Planning in Times of Uncertainty: Exploiting the Value of a Landscape Approach on the 21st Coastal Metropolis

Carla Gonçalves¹

¹Department of Civil Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal (ap.carla.goncalves@gmail.com) ORCID 0000-0001-6396-1712

Abstract

Coastal city-regions are dealing with new wicked problems due to climate change. Therefore, there is a demand for alternative paradigms and methodologies beyond the neoconservative perspective, demanding a transformative planning practice based on a territory-landscape plan as a catalyst for change. Landscape approaches are not 'new,' but they have become a driving paradigm in the international realm during the last decades. This paper explores the differences in taking a landscape approach on the Global North and South and discusses how a landscape approach can add value to coastal planning theory, especially when looking for the territories of the 21st metropolis. Conclusions have shown that landscape approaches from both Global North and South can strongly lead to a transformative and adaptive response.

Author Keywords. Landscape Science, Transformative Planning, The European Landscape Convention, Coastal Planning, Place-based Policy.

Type: Research Article

∂ Open Access ☑ Peer Reviewed ⓒ CC BY

1. Introduction

Worldwide coastal regions are a precious natural, economic, social, and cultural resource. Humans have obtained many tangible and intangible benefits from coastal zones due to their attractiveness to settle, live or pursue economic and touristic activities (Neumann, Ott, and Kenchington 2017; Rangel-Buitrago et al. 2018). Coastal metropolis is rich in ecological abundance that supports world-class housing in developed countries with commercial and recreational areas. An example of this is that most of the world's megacities are in the coastline (Barragán and de Andrés 2015; Ogie, Adam, and Perez 2019).

It is widely recognized that coastal zones are continually changing and reshaping due to the interface of land and sea and that these territories are among the most dynamic and vulnerable areas of the planet (Rangel-Buitrago 2019). Living in coastal areas has always had a certain level of risk, but today's coastal planning practice is increasingly dealing with new wicked problems due to global warming. Scientific research on climate change worldwide estimates that sea level will continue rising even more than predicted in the XX century, so damages on coastal territories and landscapes are expected to grow during this century (IPCC 2014). Although all the predictions, high levels of uncertainty prevail. Coastal ecosystems (wetlands, dunes, beaches, among others) can adapt to sea-level rise, but societies are not prepared. That is why there is an international demand for coastal planning and management policies and regulations to evolve, adapting to change (Veloso-Gomes and Taveira-Pinto 2003; Valente and Veloso-Gomes 2020; Schmidt et al. 2013).

During the last decades, coastal planning and management have begun to be recognized as an independent discipline (Marcucci, Brinkley, and Jordan 2012), in which the authors argue

that landscape should be identified as a critical cluster concept for coastal planning and management because a landscape approach goes beyond the political arena and the project timeline. However, that does not necessarily mean that such an argument has been widely advocated in the literature.

The nature and scale of structural problems that the 21st metropolis is now facing calls for a transformative planning agenda that cannot be tackled through traditional planning approaches (Nadin et al. 2020). To address this, Albrechts, Barbanente, and Monno (2020) call for a transformative planning agenda based on a territory-landscape plan as a catalyst for change. In the literature, it is possible to find two central debates: the role of landscape approaches aiming to integrate ecological, cultural, and productive components of land management and planning (Sayer et al. 2015); and the implementation of the European Landscape Convention (Council of Europe 2000).

This paper addresses the challenge of how a coastal metropolis can be analysed from a landscape perspective. Plus, which are the main differences if the differences between the Global South and North are considered (Roy 2009; Robinson and Roy 2016). Can this flux between a transformative practice and a landscape approach reconfigure the theoretical and coastal planning practice? After a literature review, a framework was step up, allowing the author to understand the main characteristics of taking a landscape approach both on the Global North and South. The following sections explore a possible new relationality of theory between landscape planning and the ongoing debate focus on rethinking the Euro-American legacy of urban planning theory, especially on global coastal city-regions. Further, some contributions will be presented to add value to coastal planning theory, especially when looking for the 21st coastal metropolis' territories.

