



A Comparative Framework for Assessing Sustainability Initiatives at the Regional Scale

DANIEL E. ORENSTEIN and DALIT SHACH-PINSLEY*

Technion – Israel Institute of Technology, Haifa, Israel

Summary. — “Sustainability” has been a prominent goal in environmental and spatial planning over the past three decades. A diverse array of initiatives have been proposed and implemented with the aim of facilitating human economic and social development, while mitigating or even reversing associated environmental damage. These initiatives vary in their definitions of sustainability, their targets for planning and management, their bureaucratic structures, and other characteristics. As such, a universally applicable “how-to” manual for realizing the goals of regional sustainable development remains elusive.

The objective of this paper is to provide scholars and practitioners with a simple analytical framework for assessing objectives, strengths, and weaknesses of sustainability initiatives at the regional scale. Drawing upon a review of theoretical and applied research on regional sustainable development, we categorize initiatives into typologies, including (1) Natural resource and ecology-based; (2) Urbanism; (3) Issue-based; and, (4) Governance, participation and science-based. We analyze each according to their focus, scope, fields of action and activities, and successes and challenges.

Through this analysis, we define axes that highlight the prominent differences in characteristics between diverse approaches to sustainability. These are: (1) “top-down—bottom-up”, based on who initiates and maintains the sustainability initiative; (2) “ecological—socio economic”, defining the relative emphasis on ecological and/or social systems; (3) “holistic—subject-specific”, defining the initiatives’ breadth of the planning and management focus; and (4) “regional-local”, defining the spatial scale of the initiative. These axes are useful for highlighting considerations that may have been neglected within an initiative, possibly preventing successful outcomes. We suggest that successful sustainability initiatives are introspective and work progressively toward balance between the extremes of these axes. This conclusion is buttressed by the evolutionary development of three global-scale sustainability efforts initiated by UNESCO’s Man and The Biosphere program, the International Long-Term Ecological Research Network, and the Urbanist movement.

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1. INTRODUCTION

For the past half century, one of the prominent trends in global environmental policy and planning has been the quest for sustainability at the local, regional, and global scales. This quest was born out of the realization that the combined impact of an exponentially growing human population and increasing material consumption was leading to rapid deterioration of the global environment and loss of biodiversity (Ehrlich & Holdren, 1971; Goodland & Daly, 1996; Vitousek, 1994; Wackernagel *et al.*, 2002). Loss of open spaces, habitat fragmentation and destruction, and sprawling human settlement and associated infrastructures are some of the spatial development phenomena that have been creating increasingly serious environmental challenges to the long-term wellbeing of human society (Cardinale *et al.*, 2012; Chapin *et al.*, 2000; Reid *et al.*, 2005). Growing recognition of these challenges culminated in global proclamations in the 1980s and 1990s, such as the Brundtland Report and Agenda 21, which popularized the concept of “sustainable development” and led to the implementation of sustainability initiatives at local, regional, and global spatial scales (Conca & Dabelko, 1998).

The Brundtland Report defined the term sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (“Our Common Future,” World Commission on Environment & Development, 1987). Inherent in this definition is the assumption that the earth’s capacity to provide natural resources and to absorb waste is limited (Meadows, Meadows, Randers, & Behrens, 1972). The combined pressures of increased human population growth and

material consumption are considered a challenge to sustainability in that they lower the resilience of the planet and its ability to provide resources and absorb waste, thus threatening the wellbeing of future generations. From these assumptions rose the first conceptualizations and applications of sustainable development, which were almost exclusively focused on environmental issues such as sustainable resource use. One of the enduring criticisms of applications of the sustainable development framework, in fact, has been their perceived neglect of the social component of sustainability (e.g., poverty, equity and health; Eizenberg & Jabareen, 2017; Hák, Janoušková, & Moldan, 2016), despite the Brundtland Report’s emphasis on poverty alleviation.

While sustainable development has been criticized from multiple perspectives (see below), the term and the idea it represents have not only endured, but they have promulgated into every discipline and profession dealing with environment, resources and land use. The definition has been refined and various frameworks for implementing sustainability have been proposed, most focusing on three aspects (or pillars) of human development: social, economic and environmental (e.g., Donald, 2008; Eizenberg & Jabareen, 2017; Hák *et al.*, 2016;

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Kearney, Berkes, Charles, Pinkerton, & Wiber, 2007; Reyer *et al.*, 2012; Schädler, Morio, Bartke, Rohr-Zänker, & Finkel, 2011; Weaver, 2005; Wheeler, 2009; Wiber, Berkes, Charles, & Kearney, 2004). These pillars have also been canonized in government policy documents such as Agenda 21 and others (Council of the European Union, 2006; Organization for Economic Cooperation, 2006; United Nations, 1992). The underlying assumption is that only when all three realms of human wellbeing are addressed can true sustainability be achieved.

