>> *Arne Heinold* from the University of Kiel in Germany and *Lukas Meßmann* from the University of Augsburg in Germany were announced as the winners. Both winners gave short presentations on their impressive work in the fields of emission-oriented management of land-based freight transportation (*Arne Heinold*) and strategic design of environmentally and socially sustainable supply networks (*Lukas Meßmann*).

A social dinner was held on the evening of the first day of the conference. The participants enjoyed a wonderful BBQ in a relaxed atmosphere at the Faculty Club of the *FernUniversität*.

We would like to thank all the participants of the *PhD School* and the *Conference* who came to Hagen and made both events very special for all of us! 🌍

▲ Congratulations to *Arne Heinold* and *Lukas Meßmann* for winning the *2023 Jacqueline Bloemhof PhD Thesis Award*.

▲ Attendees enjoying the social dinner at the end of the first day of the conference.

DEVELOPING COUNTRIES WORKSHOP AND CLUSTER IN IFORS 2023: PROMOTING SUSTAINABLE ECONOMIES WORLDWIDE

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▲ Impression of the 2023 *EWG-ORD* Co-Chairs (left to right): *Prof. Nina Kajiji* and *Prof. Gordon H. Dash*; and *EWG-ORD* Honorary Chairs *Dr. Elise Del Rosario* and *Prof. Gerhard-Wilhelm Weber*.

Continuing its scintillating efforts at *EURO 2022*, *IFORS 2023* witnessed another round of fascinating presentations by the *EURO Working Group on Operations Research for Development* (*EWG-ORD*, http://bit.ly/EWG-ORD) for providing impactful *OR* solutions for development in developing countries. *EWG-ORD* with its current *Co-Chairs*, *Professors Nina Kajiji* and *Gordon Dash* (who have also co-invented and elaborated the event format of *EWG-ORD workshops* in *EURO* and *IFORS* Conferences), has been predominantly constituted to support regional and international *OR conference* meetings, and conducts its annual workshops to that aim therein. For 2023, the *EWG-ORD* steering committee was assigned a cluster in the program of the *23rd Triennial Conference on Operational Research of the IFORS* (*IFORS 2023*; https://ifors2023.com/). This *OR for Development and Developing countries* cluster consisted of two sessions supported by the membership group of *EWG-ORD*. The two sessions were labelled as *EWG-ORD Workshop 1* and *EWG-ORD Workshop 2* respectively under the cluster. The second session was marked by the august presence of *Dr. Elise Del Rosario* (Past President of *IFORS* and Honorary Chair of *EWG-ORD*), who has been instrumental in the formation and the development of this group whereas *Prof. Gerhard-Wilhelm Weber* (Honorary Chair of *EWG-ORD*) presided over and shared his valuable insights in both the sessions.

▲ Impression from *Session 1* of the *EWG-ORD*: session chairs (*Prof. G.-W. Weber*, fourth from left, and *Dr. Jinal Parikh*, in the middle), speakers and attendees in *IFORS 2023*.

Session 1: This session commenced with the presentation titled *"An optimization model for a real-life single-track train timetabling problem"* by *Renata Mendes, Anand Subramanian, Teobaldo Bulhões* and *Bruno Bruck*. >>

▲ Impression from *Session 2* of the *EWG-ORD*: session chairs (*Dr. Elise Del Rosario*, in the middle, *Prof. G.-W. Weber* and *Dr. Jinal Parikh*), *Francis Miranda* (*IFORS* Vice President; second from left), speakers and attendees in *IFORS 2023*.

>> This work addresses a train timetabling problem arising at the Companhia Brasileira de Trens Urbanos (CBTU), a Brazilian state-owned railway company. The main goal of this work was to assign routes and timings for the trains, to better satisfy the customers of the railway, considering a series of operational constraints, such as distance between stopping points, station demands, and security rules. The second presentation titled *"Carbon Pricing under Competition and Regulation"* by *Bruno Kamdem* illustrated how policies intended to reduce CO^2 emissions must integrate competition within commodity extracting and commodity utility companies to effectively cut down greenhouse gas emissions. The study formulated and priced a new carbon auction derivative which is simultaneously a put and a call option while handling the competition-regulation dichotomy in carbon markets as also by complying with the dynamics of both the commodity price and the carbon auction quote. This session concluded with the presentation titled *"Total Factor Energy Efficiency in Developing countries with specific reference to India: An Empirical Analysis using the SBM-DEA Model"* by *Jinal Parikh* and *G.-W. Weber*. This study investigates Total Factor Energy Efficiency (TFEE) using the SBM-DEA model in the context of India which is characterized by largest increase in energy demand and considerable differences in energy efficiency in its different regions arising out of differences in their economic and demographic trends, resource availability and industrial profiles.

▲ Impressions of *Dr. Elise Del Rosario* and *Prof. G.-W. Weber* (left to right) during *Session 2* of the *EWG-ORD workshop* in *IFORS 2023*.

Session 2: This session began with a presentation titled *"Kerkenes Eco-Center Project in Anatolia and future chances by OR"* by *G.-W. Weber*. Through this paper, co-authored with *Geoffrey Summers, Francois Summers,* and *Soofia Tahira Elias-Ozkan*, he exhibited through the example of Kerkenes Eco-center project, how *OR for Development* applications are highly interdisciplinary in character, and how *OR*, together with state-of-the-art tools and devices from engineering, natural and social sciences, could serve projects of architecture, history, water management, agriculture, and education, with the goal of improving living conditions. In the second presentation titled *"IFORS Focus on Developing Countries Through the Years," Elise Del Rosario* presented an interesting narrative about the origin and evolution of various activities of *IFORS* since its first involvement with development issues dating back to the 70's. She beautifully articulated the formation of the *Developing Countries Committee* which was constituted in 1990 by *IFORS* to apply *OR in developing countries and for development*. *Elise* spoke about the remarkable contribution of *IFORS* and *EURO* towards the advancement of the *EWG-ORD* as well as about the support it received from regional groupings. She also acknowledged the initiatives of each of the *IFORS* presidents, academicians, and researchers for their contributions to this group. Being actively involved in the activities of the group since its inception, she reminisced the efforts expended and the challenges faced by it in order to bring it to its current level. While this revisit by *Elise* stimulated the discussion on where *IFORS* is now with respect to its *OR for Development* focus, it also threw an interesting question as to what should be its future direction. This session concluded with a presentation of the paper titled *"Comparing the predictive performance of Shallow and Deep Learning techniques in predicting South African SMEs' growth during COVID-19"* by *Helper Zhou* co-authored with *Gordon Dash*. This study compares and evaluates the predictive performance of two popular machine learning algorithms, CatBoost and enhanced Radial Basis Artificial Neural Networks (K4-RANN) in forecasting the growth of small-and-medium-sized enterprises (SMEs) in South Africa during the COVID-19 pandemic.

The presentations made during the two sessions addressed several critical issues outlined in the UN's SDG17 goals framework. From climate action (Goal-13), to affordable and clean energy (Goal-7), decent work, and economic growth (Goal-8) to industry, innovation, and infrastructure (Goal-9), to making cities and human settlements, safe, resilient, and sustainable (Goal-11) and more, the sessions achieved their aim of presenting the latest findings in development across five different economies – four of which are classified as developing economies. For additional information about the EWG-ORD, their upcoming *workshops*, or how you can get involved, please email to info@ewgord.org

▲ Impression of deliberations during *Session 2* of the *EWG-ORD workshop* in *IFORS 2023*.