2. In a Search for a New Approach for the 21st Metropolis

2.1. The conventional planning practice and its interrogation

On the Global North, neoliberalism as a political-economic ideology has significantly influenced spatial planning (Olesen 2014; Nadin et al. 2020). Albrechts, Barbanente, and Monno (2019) argue that the neoliberalism limited the scope for genuinely innovative development due to its condition of privileges competitiveness and economic policies over social policies. The authors emphasize that this has led to asymmetrically distributed power, uncontrolled injustices, and unfairly networks of control that cause deliberative exclusions from the (democratic) planning processes. As a reaction, several authors (Friedmann 1987; Albrechts 2010; Albrechts, Barbanente, and Monno 2020; Healey 2006) have been claiming for transformative approaches that must radically change planning processes to change the material and social distribution of planning outcomes substantively. Albrechts, Barbanente, and Monno (2020) based on Friedmann (1987), argue that "transformative practice focus on the structural problems in society; they construct images/visions of a preferred outcome and how to implement them". Transformative planning must focus on new concepts and new ways of redistributing power and must be able to produce real future alternatives that involve a more comprehensive range of actors, recognizing and reimagining the different forces of change that operate on the territory (Albrechts 2010; Albrechts, Barbanente, and Monno 2019, 2020). The authors emphasize that change is dependent on context, and planners must be aware of it. Plus, three pillars are identified as crucial issues that underline any transformative process: imagining alternative futures, socio-spatial justice, and legitimacy. Albrechts, Barbanente, and Monno (2019) argue that those pillars will help planners critically interpret existing institutional, social, political, and spatial reality. This challenge will also contribute to rethink planning practices envisioning possible futures based on the local planning traditions.

On the Global South, Parnell and Robinson (2012) also recognize the adverse effects of neoliberal policy innovations and the consequences, especially on the urban poor, of state policies inspired by neoliberalism. Parnell and Robinson (2012) also criticize neoliberalism's dominance on theoretical urban studies research, mainly when scholars reflect on Global South metropolis. The author's main argument is that planning must look beyond neoliberalism and must be "provincialized" in order to create intellectual space for alternative ideas". Both Roy (2009) and Parnell and Robinson (2012) claim that a southern (re)framing must theorize "in ways that resonate with universal challenges of natural resource threats, the uneven distribution of wealth, sustainable infrastructure management, and erosion in the quality of life". In line with Albrechts, Barbanente, and Monno (2019), both Roy (2009) and Parnell and Robinson (2012) argue that theories on spatial planning must attend to the specific institutional and political context, as well, cultural traditions (legitimacy). For Albrechts, Barbanente, and Monno (2019), legitimacy must be linked to co-production because it "legitimates social and political institutions and practices, forms of legislation, ethics, modes of thought and symbols". With co-production, transformative planning will create a new governance culture, where different perspectives and multiple actors will generate new synergies. Socio-spatial justice must be a central pillar empowering through co-production (Albrechts, Barbanente, and Monno 2019, 2020; Healey 2006; Metzger 2013). Co-production will allow envisioning alternative futures in line with the aspirations of citizens and communities. Imagining futures also play a central role in decision-making for a more substantive engagement with the political (Albrechts, Barbanente, and Monno 2020).

On coastal metropolis, whether its location on the globe, to cope with contemporary regional and urban challenges is strongly dependent on their capacity to respond adaptively to change (environmental, economic, political). To accomplish this, Albrechts, Barbanente, and Monno (2019) call for a transformative planning agenda that must achieve more imaginative and inclusive planning. This agenda must theorize from the Global North and South contexts if practice-based knowledge contributes to the international debate.

As mentioned, Albrechts, Barbanente, and Monno (2020) presented an investigation into the territory-landscape plan-making process of the Italian Apulian Region. They concluded that "the process revealed the 'landscape' could function as a constructive picklock for proposing an alternative to the development-as-growth model firmly entrenched in the region, and envisioning desirable futures focused on the concept of 'local self-sustainable development'". Conclusions have shown that this case-study was an "extreme/deviant case" (Flyvbjerg 2006), and it cannot be generalized due to its specific political context. Despite this, in the literature, it can be find other authors and case-studies (van Rooij et al. 2021) that also argue that the landscape approaches and the landscape scale must be mainstreaming on spatial planning and coastal planning literature and practice.

2.2. The demand for a new approach

"The 21st-century metropolis is a chameleon. It shifts shape and size; margins become centres; centres become frontiers; regions become cities" (Roy 2009). Being provocative, due to climate change, many metropolis must evolve and become seahorse due to their location in the coastal zone. Otherwise, they will face an extraordinary threat from rising seas and coastal flooding by mid-century. The territories of the 21st coastal metropolis must pay critical attention not only to its "social topographies, economic energies, and political machineries"

(Roy 2009) but also to the environmental and cultural effects of climate change, ecological and socio-demographic challenges to help meet the global, regional and local sustainability goals. The territories 21st coastal metropolis demand transformative and adaptive planning approaches, because their global challenges are affecting areas that comply with neither fixed administrative boundaries nor traditional government-led jurisdictions. extraterritoriality of the 21st metropolis demands such analytical work, a theory that is simultaneously located and dislocated" (Roy 2009). These analytical works must foster placebased spatial solutions while also imagining places in a broader, regional, national, and global setting and co-producing between views in often contested multi-actor settings. Globally, the landscape scale (Selman 2006) has been claiming as a powerful boundary concept (Star 2010) flexible enough to adapt to different backgrounds and multiple levels, but also robust enough to maintain conceptual coherence across scientific disciplines and the theory-practice boundary, as well to operate on functional areas across national and administrative boundaries (van Rooij et al. 2021; Brüll et al. 2017).

