TECHNISCHE UNIVERSITÄT WIEN
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How to quantify regional weighting factors?

Methodology and case study from Vienna.

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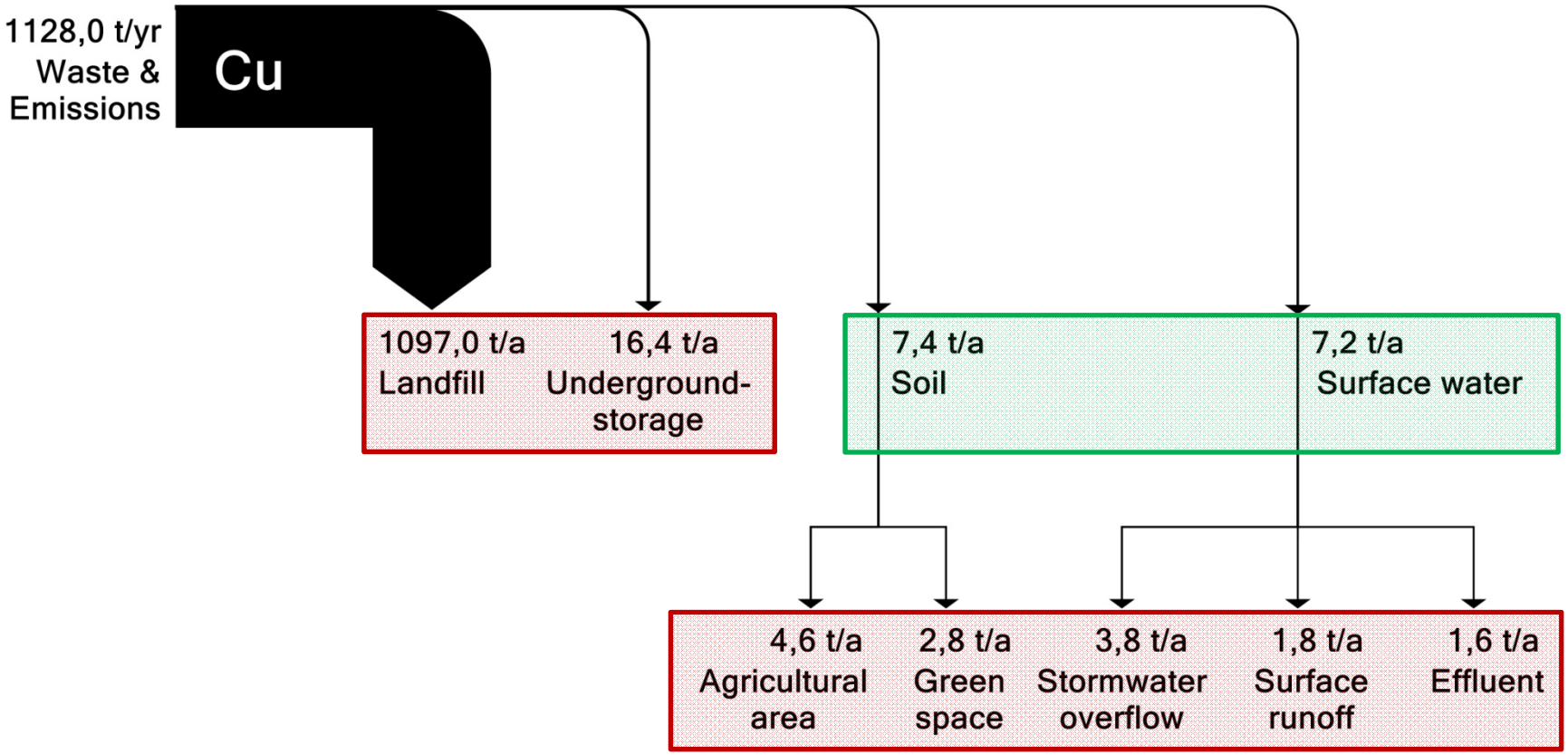
The need for regionalization if …

… current & critical flows vary in a cross-regional perspective.

