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FROM SUSTAINABILITY TO RESILIENCE: TRACING THE TRANSITION PATH FOR SPATIAL PLANNING POLICY IN GREECE

Abstract. Sustainability and resilience are currently key analytical concepts with wide acceptance among different disciplines. This study initially attempts a comprehensive analysis of the current policy to specify the meaningful elements for integrating these concepts into spatial planning theory and practice. Then, a critical review of the Greek spatial planning policy aims to shed light on its evolution in relation to the two paradigms. The findings show that the actual shift from sustainability to resilience remains to be observed and that more attention should be focused on the political rather than the administrative aspect of planning.

Key words: sustainability, resilience, planning policy, spatial planning, Greece.

1. INTRODUCTION

On the global level, governments, non-governmental organisations, and businesses are increasingly recognising that cities and wider spatial systems need to become more sustainable and more resilient to natural and man-made hazards. Resilience can be considered as a way of thinking and acting that leads to the achievement of sustainability (Metaxas and Psarropoulou, 2021) and as

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a necessary condition for sustainability by strengthening the capacity of societies to respond to crises (Lebel *et al.*, 2006).

The ongoing discourse surrounding sustainability has revolved around the imperative to strike a balance between environmental quality, social equity, and economic prosperity, while the economic, environmental, and social 'pillars' of resilience have been mentioned in the literature on multiple occasions, as the review of Weber (2023) has demonstrated. The same author indicates the significant strides and continued expansion of research on the concept of resilience over the past 35 years. Although the two concepts differ substantially in regard to definition and origin, an overall positive trajectory may be observed in the joint examination of sustainability and resilience, indicating that they share comparable objectives and methodologies. However, such research is still in its infancy (Weber, 2023). While many perceive sustainability and resilience as marginally nuanced viewpoints regarding the same phenomenon, many others regard them as separate conceptual paradigms, wherein the conservation objectives of sustainability stand in contrast to the adaptation objectives of resilience (Lew *et al.*, 2016; Roostaie *et al.*, 2019).

In spatial planning, some scholars view the two concepts as working in combination with or complementary to each other, with resilience introducing new and innovative ways of thinking and planning (Thoidou and Foutakis, 2015), while others consider that sustainability tends to be replaced by resilience as both a frame and a principle (O'Hare and White, 2013; Davoudi, 2012). Several studies have acknowledged potential synergies between the two concepts (Rega and Bonifazi, 2020), particularly regarding the understanding of the dynamics of socio-ecological systems (Rega and Bonifazi, 2020; Folke *et al.*, 2010; Abel and Step, 2003). Rega and Bonifazi (2020, p. 14) advocate "to refocus the attention on sustainability as the guiding paradigm of spatial planning, while resilience can and shall be used as a useful descriptive concept indicating a specific property of complex systems".

The scope of this study lies in exploring the integration of sustainability and resilience concepts, principles, and challenges into the Greek spatial planning system and policy. In this respect, the second section of the paper encompasses a description of the conceptual evolution of sustainability and the role of spatial planning, followed by the identification of contemporary challenges in respect to resilience. This brief literature review sheds light on critical issues to be examined in the empirical part of the study. Section 3 states the objectives and methodology of this study, while section 4 presents and discusses the results based on a critical review of the past 25 years of spatial and urban planning policy in Greece. The conclusions include the main findings and limitation of the study, as well as issues to be addressed in future research.

2. BACKGROUND OF THE STUDY: FROM SUSTAINABILITY TO RESILIENCE

2.1. The conceptual evolution of sustainability and the role of spatial planning

In 1987, the Report of the World Commission on Environment and Development 'Our Common Future' defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UN, 1987, p. 37), emphasizing a long-term perspective and taking a key step toward incorporating the concept into legal frameworks (Mondini, 2019). As Holling (2001) approached it, sustainability is the ability to create, test and maintain adaptive capacity. An object is sustainable when it can survive or be maintained over time, therefore sustainability is its property or ability to continue its existence. It serves as a fundamental principle for all aspects of development. Sustainable development presupposes a balanced relationship and progress in at least three interdependent areas: Environment – Economy – Society. The review of historical sustainability literature based on the three-pillar conception made by Purvis *et al.* (2019), concluded that perceptions regarding the pillars could be roughly divided into two groups: those that view the three as separate perspectives and those that adopt a systems approach. The authors also argue that this three-pillar conception is "a gradual emergence from various critiques in the early academic literature of the economic status quo from both social and ecological perspectives on the one hand, and the quest to reconcile economic growth as a solution to social and ecological problems on the part of the United Nations on the other" (Purvis *et al.*, 2019, p. 681).

This "triple bottom line" model gave way to broader considerations of other relevant issues, adding new dimensions to the model (Mondini, 2009). In some approaches, the 'political dimension' constitutes another core element of the notion (Andrikopoulou *et al.*, 2014), while in others (Rogers, 1997; Wassenhoven, 2022) 'culture' is proposed as a fourth, separate, pillar. More recently, the technological dimension has been identified as an additional pillar, impacted by the latest strategies of the European Communities such as smart growth and the rise of the smart city concept (Bottero *et al.*, 2014). These dimensions have to coexist within an integrated perspective (Bottero and Mondini, 2009), although each has given rise to distinct discourses. The fact that they are frequently addressed independently restricts a practical application of the concept to mere rhetoric (Giovannoni and Fabietti, 2013). Sustainability also includes the processes through which the above objectives are achieved, as well as the integration of individual and collective stakeholders in decision-making processes (Jordan, 2008).

