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Measuring and comparing local sustainable development through common indicators: Constraints and achievements in practice

Sara Moreno Pires [a,*], Teresa Fidélis [b,1], Tomás B. Ramos [c]

[a] UCILeR, University of Coimbra Institute for Legal Research, Pátio da Universidade, 3004-545 Coimbra, Portugal
[b] Department of Environment and Planning, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal
[c] CENSE, Center for Environmental and Sustainability Research, Departamento de Ciências e Engenharia do Ambiente, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Campus da Caparica, 2829-516 Caparica, Portugal

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ABSTRACT

Many efforts have been made to standardize indicators that aim to assess, monitor and compare sustainable development at different territorial levels. Arguments in favor and against the need to design common indicators are many and highly contested, which is why this article intends to contribute to the study on the outcomes for cities that put common local indicators to practice. This article aims to discuss the constraints and achievements of standardizing these indicators. It first explores and analyzes the efforts of European institutions and research projects supported by them towards the harmonization of local sustainable development indicators. In a second stage, it analyzes a Portuguese initiative that uses common indicators to benchmark sustainable development across cities and municipalities – ECOXXI. Evidence is gathered from two case study municipalities, Oeiras and Cascais, that have applied this indicator set, through a review and analysis of documents and semi-structured interviews with relevant public officers. The lessons learned point to major benefits on the sharing of guidelines and the delivery of a top-down but flexible indicator approach in the absence of national or European official guidelines. The main constraints are linked to issues of communication and to limited political support and use of such indicators.

Introduction

Several indicator systems have been designed by different institutions to provide quantitative and qualitative measures to assess and study the interrelation between social, environmental, economic and institutional development at different territorial levels (Ramos and Moreno Pires, 2013). Over the past two decades the 'indicator industry', as some call the proliferation of indicator systems (Herzi & Hasan, 2004), has seen fruitful debates emerging in regard to the roles, achievements, gaps and uses of sustainable development (SD) indicators for cities, regions, countries and at the global level. SD indicators aim to assess and benchmark SD conditions and trends across time and space, monitor progress toward goals and targets, inform planning and decision-making, raise awareness, encourage political and behavioral changes, promote public participation and improve communication on sustainability (Holden, 2006; Moreno Pires, in press). However, they are frequently set aside, manipulated or under-resourced and face major constraints, such as costs or data suitability. Furthermore, SD indicators have received much criticism for trying to measure social life and natural complexities through quantitative and restricted indicator systems, but mostly for being ineffective in changing decision-making processes and outcomes, and in promoting action based on observed trends (Holden, 2013; Moreno Pires & Fidélis, 2012). The diversity in the aims and roles of SD indicators and their conflicting and unintended outcomes have been studied and nurtured by different rationales, discourses and approaches (Holman, 2009; Moreno Pires, in press; Rydin, 2007). The article analyzes this diversity around one particular indicator dilemma: the development and use of common or standardized indicators versus context specific indicators at the local level.

The article presents a brief literature review on the main arguments for the standardization of indicators and frameworks to compare SD, and major pitfalls and criticisms around standardization processes. It also reviews the efforts of European institutions and research projects supported by them towards the harmonization of SD indicators at the local level. Focusing on Portugal, it then

* Corresponding author. Tel.: +351 239 859 802.
E-mail addresses: sarap@fd.uc.pt (S. Moreno Pires), teresafidelis@ua.pt (T. Fidélis), tabr@fct.unl.pt (T.B. Ramos).
[1] Tel.: +351 234 370 200/349.

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explores the constraints, achievements and uses of harmonized local indicators by analyzing a particular program – ECOXXI – that structures indicators to compare and benchmark SD across municipalities in the country. The study asks two main research questions: first, how are ECOXXI indicators built and how are they used; second, what are the constraints and achievements of using a common set of indicators in the context of Portuguese cities? To provide contextual evidence to these questions two municipalities that have applied ECOXXI, Oeiras and Cascais, were identified as case studies for further analysis. The findings are then discussed and the conclusion summarizes the main lessons extracted from the experience of implementing ECOXXI in these two municipalities and of developing common local SD indicators in Portugal and Europe.

