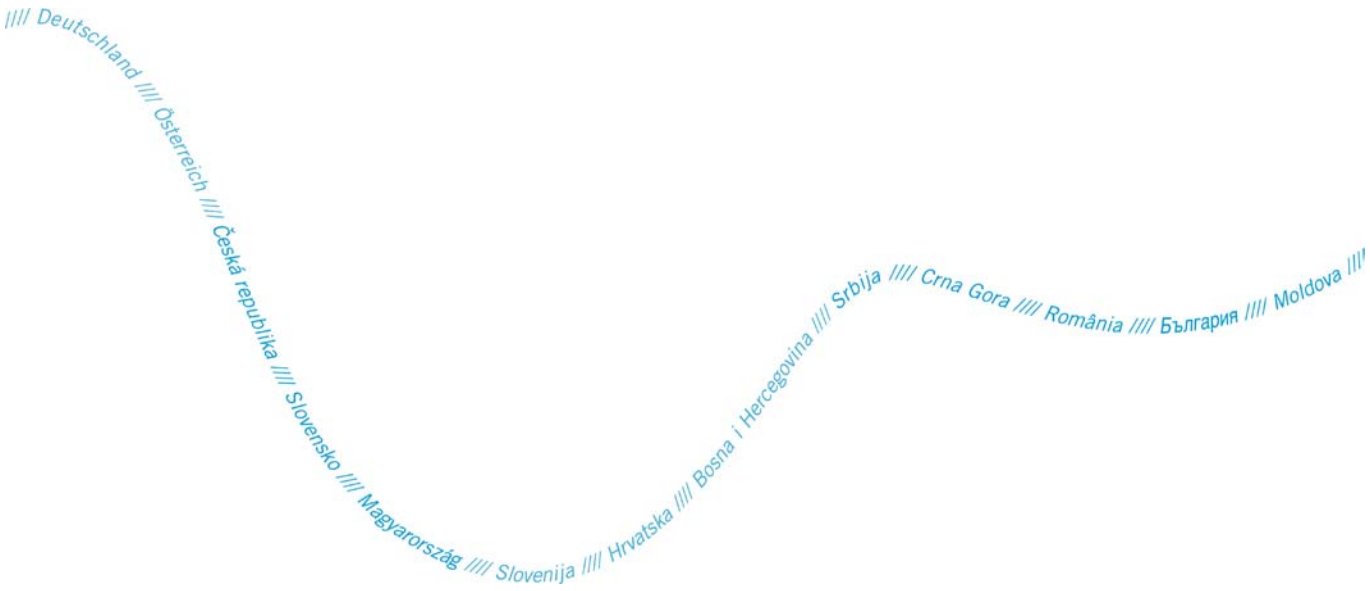
JOINT ACTION PROGRAM
Final Implementation Report

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

ANNEXES 1 –3
Investments in the DRB



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Annex 1 – Planned measures for the reduction of municipal wastewater discharges

1.1 Germany

1.1.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	**Reductions in loads (New: After investment; Old: around 1999/2000), in t/year**				**Estimated Investment Cost not only for load reduction!**
	BOD-load	COD-load	totN-load	totP-load	
Leutkirch	1	9	57	2.9	4.6 Mil. EURO
München I *	0	0	1,200	0	85.0 Mil. EURO
München II – Gut Marienhof *	0	0	300	0	15.0 Mil. EURO
ZV Starnberger See	0	0	80	0	n.a. Mil. EURO
ZV Chiemsee	0	?	60	0	5.1 Mil. EURO
Sums	1	9	1,700	~ 3	> 110 Mil. EURO

* The WWT plants were adopted for partial N-removal in 2000; further N-removal by additional measures and by optimisation of plant operation step by step until 2005

1.1.2 JAP – achieved end 2005

Name of WWT Plant	**Reductions in loads, in t/year**				**Estimated Investment Cost – not only for load reduction!**
	BOD-load	COD-load	totN-load	totP-load	
Leutkirch	1	9	57	2.9	4.6 MEURO
München I *	0	0	800	0	110 MEURO
München II *	0	0	200	0	30.0 MEURO
ZV Starnberger See	0	0	150	0	18 MEURO
ZV Chiemsee	0	?	n.a	0	
Sums	1	9	1,200	~ 3	> 160 MEURO

* The WWT plants were adopted for partial N-removal in 2000; further N-removal by additional measures and by optimisation of plant operation step by step until 2005

1.2 Austria

1.2.1 JAP – proposed 2000 – 2005

Name of Location	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost includes also sewerage**
	BOD-load	COD-load	totN-load	totP-load	
Linz – Asten	0	1.280	770	64	48

Wien - Simmering	5,500	10.000	2.000	40	146
Graz	240		740	150	37
Sum[1]	~ 14,000	~ 30,000	~ 9,500	~ 1,000	~ 730 Mio. EURO

[1] Construction of 21 new WWT plants (size < 15.000 p.e.; ~ 181,000 p.e.) and expansion/upgrading of existing WWT plants (total capacity ~ 7.8 Mio. p.e.).

1.2.2 JAP – achieved end 2005

Name of Location	**Reductions in loads, in t/year**				**Estimated Investment Cost – not including sewerage**
	BOD-load	COD-load	TotN-load	totP-load	
Zellerbecken	38	60	38	7	8.424 MEURO
Salzach - Pongau	-	-	27	3	12. 932 MEURO
Linz - Asten	180	457	-	19	40.066 MEURO
Ager - West	10	25	18	2	6. 570 MEURO
RHV Attersee	21	31	24	5	7. 639 MEURO
Wien - Simmering	-	10,776	1,271	18	207. 471 MEURO
Spittal/Drau	-	-	-	-	9.392 MEURO
Villach	-	-	-	-	-
St.Veit	10	10	38	3	6.249 MEURO
Leoben	45	92	98	2	16.443 MEURO
Graz	228	145	n.a	12	37.972 MEURO
Sums	> 422	> 11,600	>1,520	> 71	**353.158 MEURO**

1.3 Czech Republic

1.3.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	**Reductions in loads (New: After investment; Old: 1998), in t/year**				**Estimated Investment Cost predominantly for load reduction**
	BOD-load	COD-load	totN-load	totP-load	
Brno *	40	60	417	15	46.1 Mil. EURO
Uh. Hradiste *	34	51	65	1	5.8 Mil. EURO
Hodonin *	0	0	10	2	2.7 Mil. EURO
Prostejov *	0	0	42	0	15.2 Mil. EURO
Prerov *	59	74	63	3	10.1 Mil. EURO
Breclav *	25	93	36	3	11.7 Mil. EURO
Trebic	47	151	81	10	12.9 Mil. EURO
Vyskov	1	18	46	10	10.6 Mil. EURO
Jihlava	39	27	68	0	16.2 Mil. EURO
Val. Mezirici	0	0	0	6	11.9 Mil. EURO
Vsetin	0	0	18	2	11.2 Mil. EURO
Kromeriz	80	123	71	0	11.3 Mil. EURO
Other plants	1,070	n.a.	377	34	42.1 Mil. EURO
Sums	1,394	> 597	1,306	86	207.8 Mil. EURO
Remark: The ratios of COD removed versus BOD removed are at some plants small, they should be in the order of 1.7 to 1.0					

* Reconstruction was finished before 2005

1.3.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) for the Interim Implementation Report of JAP indicates an amount of 199.6 millions Euro invested for reducing 1,675 t BOD load, 536 t of tot-N load and 625 tot-P load.