Although the environmental dimension dominated the use of the concept initially (Tasopoulou and Asprogerakas, 2023), over the years the need to understand

the human or social dimensions of environmental issues has been highlighted (Bennet *et al.*, 2017). Giovannoni and Fabietti (2013) provided a concise literature review on the evolution of the concept, from the 'environmental discourse' and the relationships between people and nature, to the 'social' and 'business discourse'. They acknowledged that in recent years, growing concerns over climate change, poverty, widening disparity and the tensions engendered by social inequalities, have led national and international institutions, policy makers as well as the professional and academic community to place greater focus on social and environmental sustainability worldwide. The discussions at Rio+20 focused on the importance of both social and environmental concerns. In 2015, at the Summit in New York, the UN adopted the "2030 Agenda for Sustainable Development", a broad action plan aiming at the transition to a sustainable and resilient development model (UN, 2015). It includes seventeen (17) Sustainable Development Goals (SDGs) structured around five main pillars: (a) People, (b) the Planet, (c) Prosperity, (d) Peace, and (e) Partnership, recommending their adoption by both developed and developing countries. The SDGs address all aspects of the sustainable development approach, forming individual thematic fields. Indicatively, SDG 11 'Sustainable cities and communities' and SDG 13 'Climate action' can be directly linked to spatial planning policy and practice. SDG 11 emerged as a stand-alone goal to address the need for sustainable development from an urban perspective, favouring cities and human settlements that are more inclusive, safe, resilient and sustainable (Berisha *et al.*, 2022). It addresses a variety of issues, such as affordable housing, infrastructure, and cultural and natural heritage (Nabiyeva *et al.*, 2023). There is also recognition of the cross-cutting nature of urban issues, which have an impact on several other Sustainable Development Goals, including SDGs 1, 6, 7, 8, 9, 12, 15, and 17. SDG 13 'Climate action' reflects the effort to mitigate climate change and its effects, calling for action at different organisational levels (Filho *et al.*, 2023). SDG 13 considers both adaptation and mitigation and focuses on fostering resilience, including climate change adaptation strategies into national planning and policies, tracking the status of financial commitments made to address climate change, and, finally, enhancing capacity on climate change (Campbell *et al.*, 2018). Many of the SDGs and their targets can also be achieved in ways that would enable adaptive responses to climate change, for example, those related to resilience in SDGs 9 and 11, relating to infrastructure and urban settlements respectively. SDG 17 'Partnerships for the Goals' constitutes a horizontal action, highlighting the important role of governance in SDGs' implementation.

For Medeiros (2020), SDG 10 'Reduced inequalities' and SDG 11 'Sustainable cities and communities' are the two goals that include actions distinctly related to issues of human geography and spatial planning. His paper underlines that the SDGs would be more effectively implemented through a holistic approach to spatial planning; for example, if the focus was shifted from the amendment of income

differences to the reduction of territorial inequalities within and between countries. This would enable territorial cooperation and the multi-level governance approach to be integrated into the planning objectives. In relation to the "Urban" SDG, Klopp and Petretta (2017) have indicated the difficulties in its practical implementation and have argued that it has the potential to encourage and guide the necessary reforms in cities if it is based on local institutions and initiatives and shaped by open, inclusive processes. As a multi-dimensional concept, spatial planning should feature prominently in the implementation of the SDGs. Furthermore, it may be viewed as an alternative response to economic-centric approaches in the shaping of strategic planning policies (Medeiros, 2020).

A general overview of relevant regulations in other EU Member States exceeds the scope of the present paper. Nevertheless, based on comparative analysis studies that were conducted at the EU level, by 1997, ten years after the Brundtland Report, only a minority of states had fully embraced the notion of sustainable development and its three pillar-approach in their environmental agenda. Even in cases where broad sustainability objectives had been agreed, the implications in practice, especially at the local level, were not yet observable (EC, 1997). In the years to come, most Member States passed legislation to address the purpose of planning, the most common purpose being to steer development (28 countries) and/or to pursue sustainable development (18), followed by the protection of land and other assets (14), and the involvement of citizens in decisions on spatial development (11) (ESPON, 2018). Local development strategies tend to address a much wider set of issues, such as energy efficiency, sustainable mobility and sustainable urban development in general, city compactness and reduction of soil consumption, and heritage preservation. The inspiration of integrated urban regeneration plans, inter-municipal partnerships or sustainable urban strategies has had noticeable local impacts in several states. One crucial observation is that although EU Cohesion Policy and other sectoral policies seek to strengthen economic investment and employment, promote more sustainable development, enhance resilience to shocks, widen accessibility to services, etc., the spatial dimension of the policies and actions that support these objectives is not always recognized (ESPON, 2018).

