

Seminar Series

Tactical Network Planning for Food Aid Distribution in Kenya

Friday, November 14th

11:50 am – 12:50 pm

Imhoff Study Center – Bell 4008



Dr. Marie-Ève Rancourt

Assistant Professor

**Department of Management and Technology
Business School of the University of Quebec
in Montreal (ESG UQÀM)**

In Sub-Saharan Africa, annual weather patterns cause recurrent shocks which make the population vulnerable to food insecurity. In some regions, seasonal droughts create regular food shortages that are mitigated through sustained food aid. The objective of this study is to design an effective last-mile food aid distribution network in such a context. It is based on the food aid distribution problem arising in the region of Garissa in Kenya, but the methodology that it introduces is of general applicability in humanitarian logistics. We present a location model to determine a set of distribution centers from which the food is directly distributed to the beneficiaries. Our model considers the welfare of all stakeholders involved in this regional response system: the World Food Programme, the Kenya Red Cross, and the beneficiaries. We describe how need assessment and population data were combined to determine the food distribution requirements. We also show how GIS data describing the road network was used to establish a set of potential distribution centers and to evaluate transportation costs. In addition to the results obtained by solving our primary model, we present variants of the basic covering model and several comparative analyses to illustrate the trade-offs between the objectives of the different stakeholders. Finally, future research directions are presented and discussed.

Dr. Marie-Eve Rancourt is an assistant professor of operations management at the Business School of the University of Québec in Montréal since August 2012. She is also affiliated with the Interuniversity Research Center on Enterprise Networks, Logistics and Transportation (CIRRELT), the Massachusetts Institute of Technology (MIT), and is a member of the Canadian Research Institute on Humanitarian Crisis and Aid (OCCA).

Her research interests are in the areas of transportation system modeling and humanitarian logistics using techniques based on operations research and econometrics. She is working in collaboration with organizations such as the World Food Program, the Kenya Red Cross and the UNICEF. She received her Ph.D. in management science from HEC Montreal in 2013; an M.Sc. in modeling and decision support from HEC Montreal in 2007; and a B.Sc. in mathematics from the University of Montreal in 2004.