The debate around standardized indicators

The United Nations has devoted efforts to establish standardized key indicators for cities through, for example, the Global Urban Observatory, to assess and compare urban indicators and to build capacities for countries to evaluate urban policies (Flood, 1997). Nevertheless, despite this attempt and according to Pintér, Hardi, and Bartelmus (2005), there is a continuous growth in the diversity of SD indicators – with no consensus around methodologies, not even general agreement on the best conceptual frameworks or standardized options to measure SD (Hammond, Adriaanse, Rodenburg, Bryant, & Woodward, 1995; Ramos, Caeiro, & Melo, 2004). For example, in urban SD many different approaches have been developed: from international rankings of cities based on different criteria such as quality of life, cost of living, innovation economy, city branding, personal safety or eco-city (Yigitcanlar & Lönnqvist, 2013), to compendiums of best practices, the use of future scenarios (Boyko et al., 2012) or self-organizing maps (Arribas-Bel, Kourtit, & Nijkamp, 2013). The lack of international consensus produced growing inefficiencies in terms of our ability to develop, monitor and benchmark progress towards goals and objectives (Pintér et al., 2005). Sébastien and Bauler (2013: 9) argue that prevailing standardized indicators such as GDP were developed by "institutionally appointed experts upon specific demand by policy makers facing specific policy situations". On the other hand, and justifying this lack of consensus, standardized indicators for SD have mostly been proposed by non-governmental actors (e.g., universities, think tanks, non-governmental organizations) – generally known as "middle actors" between civil society and political/institutional spheres – within a contested policy agenda and controversial vision for SD (Sébastien & Bauler, 2013).

The Rio+20 Conference on Sustainable Development gave this debate a prominent position and recommended a Global Sustainable Development Report that would bring integrated assessments together across sectors and territorial levels (UN, 2013). This has emphasized the worldwide challenge for unified efforts and has led to other underexplored and pressing questions, such as the understanding of the challenges of harmonized indicators at different territorial levels (e.g., how to balance local and global pressures, contextual and common universal indicators and expert and lay knowledge, and how to value diversity as an interesting and productive feature of SD indicators), the understanding of the expected outcomes of both standardized and context specific indicators for cities or the role of different types of institutions leading to the standardization process and its impacts.

Several authors and international organizations provide many arguments for finding ways to standardize indicators and frameworks to compare SD (e.g., AmbienteItalia, 2003; Flood, 1997; Hammond et al., 1995; Luque-Martinez & Munoz-Leiva, 2005; Mascarenhas, Coelho, Subtil, & Ramos, 2010; Pintér et al., 2005; Ramos & Caeiro, 2010; Tanguay, Rajaonson, Lefebvre, & Lanoie, 2010; Yigitcanlar & Lönnqvist, 2013). They mainly claim that standardization is useful to assess and compare data, problems, contexts, cities and policy options regarding SD and to synthesize highly complex issues in a simplified and compact manner to spark debate and guide further in-depth analysis and policy-making (Yigitcanlar & Lönnqvist, 2013). Other arguments in favor of standardization are also linked to the strengthening of the capacities of cities, facilitating the evaluation of SD policies (Flood, 1997), enabling the benchmarking of key indicators, and reinforcing informed and strategic decision-making (Luque-Martinez & Munoz-Leiva, 2005).

On the other hand, other authors (e.g. Bakkes, 1997; Dahl, 1997; Dhakal & Imura, 2003; Miller, 2007; Rydin, 2007; Sébastien & Bauler, 2013) note the fact that promises of standardization are usually "rooted in a rationalistic and linear conception of the instrumental role played by knowledge in decision-making" (Sébastien & Bauler, 2013: 4), where indicators are "frequently conceived as consensus building tools (...) that pacify controversy" (Sébastien & Bauler, 2013: 4) or serving a neoliberal political agenda supported by evidence-based "governmental technologies" (Rydin, 2007), ready to be used in any context. The classical discussion on the advantage of having an index (or a few standardized indicators) to simplify and easily communicate a message versus the methodological disadvantage of aggregation and standardization options, portrays the prevalence of a rational discourse and takes attention from several other potential uses, impacts and discourses on standardized indicators. Dahl (1997, p. 78) questions if standardized indicators are "capable of covering the full spectrum of interest from the 'super powers' to the small island developing states, from indigenous subsistence to post-industrial communities, and from high-tech to no-tech situations". Bakkes (1997) argues that indicators must reflect their particular cultural, political and institutional context and Dhakal and Imura (2003) agree that a single set of common indicators that is equally applicable to all cities is not possible. Nevertheless, they claim that the identification of a few common universal issues to provide useful international and interregional comparisons is recommended.

The arguments presented in this critical debate are many and highly contested, which is why this article intends to contribute to the study on the outcomes for cities that put common local indicators to practice.

Harmonizing local sustainability indicators in Europe: multiple approaches and projects

The role of the European Union is precisely that of supporting efforts toward indicator harmonization, aiming to create common indicators that can be compared at the local level and across the different member states. Nevertheless, it has proven to be difficult to generate consensus on common guidelines even at the European level. This harmonization role is the result of the interaction between different levels of action and different actors within different projects. Several sustainability indicator research projects that aimed at this have been fostered over the past few years (EC, 2009; Moreno Pires, 2011). In this part, it is presented an overview of some of the most relevant projects with a focus on the local level, as well as their goals, main conclusions and recommendations (Table 1).

In 1998, in the report on 'Sustainable Urban Development in the European Union: a framework for action', the European Commission urged all members to embrace the importance of integrating local sustainability measures and monitoring methods into its policies and, particularly, to monitor the progress of LA21 (Wong, 2006). As a result, two European research projects on local indica-