** (Chapter 1) presents the research phenomenon of the urban and natural landscape from the spatial planning point of view within the wider context of comprehensive and interdisciplinary understanding of landscape. Incentives for the spatial planning research of the research phenomenon are identified in theoretical research gaps, spatial condition of the urban and natural landscape relation, and related spatial planning challenges that are responded to by research objectives, hypotheses, and expected scientific contributions. The set scientific methods and research materials support the threefold research design and structure of theoretical, spatial, and spatial planning research steps in establishing the criteria for evaluating and planning the enhancement of the landscape relation.

The **state-of-the-art** (Chapter 2) sets the theoretical framework of the research phenomenon from the spatial planning perspective. The literature review method is used in overlapping different perspectives on protection, management, and planning of urban and natural landscape from international policy documents, scientific research approaches, and literature sources relevant for the research topic and scope. The inseparability of urban and natural landscape is confirmed within this theoretical framework and the established identity factors of urban and natural landscape. The **research phenomenon is determined from the spatial planning perspective** which is set as the basis for developing the criteria for evaluating and planning the enhancement of the urban and natural landscape relation in further theoretical, spatial, and spatial planning research steps.

The theoretical research step is finalised by the **systematisation of theory-based criteria for evaluating and planning the enhancement of the urban and natural landscape**

relation (Chapter 3). It is conducted as a literature review of selected policy documents and scientific research approaches that: (i) identify the criteria in landscape analysis, planning, and protection and (ii) engage in determining the aspects of the urban and natural landscape relation from the spatial planning perspective. The reviewed literature only identifies the criteria for evaluating and/or enhancing urban and/or natural landscape, missing the criteria that concern the relation between urban and natural landscape. Thus, the extensive list of the identified theory-based criteria is organised, interpreted, and grouped within the **theoretical research catalogues** differing evaluation criteria from enhancement criteria. The interpreted theory-based criteria for evaluation are grouped by landscape relation characters that confirm the determining aspects of the landscape relation from the spatial planning perspective. The interpreted theory-based criteria for planning the enhancement of the landscape relation are grouped by phases of the spatial planning process that direct landscape transformations by planning practices. Thus, landscape relation characters and phases of the spatial planning process are set as the theoretical basis in developing spatial planning criteria for the enhancement of urban and natural landscape.

The spatial research is initiated in the wider **Mediterranean scope of the urban and natural landscape relation** (Chapter 4) identified in twenty-six Mediterranean Overview Examples of intensive urban setting between two strong natural elements of the sea and the mountains. These examples of cities (Annaba, Algiers, Melilla, Algeciras/Gibraltar, Malaga, Almeria, Barcelona, Marseille, Toulon, Nice, Genoa, Naples, Salerno, Reggio Calabria, Ancona, Trieste, Koper, Rijeka, Šibenik, Split, Dubrovnik, Kotor, Patras, Athens, Izmir, Beirut) are presented in the **spatial research catalogue of the Mediterranean scope**. Their comparison has resulted in identifying spatial criteria for evaluating urban and natural landscape that contribute to developing spatial planning criteria for the enhancement of the landscape relation. The comparison of the Mediterranean Overview Examples within the spatial planning perspective opens a gap of the missing spatial planning vision / strategy for the whole Mediterranean scope.

The determined spatial criteria for evaluating urban and natural landscape within the Mediterranean scope are applied to the **landscape settings of the Adriatic Research Cases** (Chapter 5). The thirty-six Adriatic cities (Vieste, Ancona, Monfalcone, Trieste, Koper, Lovran, Opatija, Rijeka, Bakar, Crikvenica, Novi Vinodolski, Senj, Karlobag, Starigrad, Šibenik, Trogir, Kaštela, Solin, Split, Omiš, Baška Voda, Makarska, Ploče, Neum, Trpanj, Orebić, Ston, Slano, Dubrovnik, Cavtat, Herceg Novi, Kotor, Tivat, Budva, Bar, Ulcinj) are presented in the **spatial research catalogue of the Adriatic scope**. Their comparison has resulted in the

typological classification of: (i) regional and local spatial landscape relations, (ii) historical landscape relations and their usage, and (iii) spatial planning documents concerning the evaluation and enhancement of the landscape relation. Thus, spatial criteria for evaluating the urban and natural landscape relation of the Mediterranean scope are confirmed for the Adriatic scope as well. The criteria for selecting the three Representative Research Cases for further research on perceiving the landscape relation are identified as diversity criteria representing the main types of the local spatial relation between urban and natural landscape which provides a variety of landscape settings, landscape relation problems, and spatial planning practices.

Perception of the urban and natural landscape relation in field research of Representative Research Cases (Chapter 6) explores landscape representation that complements spatial criteria for evaluating the urban and natural landscape relation. The research on perceiving the landscape relation began by continuous field research carried out on all Adriatic Research Cases (36) during a period of over 10 years and focused on three Representative Research Cases of Ancona, Rijeka, and Budva that are presented in the **field research catalogue**. The identified criteria for perceiving the urban and natural landscape relation from the field research catalogues are explored in the **perception research catalogue** and confirmed by the comparison of representative cases. This comparison establishes: (i) the types of the landscape relation perception, (ii) types of the perceived problems of the landscape relation that have to be addressed by spatial planning, and (iii) perception criteria for evaluating the landscape relation. In the systematisation of the perceived problems of the landscape relation, the identity criteria for evaluating the urban and natural landscape relation are recognised as missing and therefore established based on those problems.

The established theory-based, spatial, perception, and identity criteria for evaluation and theory-based criteria for planning the enhancement of the landscape relation are synthesised into five groups of spatial planning criteria for the enhancement of the landscape relation that reflect both the content of the spatial plans and the spatial planning process as well as landscape reality, landscape representation, and constant landscape change. **Verifying the results of research synthesis on spatial planning documentation of Representative Research Cases** (Chapter 7) is conducted on two historical and three contemporary spatial plans. Those representative spatial plans are presented in the **spatial planning research catalogue** and compared to identify (i) the existing spatial planning criteria that are used in spatial plans and (ii) the missing spatial planning criteria for the enhancement of the landscape relation. Thus, four groups of spatial, perception, identity, and spatial planning criteria for the enhancement of the landscape relation are confirmed and established. Those criteria contribute to spatial

planning practices of various levels, objectives, modes, and interventions towards enhancing the quality of the landscape relation.

Discussion on the scientific contributions and application of research results in scientific, professional, and educational domains of spatial planning (Chapter 8) addresses the limitations in research, structured responses to research problems, systematisation of research contributions, and topics opened for future research. Limitations in research are responded to by taking measures for reducing and mitigating their impacts. Structured responses to research problems bring a review of research objectives and confirmation of hypotheses, while the synthesis of research contributions provides practical use of research results in scientific, educational, and professional fields. Topics opened during the research that surpass the research focus itself introduce future research guidelines.

Conclusion as the synthesis of the established research results (Chapter 9) includes: (i) the determined research phenomenon of the urban and natural landscape relation within the spatial planning perspective, (ii) the established changeability process of the urban and natural landscape relation, (iii) the established holistic approach to scientific research of the urban and natural landscape relation, (iv) complementing the definition of the urban region by the established spatial relation between urban and natural landscape, (v) integrating intangible landscape values into spatial planning for advancing the spatial relation between urban and natural landscape, (vi) the established spatial planning criteria for the enhancement of the urban and natural landscape relation encompass the constituents of landscape setting, and (vii) strengthening the authentic (indigenous and endogenous) spatial planning as a tool for the enhancement of the urban and natural landscape relation.

