

Global Cross-Border Spillover Effects and Shared Responsibility in Achieving the Sustainable Development Goals

**13th March 2026 (Fri)
10:30 – 12:00 am (UTC+8)
Rm 221, Chen Kou Bun
Building, CUHK**

Domestic attempts to advance the Sustainable Development Goals (SDGs) in a country can have synergistic and/or trade-off effects on the advancement of SDGs in other countries. These transboundary interactions operate through multiple transmission channels, including international trade, river flows, ocean currents, and atmospheric circulation. In this seminar, I will present a global quantitative assessment of transboundary SDG interactions across 768 pairs of SDG indicators. The findings reveal significant asymmetries in global responsibility and influence. Although high-income countries account for only 14.18% of the world's population, they contribute 60.60% of total global SDG interactions. Transboundary synergistic effects via international trade were 14.94% more pronounced with trade partners outside their immediate geographic vicinity than with neighbouring ones. Conversely, nature-caused flows (including river flow, ocean currents, and air flow) resulted in 39.29% stronger transboundary synergistic effects among neighboring countries compared to non-neighboring ones. These results highlight the importance of understanding SDG interdependencies beyond national borders. To accelerate global SDG achievement, strengthened international collaboration and strategic leveraging of transboundary synergies are essential.



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Huijuan (Jane) Xiao is an Assistant Professor in the Department of Geography at Hong Kong Baptist University. She received her Ph.D. from The Hong Kong Polytechnic University and has undertaken visiting research at the University of Melbourne and the University of East Anglia. Over the past several years, her research has centered on the CO₂ emissions and Sustainable Development Goals (SDGs), with a particular focus on transboundary sustainability interactions transmitted through international trade, atmospheric flows, river systems, and ocean currents. She has published high-impact papers as first author in leading journals, including *Nature Communications* and *The Innovation*.



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