GEOGRAPHIC DISAGGREGATION OF ECOINVENT

Adrian Haas

PhD student

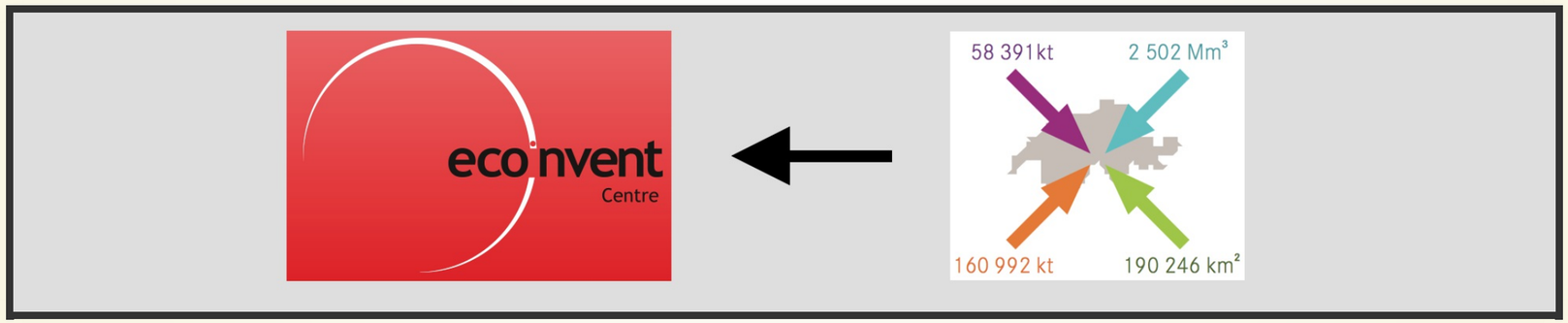
Chair of Ecological Systems Design

Institute of Environmental Engineering

ETH Zürich

ECOINVENT AND MRIO

GOAL: increase the regional resolution of ecoinvent with a global multi-regional input-output (MRIO) database



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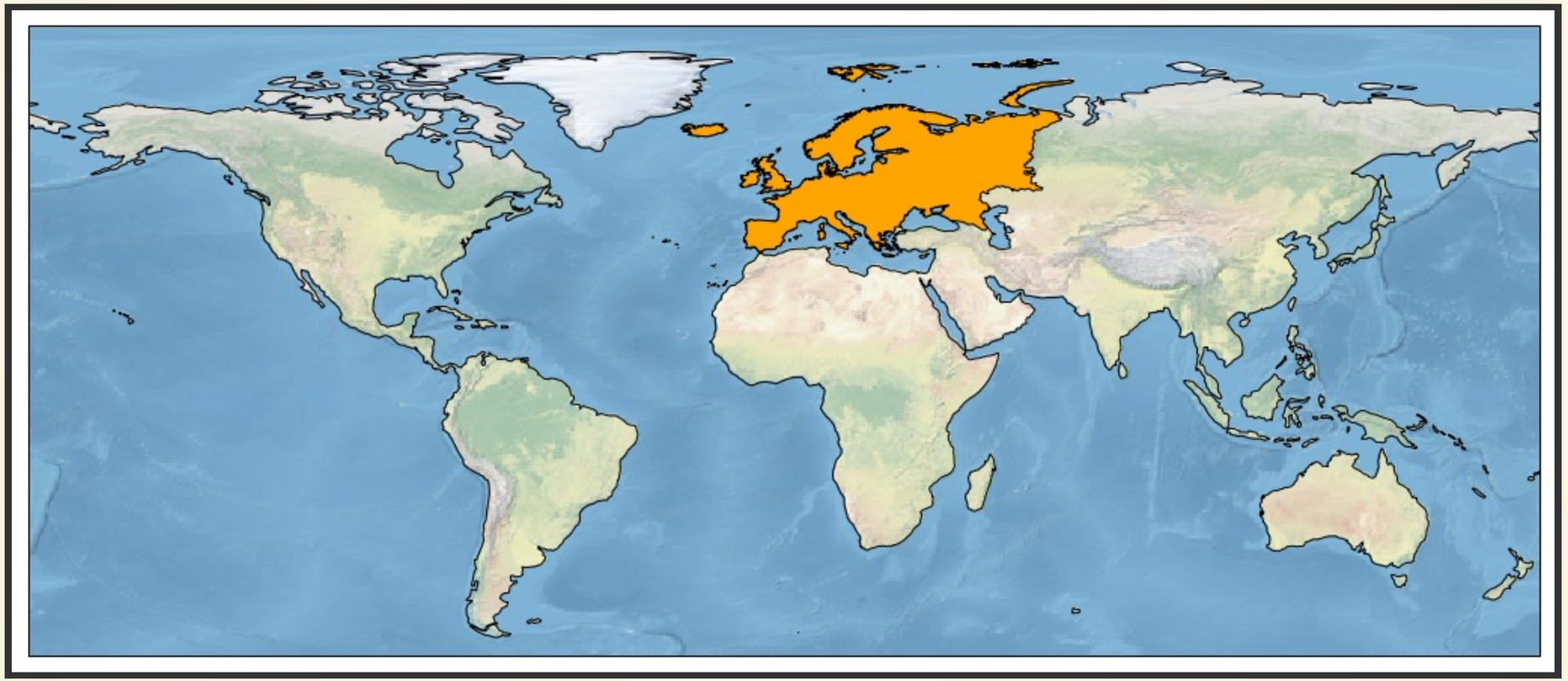
ecological systems design

