

CDEMA collaborates with researchers from HEC Montréal and Özyeğin University to improve regional disaster response capacity

CDEMA is a supporter of the use of analytical research to inform our practices and firmly believes that using scientific methods can be useful to improve regional disaster preparedness capacity in the Caribbean. Following this, CDEMA has established a collaboration with researchers from HEC Montréal and Özyeğin University in Istanbul to develop innovative approaches to improve its current regional prepositioning network, considering logistical infrastructures and disaster risks. The research team is developing analytical tools to support our decision-making processes in the context of regional prepositioning to better cope with the effects of strong weather events in the Caribbean.

The research team was the winner of the 2019 Best Paper Awards recently conferred by the Humanitarian Operations and Crisis Management College of the Production & Operations Management Society (POMS) for their article entitled [*Collaborative Prepositioning Network Design for Regional Disaster Response*](#). This article, co-authored by Burcu Balçık, Selene Silvestri, Marie-Ève Rancourt and Gilbert Laporte, has also been published in *Production and Operations Management*, a prestigious scientific journal on the Financial Times list.

Brief description of the article

This study concerns the development and the analysis of a collaborative disaster response network in the Caribbean, a region frequently hit by hurricanes. The objective is to determine, by means of mathematical programming techniques, the optimum storage locations for relief supplies and quantities to be prepositioned. The optimization model takes account of numerous factors, including hurricane history, the risk of destruction of emergency supplies, and each country's ability to contribute to this emergency response. The model also proposes an insurance-inspired cost-allocation mechanism based on the risks of each partner country.

Please contact the authors for more information.

Research team



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Short biographies

Marie-Ève Rancourt holds a PhD in Administration from HEC Montréal. She is a member of the [Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation](#) (CIRRELT) and a researcher of the [Institute of Data Valorization](#) (IVADO).

Burcu Balçık is an Associate Professor in [Industrial Engineering Department at Özyegin University](#), Istanbul, Turkey. She got her Ph.D. in Industrial Engineering from University of Washington. She was a visiting professor at HEC Montréal in 2017-2018, during which she was supported by the TUBITAK 2219 program.

Selene Silvestri received her Ph.D. in Computer Science from the University of Salerno. She was an [IVADO](#) Post-doctoral Fellow at [HEC Montréal](#) and a member of the [CIRRELT](#) until March 2019. She is currently a Lead Pre-Sales Consultant at [FICO](#).

Jessica Rodríguez-Pereira obtained her Ph.D. in Statistics and Operation Research Science from the Universitat Politècnica de Catalunya. She is a Postdoctoral Fellow at HEC Montréal, partly funded by IVADO, and a member of the [CIRRELT](#).

Gilbert Laporte earned his PhD in Operational Research from the London School of Economics. He is a Professor of Operational Research and holder of the [Canada Research Chair in Distribution Management](#) at HEC Montréal. He is also a member of [CIRRELT](#), and of the Group for Research in Decision Analysis (GERAD).

Dani Heroux and **Jason Stewart**, two master students at [HEC Montréal](#), have recently joined the research team to work on logistics assessment capacity and risk management.