2.2. Approaching resilience and contemporary challenges

Resilience is about the ability to respond to complexity and uncertainty. It is a concept that has been used in literature as early as in the 1960s (Kakderi and Tasopoulou, 2017). However, its approach and meaning can vary substantially depending on the discipline in which it is applied, such as ecology, engineering, socio-ecological systems, climate change and adaptation, urban planning and disaster risk management (Assumma *et al.*, 2021; Datola *et al.*, 2022). Although it

has attracted broad interest over the last couple of decades (see literature review in, for example, Pendall *et al.*, 2007; Meerow *et al.*, 2016), its conceptualisation nevertheless still lacks consistency and a shared definition (Cutter, 2016). Fundamental questions remain to be answered, such as "resilience to what, and resilience for whom", whether it is conceived as (static) outcomes or as (dynamic) processes and how these static conditions and dynamic processes affect places (Cutter, 2016). As a concept, it aims to describe the stability of a system against short-term or long-term interference, in tandem with the system's ability to recover and return to a state of equilibrium (MacKinnon and Derickson, 2013; Martin, 2012). It also refers to the capacity of adaptation, reorganisation and transformation (Kakderi and Tasopoulou, 2017) and it has often been linked to the study of the dynamics of complex systems (Holling, 2001).

Holling (1973, 1996) introduced the concept of resilience in ecosystems by distinguishing between ecological and engineering resilience. Since then, resilience has grown in popularity among academics and policymakers as a prism through which authorities (whether national or local) and emergency services comprehend issues like pandemics, natural disasters, or terrorist threats. Moreover, it provides a framework for creating strategies that can adapt to the demands of an ever-changing and competitive environment (McAslan, 2010).

Introduced in the context of spatial planning in the late 1990s, urban resilience is perceived as a complex and multi-dimensional concept which defies easy definition. Urban resilience research primarily employs two meanings: the first is associated with nature and ecosystems and the second concerns the social and civil components (Davoudi *et al.*, 2012 cited in Feng *et al.*, 2020). In their compilation of definitions pertaining to urban resilience, Assumma *et al.* (2019) have concluded that the emphasis is on the dynamic behaviour of resilience processes on both spatial and temporal scales. Cities and settlements should be able to return to a state of equilibrium in cases of economic crises (e.g. the financial crisis of 2008), unprecedented social transformations (e.g., refugee crises), or extreme natural phenomena, whether sudden (i.e., shocks, such as earthquakes, floods, fires, heatwave events) or long-term (i.e., disturbances, such as climate change) (Asprogerakas and Tasopoulou, 2021; Asprogerakas and Tasopoulou, 2019; Markada and Asprogerakas, 2020; Lagarias, 2023). According to Datola *et al.* (2022), an assortment of urban attributes can contribute to maintaining and improving urban systems' resilience. These attributes are the following: (1) robustness, (2) redundancy, (3) diversity, (4) integration, (5) inclusivity, (6) equity, (7) iterative processes, (8) decentralization, (9) feedback, (10) transparency, (11) flexibility, (12) forward thinking, (13) adaptive capacity, (14) predictability, and (15) efficiency.

Resilience is emerging as an important concept in the debate on climate change. Broad discussions have developed on two main approaches to this major contemporary environmental issue: adaptation and mitigation. Adaptation refers to anticipating the extreme effects of climate change to deal with its current and future

impacts by taking appropriate measures to prevent or minimise the damage that may be caused. Mitigation aims to address the causes and to reduce and stabilise the levels of heat-trapping greenhouse gases in the atmosphere to prevent climate change. These challenges provide the umbrella for a range of policies related to the environment and the impact of human activity on it. In the relevant dialogue, a broad consensus is emerging that (Leichenko, 2011): (a) to be prepared for climate change, cities need to become resilient to a wide range of shocks and pressures; and (b) efforts to enhance climate change resilience need to be combined with efforts to promote urban growth and sustainability.

The "Sendai Framework for Disaster Risk Reduction 2015–2030" recognises the primary role of the state in disaster risk reduction and the responsibility of other actors, such as local authorities and the private sector. In this context, spatial planning is identified as a field of action from the national down to the local level. Relevant actions could include integrating disaster risk assessments into land use policy, mapping urban sprawl and adopting appropriate standards for construction and urban equipment (UNDRR, 2020). Risk management requires intervention in the subsystems and operating parameters of the spatial system and implies acceptance of the implementation of public policies that can be distinguished between spatial (urban design and spatial planning) and other sectoral policies with spatial implications. Spatial policy may be able to coordinate multi-disciplinary, integrated strategies to address the pressures and challenges that shape risks which requires a multidisciplinary and integrated strategy; spatial policy can serve as a coordinating mechanism in this regard.

Resilience was first introduced into spatial planning with the purpose of developing mitigation strategies for environmental threats (Abdulkareem *et al.*, 2018) and adapting social and institutional frameworks (Spaans and Waterhout, 2017). In relation to the objectives stated above, the role of spatial planning can be twofold: (a) to coordinate adaptation policies at the national and regional level to ensure sustainable development prospects, and (b) to implement these policies at the local level through land use planning and the establishment of terms and conditions for infrastructure development. The current mission of spatial and urban planning is to offer solutions to address the complexity of the phenomenon and its multiple dimensions and thus reduce vulnerability to the expected impacts (Davidse *et al.*, 2015; Asprogerakas and Tasopoulou, 2021).

