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Review

Sustainability approaches and strategic environmental assessment in small islands: An integrative review

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ABSTRACT

Small islands are territories that are subject to different environmental, economic and social problems and pressures. Strategic Environmental Assessment (SEA) is a systematic approach that integrates sustainability issues into policies, plans and programmes promoting the participation of different stakeholders including the communities. In this research an integrative review is performed to identify, explore and discuss the academic outlook on sustainability in small islands and SEA in their decision-making context. The study is justified by the pressing need to find suitable responses for integrating sustainability into small islands through the decision-making process. The review was conducted through academic literature that focused on sustainability and environmental assessment in islands from the last 15 years. The documents were analysed through a content analysis based approach where they were coded with pre-determined categories according with the 14 priority areas identified in the Barbados Programme of Action and the three additional priority areas from the Mauritius Strategy for addressing the special challenges faced by Small Islands Developing States. From the review it is understood that it is still not clear what sustainability is for small islands or what is the best approach to achieve it. However, three key arguments, linked with SEA, emerged from the discussion on how to enhance sustainability in these territories (i) change in decision-making paradigm, (ii) good governance and community empowerment and, (iii) resilience. SEA can help to put forward these three "sustainability enhancers" since SEA approaches addressed them, yet, it is necessary to develop or rethink a framework for SEA in these territories, promote SEA research for small islands and stimulate capacity-building.

1. Introduction

Small islands face vulnerabilities and constraints that concern the international community, which engages in efforts to develop programmes of action to address sustainability in these territories (Bass and Dalal-Clayton, 1995; UNCED, 1992). These territories are living laboratories for the planet, because they are a closed and bounded system and are manageable units of study. In these territories people can see and experience the impacts of their actions on the ecosystems and what it causes in the whole system (Nagarajan, 2006). Hence, small islands can become an influencing "voice" of future goals and targets for sustainability and for that, they deserve increased attention and greater international support (Crossley and Sprague, 2014).

These territories are vulnerable and have specific features, being subjected to internal and external generated environmental problems (Douglas, 1997) and there is a need to implement sustainability strategies (Herbert, 1998). This can be achieved by finding the key principles to integrate sustainability into decision-making of these territories. There are several issues linked with sustainability to be taken into account in the political and planning system of small islands, such as, climate change and sea-level rise, natural and environmental disasters, waste management, coastal and marine resources, among others (Beller et al., 1990; Griffith, 1995; Hein, 2010). Therefore, traditional concepts of sustainability cannot be applied to small islands (van der Velde et al., 2007),

Abbreviations: BPoA, Barbados Programme of Action; EU, European Union; SEA, Strategic Environmental Assessment; SIDS, Small Islands Developing States.

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needing a tailored approach to integrate sustainability in the political and planning system of these territories. Despite the existence of different approaches that could contribute to the integration of environmental, social and economic sustainability aspects into strategic decision processes, there is one that was specifically designed to respond to this challenge, and for that reason, it may also play a fundamental role in small islands – the Strategic Environmental Assessment (SEA). SEA was developed to provide a systematic framework for analysing and assessing the decision-making processes of policies, plans and programmes (Fischer, 2007; Therivel, 2004).

SEA may improve the decision-making process, focussing on key sustainability constraints, assessing alternatives and promoting the participation of different stakeholders (Eggenberger and Partidário, 2000; João, 2005; Therivel et al., 1992). SEA is context specific and needs to be developed taking this into account (Hilding-Rydevik and Bjarnadóttir, 2007).

Despite the extensive research discussing sustainability aspects in small islands, the majority primarily focus on individual environmental, social or economic issues. Therefore, there is a dearth of research that review and analyse the holistic approaches to integrate sustainability and, in particular, using SEA.

The aim of this research was to do an integrative review to identify, explore and discuss what the academic literature reports on the key arguments for sustainability integration in small islands and on SEA approaches in their decision-making processes.

2. Study context and rationale

This section sets out the fundamental principles of the three key-topics of this paper: small islands, sustainability and SEA. This study context and rationale on the key-topics will help establish the starting point of the research, making clearer the arguments used in the paper. This section will be a brief introduction to the subject under review.

