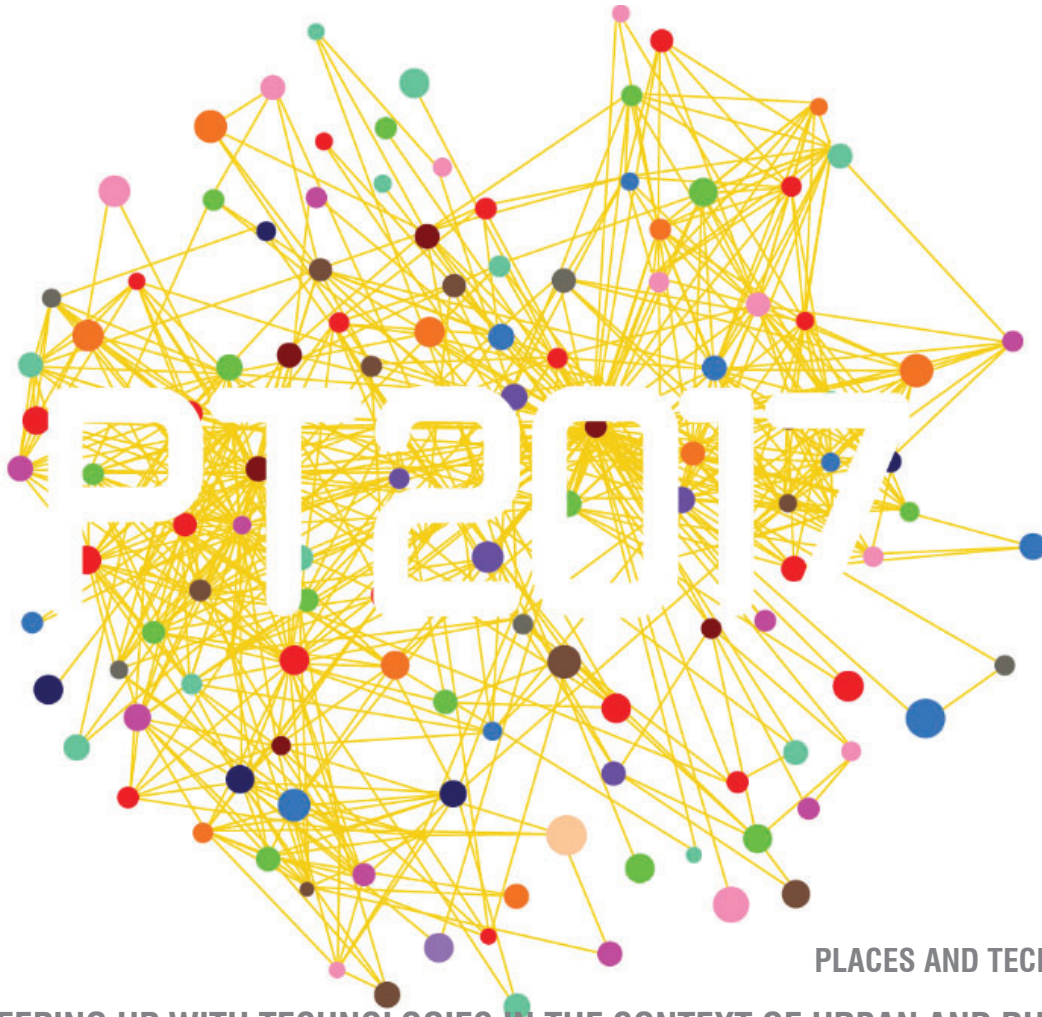


4th International Academic Conference



PLACES AND TECHNOLOGIES 2017
KEEPING UP WITH TECHNOLOGIES IN THE CONTEXT OF URBAN AND RURAL SYNERGY
Book of Conference Proceedings

Sarajevo, Bosnia and Herzegovina, June, 08th - 09th, 2017

4th International Academic Conference
PLACES AND TECHNOLOGIES 2017

KEEPING UP WITH TECHNOLOGIES IN THE CONTEXT OF URBAN AND RURAL SYNERGY

08 & 09 JUNE

SARAJEVO

BOSNIA AND HERZEGOVINA

BOOK OF PROCEEDINGS

PLACES AND TECHNOLOGIES 2017
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SYNERGY

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Editors:

Dženana Bijedić, Aleksandra Krstić-Furundžić, Mevludin Zečević



Sarajevo, Bosnia and Herzegovina

Title :

**PLACES AND TECHNOLOGIES 2017 - KEEPING UP WITH TECHNOLOGIES IN THE CONTEXT OF URBAN AND RURAL SYNERGY
BOOK OF CONFERENCE PROCEEDINGS**

For publisher:

Prof.Mr.Sci Mevludin Zečević

Chef editors:

Prof.Dr Dženana Bijedić, Prof.Dr Aleksandra Krstić-Furundžić, Prof.Mr.Sci Mevludin Zečević

Editorial board:

Prof.Dr Eva Vaništa Lazarević, Prof. Dr Aleksandra Djukić, Dr Milena Vukmirović

Publisher:

Arhitektonski fakultet Univerziteta u Sarajevu

Year of publishing:

2017

CIP - Katalogizacija u publikaciji
Nacionalna i univerzitetska biblioteka

Bosne i Hercegovine, Sarajevo

711.3/.4(063)(082)

INTERNATIONAL Academic Conference Places and Technologies (4 ; 2017 ; Sarajevo)