Ecosystem-based approaches are considered an important part of climate change adaptation and an underlying principle within spatial planning. Ecosystem services (ES) are acknowledged as a necessary framework for linking human and natural systems and for guiding spatial planning towards sustainability, on an anthropocentric basis (Ronchi, 2018). In Ronchi's words (2018, p. 149), "the ES concept provides the opportunity to reconceptualise Nature as a human-based perception understanding the human dependence on Earth's life-support system in a reciprocal relationship". Integrating ES into spatial planning enhances resilient

development (Pozoukidou *et al.*, 2022). The United Nations (UN) International Convention on Biological Diversity (UN, 1992) defined the ecosystem approach as "a strategy for the integrated management of land, water and living organisms that promotes conservation and sustainable use in an equitable manner," while humans, with their cultural diversity, are recognised as a key integral component of ecosystems. The conservation and sustainable use of biodiversity and its components should be addressed holistically, considering socio-economic and cultural parameters. Its implementation is based on twelve complementary and interrelated principles (CBD, 2004) while a broad participatory approach is required in the formulation, implementation and monitoring of related policies, involving stakeholders at the local, regional, national and international levels (Asprogerakas *et al.*, 2020).

Central to this dialogue is the role of Blue and Green Infrastructure (BGI), both conceptually and as a tool for managing development in a way that protects natural and cultural resources and promotes urban resilience. Although BGI has its conceptual roots in ecosystem conservation efforts, it has recently acquired new dimensions that are more broadly linked to sustainability goals (Foster *et al.*, 2011). The European Commission has defined Green Infrastructure (GI) as a strategically planned network of natural and semi-natural areas, as well as other features of the environment, whose design and management aim to provide a wide range of ecosystem services (EC, 2013). This definition is based on three key characteristics crucial to the effective application of BGIs in sectoral policies: connectivity, multifunctionality, and links to spatial planning. Having been associated with ecological resilience and focused mainly on preservation, GI development was perceived until recently "as a solution-oriented and cross-sectoral approach to spatial planning" (Pozoukidou, 2020, p. 13). Nonetheless, today it is perceived as "a framework or even a strategy that identifies interventions which can help tackle major environmental and socioeconomic needs and capitalize on opportunities" (op. cit.). Its associated strategies, policies and tools seem to find ground for application at all levels of spatial planning: national, regional/metropolitan, local/urban.

3. OBJECTIVES AND METHODOLOGY

This paper attempts a critical review of the past 25 years of spatial and urban planning policy in Greece, with the aim of (a) illuminating critical issues of the way principles and aspects of sustainable development are integrated, and (b) tracking the emergence of the concept of resilience. The analysis emphasises the institutional framework, with reference to the objectives, the content of the tools and their implementation in practice.

The research methodology is based on content analysis (Weber, 1990; Potter and Levine-Donnerstein, 1999) of the legal texts that regulate the operation of Greece's spatial planning system. This enables the study of topics for which it would be difficult to obtain and access quantitative data. The present approach encompasses both manifest and latent content (Gaur and Kumar, 2018; Bengtsson, 2016).

More specifically, the research begins with a review of the past 25 years of spatial and urban planning policy in Greece, with the aim of enlightening critical issues regarding the integration of principles and aspects of sustainable development. The research includes analyses of (a) the legislation (approved by Parliament), and (b) the explanatory statement to Parliament (an official document that analyses the purpose of the proposed regulations). The object of the research is the direct reference to the concept of sustainable development but also the emphasis on specific pillars covered by the proposed regulations (Table 1) with allusions to the objectives, the content of the tools and issues related to their implementation.

To track the emergence of the concept of resilience in the Greek spatial planning system, further analysis covers the current legislative framework. The concept is linked to new dynamics and relationships that have developed over the course of evolution of the international framework for sustainability, thus forming the "coding scheme" of the approach (Gaur and Kumar, 2018). The research covers references to meanings and the level of integration of sub-concepts, namely climate change, territorial inequalities, disaster risk assessment and the ecosystem approach. The presentation of the results covers spatial planning at two levels: (i) national / regional, and (ii) local (Fig. 1).

Table 1. The main spatial planning regulatory framework in Greece

Law number / year of issue	**Content**	**Level ***
L.2508/1997	Sustainable residential development	L
L.2742/1999	Spatial planning and sustainable development	N/R
Instructions, 2008	Instructions for the monitoring/approval of General Urban Plans studies of Law 2508/97	L
L.3894/2010	Acceleration and transparency in the implementation of Strategic Investments	L
L.3986/2011	Urgent Measures for the Implementation of the Medium-Term Financial Strategy Framework 2012-2015	L
Ministerial decree - GG 3545B/2021	Technical Specifications for General Urban Plans	L
L.4269/2014	Spatial and urban planning reform - Sustainable development	N/R, L
L.4447/2016	Spatial Planning - Sustainable development and other provisions	N/R, L

Tab. 1. (cont.)