The comprehensive perspective of the urban and natural landscape relation provides its expanded understanding, holistic approach to its scientific research, as well as its indigenous and endogenous spatial planning as entity wholeness that advance scientific, professional, and educational domains. The established research results are developed for the focused research scope of the East Adriatic Coast but are applicable to the wider spatial context of the Adriatic and the Mediterranean. This doctoral research is finalised by setting the criteria for planning the enhancement of the landscape relation that promote resilient development, foster the quality of life in concordance with sustainable planning goals and contribute to acknowledging the multidimensional values found in (different intensities in) each landscape.

The research impact addresses raising the awareness of local communities about the multiple values of their everyday living landscape – as they are the greatest caretakers of the

landscape created in the interaction of nature and people – as well as raising the same awareness in all stakeholders involved in the spatial planning process.

The urban and natural landscape relation is determined as a multidimensional phenomenon and a changeability process that integrates spatial, temporal, and perception landscape characters, as well as functional and holistic principles fostered by the spatial planning perspective. Interconnections between urban and natural landscape reflect the synchronicity of (i) landscape reality, (ii) landscape representation, and (iii) constant landscape change. Dimensions of the urban and natural landscape relation include and intertwine: (i) spatial, (ii) societal, and (iii) symbolic dimension. Identity factors of urban and natural landscape include: tangible identity factors of (i) natural factors and anthropogenic factors of (ii) characteristics of spatial inhabitation, and (iii) uses, functions, and activities; and intangible perception factors of (iv) aesthetic factors, and (v) associative factors. The research phenomenon determined from the spatial planning perspective is confirmed by theory-based criteria for evaluating the landscape relation and perceived challenges as problems of the landscape relation that foster five landscape relation characters: (i) spatial character of landscape form, (ii) functional character of social landscape and use, (iii) associative character of landscape perception and symbols, (iv) temporal character of landscape as heritage, and (v) holistic and inclusive character of the balanced urban and natural landscape. The acknowledgement and understanding of the multidimensional relations between urban and natural landscape constituents as well as their changeability process is what makes the landscape relation an interrelation.

The established changeability process of the urban and natural landscape relation is inherent in constant landscape change, transformation, and evolution. Transformations of the landscape relation are manifested in four natures of landscape: (i) (first) pristine nature / wilderness of natural landscape, (ii) (second) transformed / evolved nature of cultural landscape, (iii) (third) designed nature of planned (urban and natural) landscape, and (iv) (fourth) deprived nature of degraded landscape. Evolution of the landscape relation is identified in the heritage of historical (proto-)urban cultures that have developed distinctive influences on the urban and natural landscape relation of the Adriatic: (i) Stone Age pre-Illyrian agricultural settlements, (ii) the network of Illyrian hill fortresses, (iii) ancient Greek urban settlements - colonies, (iv) ancient Roman cities, (v) byzantine *refugium* in Late Antiquity, (vi) towns of the medieval Slavic culture, (vii) medieval maritime republics (Ancona and Dubrovnik), city-states, and free ports, (viii) Venetian towns of the East Adriatic Coast, (ix) Ottoman towns and

influence, (x) French Illyrian Provinces, (xi) modernisation of towns during the Habsburg Monarchy, (xii) 20th century Italian urban heritage, (xiii) modernist Yugoslav Adriatic, (xiv) post-modernist transition Adriatic, and (xv) tendencies for a holistic 21st century. Typological classification of the historical landscape relation includes two types of urban continuity: (i) continuity of urban location and (ii) continuity of urban setting.

The research results of establishing the landscape relation within the spatial planning perspective **respond to the theoretical research gap** that the phenomenon and changeability process of the urban and natural landscape relation are neither determined nor systematically analysed within the scientific field of spatial planning. The five landscape relation characters as perceived challenges of the landscape relation **address the first research objective** to identify and define the relation problems between urban and natural landscape as well as **confirm and update the first research hypothesis** that the changeability process of the relation between urban and natural landscape is a spatial, temporal, and perception phenomenon. This comprehensive perspective of the urban and natural landscape relation raises awareness of its multidimensional values, contributes to a holistic view and scientific research of the landscape relation within the spatial planning perspective (and vice versa), and advances the educational field.

The holistic approach to scientific research of the research phenomenon within the spatial planning perspective is established by overlapping different research perspectives and three complementing research steps in developing spatial planning criteria for the enhancement of the landscape relation: (i) theoretical research, (ii) spatial research, (iii) and spatial planning research. This methodological research approach involves: (i) systematisation of identity factors of urban and natural landscape from the theoretical framework, (ii) systematisation of theory-based criteria for evaluating and planning the enhancement of the landscape relation from the literature review of relevant policy documents and scientific research approaches, (iii) systematisation of spatial criteria for evaluating the landscape relation from the spatial research of Mediterranean and Adriatic spatial scopes, (iv) systematisation of perception and identity criteria for evaluation of landscape relations from the field research and perception research of representative cases within the Adriatic spatial scope, and (v) systematisation of the existing and missing spatial planning criteria for the enhancement of the landscape relation from historical and contemporary spatial plans of representative cases.

Definition of the urban region is complemented by the established spatial relation between the urban and natural landscape that involves spatial criteria for evaluation and

spatial relation types of the regional and local level. The urban and natural landscape relation within the spatial context of the Mediterranean and the Adriatic is recognised as **landscape setting**. The established spatial criteria for evaluating the landscape relation within the Mediterranean and the Adriatic spatial contexts include: (i) administrative setting, (ii) geographical setting, (iii) continuity of historical setting, and (iv) heritage setting. Each of the spatial relation types carries different landscape problems that have to be addressed by spatial planning. Regional spatial types of the urban and natural landscape relation include: (i) urban centres, (ii) urban networks, and (iii) urban agglomerations. Local spatial types of the landscape relation include: (i) intensive, compact urban development; intensive and extensive, directed urban development of (ii) tentacle and (iii) archipelago; and extensive, scattered urban development of (iv) nodes and (v) diffuse type. Three main spatial planning levels of the urban and natural landscape relation involve: (i) regional level interconnecting the coast and the hinterland, planned by inter-regional and inter-county spatial plans, (ii) micro-regional level interrelating the city and natural setting, planned by inter-municipal and inter-province spatial plans, and (iii) local level intertwining societal and ecological networks, planned by inter-city plans and projects.

Integrating intangible landscape values into spatial planning for advancing the spatial relation between urban and natural landscape engages landscape perception and identity as well as raising the quality of landscape and the quality of living in urban and natural landscape. The established perception criteria for evaluating the landscape relation within the Adriatic spatial context include: (i) interaction of anthropogenic and ecological networks, (ii) transformations of landscape setting, (iii) visual (scenic) setting, and (iv) communication setting. Perception of the landscape relation primarily refers to the typological classification of intensity of anthropogenic influence on natural landscape: (i) landscape developed by human needs represented by urban landscape, (ii) landscape adapted to human needs represented by cultural landscape, and (iii) human needs adapted to natural landscape. The identity criteria for evaluating the urban and natural landscape relation are established from the perceived landscape relation problems within the Adriatic spatial context and include: (i) identity setting, (ii) vivacity setting, and (iii) endogenous setting. Types of perceiving the identity of the urban and natural landscape relation refer to landscape types that carry identity: (i) urban landscape, (ii) cultural landscape, (iii) natural landscape, as well as (iv) interaction of urban and natural setting.

The **spatial problems of extensive urban spread into natural resources** that disrupt the balance between the urban and natural landscape relation are addressed by the holistic approach to spatial planning research that complements spatial setting with intangible landscape

values. In this manner, the spatial relation between urban and natural landscape is explored and perceived as a multidimensional phenomenon and changeability process that needs to be planned as entity wholeness. The five determined groups of identity factors and three established groups of evaluation criteria **accomplish the second research objective** as well as contribute to establishing criteria for enhancing the landscape relation that **confirm and update the second research hypothesis**. The established holistic methodological approach in developing the criteria for evaluating and planning the enhancement of the landscape relation provides a methodological contribution to spatial planning process and advances the scientific field.