ECOINVENT GEOGRAPHIC RESOLUTION

30% of transforming activities



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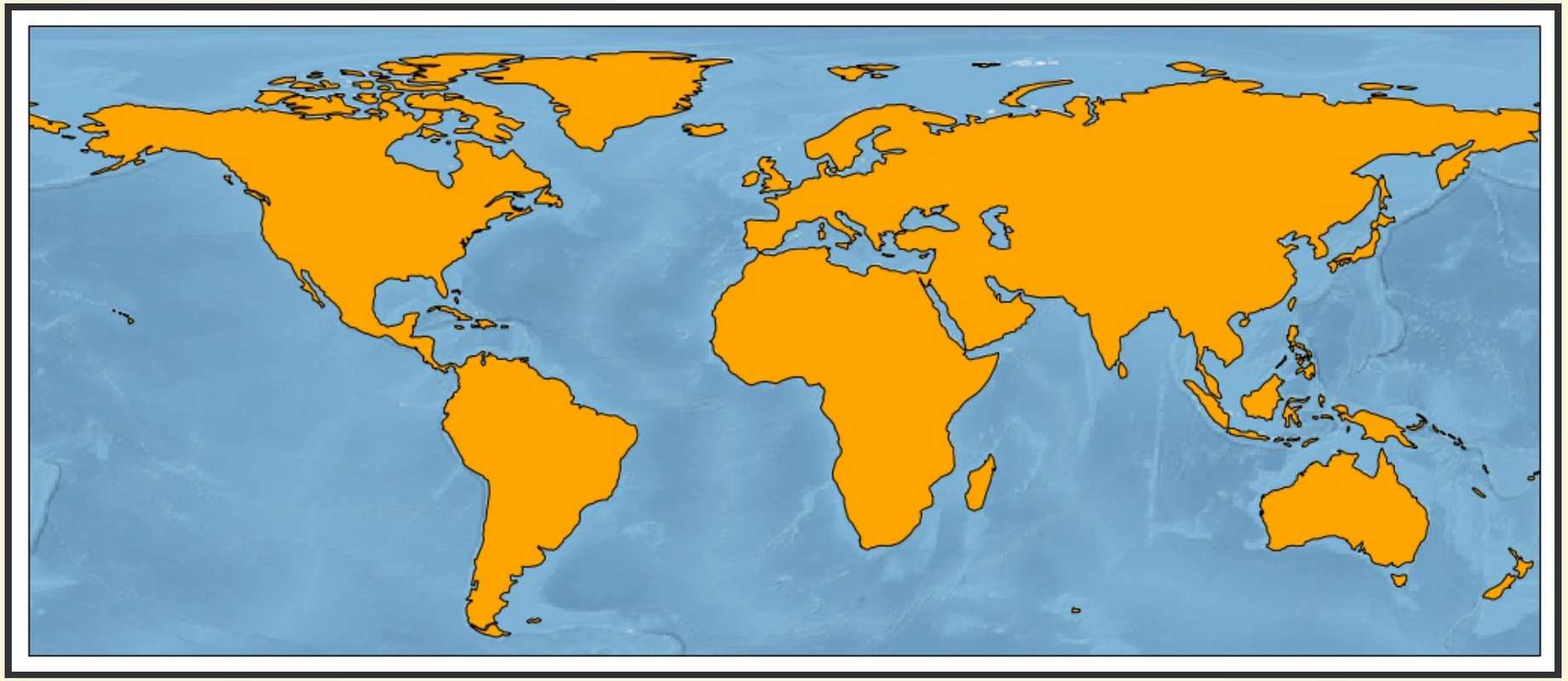
ECOINVENT GEOGRAPHIC RESOLUTION

