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It aims to bring together academic, industry, and government personnel from various countries to present and discuss the challenges for implementation of sustainable policy in the field of production and logistics.

Subramanian Senthilkannan Muthu
Editor

Assessment of Carbon Footprint in Different Industrial Sectors, Volume 2

 Springer

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Preface

This is the continuation of Volume 1 of *Assessment of Carbon Footprint in Different Industrial Sectors*. During the compilation of the different chapters for Volume 1, I framed the contents of this volume. Volume 2 deals with the carbon footprint assessment of some other industrial sectors that were not covered in the first volume. It is needless to repeat and stress the importance of the assessment of carbon footprint in various industrial sectors, as it was covered sufficiently in Volume 1.

As discussed in the Preface of Volume 1, every industry has its unique assessment and modelling techniques, allocation procedures, mitigation methods, and labelling strategies for its carbon emissions; this second volume has also been framed with distinct chapters earmarked for each important industrial sector. However, even two volumes are unable to cover all industrial sectors in terms of their carbon footprint assessment. However, the most important and prominent sectors were covered to the maximum possible extent. I will continue my efforts in terms of collecting the information on carbon footprint assessment in other industrial sectors, and I look forward to possibly disseminating that information in the future in a new volume.

Similarly to Volume 1, each chapter in this volume discusses the assessment methodologies of carbon footprint followed in a particular industry, challenges in calculating the carbon footprint, case studies of various products in that particular industry, mitigation measures to be followed to trim down the carbon footprint, and recommendations for further research. This second volume includes the carbon footprint assessment of the sugar industry, fishing industry, wine manufacturing sector, wood industry, energy sector, recycling sector, and food sector (with a case study of beef in Flanders). Also included is a sectorwise case study in India that deals with various industrial sectors.

The food industry is one of the important sources of anthropogenic greenhouse gas emissions. This volume has two chapters that discuss the food industry, either directly or indirectly. “[A Review of Energy Use and Greenhouse Gas Emissions From Worldwide Hake Fishing](#)” deals with the energy use and greenhouse gas emissions of the fishing industry in worldwide hake fishing. This chapter revolves around the carbon footprint quantification of hake, which is the most widely used

fishing product in Spain. “[A Life Cycle Assessment Application: The Carbon Footprint of Beef in Flander \(Belgium\)](#)” provides a detailed carbon footprint assessment, including the location of major hot-spots responsible for creating more greenhouse gas emissions, in the mitigation measures of beef in Flanders.

“[Carbon Footprint and Energy Estimation of Sugar Industry: An Indian Case Study](#)” deals with the quantification of energy and the carbon footprint of the sugar industry. This chapter provides a case study of the Indian sugar industry in three plants to enumerate the energy needs and carbon footprint quantification details.

The energy sector is one of the important sectors contribute either to the raise or it is one of the viable sectors to reduce the global greenhouse gas emissions. Energy plays a major role in carbon footprint in both of these ways. This volume has dedicated chapters on the carbon footprint of the energy sector in different forms. “[Carbon Footprint as a Single Indicator in Energy Systems: The Case of Biofuels and CO₂ Capture Technologies](#)” discusses the carbon footprint estimation of the energy sector, with the case studies on biofuels and CO₂ capture in power plants. Apart from the quantification of carbon footprint and lifecycle inventory collection, this chapter also discusses the suitability of the carbon footprint as a single indicator for this sector. “[Reduction in Carbon Footprint of Coal Fired Thermal Power Plants by Promoting CFL and LED Lights in Households, Offices and Commercial Centres](#)” deals with the reduction in carbon footprint in coal-fired thermal power plants by promoting compact fluorescent lamps (CFLs) and light-emitting diodes (LED) as replacements for fluorescent tubes (FTs). This study highlights energy conservation along with the financial repercussions, greenhouse gas emission reductions, and reduction of other air pollutants reduction in a coal-fired thermal power plant by using CFL and LED lights instead of FTs.

“[Assessment of Carbon Footprinting in the Wood Industry](#)” is discusses the carbon footprint assessment in the wood sector. With a sound methodology, this chapter provides the details of quantification and comparisons of carbon footprint values of 14 types of wood products. Importantly, in this chapter, the use of timber products for the purpose of carbon storage and the effect of allocation methods on carbon footprinting are also discussed to a greater extent.

“[Carbon Footprint of Recycled Products: A Case Study of Recycled Wood Waste in Singapore](#)” focuses on the carbon footprint of the recycling sector. With a case study of recycled wood waste in Singapore, this chapter revolves around the details of recycling and its implications. This chapter also details the different recycling modelling approaches.

“[Sector-wise Assessment of Carbon Footprint Across Major Cities in India](#)” is a bit different from other chapters, as it deals the carbon footprint estimation of many different sectors in India. The study discussed in this chapter spans the main cities of India—Delhi, Greater Mumbai, Kolkata, Chennai, Greater Bangalore, Hyderabad and Ahmedabad—and estimates the carbon footprint of various sectors (domestic, transportation, industrial, agricultural, waste and livestock). Additionally, this chapter presents a discussion on intercity variations in the light of carbon footprint results.

“[The Use of Carbon Footprint in the Wine Sector: Methodological Assumptions](#)” discusses carbon footprint estimation in the wine industry. It also discusses the major hot-spots of carbon footprinting in this sector. This chapter also deals with the future prospectus and challenges of using carbon footprint in the wine sector.

I would like to thank all the contributors to this book for their tremendous efforts toward the successful publication of this enriched content. I am sure that readers will benefit from this book, which provides the details of carbon footprint assessment for various industrial sectors in one place. This second volume will certainly become an important reference for researchers, students, industrialists, and sustainability professionals working in this field.

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