Few subjects have given rise to as much philosophical debate and writing as landscape. Indeed, there are many definitions of landscape and interpretations of its multiple meanings from different disciplinary perspectives (Tress and Tress 2001; Howard et al. 2013; Swaffield 2002; Thompson 2008; Olwig 1996). Freeman, Duguma, and Minang (2015), quoting Angelstam et al. (2013) systemize into four categories the landscape concept interpretation:

- "(1) the biophysical, viewing the landscape as only a natural phenomenon.
- (2) the anthropogenic, seeing the landscape as nature, but with some human constructions.
- (3) the intangible, with the landscape based on individual or social perceptions or interpretations; and
- (4) the coupled social-ecological or integrated interpretation, viewing the landscape as a totality including natural, human and spiritual dimensions".

In fact, for a long time, in many countries, it was only required to protect areas of exceptional beauty. Due to a growing international awareness that landscape is far more than just another "sectoral interest", modern theories of landscape (Swaffield 2002; Thompson 2008) represents it as a holistic entity, as a result of natural and human processes, where sustainable development goals can be balanced and achieved. Many contemporary writers (Swaffield 2002; Thompson 2008) focus on landscape as a living place, functioning as a dynamic socioecological system, which depends on how people perceive it. Nowadays, this last interpretation is the most accepted, at least in the Global North and in this paper.

3. A Transformative Approach to Plan the 21st Coastal Metropolis

3.1. The Global North: The European Landscape Convention

In the United States of America, the revolution has already begun, especially after Hurricane Sandy (2012). From the 'rebuild by design' competition to the Green New Deal Super Studio project (2020), politicians, academics and citizens are rethinking how to create alternative models of practice that shape their (coastal) landscapes (García García 2017; Fleming 2019; Steiner and Fleming 2019). In Europe, the European Landscape Convention (ELC) (Council of Europe 2000) has been an important factor in putting landscape in the political agenda and influencing the practice of landscape planning and management (Selman 2006; De Montis 2014, 2016; Sandström and Hedfors 2018; Herlin 2004), recognizing that each landscape forms a blend of different environmental, cultural, historical and social perceptions components and structures. Due to the Convention, several European spatial planning systems have evolved, including the 'landscape' as the central approach to deal with the issues of integration,

adaptation, and participation (De Montis 2014), "planning for and through landscape" (Selman 2006). Policies also place high demands on landscape at the European Union level, although support for predominant landscape approaches is weak (van Rooij et al. 2021). This is why, in this paper, the analyses focus on the European level regarding the Global North.

The European Landscape Convention was opened for signature in 2000 (Florence), entered into force in 2004 (Déjeant-Pons 2006) and is now being implemented by most of the Member-states of The Council of Europe. The European Landscape Convention defines the landscape as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Déjeant-Pons 2006). The Convention recognizes that every landscape is an expression of our heritage and that it is crucial for European quality of life and identity, forcing signatories-states to recognize landscape in law, to establish and implement landscape policies, and to integrate landscape in any policies with direct or indirect impact on it (Council of Europe 2000). That means that all landscapes, whether "ordinary" or "outstanding", must be onto government agendas and that each Party much put landscape policies into territorial agendas aiming to protect, manage or plan the landscape.

Jóhannesdóttir (2011) stresses that the European Landscape Convention recognizes landscape as a multi-layered concept, assuming and given the same importance to the visible ("as perceived by people") and the invisible ("interaction of natural and/or human factors") components of the landscape. He also highlights that this concept "get(s) beyond a dualistic way of thinking about the landscape", assuming that the landscape is the relationship between nature and humans. It is only possible to understand what landscape is if the interrelationship between its objective and subjective components are considered.

To reinforce its role, the Convention (Table 1) also establishes the need for the establishment of participatory procedures, integration into sectoral policies (article 5), and the more detailed issues of awareness-raising, training and education, identification, and assessment, the definition of landscape quality objectives and implementation (Council of Europe 2000, article 6). The Convention explicitly calls for "... procedures for the participation of the general public... with interest in the definition and implementation of the landscape policies..." (Council of Europe 2000, article 5c). Specifically, public inclusion is viewed as necessary for "Awareness-raising" (Council of Europe 2000, article 6a): "... increase awareness among the civil society... of the value of landscapes, their role and changes to them", and "Identification and assessment" (Council of Europe 2000, article 6b); "... taking into account the particular values assigned to them by the interested parties and the population concerned".

Through the European Landscape Convention's publication, the landscape must have become a political concern (Jones and Stenseke 2011) and spatial planning has been identified as a powerful instrument for implementing it (De Montis 2014; Selman 2010). Even though Déjeant-Pons (2006) stresses that landscape has become a spatial planning priority, for too many planners, this still represents "a cosmetic exercise – something to do with prettification, stopping trees being felled and screening eyesores" (Selman 2010). This approach does not conceptualize the Convention landscape definition as an integrative and holistic concept or even recognize its distinctive contribution to spatial planning: the capability to affording a cross-scale and cross-level interaction basis for spatial intervention. The strength of the landscape concept contributed to its affirmation globally, incorporating multiple scales and interdisciplinary and transdisciplinary fields.