20% of transforming activities, 90% of market activities



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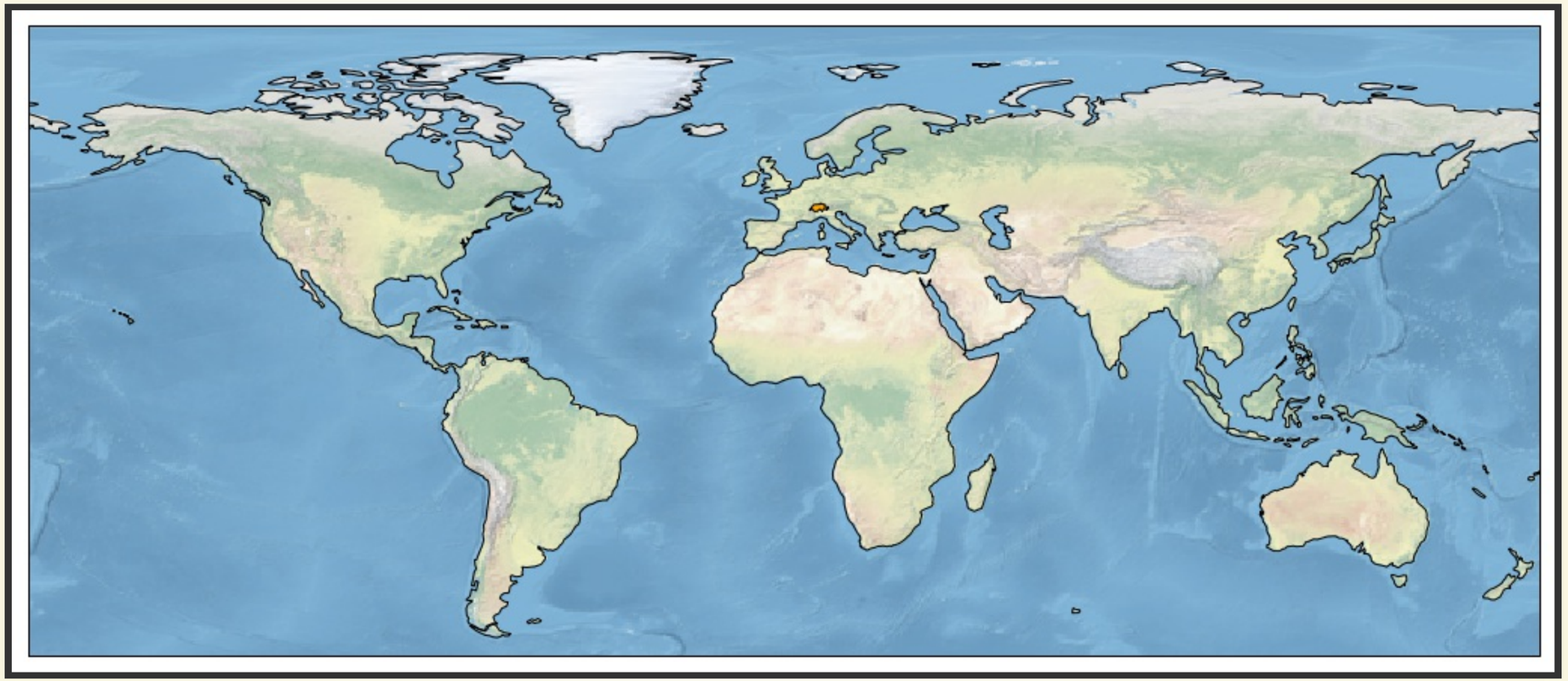

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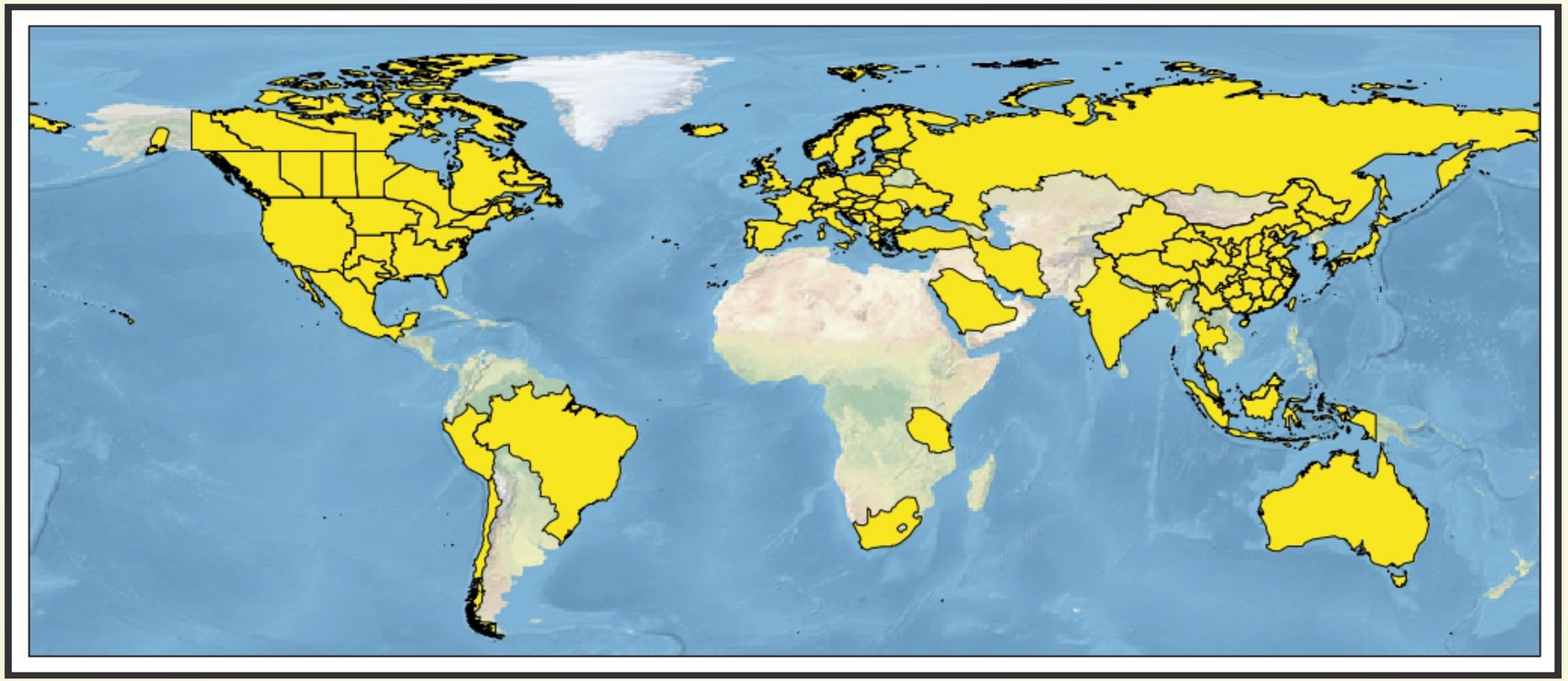
ELECTRICITY PRODUCTION

