How to quantify regional weighting factors?
Methodology and case study from Vienna.

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54th LCA Discussion Forum:
5th December 2013. UVEK Aula, Ittigen-Berne, Switzerland.
The need for regionalization if …

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

Critical flows in Vienna

Waste & Emissions

2095.9 t/yr

Landfill
2076.0 t/a

Underground-storage
16.4 t/a

Soil
1.3 t/a

Surface water
2.2 t/a

Agricultural area
0.3 t/a

Green space
1.0 t/a

Stormwater overflow
0.3 t/a

Surface runoff
0.2 t/a

Effluent
1.7 t/a

Remaining capacity & time

Uptake by plants

Legal limit in waste water flow

0.3 t/a

0.2 t/a

0.1 t/a

0.1 t/a
### Weighting factors

<table>
<thead>
<tr>
<th>Cu</th>
<th>Switzerland</th>
<th>vs.</th>
<th>Vienna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission to soil</td>
<td>2</td>
<td>vs.</td>
<td>40</td>
</tr>
<tr>
<td>Emission to surface water</td>
<td>1</td>
<td>vs.</td>
<td>10</td>
</tr>
<tr>
<td>Waste to landfill</td>
<td>-</td>
<td>vs.</td>
<td>0.3</td>
</tr>
<tr>
<td>Waste to underground st.</td>
<td>-</td>
<td>vs.</td>
<td>1</td>
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</table>

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.

**Scope**
Selection of substance/resource, region, period

**Current flow calculation**
- Applying regional substance flow analysis (SFA)
  - according to SFA guidelines (BUWAL, 1996)*
  - for each region of relevance.
- Current flows in the region

**Critical flow calculation**
- Selecting normative criteria
- Impact criteria
- Proxy criteria
- Applying risk assessment
- Critical flows in the region

**Result**
Weighting factors

Current flow calculation …

… based on regional substance flow analysis.

Critical flow calculation … 

… based on proxy criteria or impact criteria.