Keeping up with technologies in the context of urban and rural synergy [Elektronski izvor] : book of conference proceedings / [4th International academic conference] Places and technologies 2017, Sarajevo, June, 08th - 09th, 2017 ; editors Dženana Bijedić, Aleksandra Krstić-Furundžić, Mevludin Zečević. - El. zbornik. - Sarajevo : Arhitektonski fakultet, 2017. - 1 USB fleš memorija

Sistemski zahtjevi: Nisu navedeni. - Nasl. sa nasl. ekrana

ISBN 978-9958-691-56-0

COBISS.BH-ID 24131590

CONTENTS

ORGANIZATION	ix
ABOUT	xiv
TOPICS	xiv
KEY NOTE SPEAKERS	xv
WORD OF THE P&T_2017 CONFERENCE DIRECTORS	xvii
OPENING AND SPECIAL PAPERS' TOPICS	1
URBAN AND RURAL CONNECTION BETWEEN GLOBAL AND LOCAL – BETWEEN ROLE AND REALITY. WHAT DESIGN CAN DO TO ACHIEVE THE SYNERGY?	3
SPACES OF LOW AND HIGH-INTENSITY CHANGES	4
DECENTRALISING CITIES: TECHNOLOGY, THE NEW CLIMATE AND THE FUTURE OF PERI-URBAN GROWTH	13
TOPIC I: IMAGE, IDENTITY AND QUALITY OF PLACE	27
LIGHT AND ARCHITECTURE IN THE CASE OF ADIL BEY AND KUWAIT MOSQUE IN SARAJEVO	28
THE HOMEOSTASIS AND THE SYNERGY IN THE CONTEMPORARY AND FUTURE LANDSCAPING	38
PRINCIPLES OF ARCHITECTURAL REGIONALISM AS MEANS OF BUILT FORM IMPROVEMENT IN BOKA BAY, MONTENEGRO	48
INVESTMENT OPPORTUNITIES IN SERBIA: KIKINDA CASE STUDY	57
FREE ZONE IN KIKINDA	64
DEVELOPMENT CONCEPTS OF <i>UrbRur</i> AREAS	68
COMPLEX PATTERNS OF SYNERGY BETWEEN URBAN AND RURAL SPACES	77
THE IMPORTANCE OF IDENTITY AND QUALITY OF LIFE, THE CITY OF BANJALUKA	88



SELF-ORGANIZED PATTERNS OF RURAL SETTLEMENTS VS. PLANING AND DESIGNING THE BUILT ENVIRONMENT	96
KNEZ (PRINCE) MIROSLAV SQUARE IN OMIŠ (CROATIA)	105
IMAGE, IDENTITY AND QUALITY OF <i>CVJETNO NASELJE</i> HOUSING DEVELOPMENT IN ZAGREB.....	115
THE SMALL-SCALE APPROACH AS A GENERATOR FOR URBANITY INCREASE OF BANJA LUKA CITY	126
SPATIAL, TECHNOLOGICAL AND STYLISTIC PATTERNS OF PRODUCTION OF THE BUILT ENVIRONMENT IN BOSNIA AND HERZEGOVINA	135
TOPIC II: URBAN AND RURAL PLACES TOWARD HUMAN COMFORT, HEALTH AND INCLUSION	144
THE EXPERIENCE OF SMART CITY IN LIGURIA, ITALY. THE CASE STUDIES OF THE MUNICIPALITIES OF LA SPEZIA AND SAVONA	145
HEALTHY URBAN ENVIRONMENT AND DESIGN: THE OUTDOOR SPACES	155
TENDENCIES IN NEWLY-BUILT MULTI-FAMILY HOUSING IN SERBIA: OUTLOOK OF URBAN EXPERTS.....	169
DECODING URBAN FRAGMENTATION: MORPHOGENETIC PROCESSES IN THE SHAPING OF A SUBURBAN TERRITORY IN LISBON'S METROPOLIS.....	180
RETHINKING ARCHITECTURE AND RELATED ENERGY EFFICIENCY IN WESTERN BALKAN CITIES “Case study of the housing developments in city of Sarajevo”	189
THE ZONE OF TRANSITION: BETWEEN CITY AND LANDSCAPE	204
INNOVATIVE APPROACHES IN THE PROOCESS OF RE-INTEGRATION OF CITY AND VILLAGE.....	215
PERSPECTIVES THAT ARISE FOR PREVENTIVE MEDICINE FROM THE SYNERGY OF URBAN AND RURAL AREAS.....	227
WATER PROTECTION IN URBAN AREAS	236
RELATION BETWEEN PLANNING AND REALIZATION OF OPEN SPACES IN NEW BELGRADE SUPER-BLOCKS: CASE STUDIES OF BLOCKS 45 AND 70	244
IMPACTS OF EARTHQUAKE ACTIONS ON URBAN AND RURAL AREAS	253
TOPIC III: SUSTAINABLE COMMUNITIES AND PARTICIPATION.....	263
THE ARCHITECTURE OF GARDEN AS NEW RECREATION FIELD OF EVERYDAY URBAN LIFE	264
THE SCIENCE OR ART OF MAPPING? - ELABORATING THE PROCESS OF TIS CREATION IN CITY OF NIŠ	273