Twelve established groups of spatial planning criteria for the enhancement of the urban and natural landscape relation encompass the constituents of landscape setting, promote holistic spatial planning, and integrate theory-based criteria for evaluating and planning the enhancement with spatial, perception, and identity criteria for evaluating the landscape relation and existing and missing spatial planning criteria from historical and contemporary spatial plans. Holistic character of the urban and natural landscape relation arises from sustainable spatial planning that promotes (natural and cultural) landscape balance, economic cohesion, social inclusion, and diversity of cultural heritage. Theory-based criteria for planning the enhancement of the landscape relation reflect four stages of the spatial planning process: (i) preparation stage of establishing the landscape relation knowledge, (ii) decision stage of using the landscape relation knowledge, (iii) intervention stage of applying the landscape relation knowledge, and (iv) re-evaluation stage of re-examining the landscape relation knowledge.

Four main groups of established spatial planning criteria for the enhancement of the landscape relation encompass spatial, perception, identity, and spatial planning criteria that reflect both contents of spatial plans and spatial planning process as well as landscape reality, landscape representation, and constant landscape change. The spatial criteria involve: (i) **administrative setting** of contextual and population scope, (ii) **geographical setting** of macro-, regional, and micro- levels, sea, urban, and mountain character, system of inhabitation, and tendencies of urban expansion, (iii) **continuity of historical setting** in historical origin, historical changes and continuity, and historical character of urban core, (iv) **heritage setting** of cultural, natural, and intangible heritage of international, national, and local (traditional) importance. The perception criteria involve: (i) **interaction of anthropogenic and ecological networks** in urban and natural landscape, (ii) **transformation of landscape setting** as the

natures of primeval, transformed, designed, and negated landscape and new regenerated nature, (iii) **visual (scenic) setting** as land-view system of position vistas, view corridors, spatial contrasts, and evoking views, and (iv) **communications setting** as landscape access network of contemporary and historical paths and roads. The identity criteria involve: (ix) **identity setting** in *genius loci*, landscape ambience, and societal recognition of landscape setting, (x) **vivacity setting** of public life in (addressing) abandoned areas, seasonality, and production landscape, and (xi) **endogenous setting** of degrowth, resilience, relation to spontaneous construction and landscape as a common good. The (xii) **spatial planning setting** involves integration of regional and local-level plans, continuity of historical plans, knowledge integration, governance of spatial plans, planning creativity, strategic regions, planning actions, and monitoring consequences. The landscape setting criteria for enhancing the urban and natural landscape relation are developed to be **equally applicable to urbanscape as well as to natural landscape contexts**.

Strengthening the authentic (indigenous and endogenous) **spatial planning as a tool for the enhancement of the urban and natural landscape relation** promotes inherited landscape values and spatial planning traditions, equal strengthening of landscape reality and landscape representation, and equal application to both urbanscape and natural landscape contexts. Five spatial planning objectives explained through paradigm shifts and spatial planning approaches regarding the transformations of urban and natural landscape relations in the Adriatic foster: (i) determining landscape - awareness of landscape transformations, (ii) green transformation - interconnecting urban and natural landscape, (iii) sustainability - directing landscape resilience, (iv) community engagement - promoting landscape quality, and (v) phenomenology - education and communication on landscape values. Five spatial planning modes of enhancing the relations between urban and natural landscape include: (i) layer depth, (ii) network structures, (iii) indigenous and endogenous planning, (iv) process tendencies, and (v) landscape archetypes. Three main types of spatial planning interventions towards enhancing the quality of the landscape relation are recognised as necessary in all landscape types and in all stages of the planning process: (i) protection, preservation, and maintenance of the strong landscape relation, (ii) reinforcing and complementing the quality in the disrupted landscape relation, (iii) revival and recovery of the degraded relation between urban and natural landscape. Topics opened for future research in advancing the urban and natural landscape relation also promote authentic spatial planning by focusing on: (i) intangible landscape phenomena, (ii) societal values (and importance) of landscape, (iii) landscape relation as integrated heritage

networks, (iv) merging science and landscape art, (v) visual methodologies for spatial planning, and (vi) spatial planning guidelines arising from landscape (planning) practices.

Spatial planning is promoted as a tool for planning landscape transformations in making urban and natural conditions more holistic, resilient, and sustainable. Besides the existing strategies, criteria, and indicators, spatial planning practices lack the spatial planning criteria for the enhancement of the urban and natural landscape relation. This **spatial planning problem is addressed** and the **third research objective is achieved** by the twelve established setting groups of spatial planning criteria for the enhancement of the landscape relation. The **third research hypothesis** that spatial planning criteria contribute to planning the enhancement of the relation between urban and natural landscape of the East Adriatic Coast is confirmed with the existing and complemented with missing (needed) spatial planning criteria from historical and contemporary spatial plans of representative cases. The concluded research results in strengthening authentic - indigenous and endogenous - spatial planning advance spatial planning profession and practical framework.

Prošireni (strukturirani) sažetak

PROSTORNOPLANSKI KRITERIJI ZA UNAPREĐENJE ODNOSA URBANOGA I PRIRODNOGA PEJSAŽA ISTOČNE JADRANSKE OBALE

Istraživački fenomen ‘odnosa urbanog i prirodnog pejisaža’ svjedoči o 25 stoljeća urbane kulture na Mediteranu. To je neobnovljivi prostorni i baštinski resurs koji uključuje realnost i reprezentaciju pejisaža te povezuje procese urbanog razvoja i transformacije prirodnog pejisaža. Istraživanje je potaknuto premisom da urbanost proizlazi iz pejisaža, istovremeno preobražujući i ispreplićući prirodni s kulturnim i urbanim pejisažem.

Srž određivanja pejisaža prepoznata je u djelovanju i međudjelovanju ljudskih i/ili prirodnih čimbenika, odnosima između stanovnika i teritorija te istovremenom sagledavanju urbanih, kulturnih i prirodnih sastavnica pejisaža. Urbani pejisaž prepoznat je u formi grada, u izgrađenim i antropogenim strukturama, ekstenzijama i metastazama urbanih struktura i infrastrukture te u transformiranom prirodnom pejisažu u službi grada. Prirodni se pejisaž pritom odnosi na pretežno prirodni pejisaž te uključuje sve pejisaže oblikovane prirodnim strukturama unutar urbanih područja i izvan njih. Međusobni utjecaj, transformacija i razvoj sastavnica pejisaža tvore (među)odnos urbanog i prirodnog pejisaža.

Interdisciplinarni i sveobuhvatni pogled na pejisaž i interakcije prostornih, društvenih i simboličkih dimenzija pejisaža čine osnovu za holističko istraživanje odnosa urbanog i prirodnog pejisaža s motrišta prostornog planiranja. Istraživanje je dodatno usmjereno na prostorni kontekst intenzivnog smještaja gradova između morskih obala i padina planinskog zaleđa, koje daju jedinstveni identitet urbanog mjesta. Ovakav smještaj grada dodatno intenzivira prostorno stanje ekstenzivnog urbanog širenja u (pretežito) prirodni pejisaž te uzrokuje brojna ograničenja prostornog razvoja i planiranja. Smještaj gradova između dva snažna prirodna elementa, mora i planine, prepoznat je u širem prostornom kontekstu mediteranske i specifičnom kontekstu jadranske obale s planinskim zaleđem Apenina na zapadu i Dinarida na istoku.