high regional detail in electricity sector



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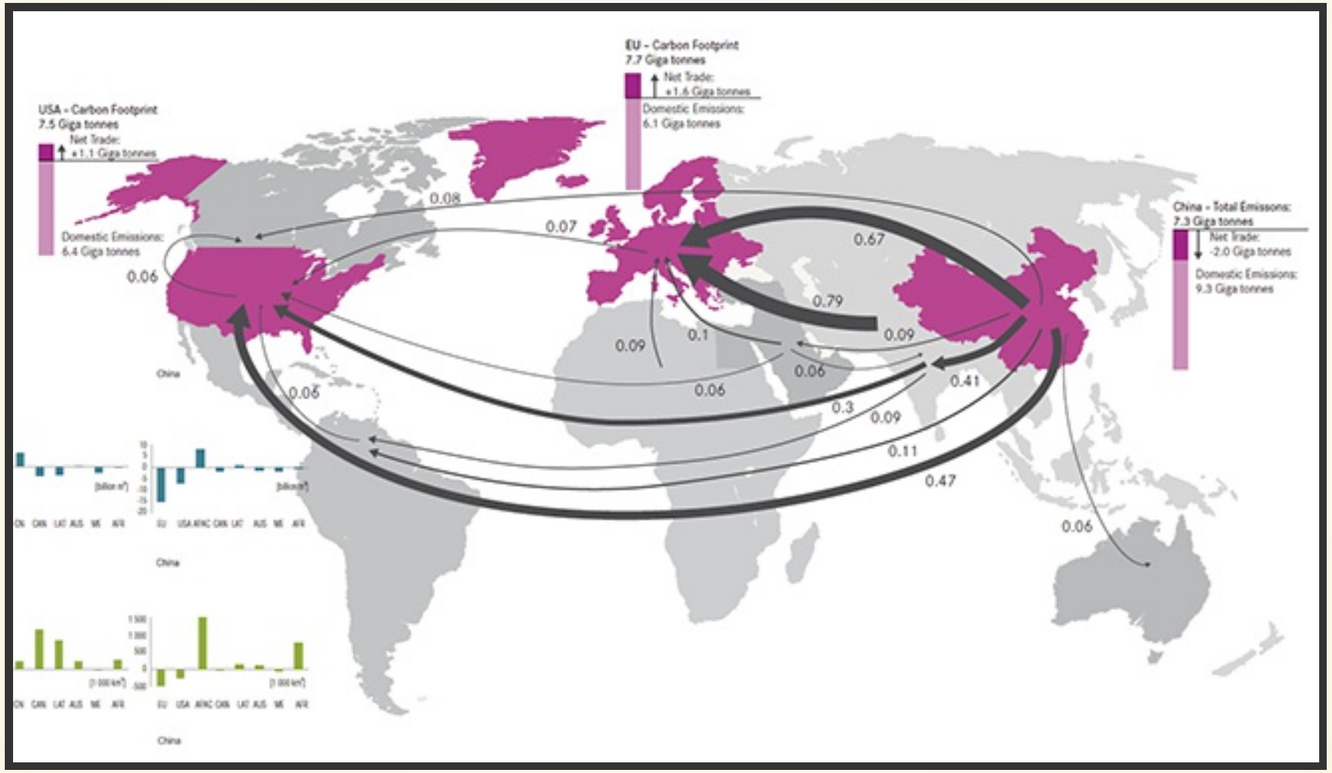
EXIOBASE DATABASE 2.2

- global multi-regional input-output database
- 48 regions with 163 economic sectors