THE ROLE OF SOCIAL MEDIA IN THE PROCESS OF ENHANCING COMMUNITY PARTICIPATION THROUGH BOTTOM-UP APPROACH IN THE CONTEXT OF URBAN REGENERATION.....	284
CREATIVE CITY CHALLENGING CONCEPT “ALL FOR ONE – ONE FOR ALL”	295
HOUSING QUALITY OF SOCIALLY VULNERABLE CATEGORIES AND AFFORDABILITY OF CURRENT SOCIAL HOUSING PROGRAMMES.....	304
TOWARDS SUSTAINABLE REGIONAL DEVELOPMENT THROUGH SOCIAL NETWORKING – „NEGOTINSKA KRAJINA “CASE.....	312
COOPERATIVE GIS PLATFORM FOR IMPROVING RESILIENCE TO HOUSEHOLD RISKS – CASE STUDY OF ADA MEDJICA ON SAVA RIVER IN BELGRADE.....	323
MULTILEVEL GOVERNANCE INSTRUMENTS FOR ACHIEVING BALANCED URBAN-RURAL DEVELOPMENT	332
SMART CITY CONCEPT IN THE STRATEGIC URBAN PLANNING PROCESS. CASE STUDY OF THE CITY OF BELGRADE, SERBIA	341
INTEGRATIVE AND LOCALLY SENSITIVE APPROACH TO THE COMMUNITY PLANNING IN SERBIA.....	350
THE “DYNAMIC EDGE”: RE-CONCEPTUALIZATION OF THE URBAN FRINGE	359
TOPIC IV: ARCHITECTURE AND BUILDING TECHNOLOGIES.....	370
SUSTAINABILITY IN HIGHER EDUCATION AND RESEARCH: THE ROLE OF THE ARCHITECT	371
INTEGRATION OF SOLAR THERMAL COLLECTORS INTO THE BUILDING ENVELOPE OF THE MULTIFAMILY HOUSING BUILDING IN BELGRADE	379
TESTING THE MOST OPTIMAL SCENARIO OF IMPROVING ENERGY PERFORMANCES OF RESIDENTIAL BUILDINGS IN SERBIA, CONSTRUCTED IN THE PERIOD OF 1971-1980.....	389
DAYLIGHT AND ENERGY ENHANCEMENT WITH VENTILATED FAÇADE SYSTEMS FOR RENOVATION PROJECTS	399
INTEGRATED DESIGN IN THE PROCESS OF ARCHITECTURAL EDUCATION	408
EVALUATION OF WALL THERMAL PERFORMANCE FOR VEGETATION WALL.....	417
MONOCULTURE FACTORY BUILDING PROJECT - Facility relaying on energy efficient technologies in order to prevent abandonment and decay of rural communities in Vojvodina	418
NEGOTIATING SUSTAINABILITY IN URBAN DEVELOPMENT: THE ROLE OF TECHNICAL BUILDING EQUIPMENT AT DAS ECKWERK, BERLIN	427



TOPIC V: ENVIRONMENTALLY FRIENDLY MODES OF TRANSPORT AND COMMUTE... 438	
WEARABLE DEVICES HELP THE WALKER TO EXPLORE THE CITY	439
EXPLORING THE CITY WITH THE BICYCLE AND TECHNOLOGY HELP TO IDENTIFY HAZARDS MET THEREBY	445
AIRCRAFT TECHNOLOGY ENHANCING ENVIRONMENTAL PROTECTION WITHIN URBAN AREAS	455
CARSHARING – USING INSTEAD OF OWNING	461
CONCEPT OF THE REGIONAL PUBLIC TRANSPORT SYSTEM DEVELOPMENT	470
TOPICS VI: CLIMATE CHANGE.....	477
ENERGY SAVING POTENTIAL OF THE REFURBISHMENT OF BUILDING ENVELOPE OF THE EXISTING SINGLE-FAMILY HOUSES IN URBAN AND RURAL AREAS OF BOSNIA AND HERZEGOVINA.....	478
(R)URBAN SYNERGY RECONSIDERED: THE ROLE OF INFORMATION NETWORKS IN CLIMATE CHANGE ADAPTATION AND MITIGATION.....	489
TOPICS VII: GEOGRAPHY AS DEVELOPMENT FACTOR	499
ROLE OF TWIN CITIES AND SATELLITE TOWNS IN INTENSIFYING REGIONAL DEVELOPMENT	500
SMALL URBAN CENTERS AS DRIVERS OF DAILY MIGRATIONS AND AGENTS OF TRANSFORMATION OF RURAL BACKGROUND: EXAMPLE OF BLACE MUNICIPALITY	512
TOPIC VIII & IX: CULTURAL PATTERNS AND SENSITIVITY; SUSTAINABILITY LESSONS FROM VARNICULAR ARCHITECTURE	525
USING SPACE SYNTAX MODEL IN TYPO MORPHOLOGICAL STUDIES - UNDERSTANDING THE TRANSFORMATION OF URBAN FORM AND URBAN LIFE OF THE EDGE BLOCKS OF NEW BELGRADE	526
THE FUNCTION OF GREENERY IN A SKYSCRAPER: THE PLACEMENT AND ITS INFLUENCE	536
Moshe Safdie.....	539
THE IMPORTANCE OF THE APPLICATION OF CO-DESIGN WITHIN THE REDESIGN OF THE CULTURAL CENTERS IN B&H	544
LEARNING FROM THE TRADITIONAL MEDITERRANEAN ARCHITECTURE: MICROCLIMATIC AND LIVEABILITY CONDITIONS IN INTERMEDIATE OUTDOOR SPACES.....	553
SUSTAINABILITY AND RESILIENCE IN TRADITIONAL BOSNIAN AND HERZEGOVINIAN ARCHITECTURE - LEARNING FROM TRADITION FOR BETTER FUTURE	563
TOPIC X: TOURISM FOR URBAN-RURAL SYNERGIES	572

