

# EURO PhD School on Sustainable Supply Chains 2023



June 25 – July 1, 2023

FernUniversität in Hagen, Germany

Final Report

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# **1 General information about the EPS on Sustainable Supply Chains 2023**

## **1.1 Dates and venue**

The EURO PhD School on Sustainable Supply Chains took place at FernUniversität in Hagen, Germany, from June 25 to July 1, 2023.

During the PhD school, the students were accommodated in the Bildungsherberge der Studierendenschaft der FernUniversität in Hagen.

## **1.2 Organizing committee**

- Karsten Kieckhäfer (Chair)  
(FernUniversität in Hagen, Germany)
- Ana Paula Barbosa Póvoa  
(Instituto Superior Técnico, Portugal)
- Renzo Akkerman  
(Wageningen University, The Netherlands)
- Christian Thies  
(Technische Universität Hamburg, Germany)
- Andreas Kleine  
(FernUniversität in Hagen, Germany)

## **1.3 Scientific committee**

- Karsten Kieckhäfer (Chair)  
(FernUniversität in Hagen, Germany)
- Grit Walther  
(RWTH Aachen University, Germany)
- Thomas S. Spengler  
(Technische Universität Braunschweig, Germany)
- Marc Reimann  
(University of Graz, Austria)
- Athanasios Rentizelas  
(National Technical University of Athens; Greece)

- Manbir S. Sodhi  
(University of Rhode Island, USA)

## 1.4 Aims and scope

The school aimed at offering an active forum for PhD students and early career researchers to enhance their knowledge in facilitating Operations Research methods for sustainable supply chain management, especially from a multi-criteria (triple bottom line) and an interdisciplinary (life cycle sustainability assessment, circular economy) perspective.

Topics of the school were:

- Assessing Sustainability in Supply Chains
- Designing Sustainable Supply Chains
- Benchmarking Sustainable Supply Chains with DEA
- Supply Chain Management in the Circular Economy

## 1.5 Terms and conditions

25 PhD students were admitted to the school. There was a registration fee of €100. The EURO support and the registration fee covered accommodation, all meals, social activities, and all traveling within the school activities. Travel costs to and from the school had to be covered by the participants, either by themselves or through external funding.

The students were awarded 1.5 ECTS. They had the possibility to gain 0.5 extra ECTS for presenting a poster at the 4<sup>th</sup> Conference of the Euro Working Group (EWG) on Sustainable Supply Chains.

The website of the EURO PhD School can be accessed through this link or the QR code:  
<https://e.feu.de/epsinssc>.



The website of the conference can be accessed through this link or the QR code:  
<https://e.feu.de/sustsc2023>.



## 2 Academic program

### 2.1 Schedule

The schedule of the school (excluding social activities) comprised in-class lectures, tutorials, and supervised trainings. Throughout the week, the PhD students additionally worked on case studies provided by Volkswagen Commercial Vehicles and Holocene. These case studies were introduced by company representatives on the first day of the school. The participants presented their solutions to the case studies on the last day of the school. A jury consisting of instructors of the PhD school and company representatives selected a winning team for each case study.

	Sunday June 25	Monday June 26	Tuesday June 27	Wednesday June 28	Thursday June 29	Friday June 30	Saturday July 1
09:00–10:30		Welcome & Introduction	Lecture: Designing sustainable supply chains - Grit Walther -	Lecture: Benchmarking sustainable supply chains with DEA - Andreas Kleine -	Lecture: Supply chain management in the circular economy - Renzo Akkerman -	4th Conference on Sustainable Supply Chains (if registered)	4th Conference on Sustainable Supply Chains (if registered)
10:30–11:00		Coffee Break	Coffee Break	Coffee Break	Coffee Break		
11:00–12:30		Lecture: Assessing sustainability in supply chains - Christian Thies & Karsten Kleckhäfer -	Training: Designing sustainable supply chains - Grit Walther -	Training: Benchmarking sustainable supply chains with DEA - Andreas Kleine -	Training: Supply chain management in the circular economy - Renzo Akkerman -		
12:30–13:30		Lunch	Lunch	Lunch	Lunch		
13:30–15:00		Training: Assessing sustainability in supply chains - Christian Thies & Karsten Kleckhäfer -	Group work on cases	Group work on cases	Case wrap-up and presentations		
15:00–15:30		Coffee Break	Social Activity and Dinner	Coffee Break	Coffee Break		
15:30–17:00		Case study introduction		Group work on cases	Case wrap-up and presentations		
Evening	Get Together PhD School	Social Dinner		Social Dinner	Get Together Conference		

In addition, the students were also invited to attend the 4<sup>th</sup> Conference of the EWG on Sustainable Supply Chains and to present posters on their PhD project.