Name of WWT Plant	**Reductions in loads (New: After investment; Old: 1998), in t/year**				**Estimated Investment Cost predominantly for load reduction!**
	BOD-load	COD-load	totN-load	totP-load	
Brno	3	5	214	15	66.5 Mil. EURO
Uh. Hradiste	50	127	49	11	5.8 Mil. EURO
Hodonin	60	111	17	5	4.5 Mil. EURO
Prostejov	127	385	38	4	13.3 Mil. EURO
Prerov	105	260	32	6	14.5 Mil. EURO
Breclav	52	102	14	6	3.3 Mil. EURO
Trebic	59	170	17	5	6.6 Mil. EURO
Vyskov	50	89	15	3	4.1 Mil. EURO
Jihlava*	94	213	27	8	15.4 Mil. EURO
Val. Mezirici*	52	75	13	4	6.5 Mil. EURO
Vsetin	83	102	24	16	2.9 Mil. EURO
Kromeriz	66	227	18	4	5.8 Mil. EURO
Other plants	506	634	358	61	50.4 Mil. EURO
Sums	1,307	2,500	836	148	199.6 Mil. EURO

* In 2005 WWT plant was under reconstruction, finished in 2006.

1.4 Slovakia

1.4.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost not only for load reduction!**
	BOD-load	COD-load	totN-load	totP-load	
Kosice	1,596	3,110	405	18	20.2 Mil. EURO
Banska Bystrica	3,720	7,700	424	47	13.1 Mil. EURO
Nitra	2,041	3,613	287	32	13.1 Mil. EURO
Liptovsky Mikulas, incl. sewerage	253	612	258	3	6.8 Mil. EURO
Ruzomberok	975	1,986	22	1	0.1 Mil. EURO
Topolcany	299	408	144	3	0.9 Mil. EURO
Michalovce	1,142	2,251	135	3	2.6 Mil. EURO
Hummene	867	1,586	106	2	11.1 Mil. EURO
Trencin (righthand side), incl. sewerage	819	1,692	57	3	10.6 Mil. EURO
Roznava	359	776	40	1	0.5 Mil. EURO
Svidnik, incl. sewerage	446	849	27	1	10.9 Mil. EURO
Banska Stiavnica, incl. collector	256	526	53	5	9.1 Mil. EURO
Cadca, incl. sewerage	197	350	41	6	4.4 Mil. EURO
Sums	12,968	25,459	2,001	125	103.4 Mil. EURO

1.4.2 JAP – achieved end 2005

Name of WWT Plant	Reductions in loads, in t/year				Estimated Investment Cost
	BOD-load	COD-load	totN-load	totP-load	
Kosice	4678	9651	240	35.1	19.395 Mil. EURO
Banska Bystrica	1838	2147	35	8.2	45.4 Mil. EURO
Nitra	709	1182	30.6	8.0	10.354 Mil. EURO
Liptovsky Mikulas, incl. sewerage	5193	10407	572		4.678 Mil. EURO
Ruzomberok	5695	12119	272	24.1	
Topolcany	931	2009	155	19.6	0.323 Mil. EURO
Michalovce	1210	2005	159	22.1	0.109 Mil. EURO
Hummene	735	1572	85	17.0	12.268 Mil. EURO
Trencin (righthand side), incl. sewerage	234	479	43	14	7.937 Mil. EURO
Roznava	275	502	22	5.1	0.526 Mil. EURO
Svidnik, incl. sewerage	183	334	20	0.7	3.837 Mil. EURO
Banska Stiavnica, incl. collector	137	267	13	3.4	13.117 Mil. EURO
Cadca, incl. sewerage	650	1436	40	8.3	7.290 Mil. EURO
Sums	22,468	44,110	1,686.6	165.6	112.966 Mil. EURO

1.5 Hungary

1.5.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	Reductions in loads (New: After investment; Old: around 1996/97), in t/year				Estimated Investment Cost includes also some costs of sewerage
	BOD-load	COD-load	totN-load	totP-load	
Budapest North	n.a.	n.a.	308	183	32.3 Mil. EURO
Budapest South	n.a.	n.a.	203	122	27.9 Mil. EURO
Budapest Central	n.a.	n.a.	900	140	407.0 Mil. EURO
Szeged (cost includes sewerage)	n.a.	n.a.	600	250	68.0 Mil. EURO
Győr	n.a.	n.a.	273	43	12.7 Mil. EURO
Tatabánya	n.a.	n.a.	30	40	8.0 Mil. EURO
Székesfehérvár	n.a.	n.a.	160	25	15.0 Mil. EURO
Dunaújváros	n.a.	n.a.	53	23	10.6 Mil. EURO
Sopron	n.a.	n.a.	40	30	9.0 Mil. EURO
Szekszárd	n.a.	n.a.	80	20	3.3 Mil. EURO
Salgótarján (cost incl. sewerage)	n.a.	n.a.	80	20	23.4 Mil. EURO
Gödöllő (cost incl. sewerage)	n.a.	n.a.	128	37	11.3 Mil. EURO
Kerka-Mura, incl. sewerage	n.a.	n.a.	100	20	11.1 Mil. EURO
Veszprém/Northern Bakony, incl. sewerage	n.a.	n.a.	100	20	11.9 Mil. EURO
Baja	n.a.	n.a.	227	40	3.5 Mil. EURO
Sums	n.a.	n.a.	3,282	1,013	655.0 Mil. EURO

1.5.2 JAP – achieved end 2005

HU-M-01 Budapest North, upgrading to tertiary treatment (N and P removal)

The Budapest North WWTP upgrading Project is still ongoing, the completion can be expected only 2008-2010 due to the current funding gaps. At spring of 2006 the Government of Hungary and the World Bank concluded an agreement on about 75 % of funding of the Project. The process related to the preliminary qualification for tendering has been finalised and the tendering process for construction is initiated. The selection of contractor was done by the middle of 2007. The existing WWTP works very well with about 160 000 m^3/day for secondary treatment and P-removal, but without N-removal.

HU-M-02 Budapest South Pest, WWTP upgrade, including N and P removal (completed in 2001)

This 40 years old WWTP runs with a very good efficiency with its capacity of 440 000 PPE and 80 000 m3/day in Budapest. It can be thanked for careful operation that without extra founding the WWTP could stably guarantee more quality of treated effluents as they were licensed. For example: BOD: 10, COD: 40, SS: 5, TN: 14 and TP: 1 mg/l respectively.

HU-M-03 Budapest Central, new wastewater treatment plant and sewage collection

The entirely new Budapest Central WWTP being implementation is the highest environmental investment in East-Central-Europe, which by 2010 will ensure that the range of treated water in Budapest could reach the 95 % instead of the recent 50 %. Its capacity is 350 000 m3/day and it is designed for tertiary treatment The total costs of the investment are 529,1 million EUR, from which 428,7 million EUR originate from EU funds, namely 65 % from CF, 20% from state government and 15 % from the capital. This project is an outstanding one not only in view of budget, but on its complexity because of the 7 subprojects, such as the main pipe for collection of Buda side, 3 pump stations in the city, 2 conductions of wastewater under the Danube, flooding dykes, new composting plant and traffic roads. In the frame of Vital Danube Project of Budapest (www.eloduna.hu) the actual construction works of the WWTP were started in January of 2006, the delay of some 2 years can be thanked of the complexity of the project, but the implementation nowadays is going with hard powers.