SWITZERLAND

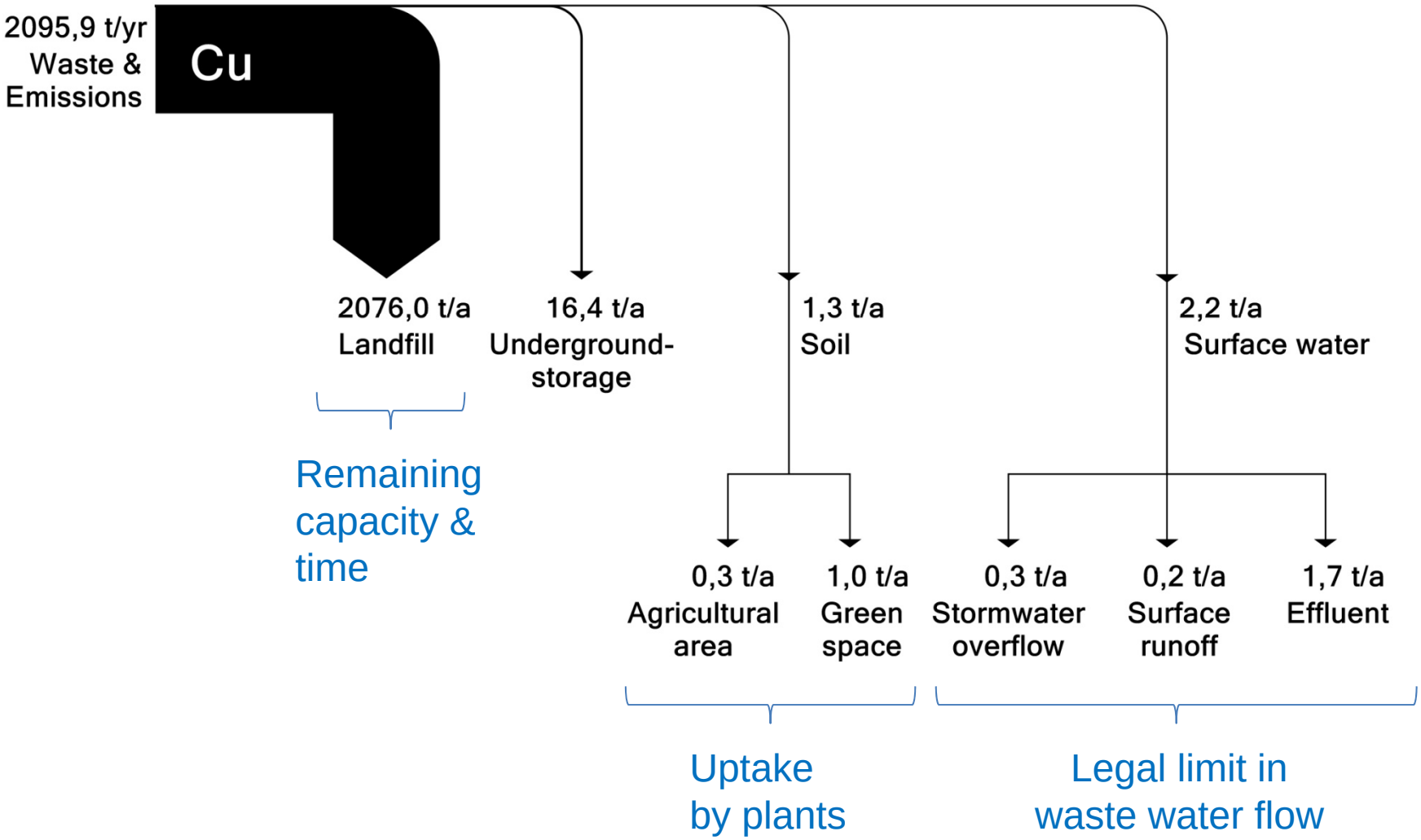
VIENNA

Current flows in Vienna



Kral, U., Lin, C.-Y., Kellner, K., Ma, H.-W., Brunner, P.H., 2013. The copper balance of cities: Exploratory insights into a European and an Asian city. *Journal of Industrial Ecology*. Accepted for publication.

