



## Sustainable freight transport : theory, models, and case studies /

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Monografía

This book presents the latest technologies and operational methods available to support sustainable freight transport practices. It highlights market requirements, cutting edge applications, and case studies from innovators in the logistics services industry. The goal is to help bridge the gap between advanced computational techniques and complex applied problems such as those in sustainable transport and logistics operations. Freight transport has traditionally focused on costs and service levels. However, it is no longer possible or socially responsible to neglect the environmental, social, climate, and energy implications of the freight moving globally. This book places sustainability at the forefront of the freight transport agenda. Sustainable Freight Transport: Theory, Models and Case Studies is divided into four sections. Section I includes chapters that focus on green freight transport policies and existing frameworks and issues. Section II is devoted to using modelling techniques and optimization for achieving sustainable freight transport, while Section III examines vehicle technologies and information systems that help achieve more sustainable transport operations both locally and globally. The final section focuses on the market requirements and presents case studies from key logistics service providers in achieving sustainable freight transport including intermodal transport applications. The contributions come from authors from different areas, backgrounds, and countries to offer a global perspective

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**Contenido:** Intro; Contents; Introduction; References; Logistics and Freight Transport as the Kernel of Resilient Airport-Driven Development; A Survey on Basic Interactivities and Causalities; 1 Airport Operations: On Course for Growth; 2 Airport-Driven Development: An Integrated Planning Framework; 2.1 Causality Between Airport and Economic Development; 2.2 Airport-Driven Development Concepts; 3 Complexity of Freight Transport and Logistics: A Challenge in Integrated Planning; 4 Airport-Driven Development Encompasses More Than Air Freight; 4.1 Value of Air Transport to Logistics 4.2 Stimulated Logistics Activities in Airport-Driven Development 5 Simple Prevailing Loop: Complicated Underlying Dynamics; 6 Causalities Within the Airport-Driven Development; 6.1 Productive Interactions; 6.2 Counterproductive Interactions; 7 Final Discussion; References; Sustainability Management in Smaller UK Ports to Promote More Sustainable Freight Transport; 1 Sustainability Management, Freight Performance and Ports; 2 Examples of Port Sustainability Management; 2.1 Port Masterplanning; 2.2 Sustainability Reporting; 2.3 Exemplary Sustainability Practice: Container Megaports 2.4 EMS in Ports 2.5 PSMS and Smaller UK Ports; 3 How Might Sustainability Management Permeate the UK Ports Industry?; 3.1 Potential Drivers of Sustainability Awareness in Smaller UK Ports; 3.2 Internal Strategies to Embed Sustainability Management; 3.3 Supply Chain and Other Sectoral Pressures; 3.4 Pragmatism and Requirements to Safeguard Critical Revenue Streams; 3.5 Towards an Implementation Strategy; References; A Bi-objective Problem of Scheduling Fuel Supply Vessels; 1 Introduction: Problem Definition; 1.1 Introduction; 1.2 Problem Definition; 2 Problem's Mathematical Formulation 2.1 Notation Sets; Indices; Parameters; Variables; 3 Solution Methodology; 4 Empirical Evaluation; 5 Conclusions; References; Web References; Value Creation Through Green Vehicle Routing; 1 Introduction; 2 Negative Externalities of Road Transportation; 3 Models and Calculators for Estimating Emissions; 3.1 Macroscopic Models; 3.2 Microscopic Models; 3.3 Online Tools and Calculators; 4 Green Vehicle Routing Problems; 4.1 The Pollution-Routing Problem; 4.2 The Homogeneous and Heterogeneous Emissions VRP; 4.3 The Energy-Minimizing VRP; 4.4 The VRP with Fuel Consumption Rate; 5 Conclusions

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