icpdr iksd
International Commission for the Protection of the Danube River
Internationale Kommission zum Schutz der Donau

Emission Inventory 2000

Municipal and Industrial Discharges in the Danube River Basin

Introduction

The herewith-presented Emission Inventory 2000 of municipal and industrial discharges is the second complete emission inventory of point sources, which cover the whole Danube river basin.

The emissions are arranged first by countries and then in accordance with the approach of Water Framework Directive on a sub-basins basis.

All Signatory States to the Danube River Protection Convention have contributed data to the emission inventories. In addition data were given by Bosnia and Herzegovina, including values for Banja Luca (Republic of Srpska). For their contributions special acknowledgement is expressed.

At the time of compilation of this inventory, the Federal Republic of Yugoslavia did not yet contribute. Therefore, for the Federal Republic of Yugoslavia, this inventory contains the data on municipal discharges for the year 1996.

The reference year of the data in the emission inventories is 2000.

The values in the emission inventories were determined as loads for individual plants, based on continuous or periodical measurements; in some cases permit values or estimated values were used by national experts to assess the actual emission values. This implies different qualities of single data.

For the compilation of the inventory of municipal discharges those municipal emissions were included which cover in total at least 75 % of the national COD loads transported in sewers and discharged into the riverine environment, irrespective of the type of treatment. The type of treatment ranges from no treatment at all, via mechanical treatment to the removal of organic carbon and further up to the removal of phosphorus and nitrogen. However the national percentages of population connected to public sewer systems vary in large boundaries, from 14 % to 90 %.

The constituents of wastewaters, which are not connected to sewer systems, partially reach surface waters by diffuse pathways via soil and groundwater. Since estimations of the diffuse emissions were not available for the reference time and the whole Danube river basin, they were not included in the municipal inventory.

Therefore the given figures for the “national loads” (which in addition comprise only those loads of the Member State which are discharged into the Danube river catchment only) should not be compared on a country-by-country basis. This also applies for the loads on the “sub-basin” basis.

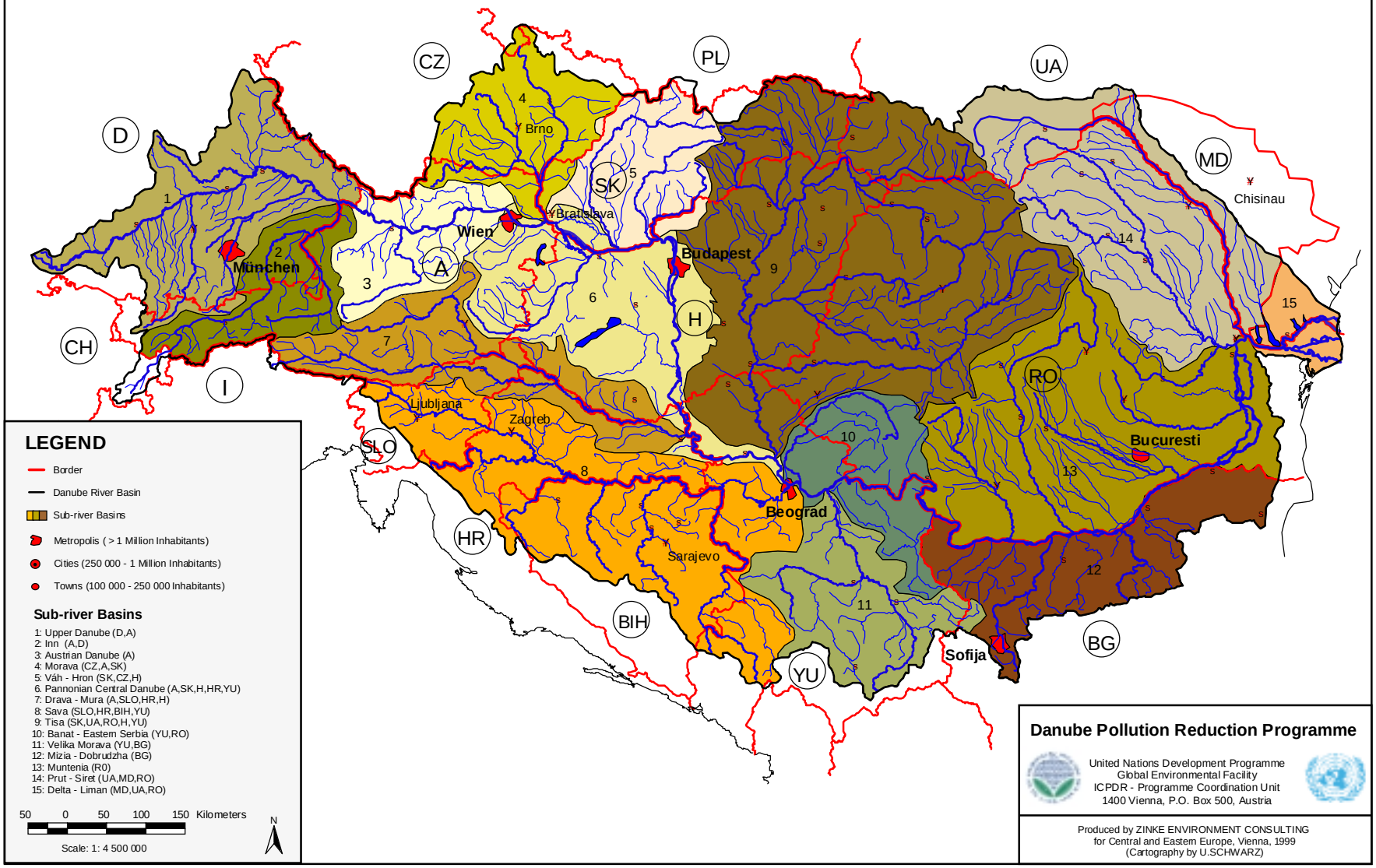
The inventory of industrial discharges considers the most relevant types of industry: food-, chemical-, pulp and paper-, fertilizer-, mining-, iron and steel-, metal surface treatment-, textile-, leather industry and large agricultural plants. In each case the best data available were included, so the ‘quality’ of the data also varies.