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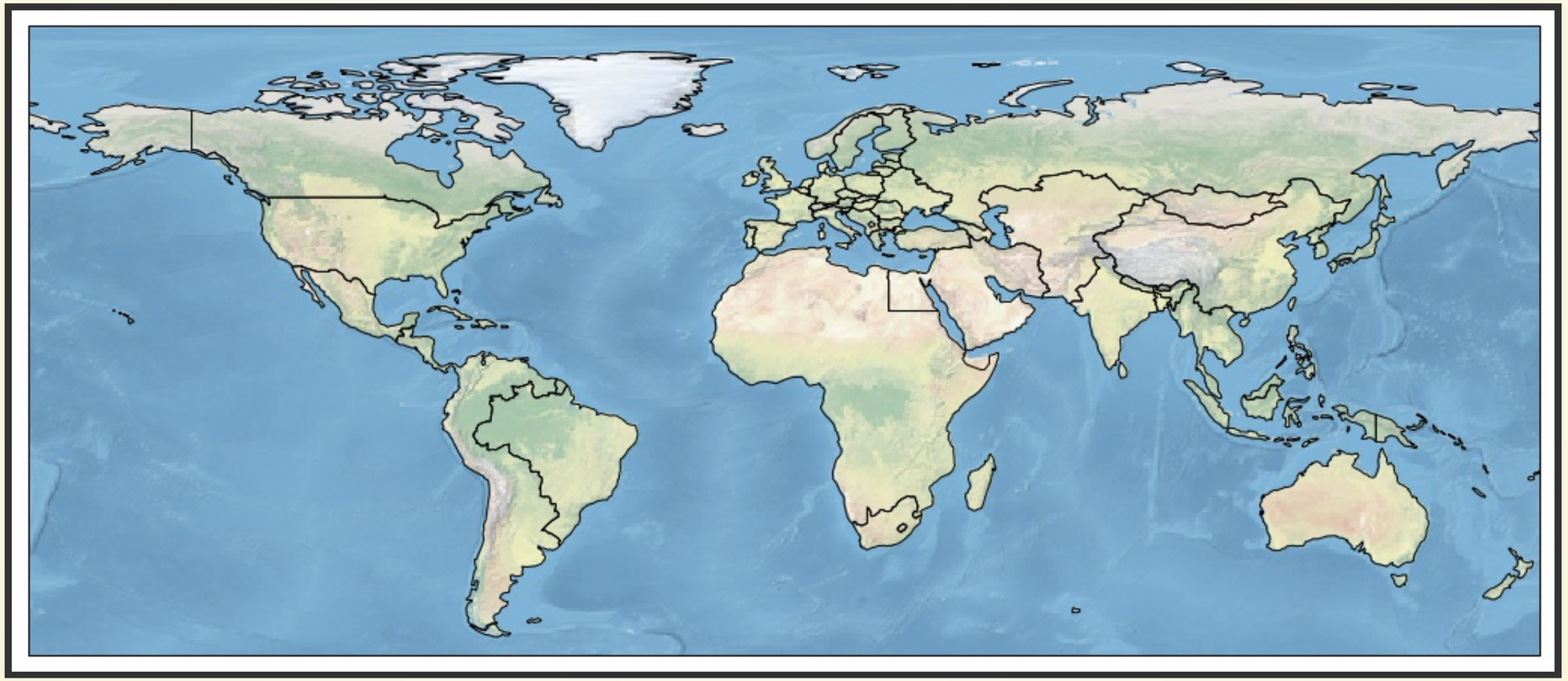
EXIOBASE GEOGRAPHIC RESOLUTION

- 43 countries (>95% World GDP)
- 5 Rest of World regions (RoW)