FLUIDITY: NETWORKED CONTEXT AND CONTEMPORARY METHODOLOGIES OF ARCHITECTURE IN TOURISM	573
ICT POTENTIAL FOR ENTREPRENEURSHIP IN RURAL AREAS	582
FOOD TOURISM CONCEPT - CREATING SYNERGY BETWEEN URBAN AND RURAL PLACES - CASE STUDY OF MAGLIČ, SERBIA	582
STRATEGIES FOR RURAL TOURISM DEVELOPMENT IN NIŠAVA DISTRICT IN SOUTHEASTERN SERBIA AS MAIN HUB FOR URBAN AND RURAL SYNERGY	608
TOPIC XI: RESILIENCE OF PLACES	624
APPLICATION OF ICT FOR URBAN REGENERATION, ENVIRONMENTAL PROTECTION AND SOCIAL EQUALITY IN SCOTLAND	625
METHODS AND TECHNIQUES TO SUPPORT COGNITIVE PROCESSES OF TERRITORIAL RESILIENCE IN DEVELOPING COUNTRIES – CASE STUDY OF SERBIA	634
CONTINUOUS PERFORMATIVE LANDSCAPES FOR RESILIENT CITY OF SKOPJE	644
AGILE METHODS IN FORMATION OF METROPOLIS NEIGHBOURHOOD	654
REVITALIZATION OF VAST CITY SPACES THROUGH THE MEANS OF SOUND	663
“URBAN RENEWAL UNDER THE SCOPE OF SECURITY ISSUES” - CASE STUDY OF BELGRADE – GLOOMY PARTS OF THE CITY	669
DISASTER RISK REDUCTION IN URBAN SETTLEMENTS – COMBINED MORPHOLOGICAL ANALYSIS AND SYSTEM DYNAMICS APPROACH	681
COMBINED GMA AND SD DISASTER RISK REDUCTION MODEL	688
TOPICS XII: HISTORY AND PHILOSOPHY OF TECHNOLOGY AND PLACES	694
REDESIGNING COMFORT	695
TOPICS XIII: BIOMIMICRY AND SMART INNOVATIONS TO HUMAN CHALLENGES	706
REVERSE BIOMIMETIC ANALOGIES IN DESIGN OF ARCHITECTURAL STRUCTURES	707
TOPICS XIV: PARTICIPATORY AND CRITICAL DESIGN IN URBAN DECISION-MAKING PROCESSES	718
MODERN SPATIAL CONCEPTS, PROGRAMMES AND TECHNOLOGIES AIMED AT SUSTAINABILITY OF HISTORICAL NUCLEI – THE CASE OF THE TOWN OF BUJE	719



PLACES AND TECHNOLOGIES 2017

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ORGANIZATION

Organizers:

University of Belgrade, Faculty of Architecture, Serbia

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METHODS AND TECHNIQUES TO SUPPORT COGNITIVE PROCESSES OF TERRITORIAL RESILIENCE IN DEVELOPING COUNTRIES – CASE STUDY OF SERBIA

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ABSTRACT

Current global sustainable development dilemmas imply efficient and effective dealing with complex phenomena in process of local territorial development governance. Climatically responsive planning actually focuses on the complex and dynamic, integral, meta phenomena being driven by the interaction of the environment, economy and society. Wide range of issues should be taken into consideration in process of local strategic thinking - from climate change adaptation strategies and actions to the socioeconomic regional positioning. In developing and transitional countries, such as Serbia, this is a big challenge for local authorities and governing institutions. Even if there is national political and strategic determination and local understanding of importance of territorial cohesion, there is usually lack of human knowledge and institutional capacity to perform and act within aggravating circumstances of overlapping problems and insufficient assets. Since the potential risk situations are more and more pronounced, local communities face a challenge of changing toward different collective action, short-term efficient as well as long-term effective. That means transformation, evolution of local human systems structures and building the capacities of all local urban-rural subsystems to strengthen resiliency to the global dynamics. The success of local planning and management process, is directly dependent on the quality of the collective knowledge on which it relies. Experience has shown that the traditional quantitative approaches to inform planning do not provide sufficient quality of reality cognition necessary to formulate effective collective actions. Therefore, there is a need for an compass, an efficient instrument to integrate and structure complex cognitive dynamics both in quantitative and qualitative way. Starting from the assumption that Integral theory AQAL model to comprehend the complexity of reality could support and improve local collective cognitive process we performed several case studies with aim to identify how this new methodological approach could change and deepen planning collective perspective in Serbian local communities enabling immediate and more prominent effective actions.

Keywords: resilience, collective cognitive process, Integral theory AQAL model

¹⁴⁶ Corresponding author

TOPIC XI:
RESILIENCE OF PLACES



INTRODUCTION

In this article we underline our stand point that the complexity of achieving resilience requires developing and implementing a sufficiently complex response at all government scales and down to the household and individual levels. Focusing on the efforts to *adapt* to the impacts of inevitable climatic changes, while at the same time raising preparedness for possible shocks and dealing with long term stresses, will require social transformations at a rate and scale that is unprecedented in human history. This transformations require societies to adapt to not only new biophysical conditions, but also to new understandings of human-environment relationships. This wider interpretation calls for a more integral approach, including both objective and subjective dimensions of adaptation and mitigation, and can inform both planning theory and practice. We argue here that, planners and policy makers first need to change knowledge base and perspective to be enabled to fully understand the nature of the problem that are dealing with. Our stand is that Integral Theory (Wilber K.) offers an innovative framework that can contribute this processes, since its rigor, inclusivity, breadth, and depth offer a promising way forward to addressing complex issues.