HU-M-04 Budapest South Buda, new wastewater treatment plant and sewage collection

Also an entirely new WWTP with 260 000 PEE is under preparation for the Hungarian Capital Budapest and its some vicinities. The original deadline for completion of WWTP has been delayed with 2 years; such as it will save the Danube with a good N and P removal by 2010. On the development of project, in 2006 there were prepared the EIA and the Feasibility Study with Public Involvement. It was made also a new Cost Estimate, which is means that the planned Total Costs was changed from 165,000,000 EUR (from year of 2001) to 300,000,000 EUR. From this amount only 30,000,000 EUR are confirmed as national equity and there are under negotiations the national public subsidy of 66 000,000 EUR and EU-CF International Grants of 204, 000, 000 EUR.

HU-M-05 Szeged expanded sewage collection and upgraded wastewater treatment plant, including N and P removal

The activities are almost finalized. As the start was delayed with 3 years, all the work was finalized by end of June 2007. During the years the Total Cost has been changed a little to 95,605,000 EUR. The largest sources of funding are the National Grants with 50,123,000 EUR, then ISPA is the original 33,325,000 EUR and the Local Equity also remained the original one. As in the meantime the existing average flow rate increased with some 7000 m3/day; the Local Government had introduced a kind of rainwater-tax at first time in Hungary.

HU-M-06 Győr, upgraded wastewater treatment plant

In Győr city it was completed the planed upgrade of WWTP for biological treatment at August of 2006 and than started the trial run. This investment of some 18,4 million EUR and the up-to-date technology can ensure the elimination of organic contaminations with 96-98 % efficiency. Unfortunately till now we could not receive more detailed reliable data on the required parameters.

HU-M-07 Szolnok, regional sewerage and wastewater treatment plant (completed in 2000)

The Szolnok WWTP is running very well, and there is no problem on fulfilment of the more stringent effluent limits were described by the authority in 2005. The new licensed effluent limits are: BOD: 25,

COD: 125, SS: 35, TN: 55, TP: 10 mg/l respectively, and the performance data in 2006 are: BOD: 9, COD: 45, SS: 14,5, TN: 6,4, TP: 1,18 mg/l respectively.

HU-M-08 Debrecen expanded sewage collection and wastewater treatment capacity

The Debrecen WWTP project, which was planned with completion by 2008, is in delay. The Total Cost was increased with about 8-9 % and the fund of some 51 million EUR from the EU- CF is not secured yet.

HU-M-09 Székesfehérvár, regional WWTP upgrade and sewerage expansion (completed in 2001)

This WWTP is working very well with much better performance, as the newest requirement would need it. In 2003 there were described by the environmental authority the next Effluent Quality Limits: BOD: 25, COD: 125, SS: 35, TN: 50, TP: 10 mg/l respectively, and the performance of Effluent Quality average data in 2004, 2005 and 2006 are: BOD: 5, COD: 39, SS: 10, TN: 15,9 and TP: 4,4 mg/l respectively.

HU-M-10 Tatabánya, upgraded wastewater treatment (completed in 2000)

This WWTP is running almost well, it could meet the requirements without the N removal to 15 mg/l in wintertime. The Effluent Quality Limits were described by the environmental authority are: BOD: 25, COD: 75, SS: 75, TN: 15, TP: 1 mg/l respectively, and the performance of Effluent Quality average data in 2005 and 2006: BOD: 14, COD: 37, SS: 20, TN: 23,4 and TP: 0,6 mg/l respectively. Beyond that in the Licence it is described by year of 2010 more stringent N-removal requirement, namely at that time it has to be reached the N: 10 mg/l in the effluent. For this reason the WWTP need a new upgrade project to be initiated and also for expand its capacity. By the last report of Water Authority the recent capacity and the flow rate of the plant is the same: 16000 m3/day.

HU-M-11 Dunaújváros, new WWTP (completed in 2002)

This WWTP is working very well with much better performance, as the newest requirement would need it. In 2004 there were described by the environmental authority the next Effluent Quality Limits: BOD: 25, COD: 125, SS: 35, TN: 50 mg/l respectively, and the performance of Effluent Quality average data in 2004, 2005 and 2006 are: BOD: 5.3, COD: 32, SS: 20, TN: 8,4 and TP: 1,8 mg/l respectively.

HU-M-12 Sopron, WWTP upgrade (incl. N and P removal) and sewerage expansion

The construction of Sopron WWTP has been finished in 2006 with ISPA grant as it was planned. There had been started the trial run and the commissioning was done in 2007.

HU-M-13 Szekszárd, reconstruction and upgrade of WTTP

This WWTP works almost well as of 2004. Still there is one problem because of the high industrial load of 44 % from diary and meat works, their pre-treatment systems and the high fluctuation of hydraulic loads. Even so the Effluent Quality average data of Szekszárd WWTP are in 2004, 2005 and 2006: BOD: 22, COD: 60, SS: 34, Grease: 2, TN: 12 and TP: 5,4 mg/l respectively. And in 2005 there were described by the environmental authority the next Effluent Quality Limits: BOD: 25, COD: 125, SS: 35, Grease: 10, TN: 55 and TP: 10 mg/l respectively.

HU-M-14 Salgótarján, wastewater treatment upgrade (N and P removal) and sewerage expansion (completed in 2002)

This plant cannot meet permanently the planned values and the more stringent water quality requirements, probably because of its low loading. In 2005 there were described by the environmental authority the next Effluent Quality Limits: BOD: 25, COD: 125, SS: 35, TN: 15/25, and TP: 2 mg/l respectively, and the performance of Effluent Quality average data in 2004 and 2005 are: BOD: 14,8/19,7, COD: 39,6/43,7, SS: 9,5/71,5, TN: 10,4 and TP: 4,0/3,5 mg/l respectively.

HU-M-15 Gödöllő, WWTP upgrade and sewerage expansion

The finishing of upgrade of this WWTP was planned by July of 2007. The expectation on its efficiency is high.

HU-M-16 Veszprém, WWTP upgrade (including N and P removal)

This WWTP works well from June of 2005 with some 15 000 m3/day flow rate, but in these days there are in progress also some construction works for expanding to reach 18,000 m3/day flow rate. In 2005 there were described by the environmental authority the next Effluent Quality Limits: COD: 75, Grease: 10, SS: 100, NO3: 60, NH4-N: 10 and TP: 4 mg/l respectively, and the performance of Effluent Quality average data in 2006 are: BOD: 10, COD: 34, Grease: 2, SS: 31, TN: 8,9 and TP: 1,5 mg/l respectively.