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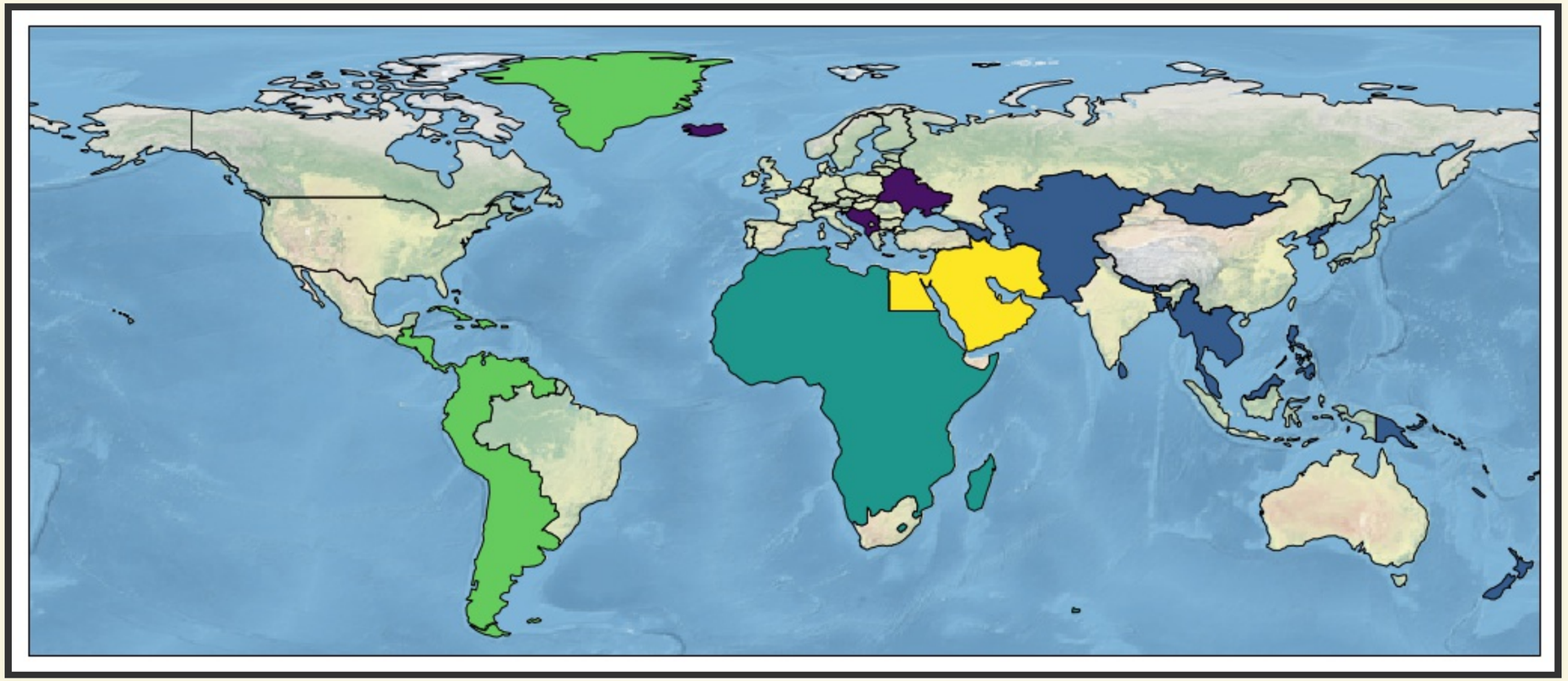

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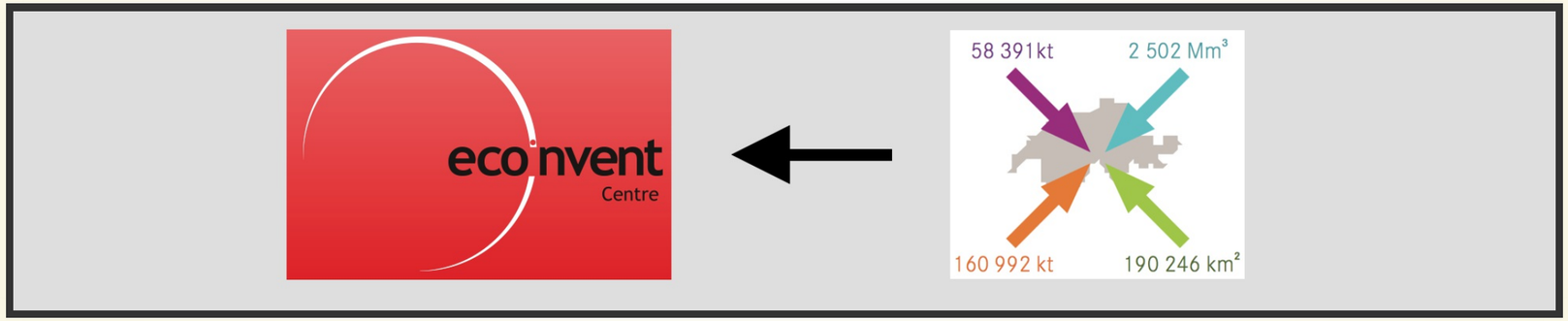
COMBINING ECOINVENT AND EXIOBASE

- Ecoinvent 3.3 cutoff system model
- Disaggregation of all activities to the new resolution
- Match activities to economic sectors
- Relink all activities according to trade shares



- new regionalized ecoinvent database with ~ 300'000 datasets

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CAR PRODUCTION

'passenger car production, petrol/natural gas'
(kilogram, GLO, None)