Teorijski, prostorni i prostorno-planerski poticaji istraživanju prepoznati su u istraživačkim problemima koji se temelje na ciljevima europskih i međunarodnih dokumenata te relevantnoj literaturi o zaštiti, upravljanju i planiranju urbanog i prirodnog pejisaža, kao i prostornim i prostorno-planerskim stanjem između gradova i njihova (pretežito) prirodnog okruženja unutar Mediterana i Jadrana. Teorijski istraživački problem ukazuje na to da

istraživački fenomen i proces promjenjivosti 'odnosa urbanog i prirodnog pejisaža' nisu utvrđeni ni sustavno istraženi unutar znanstvenog polja prostornog planiranja. Prostorni problemi ekstenzivnog širenja gradova i naselja u prirodne resurse narušavaju ravnotežu odnosa urbanog i prirodnog pejisaža. Izazovi prostornog planiranja odnose se (osim postojećih strategija, kriterija i indikatora) na nedostajuće prostornoplanske kriterije za unaprjeđenje odnosa urbanog i prirodnog pejisaža koji doprinose sveobuhvatnom razumijevanju pejisaža te razvoju holističke ravnoteže između urbanog razvoja i transformacije prirodnog pejisaža.

Cilj je istraživanja ispitati kako prostorno planiranje evaluira i usmjerava proces promjenjivosti odnosa urbanog i prirodnog pejisaža u specifičnom kontekstu gradova i naselja jadranske obale. Ovaj glavni cilj istražuje se kroz teorijske, prostorne i prostorno planerske ciljeve: (i) identificirati i definirati probleme odnosa između urbanog i prirodnog pejisaža, (ii) utvrditi čimbenike identiteta i uspostaviti kriterije za evaluaciju odnosa urbanog i prirodnog pejisaža te (iii) razviti prostornoplanske kriterije za planiranje unapređenja odnosa urbanog i prirodnog pejisaža istočne obale Jadrana.

Znanstveno istraživanje odnosa urbanog i prirodnog pejisaža iz perspektive prostornog planiranja provodi se kao kvalitativno istraživanje fenomena unutar njegova smještaja. Istraživanje se temelji na metodi usporedbe primjera dopunjenoj glavnim istraživačkim metodama logičke argumentacije, pregleda literature, interpretativnom povijesnom metodom i terenskim istraživanjem. Istraživački alati za analizu istraživačkih materijala i sintezu rezultata uključuju istraživačke kataloge, tablice, sheme i fotografije pejisaža. Znanstveno istraživanje i razvoj prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejisaža imaju metodološku pozadinu u pristupu *Urbanizma naslijeđa (Heritage Urbanism)*, koji promiče čimbenike identiteta, kriterije evaluacije i unapređenja te modele unapređenja kao metodološke korake i koncept *Emanacije urbanog pejisaža (Urbanscape Emanation)* za preklapanje različitih perspektiva i slojeva pejisaža te holističko planiranje urbanog i prirodnog pejisaža.

Struktura istraživanja u uspostavljanju skupina kriterija za evaluaciju i unapređenje odnosa urbanog i prirodnog pejisaža postavlja teorijske, prostorne i prostorno-planerske istraživačke korake koji su obrađeni u dvije knjige. Knjiga I – Doktorska disertacija sadrži istraživačka poglavlja 1–9, koja su praćena istraživačkim katalozima 1–7 u Knjizi II – Prilozi. **Teoretsko istraživanje** (poglavlja 1–3) analizira sveobuhvatan i interdisciplinarni koncept pejisaža unutar teorijskog okvira i politika prostornog planiranja kako bi se utvrdili teorijski utemeljeni kriteriji za evaluaciju i planiranje unapređenja odnosa urbanog i prirodnog pejisaža (Katalozi teorijskih istraživanja 1 i 2). **Prostorno istraživanje** analizira prostorne karakteristike

dvadeset i šest preglednih primjera Mediterana (Katalog prostornih istraživanja 3) i trideset šest istraživačkih primjera Jadrana (Katalog prostornih istraživanja 4) s ciljem identificiranja prostornih kriterija za evaluaciju odnosa urbanog i prirodnog pejisaža. Percepcijske karakteristike reprezentativnih istraživačkih primjera Ancone u Italiji, Rijeke u Hrvatskoj i Budve u Crnoj Gori (Katalog terenskog istraživanja 5 i Katalog istraživanja percepcije 6) istražene su s ciljem identificiranja kriterija percepcije i kriterija identiteta za evaluaciju odnosa urbanog i prirodnog pejisaža. **Prostorno-planersko istraživanje** (poglavlja 7–9) istražuje povijesne i suvremene prostorne planove reprezentativnih primjera (Katalog prostornih planova 7) s ciljem utvrđivanja postojećih i nedostajućih prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejisaža.

Uvod istraživanja (Poglavlje 1) predstavlja istraživački fenomen urbanog i prirodnog pejisaža s prostorno-planerskog motrišta u širem kontekstu sveobuhvatnog i interdisciplinarnog razumijevanja pejisaža. Poticaji za prostorno-planersko istraživanje odnosa urbanog i prirodnog pejisaža identificirani su u teorijskim istraživačkim problemima, stanju prostora te povezanim prostorno-planerskim izazovima na koje se odgovara u istraživačkim ciljevima, hipotezama i očekivanim znanstvenim doprinosima. Postavljene znanstvene metode i istraživački materijali podupiru tripartitnu istraživačku strukturu teorijskih, prostornih i prostorno-planerskih istraživačkih koraka u utvrđivanju kriterija za evaluaciju i planiranje unapređenja odnosa urbanog i prirodnog pejisaža.

Stanje u istraživačkom području (Poglavlje 2) postavlja teorijski okvir iz perspektive prostornog planiranja. Znanstvena metoda pregleda literature upotrebljava se u preklapanju različitih perspektiva zaštite, upravljanju i planiranju urbanog i prirodnog pejisaža iz dokumenata međunarodnih politika, znanstveno-istraživačkih pristupa i literaturnih izvora relevantnih za temu i opseg istraživanja. Neodvojivost urbanog i prirodnog pejisaža potvrđena je unutar ovog teorijskog okvira te utvrđenih čimbenika identiteta urbanog i prirodnog pejisaža. **Fenomen istraživanja uspostavljen je iz perspektive prostornog planiranja**, što je postavljeno kao temelj za izradu kriterija za evaluaciju i planiranje unapređenja odnosa urbanog i prirodnog pejisaža u daljnjim teorijskim, prostornim i prostorno-planerskim istraživačkim koracima.

Teorijski istraživački korak zaključen je **sistematizacijom teorijskih kriterija za evaluaciju i planiranje unapređenja odnosa urbanog i prirodnog pejisaža** (Poglavlje 3). Proveden je pregledom odabranih dokumenta i znanstveno-istraživačkih pristupa koji: (i) identificiraju kriterije u analizi, planiranju i zaštiti pejisaža i (ii) uključuju uspostavljene aspekte odnosa urbanog i prirodnog pejisaža iz perspektive prostornog planiranja. Pregledana literatura

identificira samo kriterije za evaluaciju i/ili unapređenje urbanog i/ili prirodnog pejisaža, izostavljajući kriterije koji se tiču odnosa između urbanog i prirodnog pejisaža. Stoga je opsežan popis identificiranih teorijskih kriterija organiziran, interpretiran i grupiran unutar **kataloga teorijskih istraživanja**, koji razlikuje kriterije evaluacije od kriterija unapređenja. Interpretirani teorijski kriteriji za evaluaciju grupirani su po karakteru odnosa pejisaža koji potvrđuju uspostavljene aspekte odnosa urbanog i prirodnog pejisaža iz perspektive prostornog planiranja. Interpretirani teorijski kriteriji za planiranje unapređenja odnosa urbanog i prirodnog pejisaža grupirani su po fazama prostorno-planerskog procesa koji usmjerava preobrazbe pejisaža planerskim praksama. Time su karakteri odnosa pejisaža i faze procesa prostornog planiranja postavljeni kao teorijska osnova u daljnjem razvoju prostornoplanskih kriterija za unapređenje urbanog i prirodnog pejisaža.

