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Trends in Operational Research Approaches for Sustainability

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*Editorial***Trends in Operational Research Approaches for Sustainability**

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1. Introduction

Climate change and sustainability are two strongly tied concepts. During the last 20 years, sustainability concept has been evolving and current literature is rich of conceptual, qualitative and quantitative studies addressing the questions of sustainability. How to balance economic, environmental and social impacts generated by climate change is one of the central concerns addressed by sustainability. Those impacts are the major challenges to be managed in organizations' global operations to survive and remain competitive. In this setting, this triple-bottom-line perspective is central to organizational sustainability strategies and operations and requires radical changes in the management of all kind of organizations around the world. As it has been widely discussed, (reliable) data is the primary source to design mathematical models and solution methods that could provide smart tools for decision-making on a vast arrange of traditional operations and businesses management problems. However, in this new sustainable setting, problems have become more complex and difficult to solve. Thus decision-makers, practitioners and managers are aware of the need for a fresh and new body of knowledge and an improved set of solution approaches that integrate mathematical models and solution methods, and in particular, operational research (OR) approaches, to properly address a wide variety of business and operations management problems under the climate change and sustainability domain such as energy and water usage efficiency, scarce resource management, reverse, recycling, remanufacturing and waste management, reducing carbon emissions, disaster management, and emerging problems such as migration crisis management. Traditional strategic, tactical and operational problems frequently studied by practitioners and researchers of OR need to be revised, revisited and studied in this new perspective to generate a new and enhanced body of knowledge able to tackle the needs for a sustainable society. Scheduling, Vehicle routing, Facility Location, Supply Chain Design, Warehouse Management, Capacity Expansion and Production Planning Problems, are some of the classical OR problems where mathematical models and solution methods must integrate all three sustainable perspectives. Sustainable development is a rich area for academic research that is still in its infancy and has the potential to affect future government policy, current production operations, and identify new business

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