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Potential benefits of developing and implementing environmental and sustainability rating systems: Making the case for the need of diversification

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Abstract

In this paper, we explore the potential benefits of implementing environmental and sustainability rating systems (ESRS) in industrial sectors other than the building industry. The increasing demand for natural resource exploration and exploitation has generated greater attention to the impact of such activity on both the organization and its stakeholders. One solution to mitigate the negative impacts is to regulate it through government agencies and legal requirements. While providing general guidelines, these processes often provide little practical help for firms to address triple bottom line goals in sustainability (i.e. social, economic, environment). More recently, a variety of environmental and sustainability rating tools have been developed to assist firms in making decisions that best fit these goals. While readily used and championed by the building industry, these rating tools have yet to be adopted by adjacent industries like mining, energy, oil & gas, and heavy industrial. This paper outlines potential benefits that these industries could realize in choosing to use such tools for the assessment of sustainability performance.

Keywords: Sustainability assessment; Rating systems; Sustainable development; Energy consumption; Continual performance improvement (CPI)

1. Measuring sustainability and sustainability rating systems

The balance of people, planet, and profit, otherwise known as the triple bottom line, is part of the ultimate goals of sustainable development and its stakeholders. Sustainability, defined as meeting the current needs of the present without affecting those of the future, is normally implemented in a project or organization through strategies that meet or accomplish the stakeholders' vision and expectations in this matter. Sustainability goals and objectives are expected to be met with an effective engagement of stakeholders with progress measured through the use of some form of an assessment tool. However, sustainability assessments must first answer two questions before selecting the appropriate tool. First, determining *what* should be measured must be decided. This could be partially answered by understanding the origins, fundamentals and

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principles of sustainability. Second, determining *how* to measure the set of criteria must be addressed. Measurements can range from objective and quantitative to more subjective or qualitative metrics. This may partially explain the slow evolution of certain areas in sustainability reporting. Answering such simple stated questions becomes more challenging when considering that there is still no agreement among stakeholders on which elements are to be considered as part of the triple bottom line. Additionally, conceptual areas such as the origins, fundamentals, principles, criterion selection and measurement processes, are still evolving and undergoing debate demonstrating the infancy stage in which sustainable development currently exists.

Although there is no common agreement around some aspects of sustainability, there is certainty in the need for the development and implementation of tools to measure the progress made towards its goal(s). Sustainability assessments then become instruments to determine the degree of success for the implementation of macro-level policies, plans, and programs (PPP) at organizational and project level(s). Moreover, the assessment process implies the existence of approaches, models, appraisals, instruments, processes, strategies, and methodologies to measure performance with pre-established standards, guidelines, factors, or other criteria (Poveda and Lipsett, 2011a). Due to not only the vast and diverse number and ongoing evolution of existing tools but also the continuous development of others to meet stakeholders' vision of sustainability, it is challenging to find a sole document incorporating all of them. Nevertheless, the literature offers reviews, state-of-the-art, overviews, classifications, descriptions, and comparisons (Ekins and Vanner, 2007; Ness et al., 2007; Haapio and Viitaniemi, 2008; Poveda and Lipsett, 2011a; Shen et al., 2011; Singh et al., 2012).

Among the different tools for sustainability assessments, indicators and composite indices are recognized as powerful decision-making and reporting tools (Singh et al., 2012). Moreover, Ness et al. (2007) refer to those indicators and indices continuously measured and calculated as tools for tracking of longer-term sustainability trends from a retrospective point of view; therefore, decision-makers can understand these trends for the making of short-term projections and relevant decision for the future.

Particular attention has been given by practitioners and stakeholders to the development and use of environmental and sustainability rating systems (ESRS) that present the assessment results in the form of composite indices. These assessment processes evaluate the performance of selected parameter(s) (i.e., criteria) by comparing actual performance to pre-established thresholds or baselines (Poveda and Lipsett, 2011a; 2014a). The structure of rating systems typically includes a series of criteria grouped in areas of "relevance" (i.e., categories) for easy identification and management. Moreover, the developer of the rating system creates a weighting system that assigns each criterion a respective weight in reference to other criteria. The weights are then translated into points which are often one of the most critical issues for debate as the weighting distribution normally differs across from system to system (Trusty, 2008). In fact, Berardi (2012) points out that reasons behind the choices in the selection and weighting of each criterion are not explicit. Some rating systems take a simplistic approach by assigning equal weight or points to each criterion suggesting that all criteria are equally relevant. Cole (1998) points out the lack of consensus on theoretical and non-subjective methodology for assigning weights (i.e., weighting factors). Moreover, Ding (2008) points out the lack of a consensus-based approach or satisfactory method for the assignment of weights. Larsson (1999) and Todd et al. (2001) indicate that such "weakness" in these types of assessment systems may lead to the manipulation of results to improve overall scores while Ding (2008) refers to the time-consuming task of regularly updating the weighting coefficients. Finally, the overall performance (i.e., final score, total points) is given by the addition of every criterion's weights or points if the organization or project has met the pre-established requirements. Accordingly, based on the number of points, the organization or project can be categorized, certified, ranked, or acknowledged as "green or sustainable".

2. A need for diversification

Since the Building Research Established (BRE) launch of BREEAM (Building Research Establishment Environmental Assessment Method), more than 600 sustainability assessment rating systems have been developed worldwide (BRE, 2008). Moreover, the assessment tools can be encountered around the world as numerous of them are adaptations to a particular region or specific scope of the most well-known ESRS. Such adaptability has been demonstrated by two of the most popular rating systems: LEED (Leadership in Energy and Environmental Design) and BREEAM. The LEED system, developed by the U.S. Green Building Council (USGBC), was first introduced into the North America market but has expanded around the world since. Currently, more than 10.5 billion square feet of building space in nearly 150 countries and territories participates in some form or adaptation of the LEED system (US Green Building Council, 2014a). BREEAM is considered the most widely rating system used throughout the world. Since it was launched in 1990 more than 250,000 buildings—which equates to over 15,000 projects—have been certified and adaptations can be found in more than 50 countries. Additionally, over 40,000 projects are registered for certification under BREEAM, which equates to over 1 million buildings (BRE, 2014a).

The building industry has a large variety of ESRS to support the decision making process for the design, construction, operation, maintenance, renovation and demolition of buildings. Among many others, some of the most popular rating systems are CASBEE (Comprehensive Assessment System for Built Environment Efficiency),