Prostorno istraživanje započeto je u širem **mediteranskom kontekstu odnosa urbanog i prirodnog pejisaža** (Poglavlje 4) identificiranom u dvadeset i šest preglednih primjera gradova Mediterana intenzivnog urbanog smještaja između dva snažna prirodna elementa, mora i planine. Pregledni primjeri gradova (Annaba, Alžir, Melilla, Algeciras/Gibraltar, Malaga, Almeria, Barcelona, Marseille, Toulon, Nica, Genova, Napulj, Salerno, Reggio Calabria, Ancona, Trst, Kopar, Rijeka, Šibenik, Split, Dubrovnik, Kotor, Patras, Atena, Izmir, Beirut) prikazani su u **katalogu prostornih istraživanja Mediterana**. Njihovom usporedbom utvrđeni su prostorni kriteriji za evaluaciju urbanog i prirodnog pejisaža koji doprinose razvoju prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejisaža. Usporedba preglednih primjera Mediterana unutar perspektive prostornog planiranja otvara nepostojanje vizije/strategije prostornog planiranja za cijeli Mediteran.

Utvrđeni prostorni kriteriji za evaluaciju urbanog i prirodnog pejisaža u kontekstu Mediterana primijenjeni su na **pejisažni smještaj istraživačkih primjera Jadrana** (Poglavlje 5). U **katalogu prostornih istraživanja Jadrana** prikazano je trideset i šest jadranskih primjera gradova (Vieste, Ancona, Monfalcone, Trst, Kopar, Lovran, Opatija, Rijeka, Bakar, Crikvenica, Novi Vinodolski, Senj, Karlobag, Starigrad, Šibenik, Trogir, Kaštela, Solin, Split, Omiš, Baška Voda, Makarska, Ploče, Neum, Trpanj, Orebić, Ston, Slano, Dubrovnik, Cavtat, Herceg Novi, Kotor, Tivat, Budva, Bar, Ulcinj). Njihovom usporedbom uspostavljena je tipološka klasifikacija: (i) regionalnih i lokalnih prostornih odnosa pejisaža, (ii) povijesnih pejisažnih odnosa i njihova korištenja te (iii) prostorno-planerskih dokumenata koji se odnose na evaluaciju i unapređenje odnosa urbanog i prirodnog pejisaža. Time su prostorni kriteriji za evaluaciju odnosa urbanog i prirodnog pejisaža Mediterana potvrđeni i za jadransko područje. Kriteriji za odabir tri reprezentativna istraživačka primjera za daljnja istraživanja percepcije

pejsažnog odnosa identificirani su kao kriteriji raznolikosti koji predstavljaju glavne tipove lokalnog prostornog odnosa urbanog i prirodnog pejzaža te pružaju različite pejzažne smještaje, probleme pejsažnog odnosa i prakse prostornog planiranja.

Percepcija odnosa urbanog i prirodnog pejzaža u terenskim istraživanjima reprezentativnih primjera (Poglavlje 6) istražuje reprezentaciju pejzaža koja nadopunjuje prostorne kriterije za evaluaciju odnosa urbanog i prirodnog pejzaža. Istraživanje percepcije pejsažnog odnosa započeto je kontinuiranim terenskim istraživanjima provođenima na svim istraživačkim primjerima Jadrana (36) tijekom više od 10 godina, a detaljno je usmjereno na tri reprezentativna istraživačka primjera Ancone, Rijeke i Budve, koji su prikazani u **katalogu terenskih istraživanja**. Identificirani kriteriji za percepciju odnosa urbanog i prirodnog pejzaža iz kataloga terenskih istraživanja dodatno su istraženi u **katalogu istraživanja percepcije pejsažnih odnosa** i potvrđeni usporedbom reprezentativnih primjera. Ovom usporedbom utvrđeni su: (i) tipovi percepcije odnosa urbanog i prirodnog pejzaža, (ii) vrste percipiranih problema odnosa urbanog i prirodnog pejzaža koji se trebaju rješavati prostornim planiranjem i (iii) kriteriji percepcije za evaluaciju odnosa urbanog i prirodnog pejzaža. U sistematizaciji percipiranih problema pejsažnog odnosa prepoznati su nedostajući i stoga uspostavljeni kriteriji identiteta za evaluaciju odnosa urbanog i prirodnog pejzaža.

Utvrđeni teorijski, prostorni, percepcijski i identitetski kriteriji evaluacije i teorijski kriteriji za planiranje unapređenja sintetizirani su u pet skupina prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejzaža koji odražavaju podjednako sadržaj prostornih planova i procese prostornog planiranja, kao i realnost, reprezentaciju i stalnu promjenu pejzaža. **Potvrđivanje sinteze istraživanja na prostorno-planskoj dokumentaciji reprezentativnih primjera** (Poglavlje 7) provedeno je na dva povijesna i tri suvremena prostorna plana. Reprezentativni prostorni planovi prikazani su u **katalogu prostornih planova** te uspoređeni kako bi se identificirali (i) postojeći prostornoplanski kriteriji korišteni u prostornim planovima i (ii) nedostajući prostornoplanski kriteriji za unapređenje odnosa urbanog i prirodnog pejzaža. Time su potvrđene i utvrđene četiri skupine prostornih, perceptivnih, identitetskih i prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejzaža. Ti kriteriji doprinose prostorno-planerskim praksama različitih razina, ciljeva, načina i intervencija usmjerenih na unapređenja kvalitete pejsažnog odnosa.

Rasprava o primjeni rezultata istraživanja u znanstvenim, edukacijskim i praktičnim područjima prostornog planiranja (Poglavlje 8) prikazuje ograničenja u istraživanju, strukturirane odgovore na istraživačke probleme, sistematizaciju istraživačkih doprinosa i otvorene teme za buduća istraživanja. Na ograničenja u istraživanju odgovoreno je

mjerama poduzetim za smanjenje i ublažavanje njihovih utjecaja. Strukturirani odgovori na istraživačke probleme donose osvrt na ciljeve istraživanja i potvrdu postavljenih hipoteza, dok sinteza istraživačkih doprinosa omogućava praktičnu primjenu rezultata istraživanja u znanstvenim, edukacijskim i stručnim područjima. Teme otvorene tijekom istraživanja koje nadilaze sam istraživački fokus uvode smjernice za buduća istraživanja.

Zaključak kao sinteza utvrđenih rezultata istraživanja (Poglavlje 9) uključuje: (i) uspostavljeni istraživački fenomen odnosa urbanog i prirodnog pejisaža unutar perspektive prostornog planiranja, (ii) uspostavljeni proces promjenjivosti odnosa urbanog i prirodnog pejisaža, (iii) uspostavljeni holistički pristup znanstvenom istraživanju odnosa urbanog i prirodnog pejisaža, (iv) nadopunjavanje definicije urbane regije utvrđenim prostornim odnosom između urbanog i prirodnog pejisaža, (v) integraciju nematerijalnih vrijednosti pejisaža u prostornom planiranju za unapređenje prostornog odnosa urbanog i prirodnog pejisaža, (vi) utvrđene prostornoplanske kriterije za unapređenje odnosa urbanog i prirodnog pejisaža koji obuhvaćaju sastavnice pejisažnog smještaja i (vii) jačanje autentičnog (autohtonog i endogenog) prostornog planiranja kao alata za unapređenje odnosa urbanog i prirodnog pejisaža. Ostvareni rezultati istraživanja pružaju znanstvene doprinose te odgovaraju na prepoznate istraživačke probleme i postavljene istraživačke ciljeve i hipoteze.