### 2.2 Instructors

The in-class lectures, tutorials, and supervised trainings were presented by the following instructors:

- Renzo Akkerman, Associate Professor, Operations Research and Logistics Group, Department of Social Sciences, Wageningen University & Research
- Karsten Kieckhäfer, Full Professor, Chair of Production and Logistics Management, Department of Business Administration and Economics, FernUniversität in Hagen
- Andreas Kleine, Full Professor, Chair of Quantitative Methods and Business Mathematics, Department of Business Administration and Economics, FernUniversität in Hagen
- Christian Thies, Assistant Professor, Resilient and Sustainable Operations and Supply Chain Management Group (W-EXK1), School of Management Sciences and Technology (MST), Hamburg University of Technology
- Grit Walther, Full Professor, Chair of Operations Management, School of Business and Economics, RWTH Aachen University

## 2.3 Company representatives

The case studies were presented by the following company representatives:

- Helena Most, Managing Director Holocene
- Till Uhlich, Project Manager Business Intelligence Technology Solutions, Volkswagen Commercial Vehicles
- Can Yilmaz, Decarbonization, External Relations and Sustainability, Volkswagen Commercial Vehicles

## 3 Social program

A social program was included in the schedule of the PhD school with the aim that the participants connect with their peers, instructors, and experts in a casual atmosphere to expand their scientific network in the field of sustainable supply chain management and to make new contacts.

The following social activities were carried out during the EPS:

- Sunday, June 25, 2023: Get together of the PhD School
- Tuesday, June 27, 2023: Visit of Koepchenwerk, hike to Herdecke, and dinner
- Thursday, June 29, 2023: Get together of the 4<sup>th</sup> Conference of the EWG on Sustainable Supply Chains
- Friday, June 30, 2023: Social dinner of the 4<sup>th</sup> Conference of the EWG on Sustainable Supply Chains

On the third day of the EPS, the participants made a field trip to the Koepchenwerk, a decommissioned pumped storage power plant, which today serves as an industrial monument. From FernUniversität in Hagen, a bus headed towards Lake Hengstey. After a short walk at the lake, the students gained exciting insights into the history, architecture, and operation of the pumped storage power plant during a guided tour. A pleasant dinner in the middle of the old town of Herdecke completed the successful field trip.

## 4 Participants

### 4.1 Application process

The participants had to be from a EURO member society country or studying in a EURO member society country. They had to be enrolled in a PhD program and, preferably, had to be in an early stage of their studies. A maximum number of 25 participants was accepted.

The following application documents must be submitted to [eps-sustsc2023@fernuni-hagen.de](mailto:eps-sustsc2023@fernuni-hagen.de) by January 29, 2023:

- Application letter, including:
  - Name, affiliation, and email-address
  - PhD program enrolled in, current stage of studies, as well as PhD supervisor’s names
  - Background in Sustainability and in Operations Research
  - Motivation to attend the PhD School
- Curriculum Vitae
- Recommendation letter from the PhD supervisor

The notification of acceptance was sent to the participants on February 3, 2023.

## 4.2 Admission process and participants

In total, 36 students from 14 countries (country of study) applied for the PhD school. These applications were carefully reviewed by the by the scientific committee according to the following criteria:

- Motivation for attending the PhD school and research focus on sustainable supply chain management as elaborated by the applicant and the supervisor
- Early stage of a PhD program
- Good distribution of the participants among the EURO member societies
- Gender balance

Overall, 14 female and 11 male students from 10 countries were admitted (cf. below). One student had to cancel the participation at such short notice that it was impossible to invite another candidate. This is particularly unfortunate because even after the submission deadline, we received many inquiries from interested students who would have liked to participate in the PhD school.

Last name	First name	Institution	Country of Study
Alzubi	Emad	University of Duisburg Essen	Germany
Bruckler	Martin	University of Augsburg	Germany
Cramer	Florian	University of Bayreuth	Germany
Dias	Rui A.	University of Lisbon	Portugal
Dieter	Peter	Paderborn University	Germany
Etzinger	Iris Sara	University of Graz	Austria
Franze	Lea	FernUniversität in Hagen	Germany
Greil	Thorsten	Technical University of Munich	Germany
Güngör	Bengü	Dokuz Eylül University	Turkey
Gürel	Emine N.	RWTH Aachen University	Germany
Ivo de Carvalho	Mafalda	University of Lisbon	Portugal