Critical flows in Vienna



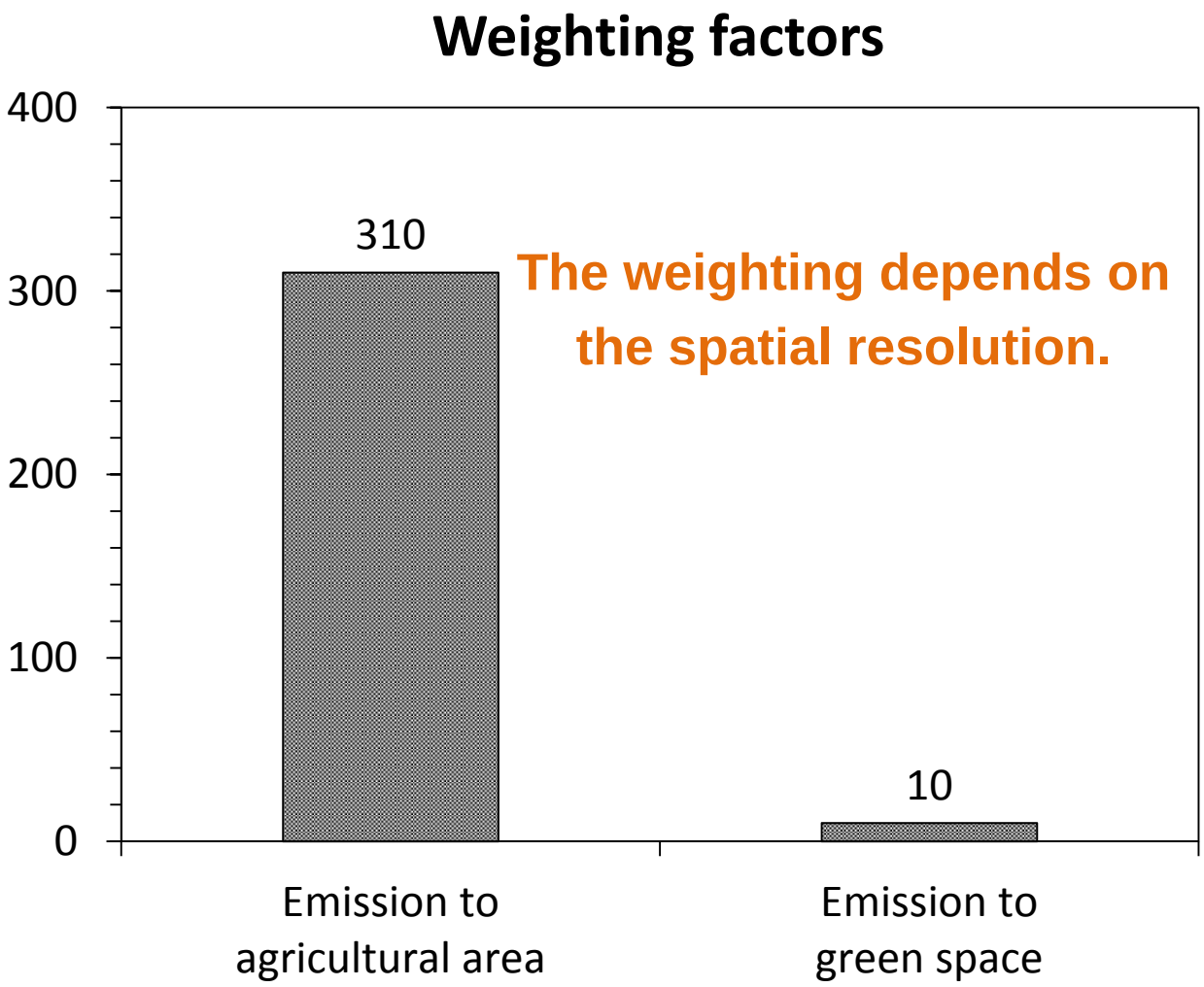
Result I

Weighting factors

Cu	**Switzerland**	vs.	**Vienna**
Emission to soil	**2**	vs.	**40**
Emission to surface water	**1**	vs.	**10**
Waste to landfill	**-**	vs.	**0.3**
Waste to underground st.	**-**	vs.	**1**

The weighting depends on the reference region.