Article 5 - General measures

Each Party undertakes:

- a) to recognize landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity;
- b) to establish and implement landscape policies aimed at landscape protection, management, and planning through the adoption of the specific measures set out in Article 6;
- c) to establish procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of the landscape policies mentioned in paragraph b above;
- d) to integrate landscape into its regional and town planning policies and in its cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape

Article 6 – Specific measures

A.Awareness-raising

Each Party undertakes to increase awareness among the civil society, private organisations, and public authorities of the value of landscapes, their role and changes to them.

B. Training and education

Each Party undertakes to promote:

- a) training for specialists in landscape appraisal and operations;
- b) multidisciplinary training programmes in landscape policy, protection, management and planning, for professionals in the private and public sectors and for associations concerned;
- c) school and university courses which, in the relevant subject areas, address the values attaching to landscapes and the issues raised by their protection, management and planning.

C. Identification and assessment

- 1. With the active participation of the interested parties, as stipulated in Article 5.c, and with a view to improving knowledge of its landscapes, each Party undertakes:
- a) i. to identify its own landscapes throughout its territory;
 - ii. to analyse their characteristics and the forces and pressures transforming them;
 - iii. to take note of changes;
- b) to assess the landscapes thus identified, taking into account the particular values assigned to them by the interested parties and the population concerned.
- 2. These identification and assessment procedures shall be guided by the exchanges of experience and methodology, organised between the Parties at European level pursuant to Article 8.

D. Landscape quality objectives

Each Party undertakes to define landscape quality objectives for the landscapes identified and assessed, after public consultation in accordance with Article 5.c.

E. Implementation

To put landscape policies into effect, each Party undertakes to introduce instruments aimed at protecting, managing and/or planning the landscape.

Table 1: The European Landscape Convention: general and specific measures (Council of Europe 2000)

The Convention has also asked its State-Members to define their landscape quality objectives. They must reflect the aspirations of the general public, the opinions of experts, and public policies about landscape, landscape quality objectives are a way of shaping, in a reliable form and following a thorough process of public participation, the final goal which society has set itself in terms of landscape improvement. Plus, the landscape quality objectives also have a role in expanding public awareness of the landscape.

Since 2006, the International Federation of Landscape Architects, inspired by the European Landscape Convention, has been promoting the idea of an International Landscape Convention. This new focus on the landscape is reflected in the number and range of

legislative initiatives being put in place across the world, including the European Landscape Convention, signed now by 37 countries, the Latin American Landscape Initiative¹, with 12 countries ratifying and celebrating national landscape charters in Medellin, Colombia in October 2012. Landscape charters are anticipated from Indonesia, New Zealand, Canada, Nigeria, and other nations in Africa over the next couple of years, and many others are in the pipeline.

3.2. The Global South: Landscape approaches

On the Global South, many international institutions (e.g., FAO, IUCN, GLF, WWF) have been advocating that the landscape scale should be mainstreamed into the practice of spatial planning to meet global challenges such as poverty alleviation, biodiversity conservation, and food production. Landscape approaches are not 'new', but during the last decades, they have become a driving paradigm in the international environmental realm (Reed, Deakin, and Sunderland 2015; Reed et al. 2016). Although, its relevant to stress that landscape approaches on the Global South are usual assembled under the sign of the under-development countries, aiming to conserve the most critical local resources: soil, water, forests, and biodiversity (Arts et al. 2017) and 'reducing' the holistic landscape concept that will be advocated on this paper. In this paper, it is assumed that a "landscape approach is a multi-faceted integrated strategy that aims to bring together multiple stakeholders from multiple sectors to provide solutions at multiple scales. It can be broadly defined as a framework to address the increasingly widespread and complex environmental, economic, social and political challenges that typically transcend traditional management boundaries" (Reed et al. 2016).

As a framework to help operationalize Landscape approaches more consistently, ten principles have been identified (Table 2). A landscape approach requires explicitly defined objectives and a clear understanding of what is meant by multifunctionality and sustainability. It will also require collaborative participation, transdisciplinarity/cross-sectoral approaches, managing for adaptive capacity, and applying an iterative process to address the system's inherent complexity.

3.3. The global approach between North and South

It compared the two examples, common characteristics of becoming clear, as illustrated in Table 3. Despite this, both processes' applications can widely vary in their focus, approach, and what it includes. The Convention is an international political document that seeks to inspire a more holistic and democratic view that recognizes the landscape as a boundary concept and the crucial connections that operate on the ground between population, environment, culture, economy, politicians. Due to its political background, the Convention has more concerns regarding its implementation on the ground than the landscape approaches because they are conceived as methods to operate on specific projects. The landscape approaches are encouraging by many international development agencies, and they aim to reconcile agricultural production, nature conservation, and competing land-uses in developing countries.