Jiang	Meihui	Erasmus University Rotterdam	The Netherlands
Kotecha	Niki	Imperial College London	United Kingdom
Merolla	Davide	University of Rome	Italy
Nguyen	Linh	Erasmus University Rotterdam	The Netherlands
Ní Shé	Clíodhna	University College Dublin	Ireland
Ögrük	Akin	Hamburg University of Technology	Germany
Rehman	Obaid Ur	Aalto University	Finland
Remijnse	Marloes	Eindhoven University of Technology	The Netherlands
Rinder	Sabrina	University of Graz	Austria
Rütt	Johanna	RWTH Aachen University	Germany
Saliju	Suad	University of Bayreuth	Germany
Salinas Velarde	Pamela A.	Technical University of Madrid	Spain
Veloso	Vânia	University of Lisbon	Portugal

## 5 Financial support

The PhD school was financially supported by EURO, GOR, and the FernUniversität in Hagen. Additionally, the registration fee of all participants of the PhD school joining the 4<sup>th</sup> Conference of the EWG on Sustainable Supply Chains were covered by EURO.

## 6 Impressions



*Get-Together of the 2023 EURO PhD School on Sustainable Supply Chains in the Bildungsherberge in Hagen  
(Photo: FernUniversität in Hagen)*





*Hike of the 2023 EURO PhD School on Sustainable Supply Chains' participants to Koepchenwerk in Herdecke  
(Photo: FernUniversität in Hagen)*



*The participants of the 2023 EURO PhD School on Sustainable Supply Chains on their field trip to a decommissioned pumped storage power plant, the Koepchenwerk in Herdecke, Germany (Photo: FernUniversität in Hagen)*



*Winning group of the Volkswagen Commercial Vehicles case study (Photo: FernUniversität in Hagen)*



*Winning group of the Holocene case study (Photo: FernUniversität in Hagen)*

## 7 Financial report

	<b>NUMBER OF PARTICIPANTS</b>
	<b>25</b>
<b>INCOME</b>	
Financial support EURO	12,500 EUR
Financial support GOR	660 EUR
Registration fees (100 EUR per participant)	2,500 EUR
<b>TOTAL</b>	<b>15,660 EUR</b>
<b>EXPENDITURE</b>	
Accommodation participants	2,557 EUR
Transportation participants	1,008 EUR
Accommodation and travelling speakers	3,520 EUR
Food participants and speakers	1,884 EUR
Social program	1,687 EUR
Administration, secretariat, and student assistants	2,083 EUR
Materials, Prints, IT	865 EUR
Tax	1,996 EUR
<b>TOTAL</b>	<b>15,600 EUR</b>

## 8 Acknowledgements

We would especially like to thank:

- EURO for the initiative to offer EURO PhD Schools as a training-oriented instrument for the education of doctoral students in a school format.
- EURO, GOR, and the FernUniversität in Hagen for the financial support.
- FernUniversität in Hagen for the administrative support and their facilities to host the school.
- Christian Thies, Grit Walther, Andreas Kleine, and Renzo Akkerman for their time and effort in sharing their knowledge and experience with the PhD students.
- Helena Most, Can Yilmaz, and Till Uhlich for providing case studies related to real-world planning issues in sustainable supply chains.
- all the PhD students who came to Hagen and made this PhD school a success.



## 9 Feedback

*"It was such an amazing summer school! Hope to meet again in somewhere. Many thanks to whole organizing team."*

*"Also, I extend my appreciation to you Karsten Kieckhäfer and Lea Franze for the exceptional organizing, planning, and executing of this outstanding event (EURO PhD School on Sustainable Supply Chains)."*

*"There is no doubt that throughout the week we gained valuable knowledge from experts that guided us through cutting edge quantitative research in this vital field. However, the most valuable information was gained from my peers with whom I collaborated and had the opportunity to share stories and connect with."*

*"I can't even begin to express how grateful I am to EURO for the experience at the Summer School on Sustainable Supply Chain held at FernUniversität in Hagen, Germany. A huge shout-out to the rockstar teachers Karsten Kieckhäfer and Christian Thies who guided us through the maze of cutting-edge quantitative research in this vital field. And let's not forget my awesome fellow PhD candidates! We laughed, we collaborated, we probably consumed way too much coffee/tea. You all made this journey memorable! This experience will shape my academic career and fuel my mission to save the world, one sustainable supply chain at a time."*

## 10 Additional reports

Two additional reports were published summarizing the highlight of the EURO PhD School on Sustainable Supply Chains and the 4<sup>th</sup> Conference of the EWG on Sustainable Supply Chains:

- Kieckhäfer, K.; Franze, L. (2023): EURO PhD School on Sustainable Supply Chains in: OR News, 78, 39–41.
- Kieckhäfer, K.; Barbosa-Póvoa, A.; Akkerman, R. (2023): Euro Working Group on Sustainable Supply Chains: 2023 PhD School and Conference Celebrated Together in Hagen, in: IFORS News, 18(3), 23–25. URL: <https://www.ifors.org/september-2023-issue/>.