INTEGRAL THEORY AQAL MODEL TO COMPREHEND THE COMPLEXITY OF RESILIENCE REALITY

Integral theory as response to global “calls” for an end to the age of fragmentation in human sustainable development and seeks for a synthesis of the best of pre-modern, modern, and postmodern thinking (Esbjörn-Hargens S. , 2009). The essence of integral approach is based on a assumption that with a perspective large enough, everyone is partially right: all definitions address an important dimension of reality, each approach focuses on a necessary area, and all justifications are valid within their context. According to post-postmodern position of integral theory, and AQAL critical realism methodological approach there are at least four irreducible domains of reality, called quadrants: subjective_individual, intersubjective_cultural, objective_behavioural, and interobjective_social systemic. They must be consulted simultaneously in an integrated way when attempting to fully understand any issue or aspect of reality, in contrast to approaches that explicitly or inadvertently reduce one quadrant to another (Esbjörn-Hargens S. , 2009). Resilience is a complex concept rooted in a complex phenomenon of climate change that is enacted by multiple methodologies from various disciplines (ARUP, 2014). Climate change and resilience as its direct paradigm response is not simply an environmental problem, it is about human capacity of individuals and communities to respond to threats, closely related to how humans perceive themselves in the world, how humans both create and respond to change, how we sustain our development in balance with nature (O’Brien & Hochachka, 2010), it requires societies to adapt to not only new biophysical conditions, but also to new understandings of human-environment relationships (Esbjörn-Hargens S. , 2005)]. No single method by itself can “see” or reveal resilience issues in its entirety (Esbjörn-Hargens S. , 2010). This raises the issue of the ontological status of climate change and all related concepts: to what

degree are the data from methodological traditions pointing to a singular or multiple object. Integral perspective on climate change is *not* assuming single reality that most everyone presumes, but it sees it as a *multiple_integral object*: an ontologically distinct phenomenon that is a combination of first, second, and third person dimensions whose enactment is rooted in Integral Epistemological Pluralism (Zimmerman, 2010) (Figure. 1.).

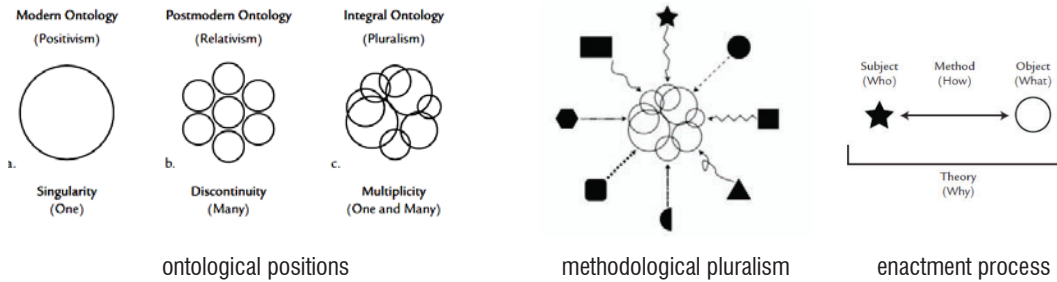


Figure 45: Integral theory positions on climate change phenomenon (Esbjörn-Hargens S. , 2010)

The emphasis here is that epistemology is connected to ontology (the what) via methodologies (the how). While modernity emphasizes ontology (the what), and postmodernity often emphasizes epistemology and interpretation (the who), Integral Theory emphasizes the role played by methodology (the how) in linking and integrating ontology and epistemology through the enactment, constitution, or performance of the phenomenon being investigated. But each of named positions has characteristic view of ontology, and in each case, the ontology associated with each worldview is the result of where it places its focus. Integral approach emphasis on methodology, lends itself to a *pluralistic view* that emphasizes the multiplicity of objects: many objects are neither simply a positivist one or a relativistic many, but a hybrid of both (Figure. 1.) (Esbjörn-Hargens S. , 2010). According the integral perspective, while climate change it is a multiple object, it does not imply that reality is fragmented or that the integral inquiry is undertaken from a relativistic stance. By treating climate change as single object “out there,” we blind ourselves to the many strategic leverage points that become more obvious and accessible when its multiplicity is recognized (Zimmerman, 2010).

Starting from the integral theory position that climate change have to be explored as a multiple object with a high degree of ontological complexity, given the degree of epistemological distance, local to global, it is impossible to be “seen” directly and therefore there are many competing perspectives on it, so methodological variety is needed, numerous social and natural science disciplines are needed to describe it (Figure 2.). There is an emphasise that usually a process of confusion and reduction occurs, resulting in the fact that too many environmental explanations have confused discursively constructed global problems with universal biophysical facts, and paid insufficient attention to discursively constructed local problems (Esbjörn-Hargens S. , 2010). Therefore, depending on whether people, for example in case of specific urban resilience, enact the problem of climate change as a condition or as a process, they are going to propose different solutions. Acknowledgement of ontological pluralism arouses key issue



TOPIC XI:
RESILIENCE OF PLACES

of ontological ethics in local politics and strategies: due to the fact that we can enact different realities, which ones do we want to either keep in focus or erode? (Zimmerman, 2010).