HU-M-17 Baja, wastewater treatment upgrade and sewerage expansion

At the Baja WWTP the reconstruction was finished in 2002 and than the plant could meet the authority requirements, which were in force that time, namely the secondary treatment without N and P removal. From 2005 the environmental authority described the next Effluent Quality Limits: COD: 125, BOD: 25, Grease: 5, SS: 35, NH4-N: 10 and TN: 35, TP: 2 mg/l respectively. These last mentioned limits for N and P are in force only till 2008, after there could be reached the TN: 10 mg/l and TP: 1 mg/l values by the licence. Currently, the plant is working only with 45 % of its capacity, so it is suitable for some smaller operational technological improvements in the future.

The information provided within the DABLAS project (2005) for the Interim Implementation Report of JAP indicates an amount of 39,629 millions Euro invested for reducing 39,629 t BOD load, 6,617 t of tot-N load and 1,895 tot-P load.

Name of WWT Plant	**Reductions in loads, in t/ year**				**Estimated Investment Cost Mil. EURO**
	BOD-load	COD-load	totN-load	totP-load	
Budapest North	1,095		1,460	438	15.1
Budapest South Pest	438		584	175	26.4
Budapest Central	22,356		1,278	639	469.0
Budapest South Buda	3,705		529	191	305.5
Szeged	3,833		548	197	80.2
Gyor	3,833		548	197	17.7
Szolnok	2,044		292	105	6.3
Debrecen	292		402	128	88.5
Székesfehérvár	193		266	34	4.9
Tatabanya	131		175	26	0.4
Dunaújváros	958		110	27	9.0
Sopron	219		88	36	15.7
Szekszárd	332		133	47	3.2
Salgótarján	37		27	15	3.8
Gödöllo	55		55	18	3.8
Veszprém	357		22	15	8.2
Baja	74		102	33	3.9
Sum:	39,629		6,617	1,895	1,061.4 Mil. EURO

1.6 Slovenia

1.6.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	Reductions in loads (New: After investment; Old: around 1996/97), in t/ year				Estimated Investment Cost not only for load reduction!
	BOD-load	COD-load	totN-load	totP-load	
Maribor	4,900	8,000	900	140	52.0 Mil. EURO
Ljubljana	9,433	15,400	1,733	270	109.5 Mil. EURO
Murska Sobota	1,103	1,800	203	32	9.2 Mil. EURO
Celje	1,715	2,800	315	49	20.8 Mil. EURO
Rogaska Slatina	294	480	54	8	16.0 Mil. EURO
Lendava	1,103	1,800	203	32	13.0 Mil. EURO
Krsko	490	800	90	14	11.0 Mil. EURO
Brezice	245	400	45	7	5.5 Mil. EURO
Velenje	1,225	2,000	225	35	16.5 Mil. EURO
Sevnica	245	400	45	7	5.5 Mil. EURO
Vrhnika	490	800	90	14	20.4 Mil. EURO
Trbovlje	441	720	81	13	7.1 Mil. EURO
Bohinjska Bistrica	270	440	50	8	5.0 Mil. EURO
Radovljica	735	1,200	135	21	10.0 Mil. EURO
Kranjska Gora	159	260	30	5	9.6 Mil. EURO
Trzi	490	800	30	4	11.8 Mil. EURO
Litija	466	760	86	13	7.5 Mil. EURO
Zagorje	417	680	77	12	6.7 Mil. EURO
Hrastnik	270	440	50	8	4.3 Mil. EURO
Dravograd	221	360	41	6	4.8 Mil. EURO
Mislinja	61	100	12	2	1.3 Mil. EURO
Slovenj Gradec	490	800	90	14	10.7 Mil. EURO
Ptuj	2,573	4,200	473	74	24.3 Mil. EURO
Sums	27,836	45,440	5,053	786	382.5 Mil. EURO

1.6.2 JAP – achieved measures end 2005

The information provided within the DABLAS project (2005) indicates an amount of 303.4 millions Euro invested for reducing 8,966t BOD load, 1,563 t of tot-N load and 586 tot-P load.

Name of WWT Plant	Reductions in loads, in t/ year				Estimated Investment Cost not only for load reduction!
	BOD-load	COD-load	totN-load	totP-load	
Maribor-main collectors and WWTP	2,874		411	148	34.5 Mil. EURO
Ljubljana	420		566	173	49.0 Mil. EURO
Murska Sobota	617		71	28	9.0 Mil. EURO
Celje	767		88	35	20.0 Mil. EURO
Rogaska Slatina	172		20	8	13.2 Mil. EURO
Lendava, incl. sewerage	283		32	13	11.2 Mil. EURO
Krsko	281		16	13	11.0 Mil. EURO
Brezice	287		16	13	6.0 Mil. EURO
Velenje	84		25	16	10.4 Mil. EURO

Sevnica	144		16	7	12.0 Mil. EURO
Vrhnika	5		-22	3	20.0 Mil. EURO
Trbovlje	415		47	19	6.0 Mil. EURO
Bohinjska Bistrica	160		18	7	14.2 Mil. EURO
Radovljica	390		22	11	10.0 Mil. EURO
Kranjska Gora	119		14	5	10.0 Mil. EURO
Trzic	287		33	13	11.8 Mil. EURO
Litija	160		18	5	7.5 Mil. EURO
Zagorje	243		28	11	6.7 Mil. EURO
Hrastnik	281		32	13	6.3 Mil. EURO
Dravograd	95		11	4	4.8 Mil. EURO
Slovenj Gradec	454		52	21	6.0 Mil. EURO
Ptuj	428		49	20	24.3 Mil. EURO
Sums	8,966		1,563	586	303.4 Mil. EURO

1.7 Croatia

1.7.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	**Reductions in loads (New: After investment; Old: 1996/97), in t/year**				**Estimated Investment Cost includes some sewerage**
	BOD-load	COD-load	totN-load	totP-load	
Vinkovci – financing assured (part of the ongoing reconstruction project – phase I biological treatment)	190	n.a.	n.a.	n.a.	12.0 Mil. EURO
For the following four cities the preparation work is assured, but the financing not yet completely					
Cakovec – construction of two collectors and extension of WWT plant for tertiary treatment (116 400 pop. equivalents)	n.a.	n.a.	n.a.	n.a.	7.3 Mil. EURO
Varazdin – reconstruction of the blower station and the sludge treatment	1,162	1,779	132	1	12.0 Mil. EURO
Koprivnica – extension of the WWTP (secondary and tertiary treatment for 90,000 PE)	604	806	n.a.	n.a.	10.8 Mil. EURO
Zagreb – biological treatment for 1.5Mio PE	10,438	29,743	1,320	220	256.0 Mil. EURO
For the following two cities the preparation work is assured, but the financing not yet					
Sisak (cost includes some sewerage)	700	919	48	2	60.0 Mil. EURO
Karlovac / Duga Resa (cost includes some sewerage)	2,026	1,179	9	16	50.0 Mil. EURO
Sum for other cities (financing still open)	190	n.a.	n.a.	n.a.	25.4 Mil. EURO
Sums	> 15,310	> 34,426	> 1,509	> 239	433.5 Mil. EURO

