9. **OTHER [CRF sector 7]**

9.1 **Overview of sector**

The Netherlands uses this source category to report all sources that cannot be properly allocated to one of the subcategories of the standard IPCC source sectors 1 to 6, either because of the definition of the source does not match with the IPCC classification or because the CRF (following IPCC recommendations) erroneously does not permit to report emissions of specific gases under these sectors. *Table 9.1* lists both the sources reported here as well as their emission trends. It shows that the N$_2$O emissions reported under this category are assumed to remain constant over time.

*Table 9.1. Trend in emissions from the other sector (category 7) (CO$_2$ in Tg; others in Gg)*

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CO$_2$ a. Solvents and other product use</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
<td>0.6</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>CH$_4$ a. Solvents and other product use</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>CH$_4$ b. Degassing drinking water $^1)$</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>1.9</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>N$_2$O c. Polluted surface water</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
</tbody>
</table>

$^1)$ From ground water.

From *Box 9.1*, in which the key and non-key sources of this sector are presented based on level, trend or both, we can conclude that N$_2$O from polluted surface water is a (level) key source.

*Box 9.1. Key source identification in the ‘Other’ source sector 7 using the IPCC Tier 1 and 2 approach (L = Level, T = Trend)*

<table>
<thead>
<tr>
<th>Sector</th>
<th>Source</th>
<th>Level/Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>CH$_4$</td>
<td>Misc. CH$_4$</td>
</tr>
<tr>
<td>7</td>
<td>CO$_2$</td>
<td>Misc. CO$_2$</td>
</tr>
<tr>
<td>7</td>
<td>N$_2$O</td>
<td>Misc. N$_2$O</td>
</tr>
<tr>
<td>7</td>
<td>N$_2$O</td>
<td>Polluted surface water</td>
</tr>
</tbody>
</table>

* Changed compared to the previous NIR.

9.1.1 **Source category description**

**Miscellaneous non-industrial CO$_2$ sources**

The small CO$_2$ emissions labelled in *Table 9.1* as ‘Solvents and other product use’ consist of emissions from fireworks. These emissions are reported here for historical reasons.

**Miscellaneous non-industrial CH$_4$ sources**

Some minor sources of CH$_4$ emissions from non-industrial, non-combustion sources have been included in the Netherlands’ inventory, but these are reported in category 7 ‘Other’ instead of in category 3, since the CRF table for that category erroneously do not allow for methane to be reported. These sources are:

- emissions from fireworks (also a negligible source of N$_2$O);
- emissions from paints and lacquers and from food storage/warehouses;
- degassing of drinking water;
- burning of candles.

The latter is a new source introduced in the Dutch Emission inventory in 2002. Activity data were based on an amount of candle burning of 2.2 kg per person per year (Van Harmelen et al., 2002).
CH$_4$ emissions from (agricultural) soils decreased in last 40 years due to drainage and lowering of water tables and are estimated on the basis of the methane background document (Van Amstel et al., 1993). Since the IPCC methodology only considers CO$_2$ sinks, these reduced CH$_4$ emissions have been included in the natural total, although they act as a methane sink. Therefore, they are not reported as anthropogenic emissions under IPCC category 7.

**Miscellaneous N$_2$O sources**

In addition, one source of N$_2$O is reported under this source sector 7: ‘Polluted surface water’. This comprises the indirect N$_2$O emissions from leaching and run-off, which are calculated as a fixed value that comprises leaching and run-off from agricultural activities (3/4) and from other nitrogen sources (1/4), including human sewage. More details on this source can be found in Spakman et al. (2003) and Kroeze (1994). Since this figure includes more than only agriculture related emissions we do not report these under 4.D but as a separate source in category ‘7’ (see also Section 6.4). Total N$_2$O emissions from leaching and run off are 3.8 Gg N$_2$O. The N$_2$O emissions stemming from agriculture are thus 3/4 * 3.8 = 2.85 Gg N$_2$O; the other part stems from NO$_x$ emissions from transport and stationary combustion sources.

**9.1.2 Methodological issues**

Nitrous oxide emissions from polluted surface water, comprising indirect N$_2$O emissions from leaching and run-off, is identified as a (level) key source and the methodological aspects are addressed in Sections 9.1.1 and 6.4. The Netherlands does not use the IPCC method to estimate these indirect N$_2$O emissions from leaching and run-off; N$_2$O emissions from atmospheric deposition emissions are not estimated. Since the emissions are a key source (see Box 9.1), the present methodology does not fully comply with the IPCC Good Practice Guidance (IPCC, 2000).

For other sources reported here also country-specific methodologies are used. The estimations are based on statistics from suppliers of products. Methane from food storage/warehouses is also reported in annual environmental reports from individual companies. Since these emissions are not considered to be key sources (see Section 1.5), the present methodology level does comply with the IPCC Good Practice Guidance (IPCC, 2000).

**9.1.3 Uncertainties and time-series consistency**

The uncertainty of N$_2$O emissions from polluted surface water is estimated to be 200% in annual emissions (see Section 1.7 for more details). The uncertainty of N$_2$O is expected to be rather large due to inherent uncertainty in the emission factors, and because of the correlation with the N$_2$O emissions from other sources. The uncertainty of the other sources is estimated to be in the range 25-50% (Section 1.7).

It is expected that the N$_2$O emissions from polluted surface water will, in practice, vary from year by year, but because no detailed data are available the emissions from this source are kept constant (see Table 9.1). It can be observed in Table 9.1 that CO$_2$ and CH$_4$ emissions from the solvent use subcategory can vary substantially over time. This may be attributed partly to changes in the groups of individual firms reporting in every year.

**9.1.4 Source-specific planned improvements**

The present methodology used to estimate indirect N$_2$O emissions from agricultural soils, here reported as N$_2$O from polluted surface water, does not fully comply with IPCC Good Practice Guidance (IPCC, 2000). For this reason actions are underway to revise and expand calculations to be in accordance with IPCC Good Practice Guidance.