Both instruments are centered on how people experiment with the development and preservation of the landscape, adapted by ideas, materiality, and culture. Their central expectation is to achieve a driving force of transformation, situated in one place distinct from another. Both processes aim to co-produce visions/imagining futures of a preferred outcome, involving a comprehensive range of actors and reimaging the different drives of change and

¹ http://www.lali-iniciativa.com

how power operates. Furthermore, they are also being advocated as more effective practices for the coordination and cooperation of different actors and institutions that are frequently bounded by competing interests. The Convention and the landscape approach have been applied and tested over several case studies. The debate is mainly centered on its practical implementation, lacking discussion of its theoretical implications. Despite this, both can add value to planning theory due to its cross-linking various scales and territorial boundaries.

Principles	Description			
1-Continual learning and adaptive management	$Changes\ in \ landscape\ attributes\ must inform\ decision-making\ and$			
	continual adjustment in which new knowledge is required.			
management	Adaptive collaborative management is essential.			
	Solutions to problems need to be built on shared negotiation			
2-Common concern entry point	processes based on trust. Stakeholders with different values, beliefs,			
	and values must be involved in the process.			
3-Multiple scales	Multiple scale issues must be addressed because outcomes at any			
3-ויונונוףוב אנמובא	scale are shaped by processes operating at other scales.			
4-Multifunctionality	Landscapes have multiple uses and purposes, each of which is			
	valued in different ways by different stakeholders. Trade-offs exist			
4-ividitifulictionality	among the differing lands cape uses and need to be reconciled.			
	Trade-offs among these goods and services must be acknowledged.			
	All stakeholders should be recognized, even though the efficient			
5-Multiple stakeholders	pursuit of negotiated solutions may involve only a subset of			
5-iviuitiple stakenoiders	stakeholders. Solutions should encompass a fair distribution of			
	benefits and incentives.			
6 Negotiated and transparent	Transparency is the basis of trust, and it must be achieved through a			
6-Negotiated and transparent change logic	mutually understood and negotiated process of change and is			
change logic	helped by good governance.			
	Access to a fair justice system allows for conflict resolution and			
7-Clarification of rights and	recourse.			
responsibilities	The rights and responsibilities of different actors need to be clear			
	too and accepted by all stakeholders.			
8-Participatory and user-friendly	To facilitate shared learning information, need to be widely			
monitoring	accessible, and the validity of different knowledge systems must be			
	recognized.			
	System-level resilience can be increased through an active			
9-Resilience	recognition of threats and vulnerabilities. Actions need to be			
	promoted that address threat, and that allow recovery after			
	perturbation through improving capacity to resist and respond.			
	People require the ability to participate effectively and to accept			
	various roles and responsibilities.			
10-Strengthened stakeholder	Effective participation makes demands of stakeholders.			
capacity	The learning process of the landscape approach is one means by			
	which stakeholders can improve their capacity to judge and			
	· · · · · · · · · · · · · · · · · · ·			

Table 2: Landscape approaches principles (Sayer et al. 2013)

GLOBAL SOUTH	GLOBAL NORTH (FOCUS ON EUROPEAN LEVEL) The European Landscape Convention: article 6 – Specific measures					
Landscape approaches principles	Awareness- raising	Training and education	Identification and assessment	Landscape quality objectives	Implementation	
1_Continual learning and adaptive management			✓			
2_Common concern entry point	✓	*	*	✓	00	
3_Multiple scales		×	✓	✓	00	
4_Multifunctionality	✓	×	✓	✓	00	
5_Multiple stakeholders	✓	×	00	✓	00	
6_Negotiated and transparent change logic			00	✓	✓	
7_Clarification of rights and responsibilities		×	00			
8_Participatory and user- friendly monitoring	*	*	*	*	×	
9_Resilience	×	×	00		00	
10_Strengthened stakeholder capacity	✓	✓	*	✓	00	

[✓] Strong relation

Table 3: A framework to assess the relationship between the landscape approaches principles and the specific measures of the European Landscape Convention

All things considered, it is concluded that both the Convention and the landscape approaches contribute to a transformative planning process (Table 4). Both processes' main characteristics enormously add value to imagining alternative futures because extensive involvement and engagement is pursued when landscape quality objectives are established or related to the principle "2-Common concern entry point". Conflict, ambiguity, and different ideas are expected and central because both processes consider vital continual mutual learning and a continuous evaluation of the decisions. Furthermore, a long-term future landscape vision is a powerful boundary concept (van Rooij et al. 2021). Socio-spatial justice is a central pillar also in both processes through co-production, constructing new landscape governance. The Convention and the landscape approaches aim to empower citizens, politicians, agents, and researchers to think in a new way regarding competing land uses. These perspectives change the way power is exercised and the way resources are used or distributed. Regarding legitimacy, the Convention and landscape approaches are dependent on the political and institutional context and are sensitive to cultural traditions. Plus, they operate in the context of a people-centred democratic society, creating unity while maintaining diversity.