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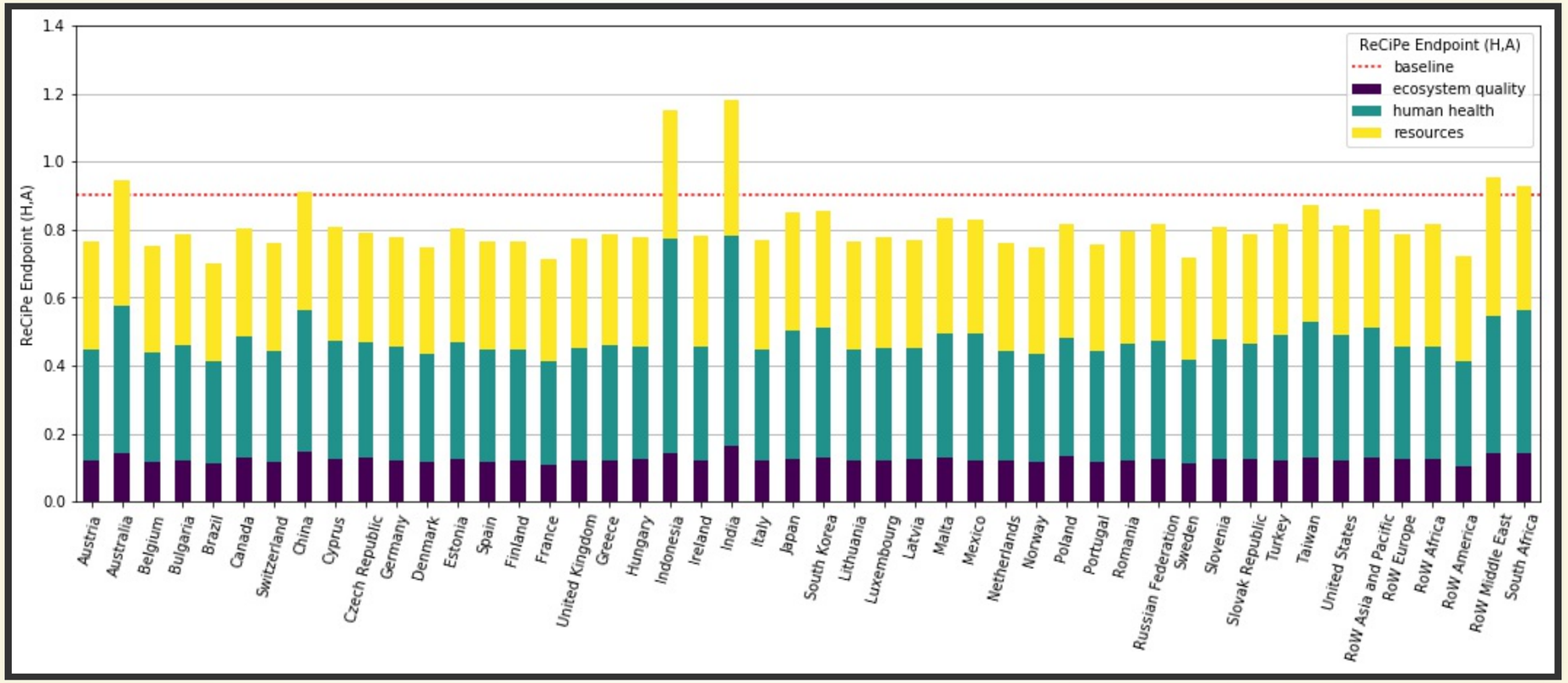
CAR PRODUCTION

supply chain differences



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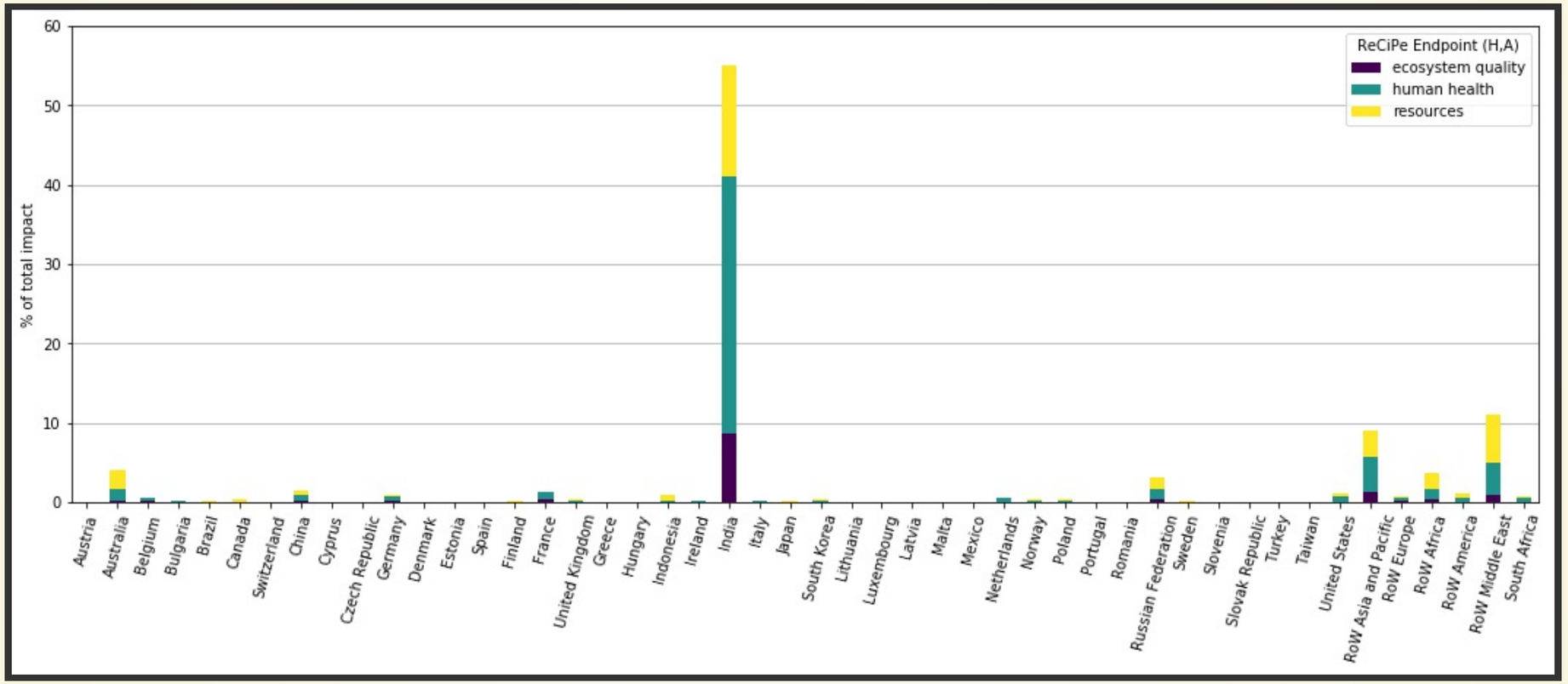
CAR PRODUCTION IN INDIA

