Distances in Intermodal statistics in the Netherlands

Peter Smeets

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Content

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Context
context

1. Intermodal transport statistics are comparable on tonne-kilometre level
2. Distances are calculated based on EU-legislation
3. To calculate/estimate tkm per country adjustments are needed:
   - distance on national territory
   - total distance
4. SDG indicator 9.1.2 is partly based on tkm
Tonne-Kilometre (tkm) in EU legislation

Reference Manual on Inland Waterways Transport Statistics:
Unit of measurement of goods transport which represents the transport of one tonne by inland waterways over one kilometre. The distance taken into account is the distance performed in the reporting country.

Rail Transport statistics methodology manual:
Tonne-km means the unit of measure of goods transport which represents the transport of one tonne (1,000 kilograms) of goods by rail over a distance of one kilometre. Only the distance on the national territory of the reporting country shall be taken into account.

Road freight transport methodology manual:
Unit of measurement representing the movement of a road motor vehicle over one kilometre. The distance to be taken into consideration is the distance actually run. It excludes the distance covered when the goods road vehicle is being transported by another means of transport.
Principles in data collection

<table>
<thead>
<tr>
<th>Distance on national territory</th>
<th>Total distance</th>
<th>Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Cargo Ship" /></td>
<td></td>
<td>territoriality principle</td>
</tr>
<tr>
<td><img src="image2" alt="Train" /></td>
<td></td>
<td>territoriality principle</td>
</tr>
<tr>
<td><img src="image3" alt="Truck" /></td>
<td></td>
<td>nationality principle</td>
</tr>
</tbody>
</table>
## Use of tkm

<table>
<thead>
<tr>
<th></th>
<th>Mode</th>
<th>Mode</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. total tkm in the Eu (by reporting countries)</td>
<td>![Smiley]</td>
<td>![Smiley]</td>
<td>![Smiley]</td>
</tr>
<tr>
<td>b. total tkm in country X</td>
<td>![Smiley]</td>
<td>![Smiley]</td>
<td>![Sad] 1)</td>
</tr>
<tr>
<td>c. total tkm by nationality X</td>
<td>![Sad] 2)</td>
<td>![Sad] 2)</td>
<td>![Sad] 1)</td>
</tr>
<tr>
<td>d. tkm international transport loaded and unloaded in country x (incl. modal split)</td>
<td>![Sad] 2)</td>
<td>![Sad] 2)</td>
<td>![Sad] 1)</td>
</tr>
</tbody>
</table>

1) a. distance to the border of international transport is missing  
   b. transport of foreign companies is missing  
2) distance abroad of cross-border journeys is missing
Solutions
1. Determining distance between IWW ports (UNLocodes) by using the Eurostat distance matrix. (circabc under 04. Inland waterways > 4_nomenclatures)

2. If not successful: NUTS3-NUTS3, NUTS2-NUTS3, NUTS2-NUTS2, NUTS1-NUTS1, NUTS0-NUTS3, NUTS0-NUTS2

3. Look up on internet (marinetraffic, the blue road etc.)

4. Future: AIS data: averages or per journey

<table>
<thead>
<tr>
<th>UNLoA</th>
<th>UNLoB</th>
<th>DISTANCE_NL</th>
<th>DISTANCE_TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEKAS</td>
<td>BETES</td>
<td>175</td>
<td>768</td>
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<tr>
<td>DEKAS</td>
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<td>805</td>
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<tr>
<td>DEKAS</td>
<td>BEANR</td>
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<td>BECHE</td>
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<td>DEKAS</td>
<td>BEGBB</td>
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<tr>
<td>NLRTM</td>
<td>NLAMS</td>
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</table>

<table>
<thead>
<tr>
<th>NutsA</th>
<th>NutsB</th>
<th>DISTANCE_NL</th>
<th>DISTANCE_TOTAL</th>
</tr>
</thead>
<tbody>
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<td>AT</td>
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<td>1420</td>
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<td>AT124</td>
<td>NL4</td>
<td>148</td>
<td>1230</td>
</tr>
</tbody>
</table>
Solutions: rail

1. Detailed response from 1 (main) respondent
2. NUTS-NUTS table
3. Time-table scheduled transport with distances.
Solutions: Territorialisation of road transport

**Geocoding**: Location name or postal code are processed by an internet route planner (commercial software)

Result:

- Standardized location names and country codes
- Latitude and longitude
- Border crossings
- *Distance on national territory*
- *Total distance*
- *Distance matrix (place-place and also NUTS3-NUTS3)*

**NUTS3 code**: determined by a common used algorithm using latitude and longitude in combination with detailed NUTS3-shapes (provided by Eurostat).
Solutions: foreign road hauliers

1. Using the “D-tables” provided by Eurostat
2. Selecting all transport that touches the national territory
3. Calculating the distance on national territory by using the NUTS3-NUTS3 matrix.
Statistical results
Modal split (tkm) of International freight transport, 2017

Reported data:
- IWW and rail: distance on national territory (5,475, 9%)
- Road: total distance (28,362, 44%)
- Road: total distance (NL hauliers) (27,115, 47%)

Adjusted data:
- IWW and rail: total distance (24109, 14%)
- Road: total distance (NL+foreign hauliers) (85,883, 51%)
- Road: total distance (NL hauliers) (58374, 35%)
Effect of adjusting distance on tkm

International transport, 2017

mio tkm

Foreign road hauliers

Tkm abroad

IWW

ROAD

RAIL

reported data

adjusted data
Modal split, 2017 (domestic and international bilateral)

Tkm (non containerised)
- 60% Tkm
- 33% Tkm
- 7% Tkm

Tkm (containerised)
- 45% Tkm
- 33% Tkm
- 22% Tkm

TEUkm
- 32% TEUkm
- 35% TEUkm
- 33% TEUkm
Container transport, empty TEU by distance class, 2017
Average distance of laden and empty containers, 2011-2017
Container transport per distance class (average 2011-2017)

1/3 Inside Rotterdam Port area

Rotterdam-Antwerpen
Rotterdam-Duisburg v.v.
Rotterdam-Germersheim, Mannheim, Wörth am Rhein
Rotterdam-Italy/Poland v.v.
Thanks for your attention