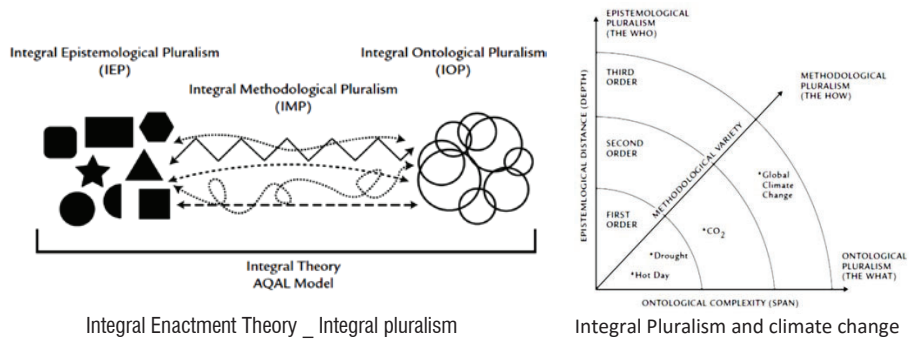


Figure 2: Integral theory methodological pluralism and AQAL model (Esbjörn-Hargens S. , 2010)

According to integral theory and integral ecology, inclusiveness is needed to ensure that an adequate set of perspectives is called upon to allow a given state of affairs to manifest itself in all its complexity. Scientists can provide important information about what a particular problem is, but third-person scientific methods-perspectives cannot replace insights drawn from first- and second-person perspectives, including basic value considerations. (Lalović, Živković, & Milovanović Rodić, 2012). Therefore, a transdisciplinary approach is now called for, whereby disciplines do not compete with or dismiss one another, and instead act in concert and create synergy.

METHODS AND TECHNIQUES TO SUPPORT INTEGRAL COGNITION OF RESILIENCE

There are at least two ways to use the AQAL model (Figure 3.): 1) as dimensions - *quadratic* approach, comprehending various realities that one individual can perceive as a result of his own embodied awareness, or as 2) perspectives – *quadri-*via** approach, refers to four ways of seeing particular reality. “The quadrants represent the native ways in which we experience reality in each moment and quadri-*via* represent the most common ways we can and often do look at reality to understand it” (Esbjörn-Hargens S. , 2009). Therefore, according to the integral approach each of the perspectives associated with the four quadrants of reality cognition can be studied through two major methodological families: - inside, a first-person perspective, or - the outside, a third-person perspective.

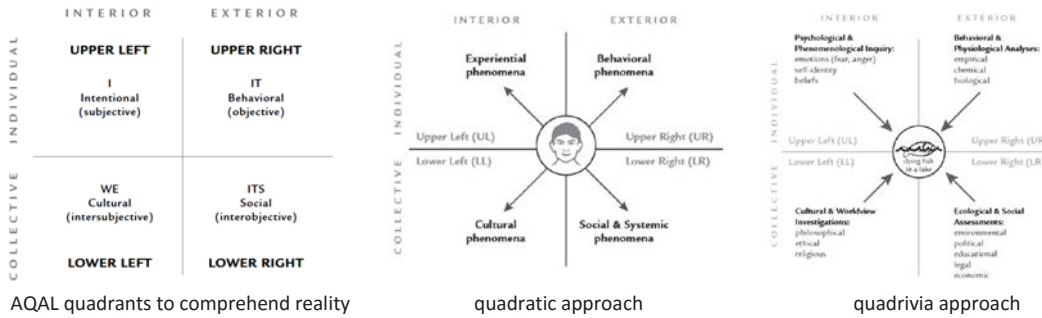


Figure 3: AQAL model of reality integral cognition (Esbjörn-Hargens S. , 2009)

This results in eight distinct zones of human inquiry and research. These eight zones comprise what integral theory calls “integral methodological pluralism (IMP), which includes such approaches as phenomenology as an exploration of first-person subjective realities, ethnomethodology as an exploration of second-person intersubjective realities, and empiricism as an exploration of third-person empirical realities (Figure 4.).

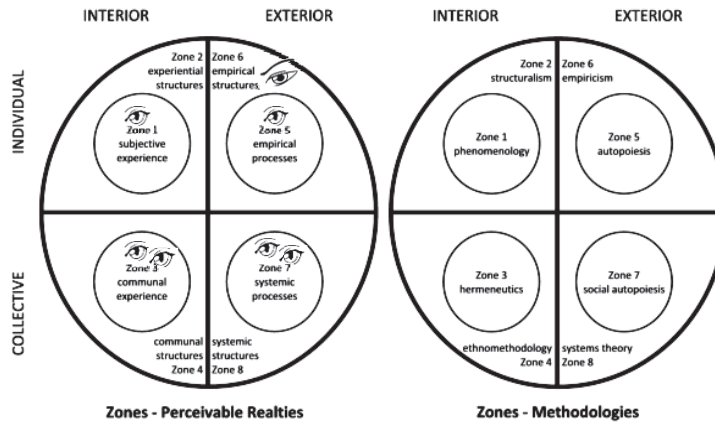


Figure 4: Integral methodological pluralism (IMP) - Eight methodological zones, (Esbjörn-Hargens S. , 2009)

Because integral theory acknowledges and includes all the major insights from valid forms of research, it emphasizes the importance of including all zones in its efforts to understand anything in a comprehensive way and there are “schools of thought” that specialize in using the methods, practices, and techniques associated with each zone. “An integral approach must include all eight zones or it risks leaving out important aspects of reality that have a bearing on effective solutions to the problems facing our communities and our planet. In other words, the more of reality we



TOPIC XI:

RESILIENCE OF PLACES

acknowledge and include, the more sustainable our solutions will become, precisely because a project will respond more effectively to the complexity of that reality. We cannot exclude major dimensions of reality and expect comprehensive, sustainable results” (Esbjörn-Hargens S. , 2009).

