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Assessing sustainability of building materials in developing countries: the sustainable building materials index (SBMI)

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Abstract

Measuring sustainability of building materials is complex. Despite this a wide range of different methodologies and systems have been developed. Most of these focus on environmental issues and are based on Life Cycle Assessment (LCA), or similar methodologies. While increasingly sophisticated systems are being developed to capture and represent environmental impacts, limited progress has been made on measuring a broader set of impacts related to sustainability. In developing countries there is a strong interest in sustainable development impacts that can be generated through construction and investments in the built environment. In particular, there is an aspiration that construction processes and built environment investments contribute to small business development, job creation, better health and improved education levels. In developing countries there is therefore a need to establish a methodology for assessing the social and economic impacts of building materials and products related to sustainability performance. This paper reviews a selection of sustainability assessment and reporting methodologies in order to understand the applicability of existing systems as a means of measuring sustainability of building materials in developing countries. The review finds that current assessment systems do not adequately measure social and economic sustainability impacts of building materials. They also tend not to support comparisons between materials and products. An alternative methodology, termed the Sustainable Building Material Index (SBMI), is therefore proposed. This is reviewed and recommendations for further research made.