Sveobuhvatno sagledavanje odnosa urbanog i prirodnog pejisaža pruža njegovo prošireno razumijevanje, holistički pristup znanstvenom istraživanju te njegovo autentično (autohtono i endogeno) prostorno planiranje kao jedinstvene cjeline kojom se unapređuje znanstveno, edukativno i stručno područje. Utvrđeni rezultati istraživanja razvijeni su za usmjereno istraživanje istočne obale Jadrana te su primjenjivi i na širi prostorni kontekst Jadrana i Mediterana. Ovo doktorsko istraživanje finalizirano je postavljanjem kriterija za planiranje unaprjeđenja odnosa urbanog i prirodnog pejisaža kojima se promiče otporan razvoj, njeguje kvaliteta života u skladu s ciljevima održivog planiranja i pridonosi osvještavanju višedimenzionalnih vrijednosti pronađenih (u različitim intenzitetima) u svakom pejisažu.

Istraživački utjecaj usmjeren je na podizanje svijesti lokalnih zajednica o višestrukim vrijednostima njihova svakodnevnog životnog pejisaža – budući da su oni najveći održavatelji pejisaža nastalog u interakciji prirode i čovjeka – kao i na podizanje iste svijesti svih sudionika uključenih u proces prostornog planiranja.

Odnos urbanog i prirodnog pejisaža uspostavljen je kao višedimenzionalni fenomen i proces promjenjivosti koji integrira prostorne, vremenske i perceptivne karaktere pejisaža te funkcionalna i holistička načela prostornog planiranja. Veze urbanog i prirodnog pejisaža odražavaju sinkronicitet (i) realnosti pejisaža, (ii) reprezentacije pejisaža i (iii) stalne promjene pejisaža. Dimenzije odnosa urbanog i prirodnog pejisaža uključuju i isprepliću: (i) prostornu, (ii) društvenu i (iii) simboličku dimenziju. Čimbenici identiteta urbanog i prirodnog pejisaža uključuju: materijalne čimbenike identiteta (i) prirodnih čimbenika i antropogenih čimbenika (ii) obilježja naseljavanja prostora te (iii) korištenja, funkcija i aktivnosti; kao i nematerijalne čimbenike percepcije (iv) estetskih čimbenika i (v) asocijativnih čimbenika. Fenomen istraživanja, uspostavljen iz perspektive prostornog planiranja, potvrđen je teorijski utemeljenim kriterijima za evaluaciju odnosa urbanog i prirodnog pejisaža i percipiranim izazovima kao problemima pejisažnog odnosa koji ističu pet karaktera odnosa pejisaža: (i) prostorni karakter forme pejisaža, (ii) funkcionalni karakter društvenog pejisaža i korištenja, (iii) asocijativni karakter percepcije i simbola pejisaža, (iv) vremenski karakter pejisaža kao naslijeđa i (v) holistički i inkluzivni karakter uravnoteženog urbanog i prirodnog pejisaža. Osvještavanje i razumijevanje višedimenzionalnih odnosa između sastavnica urbanog i prirodnog pejisaža, kao i procesa njihove promjenjivosti, čine odnos urbanog i prirodnog pejisaža – međuodnosom.

Uspostavljeni proces promjenjivosti odnosa urbanog i prirodnog pejisaža svojstven je stalnoj mijeni, transformaciji i evoluciji pejisaža. Transformacije odnosa urbanog i prirodnog pejisaža očituju se u četiri prirode pejisaža: (i) (prva) iskonska priroda / divljina prirodnog pejisaža, (ii) (druga) transformirana / evoluirana priroda kulturnog pejisaža, (iii) (treća) projektirana priroda planiranog (urbanog i prirodnog) pejisaža i (iv) (četvrta) degradirani pejisaž lišen prirode. Evolucija odnosa urbanog i prirodnog pejisaža identificirana je u naslijeđu povijesnih (proto)urbanih kultura koje su razvile prepoznatljive utjecaje na odnos urbanog i prirodnog pejisaža Jadrana: (i) predilirski poljoprivredna naselja kamenog doba, (ii) mreža ilirskih gradina, (iii) starogrčka gradska naselja – kolonije, (iv) starorimski gradovi, (v) bizantski *refugium* u kasnoj antici, (vi) gradovi i naselja srednjovjekovne slavenske kulture, (vii) srednjovjekovne pomorske republike (Ancona i Dubrovnik), gradovi-države i slobodne luke, (viii) mletački gradovi istočne obale Jadrana, (ix) osmanski gradovi i utjecaj, (x) francuske ilirske provincije, (xi) modernizacija gradova tijekom Habsburške Monarhije, (xii) talijansko naslijeđe gradova 20. stoljeća, (xiii) modernistički jugoslavenski Jadran, (xiv) postmodernistički tranzicijski Jadran i (xv) tendencije za holističko 21. stoljeće. Tipološka klasifikacija povijesnog pejisažnog odnosa uključuje dva tipa urbanog kontinuiteta: (i) kontinuitet urbane lokacije i (ii) kontinuitet urbanog smještaja.

Istraživački rezultati uspostavljanja odnosa urbanog i prirodnog pejisaža u perspektivi prostornog planiranja **postavljaju teorijski znanstveni doprinos te odgovaraju na teorijski istraživački problem** da fenomen i proces promjenjivosti odnosa urbanog i prirodnog pejisaža nije utvrđen ni sustavno analiziran unutar znanstvenog polja prostornog planiranja. Uspostavljanje pet karaktera odnosa pejisaža kao percipiranih izazova odnosa pejisaža **odgovara na prvi istraživački cilj** identificiranja i definiranja problema odnosa urbanog i prirodnog pejisaža te **potvrđuje i nadopunjuje prvu istraživačku hipotezu** da je proces promjenjivosti odnosa urbanog i prirodnog pejisaža prostorni, vremenski i perceptivni fenomen. Ova sveobuhvatna perspektiva odnosa urbanog i prirodnog pejisaža podiže svijest o njegovim višedimenzionalnim vrijednostima, pridonosi cjelovitom sagledavanju i znanstvenom istraživanju odnosa urbanog i prirodnog pejisaža unutar perspektive prostornog planiranja (i obrnuto) te unapređuje edukaciju.

Holistički pristup znanstvenom istraživanju fenomena istraživanja unutar perspektive prostornog planiranja uspostavljen je preklapanjem različitih istraživačkih perspektiva i tri istraživačka koraka u razvoju prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejisaža: (i) teorijsko istraživanje, (ii) prostorno istraživanje, (iii) prostorno-planersko istraživanje. Ovaj metodološki istraživački pristup uključuje: (i) sistematizaciju čimbenika identiteta urbanog i prirodnog pejisaža iz teorijskog okvira, (ii) sistematizaciju teorijskih kriterija za evaluaciju i planiranje unapređenja odnosa urbanog i prirodnog pejisaža iz pregleda literature, relevantnih dokumenta i znanstveno-istraživačkih pristupa, (iii) usustavljivanje prostornih kriterija za evaluaciju odnosa urbanog i prirodnog pejisaža iz prostornih istraživanja konteksta Mediterana i Jadrana, (iv) sistematiziranje kriterija percepcije i kriterija identiteta za evaluaciju odnosa pejisaža unutar terenskih istraživanja i istraživanja percepcije reprezentativnih primjera jadranskog prostornog obuhvata te (v) sistematizaciju postojećih i nedostajućih prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejisaža iz povijesnih i suvremenih prostornih planova reprezentativnih primjera.