Law number / year of issue	Content	Level *
L.4546/2018	Incorporation into Greek legislation of Directive 2014/89/EU „establishing a framework for maritime spatial planning".	N/R
L.4685/2020	Modernisation of environmental legislation, incorporation into Greek legislation of Directives 2018/844 and 2019/692 of the European Parliament and of the Council'	N/R, L
L.4759/2020	Modernisation of Spatial and Urban Planning Legislation	N/R, L
L.4864/2021	Strategic investments	L
Ministerial decrees - GG 3545B/2021 and 510B/2022	Technical Specifications for Local Urban Plans Technical Specifications for Special Urban Plans	L

* N/R: National / Regional, L: Local

Source: own work.

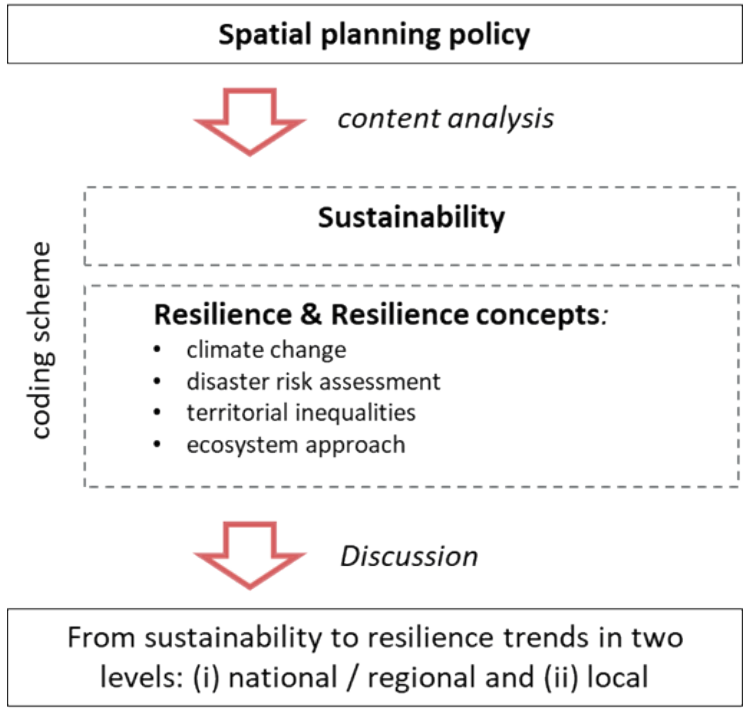

Fig. 1. Research metodology

Source: own work.

The Greek spatial planning framework provides two levels: (a) Spatial planning at the National and Regional level has a predominantly strategic character and encompasses medium-term or long-term objectives, guidelines for spatial development and economic activities and provisions for the protection of sensitive areas; and (b) Urban planning at the local level is for the most part regulatory, governing, for example, the establishment of land uses, the plot ratio, etc. It includes the Local Urban Plans (LUPs), which regulate the sustainable spatial organisation and development of Municipalities, the Special Urban Plans (SUPs) which cover (i) spatial interventions, and (ii) the development of strategic investment projects (of public and private interest), irrespective of administrative boundaries, and the street layout Implementation Plans. All the upper tier frameworks are binding for the lower tier urban and local plans. The system is centralised and executive power is exercised primarily by the Ministry of the Environment and Energy (Asprogerakas and Melissas, 2023).

4. RESULTS AND DISCUSSION

4.1. The concept of sustainability in the Greek spatial planning policy

The concept of sustainability first appeared in the country's spatial planning legislation in the second half of the 1990s, when the basic laws on spatial planning attempted to conform with the wider Europeanisation of planning policies (Yiannakou and Tasopoulou, 2012). On the strategic level, the law attempted to approach spatial planning through a broader framework that identifies economic, social, geographical and political developments in the European Union and beyond, incorporating the principles of sustainability. This pursuit is reflected in the objectives of the law, which highlight the triptych of integrated, balanced and sustainable spatial development and point out the need to use spatial planning to secure the country's comparative geographical, natural, cultural and productive advantages.

The legislative framework as it stood in the late 1990s showcased the role of spatial planning for strengthening the variety and diversity of the national territory, balancing the diffusion of development and promoting economic and social cohesion. These principles were implemented through the establishment of frameworks for spatial planning and sustainable development at the national and regional level, to meet developmental, social and environmental objectives in a uniform manner. The concept of environmental planning was integrated into spatial planning by "incorporating elements of the natural environment into planning practice" (Law 2742/1999).

The pursuit of sustainability is emphatically reflected in the title of the tools proposed by the law: "Frameworks for Spatial Planning and Sustainable Development." At the national level, the "General Framework for Spatial Planning and Sustainable Development" (2008) sought balance between the three main objectives at the core of spatial planning: development, stability and protection. The Special Frameworks may cover special geographical areas, such as coastlines, islands or mountainous regions, or certain nationally vital sectors or branches of productive activities (tourism, aquaculture, manufacturing, etc.). The Regional Frameworks encompass strategic goals and directions, among others, for territorial organisation and management, the protection and restoration of the environment, as well as the protection, promotion and preservation of the natural and cultural heritage of the Region. They constitute the intermediate level where national and local spatial planning "meet" and at the same time form the common frame of reference for the coordination of individual policies, programs and investment plans at all levels of government, from central to local (Table 2).