Result II



The weighting depends on the spatial resolution.

Summary

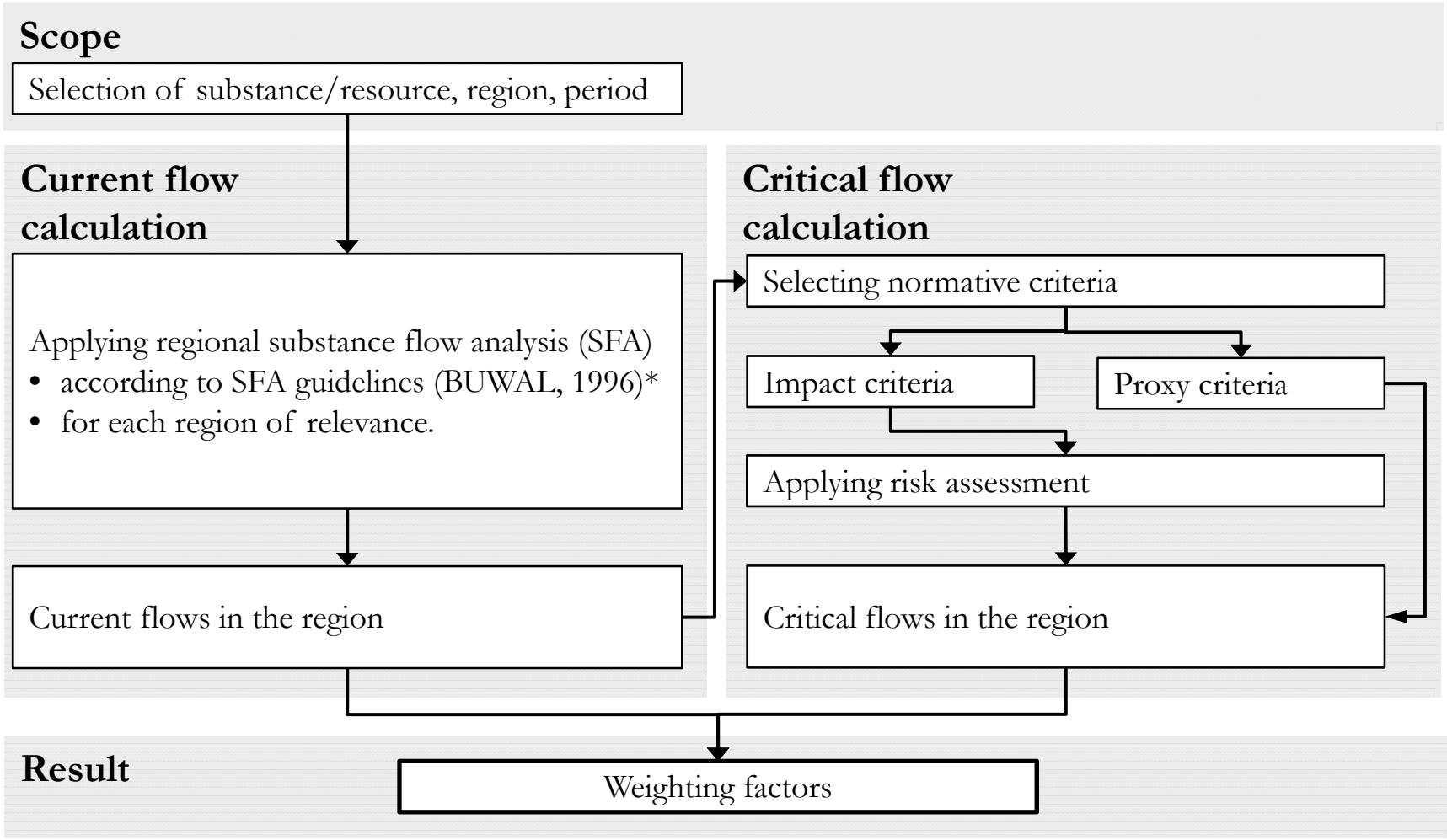
- Weighting factors vary in a cross-regional perspective.
- The weighting depends on:
  - the reference region.
  - spatial resolution within the region.
- Region-specific circumstances -> Region-specific impacts.
- Harmonized framework for regional weighting factors.