Definicija urbane regije dopunjena je utvrđenim prostornim odnosom urbanog i prirodnog pejisaža koji uključuje prostorne kriterije evaluacije i tipove prostornih odnosa regionalne i lokalne razine. Odnos urbanog i prirodnog pejisaža unutar prostornog konteksta Mediterana i Jadrana prepoznat je kao **pejisažni smještaj**. Uspostavljeni prostorni kriteriji za evaluaciju odnosa urbanog i prirodnog pejisaža unutar mediteranskog i jadranskog prostornog konteksta uključuju: (i) administrativni smještaj, (ii) geografski smještaj, (iii) kontinuitet

povijesnog smještaja i (iv) naslijeđe smještaja. Svaki od tipova prostornih odnosa nosi različite pejisažne probleme na koje je potrebno odgovoriti prostornim planiranjem. Regionalni prostorni tipovi odnosa urbanog i prirodnog pejisaža uključuju: (i) urbane centre, (ii) urbane mreže i (iii) urbane aglomeracije. Lokalni prostorni tipovi odnosa urbanog i prirodnog pejisaža uključuju: (i) intenzivan, kompaktan urbani razvoj; intenzivan i ekstenzivan, usmjeren urbani razvoj (ii) krakova i (iii) arhipelaga te ekstenzivan, raspršen urbani razvoj (iv) čvorova i (v) difuznog tipa. Tri glavne prostorno-planerske razine odnosa urbanog i prirodnog pejisaža uključuju: (i) regionalnu razinu, koja povezuje obalu i zaleđe, planiranu međuregionalnim i međuzupanijskim prostornim planovima, (ii) mikroregionalnu razinu, koja povezuje grad i prirodni smještaj, planiranu međuopćinskim i međupokrajinskim prostornim planovima te (iii) isprepletene društvene i ekološke mreže na lokalnoj razini, planirane međugradskim planovima i projektima.

Integracija nematerijalnih pejisažnih vrijednosti u prostorno planiranje za unapređenje prostornog odnosa urbanog i prirodnog pejisaža uključuje percepciju i identitet pejisaža, kao i podizanje kvalitete pejisaža i kvalitete življenja u urbanom i prirodnom pejisažu. Uspostavljeni kriteriji percepcije za evaluaciju odnosa urbanog i prirodnog pejisaža unutar jadranskog prostornog konteksta uključuju: (i) interakciju antropogenih i ekoloških mreža, (ii) transformaciju pejisažnog smještaja, (iii) vizualni (scenski) smještaj i (iv) smještaj komunikacija. Percepcija odnosa pejisaža primarno se odnosi na tipološku klasifikaciju intenziteta antropogenog utjecaja na prirodni pejisaž: (i) pejisaž razvijen prema ljudskim potrebama, predstavljen urbanim pejisažem, (ii) pejisaž prilagođen ljudskim potrebama, predstavljen kulturnim pejisažem, i (iii) ljudske potrebe prilagođene prirodnom pejisažu. Kriteriji identiteta za evaluaciju odnosa urbanog i prirodnog pejisaža uspostavljeni su prema percipiranim problemima odnosa pejisaža unutar jadranskog prostornog konteksta i uključuju: (i) identitet smještaja, (ii) životnost smještaja i (iii) endogeni smještaj. Tipovi percepcije identiteta odnosa urbanog i prirodnog pejisaža odnose se na tipove pejisaža koji nose identitet: (i) urbani pejisaž, (ii) kulturni pejisaž, (iii) prirodni pejisaž, kao i (iv) interakcija urbanog i prirodnog smještaja kao nositelj identiteta.

Na prostorne probleme ekstenzivnog urbanog širenja u prirodne resurse koji narušavaju ravnotežu odnosa urbanog i prirodnog pejisaža odgovoreno je holističkim pristupom prostorno-planerskom istraživanju koji nadopunjuje prostorni smještaj s nematerijalnim vrijednostima pejisaža. Na taj se način prostorni odnos urbanog i prirodnog pejisaža istražuje i sagledava kao višedimenzionalni fenomen i proces promjenjivosti koji je potrebno planirati kao jedinstvenu cjelinu. Utvrđenih pet skupina čimbenika identiteta i utvrđene tri skupine kriterija evaluacije **ostvaruju drugi cilj istraživanja** te doprinose utvrđivanju kriterija za unapređenje

odnosa urbanog i prirodnog pejisaža koji **potvrđuju i nadopunjuju drugu hipotezu istraživanja**. Holistički metodološki pristup u razvoju kriterija za evaluaciju i planiranje unapređenja odnosa urbanog i prirodnog pejisaža daje metodološki doprinos procesu prostornog planiranja i unapređuje znanstveno područje.

Dvanaest skupina prostornoplanskih kriterija uspostavljenih za unaprjeđenje odnosa urbanog i prirodnog pejisaža obuhvaća sastavnice pejisažnog smještaja, promiče holističko prostorno planiranje te integrira teorijske kriterije za evaluaciju i planiranje unapređenja s prostornim, percepcijskim i identitetskim kriterijima za evaluaciju te postojećim i nedostajućim prostornoplanskim kriterijima iz povijesnih i suvremenih prostornih planova. Holistički karakter odnosa urbanog i prirodnog pejisaža proizlazi iz održivog prostornog planiranja koje promiče ravnotežu (prirodnih i kulturnih) pejisaža, ekonomsku koheziju, društvenu uključenost i raznolikost kulturnog naslijeđa. Teorijski kriteriji za planiranje unapređenja odnosa pejisaža odražavaju četiri faze procesa prostornog planiranja: (i) pripremnu fazu uspostavljanja znanja o odnosu pejisaža, (ii) fazu odluke o korištenju znanja o odnosu pejisaža, (iii) fazu intervencija primjenom znanja o odnosu pejisaža i (iv) fazu reevaluacije pri preispitivanju znanja o odnosu pejisaža.

Četiri glavne skupine uspostavljenih prostornoplanskih kriterija za unaprjeđenje odnosa urbanog i prirodnog pejisaža obuhvaćaju prostorne kriterije te kriterije percepcije, identiteta i prostornog planiranja koji odražavaju sadržaje prostornih planova i procese prostornog planiranja te realnost, reprezentaciju i stalnu promjenu pejisaža. Prostorni kriteriji uključuju: (i) **administrativni smještaj** kontekstualnog i populacijskog opsega, (ii) **geografski smještaj** makro-, regionalne i mikrorazine, morski, urbani i planinski karakter, sustav naseljavanja i tendencije urbanog širenja, (iii) **kontinuitet povijesnog smještaja** u povijesnom podrijetlu, povijesnim promjenama i kontinuitetu te povijesnom karakteru urbane jezgre, (iv) **naslijeđe smještaja** u kulturnom, prirodnom i nematerijalnom naslijeđu međunarodnog, nacionalnog i lokalnog (tradicijskog) značaja. Kriteriji percepcije uključuju: (v) **interakciju antropogenih i ekoloških mreža** u urbanom i prirodnom pejisažu, (vi) transformaciju smještaja pejisaža kao iskonske, transformirane, projektirane i negirane prirode pejisaža te nove regenerirane prirode, (vii) **vizualni (scenski) smještaj** kao sustav pozicija vizura, vizualnih koridora, prostornih kontrasta i evocirajućih vizura te (viii) **smještaj komunikacija** kao pejisažnu pristupnu mrežu suvremenih i povijesnih staza i cesta. Kriteriji identiteta uključuju: (ix) **identitet smještaja** u *genius loci*, ambijentu pejisaža i društvenom prepoznavanju pejisažnog smještaja, (x) **životnost smještaja** javnog života u (adresiranju) napuštenih područja, sezonskom karakteru i pejisažu

proizvodnje i (xi) **endogeni smještaj** u odrastu, otpornosti, odnosu prema spontanoj izgradnji i pejisažu kao općem dobru. **Prostorno-planerski smještaj** (xii) uključuje integraciju regionalnih i lokalnih planova, kontinuitet povijesnih planova, integraciju znanja, upravljanje prostornim planovima, kreativnost planiranja, strateške regije, aktivnosti planiranja i praćenje posljedica. Kriteriji pejisažnog smještaja za unapređenje odnosa urbanog i prirodnog pejisaža razvijeni su tako da budu **jednako primjenjivi na urbani pejisaž kao i na kontekst prirodnog pejisaža**.