Table 2. Sustainability in spatial planning legislation over time (1997–2010)

Basic Legislation	L.2508/1997, L.2742/1999	
Policy directions	Conformance with the wider Europeanisation of planning policies. Sustainable development.	
Objectives	*Strategic planning* • Integrated, balanced and sustainable spatial development. • Securing the country's comparative geographical, natural, cultural and productive advantages. Incorporation of natural environment elements into planning practice.	*Urban planning* • Address of major "universal" environmental issues: urban sprawl vs the compact city model, cultural heritage protection, social inclusion etc. • Integrated approaches to urban interventions. • Upgrading of the built environment and protection of the natural environment.
Tools	*Strategic planning* • Frameworks for spatial planning and sustainable development at the national and regional level.	*Urban planning* • Strategic urban plans, Street layout plans. • Urban renewal.
Implementation emphasis	Integration mainly of the environmental aspects of sustainability, land use zoning.	

Source: own work.

Concurrently, new integrated tools are introduced in an obvious attempt to cover the individual pillars of sustainability, the so-called "Plans of Integrated Urban Interventions" (SOAPs) for urban areas and the "Areas of Special Spatial Interventions" (PEHPs) that apply at the sub-regional level. SOAPs are developed to promote integrated urban planning strategies in cities or individual neighbourhoods, as well as

in wider urban areas, that face critical and complex issues of delayed development, breakdowns in social and economic cohesion, environmental degradation and worsening quality of life. SOAPs are multi-sectoral in their objectives and thus have an integrated character. They are distinct from the urban renewal provisions that provide for physical planning interventions to meet urban planning needs and address problems within the urban area (Asprogerakas, 2016; Asprogerakas, 2020a). The *PEHP* is, in principle, a restorative and defensive tool, as it is meant for areas that exhibit unique and/or significant spatial development problems. It features a composite, integrated approach, combining regulations and actions with spatial and development goals and enabling synergies between the relevant policies (Asprogerakas and Kallioras, 2020).

At the local level (Law 2508/1997) the main challenges included urban sprawl, deprived areas, the degradation of important cultural heritage sites, worsening air and water pollution, etc. Tools of "strategic" urban planning were introduced at the municipal level, to identify areas of special protection and define the patterns of residential development. Another objective is striking a balance between urban land uses and arrangements for environmental protection (referring to both natural and cultural resources). The concept of the compact city emerges as a basic planning principle, with a clear direction for minimising residential areas, expansion in 'critical zones' and ensuring adequate residential density to deal with the problem of 'urban sprawl'. Tasopoulou and Asprogerakas (2023) have indicated a transition, at least in rhetoric, from outdated approaches that "see the city as a sum of rigid 'zones' and absolute separation of uses and functions" to an "effort to develop the city with a single plan – framework".

Apart from the institutional framework directly concerning spatial planning, Greece's spatial planning practices have also been impacted by a series of legislative initiatives launched over the course of the economic crisis. In the 2010s (Table 3), spatial planning policy was intrinsically linked to the fiscal crisis the efforts to address it (Klabatsea, 2012, Vitopoulou *et al.*, 2015; Gemenetzi, 2022). Since 2010, the strategic investments policy has significantly promoted the economic dimension in an effort to simplify the provisions and processes of environmental and spatial legislation, and provide an attractive investing environment. This approach clearly favours the economic pillar of sustainability over the environmental one.

The related provisions adopted internationalised capital attraction models with an emphasis on the use of space as a recipient of investments (Asprogerakas, 2020). In this context, the main goal was to reduce the time needed for the plans to be completed. Also, the planning levels were clearly distinguished into strategic and regulatory, and responsibilities were allocated in accordance with the new administrative division of the country (Tasopoulou, 2021). Sustainable development was defined according to the definition of the 1987 Brundtland report. However, the promoted objectives and relationship with sustainable development of the attempted reform came under heavy criticism from the scientific and professional community, which put forth the following main arguments (Tasopoulou and Asprogerakas, 2023):

– The absence of substantial reference to the purpose and strategic directions that would ensure all dimensions of sustainable development, as emphasis was placed instead on the role of space as a receptor of economic activities to the detriment of public benefit, efficiency and environmental protection;

– The role of powerful economic actors was strengthened. While this choice could enable new development prospects, it nevertheless shaped a new, more elitist governance model which limited access to development processes to the more powerful players.

In 2020, many of the provisions regulating the spatial planning system were modified. Beyond sustainable development, 'sustainable spatial planning' is defined as "the spatial, territorial and environmental dimensions of sustainable development, together with those related with rational spatial organisation." The revised legislation includes new references to the concept of sustainability, such as "the sustainable exploitation of regional energy potential, with priority given to renewable energy sources" (Law 4759/2020). Tasopoulou and Asprogerakas (2023) have noted that the concept of sustainability has been explicitly incorporated in the reform efforts of the last decade, at least in rhetoric, although the impact of the term in shaping the content of spatial planning tools is not evident. Over time there has been a shift in emphasis from the environmental pillar to that of economic sustainability, depending on the policy priorities.