1.7.2 Status of the listed JAP measures in 2005

Name of the WWTP	Investment costs	Status
Vinkovci Construction of WWTP biological treatment	EUR 5.8 mil.	completed
Cakovec Sewerage network Extension of plant to tertiary treatment	EUR 10.8 mil.	under construction
Varazdin Reconstruction of the sludge line and the pumping station	EUR 2.5 mil.	under construction
Koprivnica Extension of WWTP (secondary and tertiary treatment for 90000 PE)	EUR 10.3 mil.	under construction (end of 2007)
Zagreb Construction of WWTP biological treatment for 1,5 Mio PE	EUR 256 mil.	Mechanical – completed 1 of the 3 biological treatment lines has been completed (300000PE)
Sisak Construction of sewerage WWTP – with secondary treatment	- EUR 31 mil.	under construction Nominated for IPA
Karlovac / Duga Resa Construction of sewerage WWTP– with secondary treatment	EUR 33 mil.	Planning documents in preparation Funds provided for through ISPA

1.7.3 Projects in preparation

Name of the WWTP	Investment costs	Status
Vrbovec Construction of WWTP with secondary treatment, 2009-2011	EUR 6 mil.	Nominated for IPA
Vukovar – Construction of WWTP with secondary treatment, 2009 -2012	EUR 19 mil.	
Osijek – construction of WWTP with secondary treatment, 2007 -2011	EUR 20 mil.	
Slavonski Brod – construction of WWTP with secondary treatment, 2007-2010	EUR 33 mil.	
Nova Gdariška – construction of WWTP with secondary treatment, 2009-2012	EUR 13 mil.	
Đakovo – construction of WWTP with secondary treatment, 2009-2012	EUR 16.5 mil.	
Krapina – construction of WWTP with secondary treatment, 2009-2012	EUR 5.8 mil.	
Ogulin – Sewerage WWTP– with secondary treatment	EUR 10 mil.	Republic of Croatia and IBRD – Inland Waters Project
Virovitica Sewerage	EUR 5.2 mil.	
Southern Baranja Sewerage	EUR 5.5 mil.	
Našice Sewerage WWTP– with secondary treatment	EUR 7.2 mil.	
Vukovar Sewerage	EUR 10.4 mil.	

Ilok Sewerage WWTP– with secondary treatment	EUR 2.8 mil.	
Belišće Extension of the final stage of WWTP	EUR 5.4 mil.	Regular annual budget of Hrvatske vode (Croatian Waters)
Bizovac-Petrijevci-Ladimirevci WWTP – with secondary treatment	EUR 1.2 mil.	
Požega WWTP – with secondary treatment	EUR 30 mil.	

1.8 Bosnia and Herzegovina

1.8.1 JAP – proposed measures 2000 – 2005

Name of Location	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost includes some minor investment into sewerage**
	BOD-load	COD-load	totN-load	totP-load	
Tuzla-Lukovac	1,540	4,140	1,080	160	58.0 Mil. EURO
Sarajevo	6,150	10,660	1,015	150	15.0 Mil. EURO
Banja Luka	n.a.	n.a.	910	140	50.0 Mil. EURO
Bjeljina	n.a.	n.a.	n.a.	n.a.	12.0 Mil. EURO
Brcko	n.a.	n.a.	n.a.	n.a.	12.0 Mil. EURO
Sums	> 7,690	> 14,800	> 3,005	> 450	147.0 Mil. EURO

1.8.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 145.2 millions Euro invested for reducing the pollution.

Name of Locat ion	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost includes some minor investment into sewerage**
	BOD-load	COD-load	totN-load	totP-load	
Tuzla-Lukovac					58.0 Mil. EURO
Sarajevo					15.0 Mil. EURO
Banja Luka					50.0 Mil. EURO
Bjeljina					12.0 Mil. EURO
Brdsko District					10.2 Mil. EURO
Sums					145.2 Mil. EURO

1.9 Serbia

1.9.1 JAP – proposed measures 2000 – 2005

(Federal Republic of Yugoslavia)

Name of WWT Plant	Reductions in loads (New: After investment; Old: around 1996/97), in t/year				Estimated Investment Cost not only for load reduction!
	BOD-load	COD-load	totN-load	totP-load	
Remark: The data of FRYU will be integrated as soon as the necessary links are established with FRYU.					

1.9.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 605 millions Euro invested for reducing 54,000 t BOD load, 3,305 t of tot-N load and 1,592 t of tot-P load.

Name of WWT Plant	**Reductions in loads, in t/year**				**Estimated Investment Cost**
	BOD-load	COD-load	totN-load	totP-load	
Belgrade	24,911		1,424	712	350.0 Mil. EURO
Novi Sad	6,707		383	192	46.0 Mil. EURO
Nis	15,969		913	456	58.0 Mil. EURO
Sabac	2,491		142	71	21.0 Mil. EURO
Vrbas	1,309		75	37	55.0 Mil. EURO
Zrenjanin	1,916		274	55	37.0 Mil. EURO
Subotica	164		66	54	30.0 Mil. EURO
Senta	511		29	15	8.0 Mil. EURO
Sum	53,979		3,305	1,592	605.0 Mil. EURO

1.10 Bulgaria

1.10.1 JAP – proposed measures 2000 – 2005

Name of Location	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost includes some minor investment into sewers**
	BOD-load	COD-load	totN-load	totP-load	
Sofia	4,819	5,670	1,036	135	26.5 Mil. EURO
Veliko Tarnovo	1,696	2,413	131	40	9.2 Mil. EURO
Gorna Orahowitza (load reductions only municipal)	1,584	2,614	63	24	n.a. Mil. EURO
Montana	2,308	4,950	160	49	17.7 Mil. EURO
Pleven	1,346	2,984	93	59	2.0 Mil. EURO
Dobrich	n.a.	n.a.	n.a.	n.a.	1.0 Mil. EURO
Gabrovo	91	209	n.a.	15	2.0 Mil. EURO
Razgrad	34	n.a.	n.a.	0	1.0 Mil. EURO
Troyan	1,794	3,796	150	30	9.2 Mil. EURO
Vratza	412	1,335	214	37	2.0 Mil. EURO
Samokov	1,300	3,079	130	57	2.0 Mil. EURO
Lovech	1,382	2,927	119	44	9.3 Mil. EURO
Sevlievo	1,194	1,962	136	42	12.5 Mil. EURO
Popovo	913	1,891	52	24	13.8 Mil. EURO
Stragitza	77	91	3	1	0.9 Mil. EURO
Dulovo	241	390	11	2	2.0 Mil. EURO

Isperih	257	407	10	3	1.0 Mil. EURO
Sums	> 19,448	> 34,718	> 2,308	> 562	> 111.9 Mil. EURO

1.10.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 171.9 millions Euro invested for reducing 18,657 t BOD load, 5,804 t of tot-N load and 1,766 t of tot-P load.