2.1. Small Islands as specific and vulnerable territories

Different authors have debated over the definition of "Small Island" and what it means without conclusive scope delimitation (Baldacchino, 2004; Deschenes and Chertow, 2004; Hay, 2006; Kerr, 2005). The criteria found in the literature (*e.g.*, population size and/or density, area, gross disposable product) to establish the definition of small island, seems to be meaningless, arbitrary and does not consider social dimensions which may cause bias research and analysis (Anckar, 2006; Hein, 2010; Kerr, 2005; Maul, 1996). It is necessary to define what a small island is in a specific context (Nunn, 1994), whether it is for study proposes, for international financial aid access, for political reasons and/or for economic reasons. For instance, and for the purposes of their researches, Dolman (1985, p. 40) defines a small island as "a territory surrounded by a large body of water" with a land area of less than 13 000 km^2 and one million inhabitants or less, and Hess (1990, p. 3) defines a small island as having a land area of 10 000 km^2 or less and 500 000 or less inhabitants. Baldacchino (2005) advises against a rigid definition of island and their categorisation. More than having a well-accepted single rigid definition, we will need to have a flexible concept that despite adopting some common criteria or assumptions it will also integrate a dynamic view for each particular context.

Small islands have specific characteristics and vulnerabilities because of their small size and geographic isolation. These specific features may be categorised in five major areas, such as: (i) economic dependency due to problems related to transportation of people and goods and communication (Briguglio, 1995; Hein, 2010; McIntyre, 2004), also, due to limited capacity to produce and consume, become highly dependent on international trade and markets (Bass and Dalal-Clayton, 1995; Briguglio, 1995; Hein, 2010); (ii) limited resources, because there is a scarcity of basic resources, such as, freshwater and fertile soil (Bass and Dalal-Clayton, 1995; Deschenes and Chertow, 2004); (iii) population size, small islands that have small populations, have a limited pool of skills, while high populations densities have high demands on resources (Bass and Dalal-Clayton, 1995; McIntyre, 2004); (iv) unique biodiversity and vulnerable ecosystems with small population species that are indigenous to only one island or island group within a region and with a greater risk and vulnerability from overexploitation and habitat degradation (Bass and Dalal-Clayton, 1995; Hein, 2010; McIntyre, 2004); and (v) proneness to natural catastrophes because many islands are volcanic in origin with active volcanoes, furthermore, climate change and the rise of sea level are a pressing concern because small islands are less resilient to single event disasters (Briguglio, 1995; Hein, 2010; Pelling and Uitto, 2001).

The international community concern about the singular features of small islands, their development, vulnerabilities and specific characteristics started in the 1970s (Campling and Rosalie, 2006) and in the following decade, in 1986, the "Interoceanic Workshop on Sustainable Development and Environmental Management of Small Islands" took place (Beller et al., 1990). This workshop brought together 32 experts and focused not only on what would be commonly known as Small Islands Developing States (SIDS) but other islands, such as the Mediterranean islands of Greece and Malta, which face similar constraints (Adrianto and Matsuda, 2002; Beller et al., 1990; Newitt, 1992).

In 1992, at the Earth Summit, it was formally recognized the unique challenges faced by SIDS. Agenda 21 (UNCED, 1992) states the goals and main activities for SIDS to achieve sustainable development through the adoption and implementation of plans and programmes to support the sustainable development and also through the adoption of measures to cope with environmental change (Griffith, 1995; McAlpine and Birnie, 2006; UNCED, 1992). Taking this into account, the UN Global Conference on the Sustainable Development of SIDS was held in Barbados in 1994 reaffirming the principles and commitments of the Agenda 21 (UNCED, 1992) and translating these into a specific programme of action for SIDS (Griffith, 1995; Hein, 2010). The Barbados Programme of Action (BPoA) (United Nations Global Conference on the Sustainable Development of Small Island Developing States, 1994) recognizes 14 priority areas for sustainable development in SIDS. In 2005, the BPoA commitments were renewed and improved with the Mauritius Strategy in 2005 (United Nations, 2005), which identifies additional priority areas such as health, culture and, sustainable production and consumption.

2.2. The definition issues of sustainability

Even though the international community addresses and recognizes the importance of sustainability to small islands, the definition of "sustainability" is still discussed by different authors with different outlooks. Some define sustainability as being (ideally) a nearly steady-state, since there are limits to growth (Daly, 2007; Meadows et al., 1972), and to others is something that is essential for the development of the nations (WCED, 1987). Costanza and Patten (1995) outline that the problem of defining sustainability is due to a misdirect discussion and what should be taken into account is that more than being a problem of definition, sustainability is a matter of wills, meaning that "sustainability" should be a consensus of what the communities want to preserve and at the