CASE STUDY OF SERBIA – ROAD TOWARD BELGRADE’S RESILIENCE

The Global Alliance for Urban Crisis, was initiated during the World Humanitarian Summit in 2016 as a global, multi-disciplinary and collaborative community of practice, ‘network of networks’ working to support the implementation of the broader Agenda for humanity which encompasses a number of international processes (Sendai Framework for Disaster Risk Reduction, 2030 Agenda for Sustainable Development, UN Framework Convention on Climate Change, outcomes of Habitat III in Quito) all considered as critical to achieve genuine change in the way humanitarian assistance is delivered, and risk and vulnerability reduced. It resulted with globe’s largest association of local government partnerships: a network of over 3,300 cities, towns and local governments, with numerous strategic partners including the Medellin Collaboration on Urban Resilience launched (2014), Cities Alliance (2016), UNISDR, ICLEI - Local Governments for Sustainability, C40 Climate Leadership Group, 100 Resilient Cities, The World Bank Group, Inter-American Development Bank, Rockefeller Foundation, and the Global Facility for Disaster Reduction and Reconstruction. The ambition is to increase the membership to 5,000 local governments by 2020, and to have at least 500 local resilient strategies developed (CRPP 2016).

Following the Balkan 2014 floods experience, with major post shock disasters worst manifested in Serbia within Belgrade region, significant efforts toward resilience have been undertaken on a different governance levels almost simultaneously: interregional basin of Sava project initiated, several Serbian national documents adopted, City of Belgrade several regulatory and normative changes have been undertaken. But the overall public critical discourse opened around whole national and local social systems unpreparedness was fertile ground for Belgrade’s resilience initiative to be seeded. City of Belgrade officially applied 100 Resilient Cities (100RC) in 2014 and was selected as the first city in Eastern Europe from among 300 city applicants to participate in the second 100RC challenge. Following 100 RC Strategy Guidance Manual Belgrade started overall collaborative process of Resilience strategy enactment. So far the first phase – Preliminary Resilience Assessment is finished and wrapped up in a working document sent out for institutional approval. As we were the part of the process, we felt the urge to look at the process through integral AQAL lenses in order to assume critical realistic position of whole process and may be contribute to the cognitive deepening and comprehension in the next phase. First thing that should be underlined in this case study is that all 100RC cities in partnership share common framework, methodology, tools and techniques (ARUP, 2014) provided by the program which is very important because essentially establishes common integral enactment approach enabling the all cities processes to be compared and analysed. The resilience strategy methodology is offered as a “dynamic roadmap to build resilience in the city: It articulates the city’s priorities for building resilience through specific initiatives for immediate implementation as well as the city’s longer-term future, and it triggers action, investment and support within city government and from outside groups. The process of building a city’s resilience is not linear but iterative as the city’s resilience priorities and opportunities evolve - a city’s efforts will be reformed

as new shocks or stresses are experienced, initiatives are implemented, new data becomes available and opportunities for collaboration are revealed” (100RC, 2015). In its essence, this methodology is road map to integral methodological pluralism described before (Figure 5.).

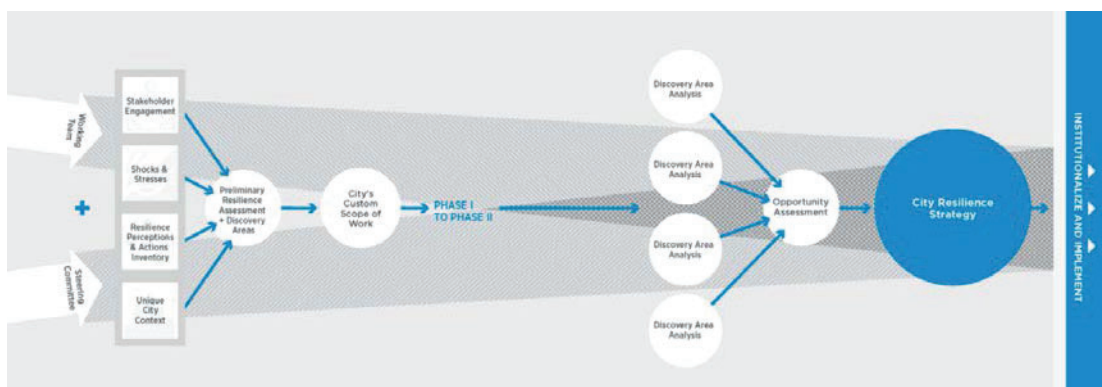


Figure 5: Resilience Strategy Development Process (100RC, 2015)