Name of Location	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost includes some minor investment into sewers**
	BOD-load	COD-load	totN-load	totP-load	
Sofia	10,403		4,161	1,110	58.5 Mil. EURO
Gorna Orahowitza	1,271		182	65	16.1 Mil. EURO
Montana	1,140		163	59	16.7 Mil. EURO
Pleven	776		310	150	5.3 Mil. EURO
Gabrovo	639		256	99	12.4 Mil. EURO
Razgrad	63		73	29	8.8 Mil. EURO
Troyan	1,852		212	85	8.9 Mil. EURO
Vratza	118		173	61	3.5 Mil. EURO
Lovech	1,015		116	46	14.0 Mil. EURO
Sevlievo	666		76	30	14.0 Mil. EURO
Popovo	446		51	20	11.9 Mil. EURO
Dulovo	268		31	12	1.8 Mil. EURO
Sums	18,657		5,804	1,766	171.9 Mil. EURO

1.11 Romania

1.11.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost not only for load reduction!**
	BOD-load	COD-load	totN-load	totP-load	
Bucharest	10,600	14,120	3,363	444	492.5 Mil. EURO
Craiova	660	864	597	63	32.0 Mil. EURO
Braila	3,220	3,750	126	26	21.9 Mil. EURO
Galati	4,355	4,540	224	37	29.5 Mil. EURO
Zalau	108	146	39	11	7.0 Mil. EURO
Resita	126	127	85	22	3.5 Mil. EURO
Campulung	228	238	38	7	1.5 Mil. EURO
Deva	150	156	86	21	5.6 Mil. EURO
Timisoara	3,284	2,561	444	101	1.5 Mil. EURO
Iasi	1,390	772	165	35	1.9 Mil. EURO
Sums	24,121	27,274	5,167	767	596.9 Mil. EURO
Remark: The ratios of COD removed versus BOD removed are small, they should be in the order of 1.7 to 1.0					

1.11.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 214.6 millions Euro invested for reducing 12,298 t BOD load, 1,964 t of tot-N load and 2,061 t of tot-P load.

Name of WWT Plant	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost not only for load reduction!**
	BOD-load	COD-load	totN-load	totP-load	
Bucharest (Glina)	10,643		3,548	2,129	108.3 Mil. EURO
Zalau	867		87	52	9.6 Mil. EURO
Timisoara	- 158		-63	88	45.0 Mil. EURO
Iasi	946		-1,608	-208	51.7 Mil. EURO
Sums	12,298		1,964	2,061	214.6 Mil. EURO

1.12 Moldova

1.12.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	**Reductions in loads (New: After investment; Old: around 1996/97), in t/year**				**Estimated Investment Cost includes also Cost of sewerage**
	BOD-load	COD-load	totN-load	totP-load	
Cahul	20	33	52	11	53.8 Mil. EURO
Ungheni	22	29	55	12	57.7 Mil. EURO
Comrat	18	24	50	9	11.7 Mil. EURO
Ciadir-Lunga	13	17	57	11	8.9 Mil. EURO
Edineti	12	9	65	7	4.5 Mil. EURO
Falesti	8	18	46	5	15.4 Mil. EURO
Vulcanesti	15	20	35	4	8.2 Mil. EURO
Nisporeni	12	21	30	4	15.2 Mil. EURO
Taraclia	11	18	35	4	7.6 Mil. EURO
Glodeni	9	14	45	5	8.8 Mil. EURO
Leova	15	30	20	4	5.8 Mil. EURO
Briceni	14	26	45	6	8.9 Mil. EURO
Cupcini	12	29	15	3	12.2 Mil. EURO
Costesti / Rascani	12	27	15	2	7.2 Mil. EURO
Cantemir	11	24	20	3	20.8 Mil. EURO
Other communities	45	120	200	30	50.0 Mil. EURO
Sums	249	459	785	120	296.7 Mil. EURO
Remarks: The load reductions shown – big on the side of nutrients, comparatively smaller for BOD and COD – can only be valid if WWT plants exist in all those places, and in case the investment into these WWT plants goes into plant expansion for nutrient removal.					

1.12.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 32.4 millions Euro invested for reducing 29 t BOD load, 608 t of tot-N load and 2.54 t of tot-P load.

Name of WWT Plant	Reductions in loads, in t/year				Estimated Investment Cost
	BOD-load	COD-load	totN-load	totP-load	
Ungheni	5		1.8	0.9	0.01 Mil. EURO
Comrat	10.4		3.7	0.7	0.02 Mil. EURO
Taraclia	12.3		4.2	0.9	0.03 Mil EURO
Lapusna	1.3		0.1	0.04	0.003 Mil EURO
Total Sum	29		9.8	2.54	0.063 Mil. EURO

1.13 Ukraine

1.13.1 JAP – proposed measures 2000 – 2005

Name of WWT Plant	Reductions in loads (New: After investment; Old: around 1996/97), in t/year				Estimated Investment Cost not only for load reduction!
	BOD-load	COD-load	totN-load	totP-load	
Uzhgorod	218	392	293	29	25.0 Mil. EURO
Chernivtsi	318	n.a.	65	22	4.7 Mil. EURO
Izmail	31	58	n.a.	9	12.4 Mil. EURO
Mukachevo	111	171	128	6	3.0 Mil. EURO
Vilkovo	n.a.	n.a.	n.a.	n.a.	6.5 Mil. EURO
Reni Sea Port	n.a.	n.a.	n.a.	n.a.	2.8 Mil. EURO
Kolomia	n.a.	n.a.	n.a.	n.a.	? Mil. EURO
Sums	> 678	> 621	> 486	> 66	> 54.4 Mil. EURO
Remark: The load reductions shown – big on the side of nutrients, comparatively smaller for BOD and COD – can only be valid if WWT plants exist in all those places, and in case the investment into these WWT plants goes into plant expansion for nutrient removal.					

1.13.2 JAP – achieved measures end 2005

The information provided within the DABLAS project (2005) indicates an amount of 39.7 millions Euro invested for reducing 2,378 t BOD load, 743 t of tot-N load and 464 t of tot-P load.

Name of WWT Plant	Reductions in loads (New: After investment; Old: around 1996/97), in t/year				Estimated Investment Cost
	BOD-load	COD-load	totN-load	totP-load	
Uzhgorod	228		91	100	25.0 Mil. EURO
Chernivtsi	639		256	190	0.3 Mil. EURO
Izmail	767		307	107	3.6 Mil. EURO
Mukachevo	32		13	30	0.5 Mil. EURO
Vilkovo	128		15	6	6.5 Mil. EURO
Reni Sea Port	128		15	4	2.8 Mil. EURO
Kolomia	456		46	27	1.0 Mil. EURO
Sums	2,378		743	464	39.7 Mil. EURO

1.14 Summary for the discharges of municipal wastewater, by country

1.14.1 JAP 2000 – 2005

Name of Location	Reductions in loads (New: After investment; Old: between 1996/97 and 2000), in t/year				Estimated Investment Cost not only for load reduction, but also to some extent for end collectors of sewer systems
	BOD-load	COD-load	totN-load	totP-load	
Austria	~ 14,000	~ 30,000	~ 9,500	~ 1,000	~ 730.0 Mil. EURO
Bosnia-Herzegovina	> 7,690	>14,800	> 3,005	> 450	147.0 Mil. EURO
Bulgaria	> 19,448	> 34,718	> 2,308	> 562	> 111.9 Mil. EURO
Croatia	> 15,310	> 34,426	>1,509	> 239	433.5 Mil. EURO
Czech Republic	1,394	> 597	1,306	86	207.8 Mil. EURO
Federal Republic of Germany	1	9	1,700	~ 3	> 110 Mil. EURO
Hungary	n.a.	n.a.	3,282	1,013	655.0 Mil. EURO
Moldova	249	459	785	120	296.7 Mil. EURO
Romania	24,121	27,274	5,167	767	596.9 Mil. EURO
Slovak Republic	12,968	25,459	2,001	125	103.4 Mil. EURO
Slovenia	27,836	45,440	5,053	786	382.5 Mil. EURO
Ukraine	> 678	> 621	> 486	> 66	> 54.4 Mil. EURO
Federal Republic of Yugoslavia (to be added in the future)					Mil. EURO
Sum over these States ("Danube Basin")	> 123,695	> 213,803	> 36,102	> 5,217	> 3,829.1 Mil. EURO