A better insight into total contributions of point and diffuse sources to the pollution of the Danube River Basin is expected to be gained from the UNDP/GEF project: “Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin”.

Despite the variations in data quality, the data of the first and second emission inventories have already been used in several research and development projects as well as in investigations and for policy-making and thus have become a valuable tool of information. In making them available in the Internet, the emission inventories may also find the appreciation of the interested public.

Map: Danube Sub-river Basins

Based on Transboundary Analysis Workshop 1999



LEGEND

- Border
- Danube River Basin
- Sub-river Basins
- Metropolis (> 1 Million Inhabitants)
- Cities (250 000 - 1 Million Inhabitants)
- Towns (100 000 - 250 000 Inhabitants)

Sub-river Basins

1: Upper Danube (D,A)
2: Inn (A,D)
3: Austrian Danube (A)
4: Morava (CZ,A,SK)
5: Váh - Hron (SK,CZ,H)
6. Pannonian Central Danube (A,SK,H,HR,YU)
7: Drava - Mura (A,SLO,HR,H)
8: Sava (SLO,HR,BIH,YU)
9: Tisa (SK,UA,RO,H,YU)
10: Banat - Eastern Serbia (YU,RO)
11: Velika Morava (YU,BG)
12: Mizia - Dobrudzha (BG)
13: Muntenia (R0)
14: Prut - Siret (UA,MD,RO)
15: Delta - Liman (MD,UA,RO)

50 0 50 100 150 Kilometers

Scale: 1: 4 500 000

N

Danube Pollution Reduction Programme

United Nations Development Programme
Global Environmental Facility
ICPDR - Programme Coordination Unit
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Annotations and Abbreviations

Annotations:

p	permit value

Abbreviations:

AVcode	unique code per discharge location
(T)	discharge is at tributary of the river mentioned
TPE	thousand population equivilants
Tm3/a	thousand cubic meters per year
t/a	tons per year
t/d	tons per day
EUR	Euro

Industrial Sectors:

1	food industry
2	chemical industry
3	pulp and paper industry
4	fertiliser industry
5	mining
6	iron and steel industry
7	metal surface treatment
8	textile industry
9	leather industry
10	agriculture
11	other relevant industry