Preliminary Resilience Assessment (BGPR, 2017) is a critical first marker on the road to a collaborative and effective strategy to improve Belgrade’s resilience. This document describes the significant work completed to date to build a baseline of facts and deepen our understanding of Belgrade’s key resilience challenges, approaches and opportunities now and into the future. Then, PRA outlines recommended Discovery Areas – specific themes around which deeper analysis and broader stakeholder engagement will be undertaken. At the end, PRA describes the next steps that will be undertaken to develop a final Belgrade Resilience Strategy. Following table summarizes the 100 RC methodology and used tools and key findings following each stage of the PRA process of integral *collaborative* comprehension of Belgrade resilience:



TOPIC XI:
RESILIENCE OF PLACES

Table 14: City of Belgrade Preliminary resilience assessment methodology

steps	Tools (100RC, 2015)	key findings
unique city profile	No specific tool	Contextual information to determine the City's powers to take action on building resilience
analysis of actions and plans	<i>Action Inventory tool</i>	Efforts by the City government structures, academia, civil society groups and other partners : What we are doing?
stakeholders perceptions of Belgrade's strengths and weaknesses	<i>Perceptions assessment tool</i>	How stakeholders perceive state of main resilience drivers: What we think we are doing?
preliminary asset scan	<i>Assets & Risks Tool</i>	Identification of the significant assets that exist in Belgrade, which contribute to the City's physical, economic and social resilience
review and analysis of shocks and stresses		Identification of the most significant shocks and stresses that affect Belgrade today, or which are anticipated to affect it in the future
integrated analysis of goatherd deliverables	<i>City Resilience Framework</i>	Identification of discovery areas and defining next steps for collaborative process of strategy enactment

In order to evaluate quality of enactment process in comprehending the complexity of Belgrade's resilience issues we developed overview of used methods and techniques using AQAL methodological zones (Figure 6.).

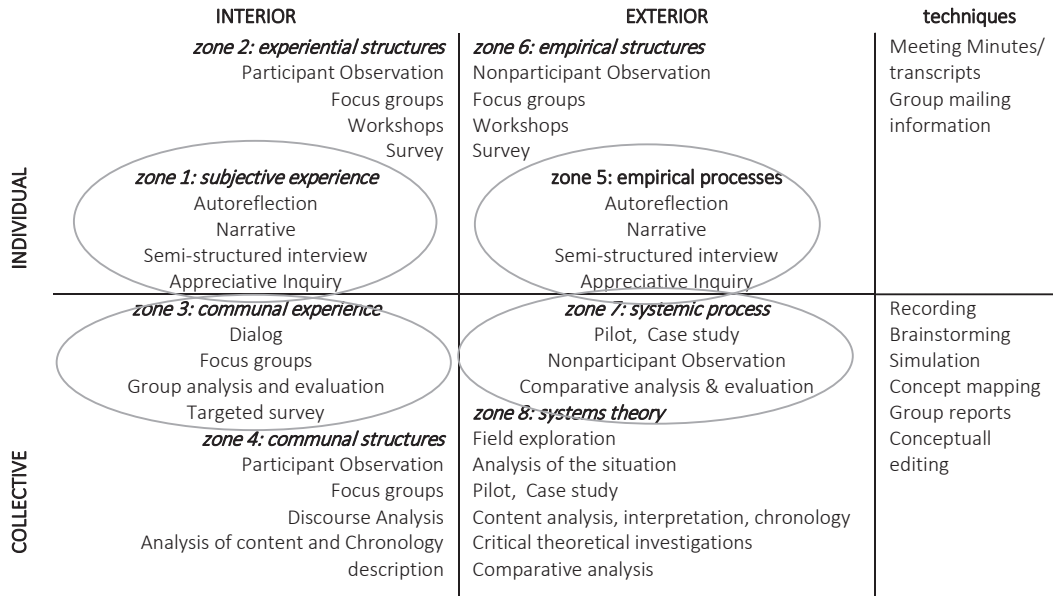


Figure 6: Resilience Strategy Development Process

Trough AQAL analysis of the 100RC methodology – methods and techniques applied in Belgrade’s PRA enactment process it can be concluded that integral methodological pluralism comprehended. The focus of the PRA process was actually AQAL *quadratic* approach comprehending various realities that different stakeholders perceived as a result of their own embodied awareness. Over 1,000 citizens – of which over 800 students that will become future leaders of urban development in the city – have been engaged with the process throughout this first phase of work. As discussed previously the quality of the collective reality cognition depends on the number and chosen participants. That was very difficult and mostly responsible task for Resilient Belgrade Office and help of strategic partners who have experience from all over the world was invaluable. However, from the critical realism point of view it is impossible to have certainty on this matter. How successful was performed stakeholder analysis and engagement plan would be tested in a next second phase of Belgrade’s resilience strategy enactment. PRA document actually resulted with five discovery areas identified as important for deeper understanding and exploration. In Phase II, in the context of the working groups that will be formed from the further development of the Discovery Areas collaborations will multiply in an effort to create a common approach and strategy for the city with the active participation of the different stakeholders. In this phase AQAL *quadrivia* approach will be implemented for each discovery area and its details.



TOPIC XI:
RESILIENCE OF PLACES
CONCLUSIONS

Each discipline dealing with the complex phenomena or problems in a collaborative way should have clear picture of methodology applied in order to ensure the quality results of the process. As shown from this case study research Integral AQAL model could be used as a collaborative “checkboard” toward integral collective cognition. It could also be developed as a planning process evaluation tool that helps to tailor monitor and asses quality of collaborative process performed.

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