	Transformative planning CO-PRODUCTION				
	1 st pillar: imagining	2 nd pillar: socio-	3 rd pillar: legitimacy.		
	alternative futures	spatial justice	5 Piliai Tegiumacy.		
The European Landscape Convention	✓	✓	✓		
Landscape approaches	✓	✓	✓		

[✓] Strong relation

Table 4: Assessment framework to evaluate the contribution of the European Landscape Convention and the landscape approaches to transformative planning pillars

^{□□} Partially related

[×] No relation

[□] Partially related

[×] No relation

4. Conclusions

This paper's main argument is that the landscape approaches from both Global North and South can lead to a transformative and adaptive response to plan the 21st coastal metropolis. Planning the 21st Coastal Metropolis is dealing with uncertainty. Due to their location, coastal city-regions are a dynamic system that is changing through time, affected by time and a wicked global problem - climate change (Williams and Li 2011). Globally, a transformative and adaptive agenda based on the landscape is on the debate to radically change planning processes. To contribute to the international agenda, the discussion must theorize from the Global North and South contexts to 'provincialize' (Parnell and Robinson 2012) relevant ideas for all city-regions. On the Global North, the debate is dominated by implementing the European Landscape Convention (Council of Europe 2000) and the Global South by advocating landscape approaches (Sayer et al. 2013). Three pillars have been identified to achieve transformative planning: imagining alternative futures, socio-spatial justice, and legitimacy. Co-production is a transversal concept related to all three pillars (Albrechts, Barbanente, and Monno 2020). The Convention and the landscape approaches can strongly contribute to transformative and adaptive planning. Both argue that landscapes have the strength of being dynamic interfaces and emotional geographies, bringing together nature, people, past, present, tangible and intangible elements. Both processes attend to the specific institutional and political context, cultural traditions and aim to co-imagine different futures, achieve social justice, and legitimize all the options. They also required continuous critical reflection of all stakeholders to provoke a structural change. Further research will focus on theorizing on universal landscape approaches that can be asserted and their implications for such a claim.

References

- Albrechts, L. 2010. "More of the same is not enough! How could strategic spatial planning be instrumental in dealing with the challenges ahead?". *Environment and Planning B: Planning and Design* 37, no. 6: 1115-27. https://doi.org/10.1068/b36068.
- Albrechts, L., A. Barbanente, and V. Monno. 2019. "From stage-managed planning towards a more imaginative and inclusive strategic spatial planning". *Environment and Planning C: Politics and Space* 37, no. 8 (december): 1489-506. https://doi.org/10.1177/2399654419825655.
- ——. 2020. "Practicing transformative planning: the territory-landscape plan as a catalyst for change". *City, Territory and Architecture* 7, no. 1 (december): Article number 1. https://doi.org/10.1186/s40410-019-0111-2.
- Angelstam, P., M. Grodzynskyi, K. Andersson, R. Axelsson, M. Elbakidze, A. Khoroshev, I. Kruhlov, and V. Naumov. 2013. "Measurement, collaborative learning and research for sustainable use of ecosystem services: landscape concepts and Europe as laboratory". *Ambio* 42, no. 2 (march): 129-45. https://doi.org/10.1007/s13280-012-0368-0.
- Arts, B., M. Buizer, L. Horlings, V. Ingram, C. van Oosten, and P. Opdam. 2017. "Landscape approaches: A state-of-the-art review". *Annual Review of Environment and Resources* 42 (october): 439-63. https://doi.org/10.1146/annurev-environ-102016-060932.
- Barragán, J. M., and M. de Andrés. 2015. "Analysis and trends of the world's coastal cities and agglomerations". *Ocean & Coastal Management* 114 (september): 11-20. https://doi.org/10.1016/j.ocecoaman.2015.06.004.
- Brüll, A., T. M. Wirth, F. Lohrberg, A. Kempenaar, M. Brinkhuijsen, M.-F. Godart, A. Coppens, and M. Nielsen. 2017. "Territorial cohesion through cross-border landscape policy? The