The “three pillars” definition has been challenged by some, and new sustainability paradigms are gaining increasing attention. Miller (2014) suggests that the “three pillars” categorization locks users into a limited discourse of compromise between the three components. He and others subscribe to the concept of “sustainable livelihoods” (Chambers & Conway, 1991). Chambers and Conway (1991) suggested that sustainability (which they claimed was considered synonymous with “good” in development circles) is but one of three concepts, along with capabilities and equity, that should be rolled into this more integrative principle. Miller (2014) suggests replacing the paradigmatic “three pillars” definition with a pursuit of quality of life and sustainable livelihoods (also suggested in various forms by others, e.g., Biggs *et al.*, 2015; Birkmann, 2006; Horlings & Padt, 2013; Stoll-Kleemann & O’Riordan, 2002). Birkmann (2006) explains that the sustainable livelihood approach “views people and communities on the basis of their daily needs, instead of implementing ready-made, general interventions and solutions.” His approach links the concept of sustainable livelihoods with a framework for assessing and lowering societal vulnerability to hazard and risk, adding an important critique that sustainable development—if it is to lead to reducing vulnerability to risk—cannot be a mere “balancing exercise,” but rather must address “deeply rooted social, economic and environmental conflicts” (Birkmann, 2006). In order to overcome the false separation of economic, social, and environmental factors, Birkmann recommends the “egg of sustainability,” which places the human economy inside the human social system, which is itself embedded within the natural eco-system.

In his critique of the “sustainable development” paradigm, Wall (1997) suggests that the term has, in many cases, become a political slogan or, alternatively, an imprecise catch phrase (although, it also may also act as a catalyst for community discussion). Chambers and Conway (1991), reflecting on multiple definitions of sustainable development, consider it to be unproductively pessimistic in its outlook and over-reliance on “negative syntax” and “defensive objectives”.

Critique notwithstanding, the sustainability concept and its three-pillar definition persevere in a plethora of local, regional, and global initiatives. Scholars and practitioners have joined the global effort to address societal challenges, as articulated in the Brundtland Report and others, by proposing frameworks and developing initiatives for spatial development that have sought to achieve sustainability, such that human development could continue, while the environmental damage intrinsic to development could be mitigated and even reversed (Jabareen, 2006; Yigitcanlar & Teriman, 2015). While these efforts can be united under the conceptual umbrella of “sustainability”, the array of initiatives differ from one another in approach, objectives, and execution. A sampling of the definitions, as reflected in the current research on regional sustainability initiatives over the past decade, is provided in Appendix 1.

The sheer diversity of sustainability approaches and initiatives has been a mixed blessing: On the one hand, initiatives

tailored-made for different socio-ecological contexts have much promise for successful outcomes. On the other hand, the proliferation of models and experiences has been accompanied by a not insignificant amount of unsuccessful projects. For example, in the planning realm, one study found that comprehensive plans that incorporated sustainable development principles were no more sustainable than plans that did not incorporate such principles (Berke & Conroy, 2000). Such results can catalyze skepticism and cynicism toward sustainability efforts.

In this paper, we explore the diverse ways in which communities, planners, policy makers and scholars understand “sustainability” and how they define sustainability at the regional scale. For both theoretical and practical reasons, we chose the regional scale for analysis, which is a broad spatial scale that includes urban areas embedded within a matrix of open (agricultural and natural) spaces. The region includes both natural and social systems, which necessitates a holistic and integrative approach to research and development (Fürst, Helming, Lorz, Müller, & Verburg, 2013; also see Naveh (2000) for an ecological perspective or Pike (2007) for a regional studies perspective). Given that most definitions of sustainability demand an integrative perspective, the region is an ideal scale to explore how sustainability is conceptualized and implemented.¹

Our objective is to both analyze how scholars and practitioners understand sustainability and extract operative lessons from the cumulative practical experiences of on-the-ground sustainability initiatives as analyzed in the academic literature, particularly those lessons that would be relevant at the early stages of project formulation. It is not, as others have done before us, to re-theorize sustainability or to develop new conceptual frameworks (for different disciplinary approaches to sustainability theory see, for example, Birkmann, 2006; Jabareen, 2008; Mostafavi & Doherty, 2010; Naveh, 2000; Singh *et al.*, 2010), nor is it to assess sustainability indicators, which is an increasingly prominent theme in the recent sustainability literature. The normative goal of this analysis is to encourage successful sustainability initiatives by identifying and characterizing the multiple practical issues that should be considered when initiating a project or evaluating an existing one.

2. EXTRACTING PROMINENT THEMES FROM THE SUSTAINABILITY LITERATURE

In order to extract themes from the sustainability literature, we began with a three-step literature review. First, we conducted a literature search using both Science Citation Index and Google Scholar for the terms “sustainable regional development” and “sustainable spatial planning.” We limited our search to work published since 2005, as we wanted to focus on the most recent manifestations and interpretations of sustainability concepts, but we later included earlier studies when relevant. We reviewed this literature (approximately 90 journal articles) and extracted from it articles focusing on the implementation of particular initiatives and projects at the regional scale. From these, we identified prominent, recurring themes for applications (i.e., themes that described initiatives defined in the context of sustainability). We then supplemented the initial search with targeted searches for articles relating to the themes we extracted in the first step. These included ecotourism, sustainable agricultural landscapes, sustainable urbanism, landscape urbanism and others. Finally, we adopted and modified a classification system proposed by

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