Appendix

(out of the regular time for presentation; for discussion in view of the harmonized framework)

Proposed framework for …

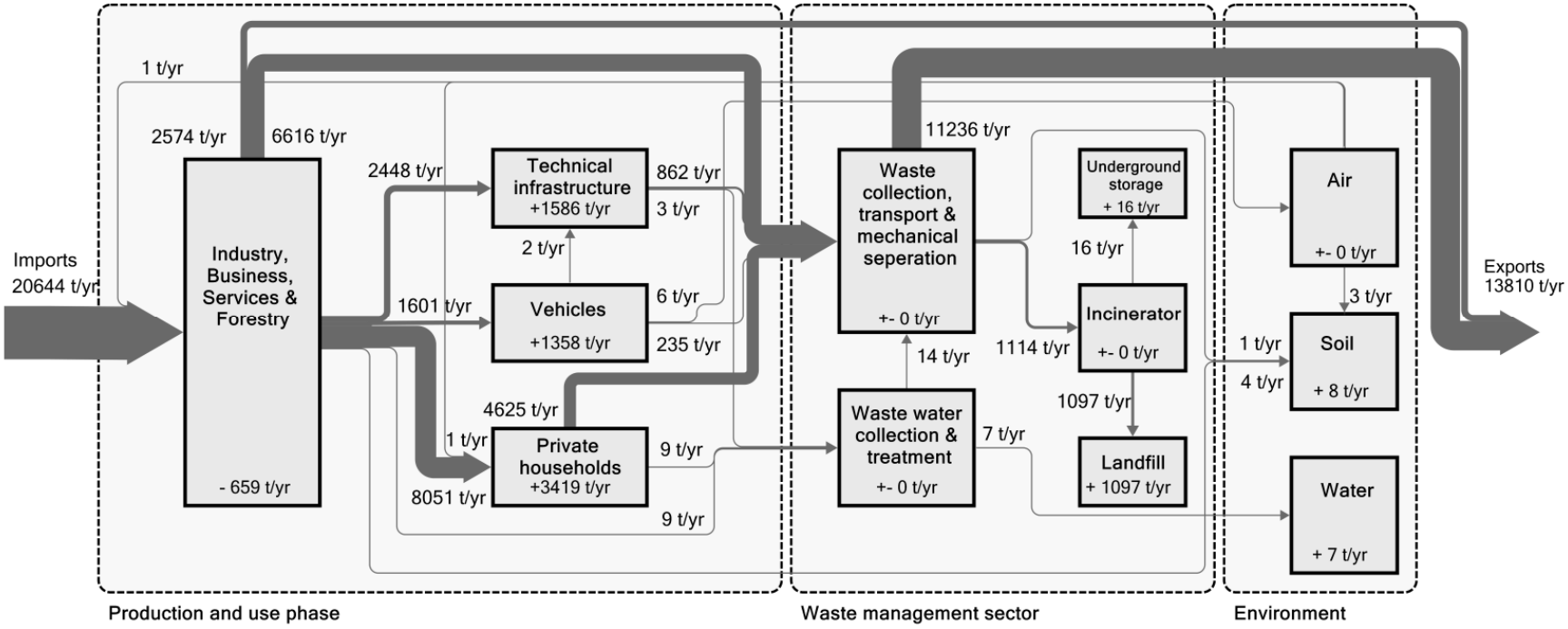
… the regionalization of weighting-factors.



* BUWAL, 1996. Stoffflussanalyse Schweiz - Anleitung. *Umweltschriftenreihe Umwelt Nr. 251*. Bern: Bundesamt für Umwelt, Wald und Landschaft.

Current flow calculation …

… based on regional substance flow analysis.