1.14.2 Measures achieved/in progress end 2005

Name of Location	Reductions in loads (New: After investment; Old: between 1996/97 and 2000), in t/year				Estimated Investment Cost not only for load reduction, but also to some extent for end collectors of sewer systems
	BOD-load	COD-load	totN-load	totP-load	
Austria	> 422	> 11,600	>1,520	> 71	353.2 MEURO
Bosnia-Herzegovina					145.2 MEURO
Bulgaria	18,657	n.a.	5,804	1,766	171.9 MEURO
Croatia					349.4 MEURO
Czech Republic	1,307	2,500	836	148	199.6 MEURO
Germany	1	9	1,200	~ 3	> 160 MEURO
Hungary	39,629		6,617	1,895	1,061.4 MEURO
Moldova	29		9.8	2.54	0.063 MEURO
Romania	12,298		1,964	2,061	214.6 MEURO
Slovak Republic	22,468	44,110	1,686.6	165.6	112.966 MEURO
Slovenia	8,966		1,563	586	303.4 MEURO
Ukraine	2,378		743	464	39.7 MEURO
Serbia	53,979		3,305	1,592	605.0 MEURO
Sum "Danube Basin"	> 160,134	> 58,219	> 25,248	> 8,754	> 3,716.4 MEURO

Annex 2 – Planned measures for a reduction of industrial wastewater discharges, including agricultural (point) sources

1.1 Germany

1.1.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Esso Refinery Ingolstadt *	COD: +/- 0 t/year; totN: 20 t/ year; totP: +/- 0 t/year;	0.6 Mil. EURO
Nitrochemie Aschau *	COD: +/- 0 t/year; totN: 55 t/year; totP: +/- 0 t/year;	2.4 Mil. EURO
Sum		3.0 Mil. EURO

* Considerable load reduction measures were introduced already between 1997 and 2000; here indicated figures refer to reductions between 2001 and 2005.

1.1.2 JAP – achieved end 2005

Name of Location	**Remarks to load reductions**	**Estimated Investment Cost for load reduction**
Esso Refinery Ingolstadt *	COD: +/- 0 t/year; totN: 20 t/ year; totP: +/- 0 t/year;	0.6 MEURO
Nitrochemie Aschau *	closed down	
Sum		0.6 MEURO

* Considerable load reduction measures were introduced already between 1997 and 2000; here indicated figures refer to reductions between 2001 and 2005.

1.2 Austria

1.2.1 JAP – proposed measures 2000 – 2005

Name of Location	**Remarks as to load reductions**	**Estimated Investment Cost of load reduction**
MoDo Hallein, Pulp and Paper	Biological WWT plant, removes biodegardable organic carbon, around 6,000 t BOD per year	33 Mil. EURO

1.2.2 JAP – achieved end 2005

Name of Location	Remarks to load reductions	Estimated Investment Cost for load reduction
MoDo Hallein, Pulp and Paper	Biological WWT plant, removes biodegardable organic carbon, around 6,000 t BOD per year	33 MEURO
Steirische TKV	Extension of biological WWTP, reduction of around 1 t BOD p.a. and 11 t COD p.a.	2.1 MEURO
Salinen Austria GmbH	Sewage sludge diversion and treatment, settling out of 38,000 t NaCl p.a.	8.2 MEURO
Mayr-Melnhof Karton GmbH	WWTP, reduction of 27 t BOD p.a. and 193 t COD p.a.	5.5 MEURO
Rauch Fruchtsäfte GmbH	WWTP, reduction of 48 t BOD p.a. and 1,164 t COD p.a.	2.4 MEURO
Schlempetrocknungs-GmbH	WWTP, 60,000 m³ wastewater p.a., reduction of 5,140 t BOD p.a.	2.7 MEURO
AMI Agrolinz Melamine International	Stripper for ammonia-production, 6,500 m³ wastewater p.a., reduction of 46 t COD p.a.	1.7 MEURO
Burgenländische TKV	Biological wastewater pre-treatment, additional reduction of 600 t COD p.a.	1.7 MEURO
BMW Motoren GmbH	New production process, reduction of 33,119 m³ wastewater, 36 t COD p.a. and 100 t NH4-N p.a.	1.6 MEURO
Zellstoff Pöls AG	Reduction of 59 t AOX and of 5,930 t COD p.a.	47 MEURO
CIBA Spezialitätenchemie Österreich GmbH	New cooling process, reduction of 5.7 mio m³ wastewater p.a.	1.3 MEURO
SCA Graphic Laakirchen AG	Ozone treatment, reduction of 560 t COD and 37.5 t of N p.a.	6.8 MEURO
Spitz S. GmbH	Reduction of 237,000 m³ wastewater, 191 t COD and 98 t NH4-N p.a.	5.1 MEURO
Eternit-Werke AG	WWTP, reduction of 109 t COD p.a.	1.2 MEURO
Sum:		120.3 MEURO

1.3 Czech Republic

1.3.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Otrokovice tannery	Joint treatment with municipality, incl. nitrification and nitrogen removal	2.8 Mil. EURO
Tanex Vladislav	Glue production; expansion of WWT plant	0.4 Mil. EURO
Snaha Brtnice tannery	General reconstruction of WWT plant; COD/BOD, NH4-N, Cr	0.8 Mil. EURO
Prudká Brno, paper production	Construction of WWT Plant (biology); will remove COD/BOD	0.2 Mil. EURO

MORPA Jindrichov paper production	Construction of WWTP (biology); Removal of COD/BOD	0.2 Mil. EURO
Other industries	Nutrient removal	0.9 Mil. EURO
Gigant Dubnany pig farm	Remedial measures; slurry reduction	5.3 Mil. EURO
Sum		10.6 Mil. EURO

1.3.2 JAP – achieved end 2005

Name of Location	**Remarks as to load reductions**	**Estimated Investment Cost of load reduction**
TOMA Otrokovice tannery	Term of realisation postponed to 2007 - 2012	-
Tanex Vladislav Glue production	Expansion of WWT plant Removal of around 25 t BOD p.a, 60 t COD p.a and 6 t NH_4-N p.a	0.4 Mil. EURO
Snaha Brtnice tannery	Reduction of production and changes of plant technology, general reconstruction of WWT plant will be not realised	-
Brněnské papírny Prudka paper production	Planned measures could not be implemented because of dissention of the new owner. New conception of measures has been applied.	
OLPA Jindrichov paper production	Construction of WWTP (biology); Removal of around 27 t BOD p.a. and 57 t COD p.a.	0.6 Mil. EURO
OLPA Aloisov paper production	Reconstruction of WWTP (new biological reactor)*	0.6 Mil. EURO
OLPA Lukavice paper production	Reconstruction of WWTP (new biological reactor) **	0.7 Mil. EURO
Other industries	Nutrient removal	0.7 Mil. EURO
Gigant Dubnany pig farm	Farm was closed down. At present it does not exist.	
Sum		3.0 Mil. EURO