- where do the impacts occur?



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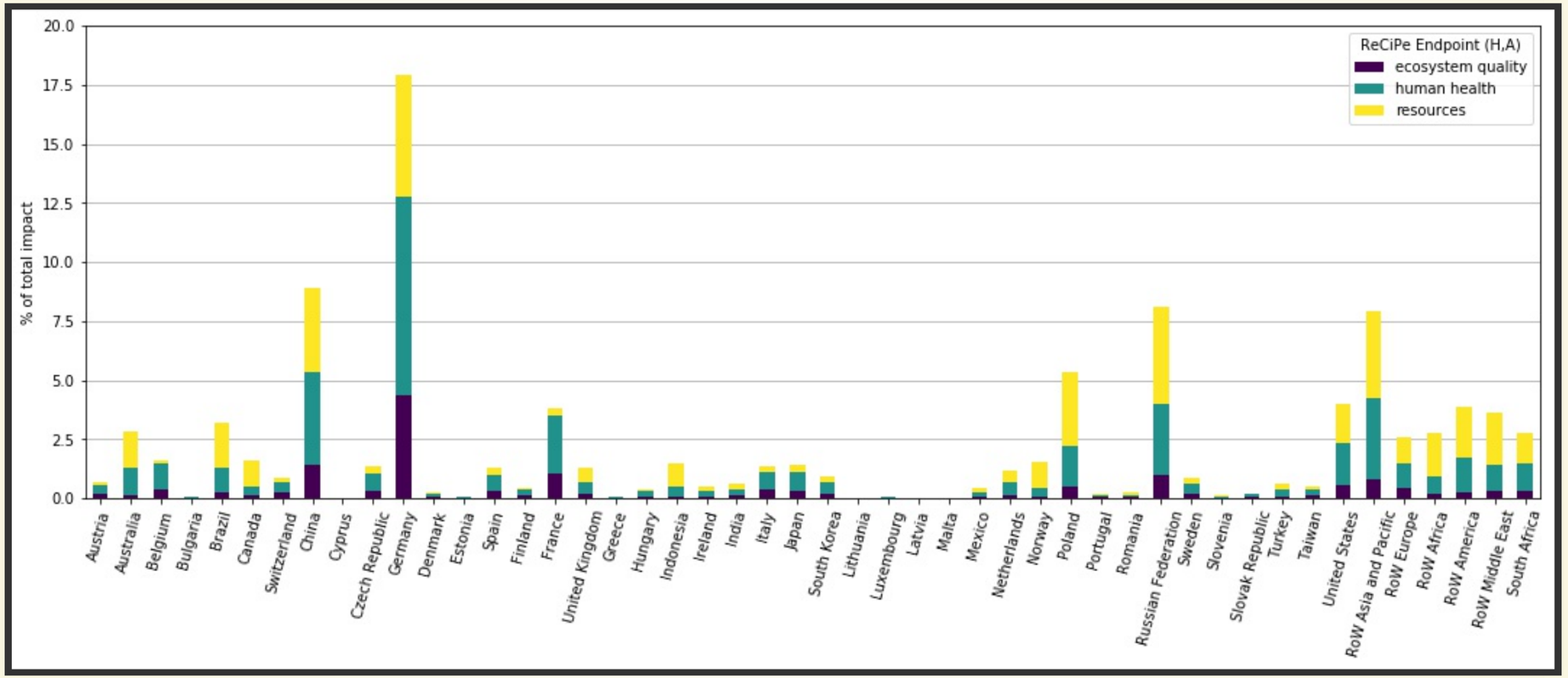
CAR PRODUCTION IN GERMANY

- where do the impacts occur?



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REGIONALIZED LCIA

- regionalized impact assessment methods with country-level characterization factors
- spatially explicit impacts

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INTEGRATION WITH OTHER TOOLS

- regionalized system model with ocelot?

- brightway2 integration

- faster matrix calculations in brightway2

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- Geographic disaggregation of ecoinvent with MRIO data
- Spatially explicit impacts along the whole supply chain
- Regionalized Life Cycle Impact Assessment

Thank you for your attention!