Table 3. Sustainability in spatial planning legislation over time (2010–2022)

Basic Legislation	L.3894/2010, L.3986/2011, L.4269/2014, L.4447/2016, L.4546/2018, L.4759/2020, L.4685/2020
Policy directions	Flexibility and efficiency.
Objectives	Capital attraction and accumulation.
New tools	Flexible tools for investment projects. Maritime spatial planning frameworks.
Implementation emphasis	Economic efficiency, Effective integration of resources into the development process.

Source: own work.

4.2. Integrating resilience into spatial planning policy and practice

Resilience

No explicit reference to the concept of resilience was included in the legislative framework (including the related specifications), for spatial planning between 1997 and 2020. According to all the relevant legislation, the main objective of the spatial planning system is to bolster the sustainable development policy. The

regional spatial planning frameworks provide guidelines for spatial development, and emphasise the specific development characteristics of each region to ensure equal integration at the national, European and international levels and the sustainable use of energy potential.

In 2020 (Law 4759/2020), resilience was directly associated with maritime spatial planning and integrated coastal management. Recent amendments (Law 4864/2021) to the strategic investment framework, apart from reinforcing the economic parameters of sustainability over the environmental ones (Tasopoulou and Asprogerakas, 2022), explicitly incorporated the notion of resilience for the first time. Specifically, "the resilience and the ability of the physical, residential and economic-social subsystem to smoothly adapt to the effects of the investment" is set as one of the parameters to be considered in the application for an investment to be designated as strategic.

Climate change and disaster risk assessment

As forecast, the evaluation of the established Regional Spatial Frameworks necessitates that their content be adapted and brought up to date, with particular emphasis on, inter alia, addressing the problems of climate change and natural disasters. Provision is also made for interventions in areas with critical spatial development problems (see above Areas for Special Spatial Interventions), which require special planning and a coordinated programme of measures and projects (e.g. addressing the impact of major projects on man-made activities, as well as emergencies caused by landslides, floods and other disasters, managing areas with special problems). Moreover, in the context of sustainable, rational and integrated spatial development of maritime-area activities, Law 4759/2020 establishes an integrated approach for all relevant activities and uses while also seeking to conserve marine biodiversity and ensure resilience to the effects of climate change.

Urban planning tools have been substantially bolstered with content since 2020. The LUPs are the primary vehicle for the introduction of measures to adapt to climate change, address emergency events and manage the consequences of natural and technological disasters and other threats. SUPs provide similar measures and may also be developed especially to address the consequences of natural disasters. Neither tool may be revised until five years after adoption, with certain exceptions, one of which is the need to address extraordinary urban planning needs caused by natural or technological disasters and risks. This provision reflects a government consideration to afford urban planning a certain degree of flexibility in adapting to unforeseen and emergency situations. Moreover, the approval of these plans ("main study") entails the formulation and approval of "supportive" studies: the Strategic Environmental Assessment Study, Geological Study and Hydraulic Study to temporarily delimitate existing streams (flood line definition), together constitute a supplementary framework that can safeguard certain aspects of the resilience of the regions in question.

Diving into the recent specifications for these two types of plans, it becomes evident that they entail certain aspects of resilience, as these were detected in the introduction section. LUPs are governed by the principles of sustainable spatial development. Within this context, "they promote climate change mitigation and adaptation, as well as resilience and security from natural and man-made risk factors." The "main study," based on the planning needs of the area, includes all supplementary studies or technical reports related to urban mobility, climate change adaptation, emergency needs, flood and fire maps, soil erosion, vulnerability assessment, etc. Two distinct chapters of the study (analysis – diagnosis phase) are devoted to (a) the recording of climate – microclimate data and problems attributed to climate change, and (b) the identification of an emergency management network (escape routes, refuge areas, etc.). Certain vulnerability elements are analysed and depicted in maps. Accordingly, the proposal development phase is concerned with plans to address emergencies and adapt to climate change. These plans include specific adaptation measures, integration of the urban plans in the operational plans for both pre-empting and responding to emergencies, establishment of infrastructures and interventions to prevent and address disasters, and the introduction of measures and proposals for the utilisation of the urban plan at the post-disaster stage.

The national and regional-level Climate Change Adaptation Plans, the National Energy and Climate Plan and the Emergency Management Frameworks must all be considered when developing the spatial plans for both land and sea (Lazoglou and Serraos, 2021). The National Climate Change Adaptation Strategy includes measures that concern the formulation of studies and management plans for risk prevention, and the coordination of the competent ministries-agencies. The Regional Climate Change Adaptation Plans concern the 13 Regions of Greece.

Since the 1980s, Greece's civil protection system has been shaped by efforts to address earthquakes and their fallout. L.4662/2020 attempted to introduce a modern framework through the issuance of a series of General Civil Protection Plans for Emergency Response and Immediate Management of the Consequences of various disaster events such as (i) Floods, (ii) Forest Fires, (iii) Earthquakes, (iv) Technological Accidents, as part of the harmonisation with European Directive SEVESO III, and (v) for the response to a Volcanic Eruption in Santorini. Optimal disaster management requires the existence of a structured emergency plan intrinsically linked to the existing spatial planning system (Tsilimigkas *et al.*, 2018; Theodora, 2020; Pitides *et al.*, 2023; Dandoulaki *et al.*, 2023).