- European case of the Three Countries Park (BE-NL-DE)". *Change and Adaptation in Socio-Ecological Systems* 3, no. 1: 68-92. https://doi.org/10.1515/cass-2017-0007.
- Council of Europe. 2000. The European Landscape Convention. Council of Europe.
- De Montis, A. 2014. "Impacts of the European Landscape Convention on national planning systems: A comparative investigation of six case studies". *Landscape and Urban Planning* 124 (may): 53-65. https://doi.org/10.1016/j.landurbplan.2014.01.005.
- ——. 2016. "Measuring the performance of planning: The conformance of Italian landscape planning practices with the European Landscape Convention". *European Planning Studies* 24, no. 9 (september): 1727-45. https://doi.org/10.1080/09654313.2016.1178215.
- Déjeant-Pons, M. 2006. "The European Landscape Convention". *Landscape Research* 31, no. 4 (october): 363-84. https://doi.org/10.1080/01426390601004343.
- Fleming, B. 2019. "Design and the Green New Deal". *Places Journal*, april 2019. https://doi.org/10.22269/190416.
- Flyvbjerg, B. 2006. "Five misunderstandings about case-study research". *Qualitative Inquiry* 12, no. 2 (april): 219-45. https://doi.org/10.1177/1077800405284363.
- Freeman, O., L. Duguma, and P. Minang. 2015. "Operationalizing the integrated landscape approach in practice". *Ecology and Society* 20: Article number 24. https://doi.org/10.5751/ES-07175-200124.
- Friedmann, J. 1987. *Planning in the public domain: From knowledge to action*. Princeton University Press. https://doi.org/10.2307/j.ctv10crf8d.
- García García, M. 2017. "Hacia la metamorfosis sintética de la costa. Diseñando paisajes resilientes". PhD diss., Escuela Técnica Superior de Arquitectura, Universidad Politécnica de Madrid. https://doi.org/10.20868/UPM.thesis.48296.
- Healey, P. 2006. *Urban complexity and spatial strategies: Towards a relational planning for our times*. London: Routledge. https://doi.org/10.4324/9780203099414.
- Herlin, I. S. 2004. "New challenges in the field of spatial planning: Landscapes". *Landscape Research* 29, no. 4 (october): 399-411. https://doi.org/10.1080/0142639042000289037.
- Howard, P., I. Thompson, E. Waterton, and M. Atha. 2013. *The Routledge companion to landscape studies*. London: Routledge. https://doi.org/10.4324/9781315195063.
- IPCC. 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Edited by Core Writing Team, R. K. Pachauri and L. A. Meyer. Geneva, Switzerland: IPCC. https://www.ipcc.ch/report/ar5/syr/.
- Jóhannesdóttir, G. R. 2011. "Landscape and aesthetic values: Not only in the eye of the beholder". In *Conversations with Landscape*, 109-23. Routledge.
- Jones, M., and M. Stenseke. 2011. *The European Landscape Convention: Challenges of participation*. Vol. 13: Springer Science & Business Media. https://doi.org/10.1007/978-90-481-9932-7.
- Marcucci, D. J., J. D. Brinkley, and L. M. Jordan. 2012. "A case for coastal theory with lessons from planning theory". *Coastal Management* 40, no. 4 (july): 401-20. https://doi.org/10.1080/08920753.2012.692306.
- Metzger, J. 2013. "Placing the stakes: The enactment of territorial stakeholders in planning processes". *Environment and Planning A: Economy and Space* 45, no. 4: 781-96. https://doi.org/10.1068/a45116.

- Nadin, V., D. Stead, M. Dąbrowski, and A. M. Fernandez-Maldonado. 2020. "Integrated, adaptive and participatory spatial planning: Trends across Europe". *Regional Studies* 55, no. 5: 791-803. https://doi.org/10.1080/00343404.2020.1817363.
- Neumann, B., K. Ott, and R. Kenchington. 2017. "Strong sustainability in coastal areas: a conceptual interpretation of SDG 14". *Sustainability science* 12, no. 6 (november): 1019-35. https://doi.org/10.1007/s11625-017-0472-y.
- Ogie, R., C. Adam, and P. Perez. 2019. "A review of structural approach to flood management in coastal megacities of developing nations: Current research and future directions". *Journal of Environmental Planning and Management* 63, no. 2 (january): 127-47. https://doi.org/10.1080/09640568.2018.1547693.
- Olesen, K. 2014. "The neoliberalisation of strategic spatial planning". *Planning Theory* 13, no. 3: 288-303. https://doi.org/10.1177/1473095213499340.
- Olwig, K. R. 1996. "Recovering the substantive nature of landscape". *Annals of the Association of American Geographers* 86, no. 4: 630-53. https://doi.org/10.1111/j.1467-8306.1996.tb01770.x.
- Parnell, S., and J. Robinson. 2012. "(Re)theorizing cities from the Global South: Looking beyond neoliberalism". *Urban Geography* 33, no. 4 (may): 593-617. https://doi.org/10.2747/0272-3638.33.4.593.
- Rangel-Buitrago, N. 2019. *Coastal scenery: Evaluation and management*. Coastal Research Library: Springer International Publishing. https://doi.org/10.1007/978-3-319-78878-4.
- Rangel-Buitrago, N., M. Contreras-López, C. Martínez, and A. Williams. 2018. "Can coastal scenery be managed? The Valparaíso region, Chile as a case study". *Ocean and Coastal Management* 163: 383-400. https://doi.org/10.1016/j.ocecoaman.2018.07.016.
- Reed, J., L. Deakin, and T. Sunderland. 2015. "What are 'Integrated Landscape Approaches' and how effectively have they been implemented in the tropics: A systematic map protocol". *Environmental Evidence* 4, no. 1 (january): Article number 4. https://doi.org/10.1186/2047-2382-4-2.
- Reed, J., J. Van Vianen, E. L. Deakin, J. Barlow, and T. Sunderland. 2016. "Integrated landscape approaches to managing social and environmental issues in the tropics: learning from the past to guide the future". *Global Change Biology* 22, no. 7 (july): 2540-54. https://doi.org/10.1111/gcb.13284.
- Robinson, J., and A. Roy. 2016. "Debate on global urbanisms and the nature of urban theory". *International Journal of Urban and Regional Research* 40, no. 1: 181-86. https://doi.org/10.1111/1468-2427.12272.
- Roy, A. 2009. "The 21st-century metropolis: New geographies of theory". *Regional Studies* 43, no. 6: 819-30. https://doi.org/10.1080/00343400701809665.
- Sandström, U. G., and P. Hedfors. 2018. "Uses of the word 'landskap' in Swedish municipalities' comprehensive plans: Does the European Landscape Convention require a modified understanding?". *Land Use Policy* 70 (january): 52-62. https://doi.org/10.1016/j.landusepol.2017.07.060.
- Sayer, J., C. Margules, A. K. Boedhihartono, A. Dale, T. Sunderland, J. Supriatna, and R. Saryanthi. 2015. "Landscape approaches; what are the pre-conditions for success?". *Sustainability Science* 10, no. 2 (april): 345-55. https://doi.org/10.1007/s11625-014-0281-5.