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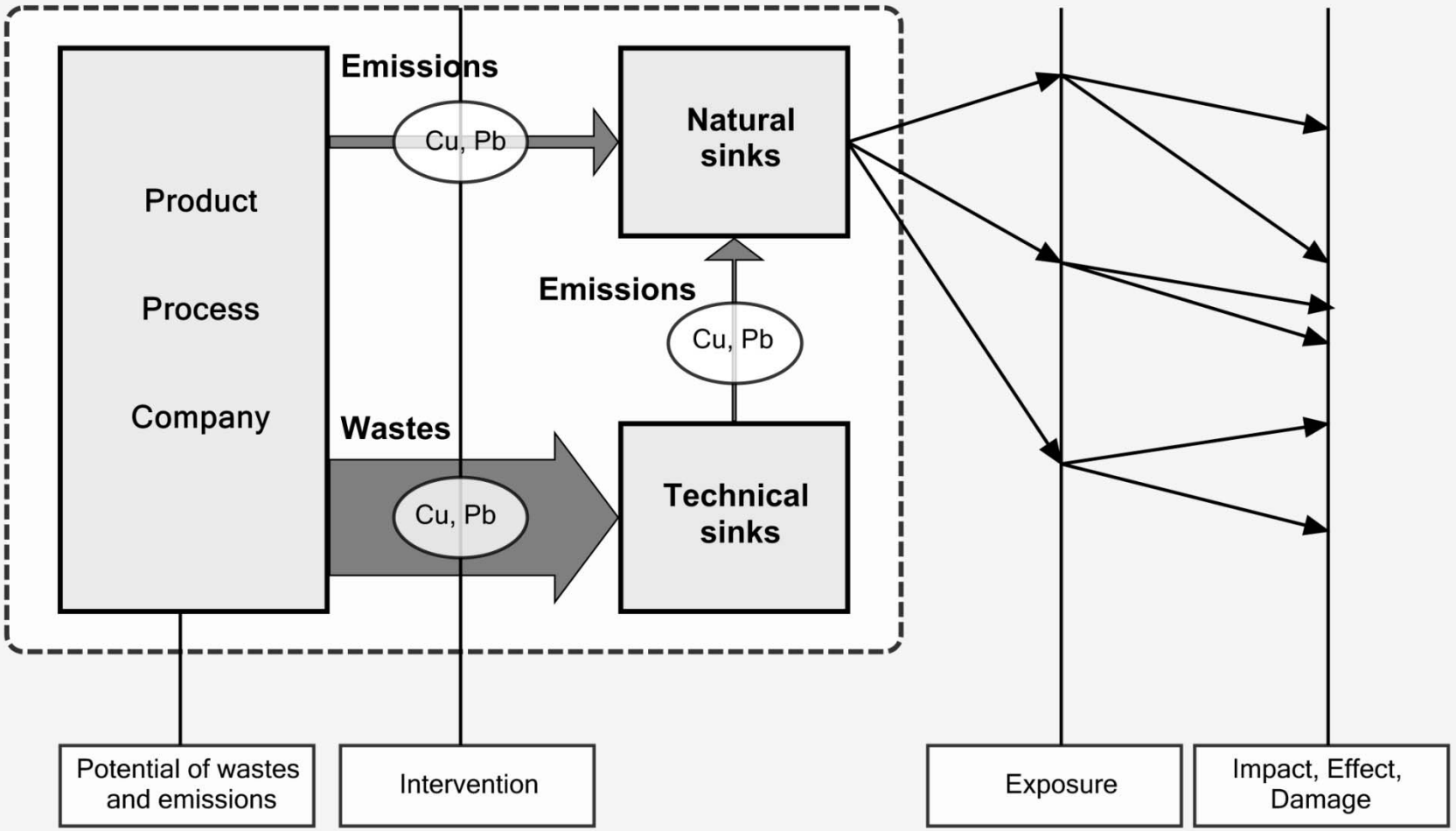
Critical flow calculation …

… based on proxy criteria or impact criteria.



Kral, U, et.al. , 2013. Sinks as limited resources? - A new indicator for assessing sink constraints. Ecological Indicators. Under preparation.