According to research by Asprogerakas (2022), planning for civil protection starts with a risk assessment for a given area. The above-mentioned civil protection plans have a certain spatial dimension and include limited actions that could be integrated into spatial planning tools:

– the identification of sites for the temporary deposition of solid waste, biowaste and rubble resulting from the disaster event;

– the identification of places where citizens may gather for the subsequent organised evacuation;

– the identification of sites for the reception and accommodation of persons affected by an earthquake (camping sites);

– the adaptation of the road network to allow the evacuation of the affected persons without impeding the access of emergency and relief vehicles.

These actions are mainly local in focus, and municipal authorities play a major role, facilitating their integration into the proposed spatial planning tools, especially at the municipal level.

Ecosystem approach

At the regional and metropolitan levels, the Greek spatial planning system provides provisions that promote the organisation of green networks and proposes specific programs/ action plans and pilot interventions. However, specifications at the lower planning levels seem to lack details on how to evolve the efforts to record the green elements and establish a green (and blue) infrastructure, especially based on an ecosystem approach.

There is a particular interest for the adoption of the ecosystem approach as a parameter for Maritime Spatial Planning (MSP) (Directive 2014/89/EU), to combine environmental and social objectives and ensure intersectorality and cooperation at different levels. This may also lead to a shift towards a broad participatory approach to marine management and monitoring (Asprogerakas *et al.*, 2020). MSP shall consider land-sea interactions and, more generally, the principles of sustainable management. Greek maritime spatial planning places support for sustainable development and the spatial coherence between maritime and coastal spaces at the core of its objectives. Besides, the "integrated management of the coastal zone" considers the vulnerable nature of coastal ecosystems and landscapes by definition.

Territorial inequalities

The established Regional Spatial Frameworks place particular emphasis on, inter alia, addressing the issues of territorial cohesion. A provision is also made for intervention in areas with critical spatial development problems and special planning to bolster the development of disadvantaged areas such as Greece's borders, mountains and islands. At the urban planning level, territorial inequalities do not appear to be addressed with specific proposals, although an extensive analysis of the demographic characteristics – developmental nature is incorporated into the initial phase of the study.

5. CONCLUSIONS

This study begins with a comprehensive review of current policies related to the concept of sustainable development and the shift to resilience, including the 2030 Agenda for Sustainable Development, to identify sub-concepts for its integration into spatial planning. This entailed addressing issues such as climate change, territorial inequalities, disaster risk assessment and the ecosystem approach.

It then provided a critical review of the past 25 years of Greek spatial and urban planning policy, with the aim of exploring the integration of sustainability and resilience into spatial planning policy and practice. The analysis demonstrates that Greek spatial planning has yet to make the transition from sustainability to resilience, although the concept has been generally expressed and certain fragmented efforts are evident. The legislation enacted over the past 25 years enshrined sustainability as a fundamental tenet, albeit with emphasis placed at times on the environmental and at others on the economic dimension, while the social dimension remains largely neglected. Contemporary institutional documents contain no explicit references to the concept of resilience, except in a few cases involving strategic investments, but there are elements that refer to efforts to deal with issues such as climate change, disaster risk management and the ecosystem approach in plans specifications.

The content analysis in this paper is limited to the policy implied by the institutional framework. More research is required to verify the policy's implementation through spatial planning in practice. Experience has demonstrated that spatial planning fails to meet its goals and often deviates from them. Greece is currently nearing the conclusion of institutional spatial planning reforms, and is expected to start implementing the 'new' policy. Concerning the reforms, it should be noted that they do not formulate a clearly defined policy, contrary to the institutional framework of previous decades. This conclusion is further supported by the fact that explanatory statements submitted to Parliament do not include either feasibility analyses or objectives of the planning policy. Regarding their implementation, the competent Ministry is currently pursuing an ambitious programme to finish multi-level spatial planning over the next five years, part of which is funded by the Recovery and Resilience Facility. It presents an opportunity to promote planning practices with specifications and guidelines aimed towards achieving resilience. This implies a larger emphasis on the political rather than the administrative aspect of planning.

Civic participation poses a sustainability-related challenge that should be addressed in further research. Traditionally, Greek spatial planning has lacked such processes. This shortcoming has been attributed historically , to institutional deficiencies in establishing relevant mechanisms on the one hand and, on the other, to the personal perceptions and values of those involved in plan-making (local government, planners) (Tasopoulou, 2013, 2015). This has meant that even in cases where they were implemented, participation procedures remained a formal-

ity, leaving the field open for informal initiatives and interventions. (Tasopoulou, 2015; Serraos and Asprogerakas, 2019).

This paper attempts to shed light on the adoption of the principles and aspects of sustainable development and the concept of resilience in Greek spatial planning policy as a reference for international audiences. Moreover, the relevant assessment aims to aid in the formulation of spatial policy by the Greek Ministry of the Environment and Energy going forward, while also facilitating the work of other governmental agencies and actors that deal with policies with spatial implications. The adoption of the concepts that shape the resilience approach applies to all levels of decision-making and includes both specialised tools, such as for natural disaster management, and spatial policy instruments.

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