- Sayer, J., T. Sunderland, J. Ghazoul, J.-L. Pfund, D. Sheil, E. Meijaard, M. Venter, A. K. Boedhihartono, M. Day, and C. Garcia. 2013. "Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses". *Proceedings of the National Academy of Sciences of the United States of America* 110, no. 21 (may): 8349-56. https://doi.org/10.1073/pnas.1210595110.
- Schmidt, L., P. Prista, T. Saraiva, T. O'Riordan, and C. Gomes. 2013. "Adapting governance for coastal change in Portugal". *Land Use Policy* 31 (march): 314-25. https://doi.org/10.1016/j.landusepol.2012.07.012.
- Selman, P. 2006. *Planning at the landscape scale*. London: Routledge. https://doi.org/10.4324/9780203696903.
- ——. 2010. "Centenary paper: Landscape planning—preservation, conservation and sustainable development". *Town planning review* 81, no. 4: 381-406. https://doi.org/10.3828/tpr.2010.13.
- Star, S. L. 2010. "This is not a boundary object: Reflections on the origin of a concept". *Science, Technology,* & *Human Values* 35, no. 5: 601-17. https://doi.org/10.1177/0162243910377624.
- Steiner, F., and B. Fleming. 2019. "Design With Nature at 50: Its enduring significance to socioecological practice and research in the twenty-first century". *Socio-Ecological Practice Research* 1, no. 3: 173-77. https://doi.org/10.1007/s42532-019-00035-1.
- Swaffield, S., ed. 2002. *Theory in landscape architecture: A reader*. University of Pennsylvania Press.
- Thompson, I. 2008. Rethinking landscape: A critical reader. Routledge.
- Tress, B., and G. Tress. 2001. "Capitalising on multiplicity: A transdisciplinary systems approach to landscape research". *Landscape and Urban Planning* 57, no. 3 (december): 143-57. https://doi.org/10.1016/S0169-2046(01)00200-6.
- Valente, S., and F. Veloso-Gomes. 2020. "Coastal climate adaptation in port-cities: Adaptation deficits, barriers, and challenges ahead". *Journal of Environmental Planning and Management* 63, no. 3: 389-414. https://doi.org/10.1080/09640568.2018.1557609.
- van Rooij, S., W. Timmermans, O. Roosenschoon, S. Keesstra, M. Sterk, and B. Pedroli. 2021. "Landscape-based visions as powerful boundary objects in spatial planning: Lessons from three dutch projects". *Land* 10, no. 1 (january): Article number 16. https://doi.org/10.3390/land10010016.
- Veloso-Gomes, F., and F. Taveira-Pinto. 2003. "Portuguese coastal zones and the new coastal management plans". *Journal of Coastal Conservation* 9, no. 1: 25-34. http://www.jstor.org/stable/25098406.
- Williams, T., and L. Li. 2011. "Coastal scenery at beaches on Hong Kong Island, China". In *Proceedings of the 10th International Conference on the Mediterranean Coastal Environment, MEDCOAST 2011*, 359-68. Middle East Technical University.