Jačanje autentičnog (autohtonog i endogenog) **prostornog planiranja kao alata za unapređenje odnosa urbanog i prirodnog pejisaža** promiče naslijeđene pejisažne vrijednosti i tradiciju prostornog planiranja, ravnomjerno jačanje realnosti i reprezentacije pejisaža te jednaku primjenu i na urbani i na prirodni kontekst. Pet ciljeva prostornog planiranja, objašnjenih promjenama paradigmi i pristupima prostornom planiranju prema transformacijama odnosa urbanog i prirodnog pejisaža na Jadranu, potiče: (i) uspostavljanje pejisaža – svijest o transformacijama pejisaža, (ii) zelenu transformaciju – povezivanje urbanog i prirodnog pejisaža, (iii) održivost – usmjeravanje otpornosti pejisaža, (iv) uključivanje zajednice – promicanje kvalitete pejisaža i (v) fenomenologiju – edukaciju i komunikaciju o vrijednostima pejisaža. Pet načina prostornog planiranja za unapređenje odnosa urbanog i prirodnog pejisaža uključuje: (i) dubinu pejisažnih slojeva, (ii) strukture mreža, (iii) autohtono i endogeno planiranje, (iv) tendencije procesa i (v) arhetipove pejisaža. Tri glavna tipa intervencija prostornog planiranja prema unapređenju kvalitete odnosa urbanog i prirodnog pejisaža prepoznata su kao neophodna u svim tipovima pejisaža i u svim fazama procesa planiranja: (i) zaštita, očuvanje i održavanje snažnog odnosa pejisaža, (ii) jačanje i nadopunjavanje kvalitete u narušenom odnosu pejisaža, (iii) oživljavanje i oporavak degradiranog odnosa urbanog i prirodnog pejisaža. Teme otvorene za buduća istraživanja u unapređenju odnosa urbanog i prirodnog pejisaža također promiču autentično prostorno planiranje, usredotočujući se na: (i) nematerijalne fenomene pejisaža, (ii) društvene vrijednosti (i važnost) pejisaža, (iii) odnos pejisaža kao mreže integriranog naslijeđa, (iv) spajanje znanosti i pejisažne umjetnosti, (v) vizualne metodologije za prostorno planiranje i (vi) smjernice prostornog planiranja koje proizlaze iz pejisažnih (planskih) praksi.

Prostorno planiranje promiče se kao alat za planiranje transformacije pejisaža kako bi urbani i prirodni uvjeti postali cjelovitiji, otporniji i održiviji. Osim postojećih strategija, kriterija i indikatora, praksi prostornog planiranja nedostaju prostornoplanski kriteriji za unapređenje odnosa urbanog i prirodnog pejisaža. Ovaj se **prostorno-planerski problem rješava**, kao što se i **treći istraživački cilj ostvaruje**, utvrđivanjem dvanaest skupina

prostornoplanskih kriterija za unapređenje odnosa urbanog i prirodnog pejzaža. **Treća istraživačka hipoteza**, da prostornoplanski kriteriji doprinose planiranju unapređenja odnosa između urbanog i prirodnog pejzaža istočne obale Jadrana, potvrđena je postojećim i nadopunjena nedostajućim (potrebnim) prostornoplanskim kriterijima iz povijesnih i suvremenih prostornih planova reprezentativnih primjera. Provedeno istraživanje doprinosi jačanju autentičnog – autohtonog i endogenog prostornog planiranja, unapređujući prostorno-planersku struku i praktični okvir prostornog planiranja.

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1. THEORETICAL RESEACH CATALOGUE 1 (Book I – Chapter 3)
**RESEARCH CATALOGUE OF THEORY-BASED CRITERIA FOR
EVALUATING THE URBAN AND NATURAL LANDSCAPE RELATION -
Criteria groups by landscape relation characters**
2. THEORETICAL RESERACH CATALOGUE 2 (Book I – Chapter 3)
**RESEARCH CATALOGUE OF THEORY-BASED CRITERIA FOR
PLANNING THE ENHANCEMENT OF THE URBAN AND NATURAL
LANDSCAPE RELATION - Criteria groups by spatial planning stages**
3. SPATIAL RESEARCH CATALOGUE 3 (Book I – Chapter 4)
**RESEARCH CATALOGUE OF SPATIAL CRITERIA FOR EVALUATING
THE URBAN AND NATURAL LANDSCAPE RELATION IN
MEDITERRANEAN OVERVIEW EXAMPLES**
4. SPATIAL RESEARCH CATALOGUE 4 (Book I – Chapter 5)
**RESEARCH CATALOGUE OF SPATIAL CRITERIA FOR EVALUATING
THE URBAN AND NATURAL LANDSCAPE RELATION IN ADRIATIC
RESEARCH CASES**
5. FILED RESEARCH CATALOGUE 5 (Book I – Chapter 6)
**FIELD RESEARCH CATALOGUE OF REPRESENTATIVE RESEARCH
CASES**
6. PERCEPTION RESEARCH CATALOGUE 6 (Book I – Chapter 6)
**RESEARCH CATALOGUE OF PERCEPTION CRITERIA FOR
EVALUATING THE URBAN AND NATURAL LANDSCAPE RELATION IN
REPRESENTATIVE RESEARCH CASES**
7. SPATIAL PLANNING RESEARCH CATALOGUE 7 (Book I – Chapter 7)
**RESEARCH CATALOGUE OF SPATIAL PLANNING CRITERIA FOR THE
ENHANCEMENT OF THE URBAN AND NATURAL LANDSCAPE
RELATION IN SPATIAL PLANS OF REPRESENTATIVE RESEARCH
CASES**

Specific notes for reading

The doctoral dissertation *Spatial Planning Criteria for Relation Enhancement Between Urban and Natural Landscape of The East Adriatic Coast* is written in two books that are intended and designed to be read in parallel:

BOOK I – DOCTORAL DISSERTATION

BOOK II – APPENDIX (Research Catalogues and Research Tables)

Novel notions introduced by this doctoral dissertation:

- **Relation between urban and natural landscape** – initial formulation of the research phenomenon is used equally as the ‘*urban and natural landscape relation*’ and ‘*relation of the urban and natural landscape*’ and as ‘*the landscape relation*’,
- **Mediterranean Mountains** – a belt of mountains that round the Mediterranean Sea,
- **Adriatic Coastal Mountains** – a sequence of mountains that embrace the Adriatic Sea including the Apennines of the West and the Dinarides of the East Adriatic Coast,
- The **West Adriatic Coast** and the **East Adriatic Coast** - viewed as coastal landscape regions and named in this manner (written in capital letters),
- **Mediterranean Overview Examples** – twenty-six (26) representative cities of the Mediterranean coast set in the foothills of Mediterranean Mountains,
- **Adriatic Research Cases** – thirty-six (36) representative cities, towns, and settlements of the Adriatic coast set in the foothills of Adriatic Coastal Mountains,
- **Representative Research Cases** – Adriatic coastal cities of Ancona (Italy), Rijeka (Croatia), and Budva (Montenegro) representative for intensive, mixed (intensive and extensive), and extensive urban development into natural resources.

Notes:

- When the text is quoted directly from the literature, it is marked as ‘...’ in *italic* type,
- When a name or a specific term is mentioned, it is marked in *italic* type,
- **Bold** is used for a significant term or idea used in the text,
- Complex listings and thoughts are presented in low dash form as used for these notes.