* reconstruction finished in 2006, ** reconstruction finished in 2007

1.4 Slovakia

1.4.1 JAP – proposed measures 2000 – 2005

Name of Location	**Remarks as to load reductions**	**Estimated Investment Cost of load reduction**
Istrochem Bratislava	WWTP, removal of BOD, COD and totN	8.2 Mil. EURO
Povazske Chemical Plants	Reconstruction of WWTP	0.5 Mil. EURO
Biotika Slovenska Lupca	Extension of WWTP by anaerobic stage	3.4 Mil. EURO
Chemko Strazske	Reconstruction of sewerage system	2.1 Mil. EURO
Sum		14.2 Mil. EURO

1.4.2 JAP – achieved end 2005

Name of WWT Plant	Year	Profil	Q m^3/y	BOD_5 t/y	$CHSK_{Cr}$ t/y	N_t t/y	P_t t/y
AQUACHÉMIA (PCHZ.a s. Žilina – old name)	2005	Influent	8,556	0.184	0.242		
		Effluent		0.091	0.145		
		Reduction		0.093	0.097	-	-
Istrochem Bratislava	2005	Influent	754,300		1639		
		Effluent			1594.2		
		Reduction			44.80	-	-
Biotika Slovenská Ľupča - A	2005	Influent	1,285,000	2192.4	3859	324.9	
		Effluent		67.3	166		7.1
		Reduction		2125.10	3693.00	-	-
Biotika Slovenská Ľupča -B	2005	Influent	8,871,000				
		Effluent		24.1	103.2		
		Reduction		-	-	-	-
Ekologické služby (Chemko Strážske)	2005	Influent	1,845,850				
		Effluent		16.7	71	17.4	0.3
		Reduction		-	-	-	-
Ekologické služby (Chemko Strážske)	2005	Influent	1,968,511				
		Effluent		75.3	262.2	56.4	
		Reduction		-	-	-	-

NOTE : Owners of industrial WWTPs are mostly private companies. There is problem with database concerning wastewater and lack of information about investment.

1.5 Hungary

1.5.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction and demonstration projects
Nitrokemia Balatonfüzfö	totN: 420 t/year; totP: 6 t/year;	5.9 Mil. EURO
Piggery Mosonmagyarovar	totN: 200 t/year; totP: 50 t/year	0.7 Mil. EURO
MOL Company (reduction of oil pollution)	Oil 60 t/ year	48.7 Mil. EURO
BORSODCHEM Company	Saltwater reduction programme	2.9 Mil. EURO
Bábolna Poultry Ltd.	Grease, COD	0.6 Mil. EURO
Demonstration projects, *non-point source pollution*:		
Tisza Basin	Pollution minimization from agricultural activities, totN: 100 t/year; totP: 20 t/year	0.5 Mil. EURO
Körös-Maros	Agro- and nature conservation training in Körös-Maros National Park totN: 200 t/year; totP: 50 t/year	3.0 Mil. EURO
Hajdú-Bihar county	Minimising of pollution from agricultural origin	1.3 Mil. EURO
Danube Basin in Hungary	Rational farming for decreasing nutrient inputs in the Hungarian part of the Danube Basin totN: 2,000 t/year; totP: 200 t/year	1.4 Mil. EURO
Babocsa / Drava floodplains	Organic farming totN: 100 t/year; totP: 20 t/year	1.7 Mil. EURO
Sum		66.7 Mil. EURO

1.5.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 41.6 millions Euro invested for reducing pollution.

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction and demonstration projects
Mátra Sugar Co., Szolnok	BOD red.: 571 t/year; COD red.: 638 t/year;	0.6 Mil. EURO
MOL Rt. Százhalombatta	BOD red.: 630 t/year; COD red.: 1,194 t/year; N red. 92 t/year	39.6 Mil. EURO
Dunapack Co. Brownpaper	BOD red.: 263 t/year; COD red.: 394 t/year;	1.4 Mil. EURO
Sum:		41.6 Mil. EURO

1.6 Slovenia

1.6.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Podgrad / Gornja Radgona	Pig farm (BOD/COD, nutrients)	1.7 Mil. EURO

1.6.2 JAP – achived end 2005 and in process of finalisation

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Pig Farm Podgrad	reconstruction of WWTP, treatment of wastewater, sludge disposal solution, implement BAT	2.2 Mil. EURO
Farme Ihan d.d	treatment of wastewater, sludge disposal solution, implement BAT	4.8 Mil. EURO
Paper factory VIPAP Krško	treatment of wastewater, sludge disposal solution, implement BAT	5.5 Mil. EURO
Leather processing plant Vrhnika	treatment of wastewater, sludge disposal solution	0.9 Mil. EURO
Paper factory Radeče	treatment of wastewater, sludge disposal solution, implement BAT, BOD red. 59 t/a, COD red. 81 t/a	1.3 Mil. EURO
Brewery Union Ljubljana	BOD red. 527 t/a, N red. 40 t/a, P red. 56 t/a, COD red. 1,133 t/a	5.0 Mil. EURO

1.7 Croatia

1.7.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost
	Croatia has not nominated reductions with industrial or agricultural point source discharges	Mil. EURO

1.7.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 4.5 millions Euro invested for reducing pollution.

Name of Location	Remarks as to load reductions	Estimated Investment Cost
Vrbovec - food industry	Pre-treatment of Waste waters	2.0 Mil. EURO
Varazdin – food industry	Pre-treatment of Waste Waters, BOD red. 220 t/a, N red. 6 t/a, P red. 4 t/a, COD (chemical oxygen demand-Cr) red. 287 t/a	0.8 Mil. EURO
Osijek - food industry	Pre-treatment of Waste Waters, BOD red. 309 t/a, N red. 5 t/a, P red. 4 t/a, COD red. 584 t/a	1.5 Mil. EURO
Belisce - pulp and paper industry	Pre-treatment of Waste Waters, BOD red. 2,297 t/a, COD red. 2,777 t/a	0.2 Mil. EURO
Sum:		4.5 Mil. EURO

1.8 Bosnia and Herzegovina

1.8.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Chlorine-Alkali-Complex Tuzla	Reconstruction of pre-treatment facilities. Removes COD, BOD, N and P.	2.2 Mil. EURO
Pulp and Paper Industry Maglaj	Rehabilitation / reconstruction; no further data	3.0 Mil. EURO
Coke and Chemical Industry Lukavac	Reconstruction of pre-treatment; removes COD and BOD	2.8 Mil. EURO
Cellulose / Viscose Factory Banja Luka	Reconstruction and improvement of WWTP; no further data	3.5 Mil. EURO
Iron Works Zenica	Reconstruction of WWTP	1.6 Mil. EURO
Pulp and Paper Industry Prijedor	Construction of WWT Plant; no further data	14.0 Mil. EURO
Pig Breeding Farm Brcko	Construction of WWTP; will remove 1,570 t N per year and 350 t P per year	2.3 Mil. EURO
Sum		29.4 Mil. EURO

1.8.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 29.4 millions Euro invested for reducing pollution.

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Chlorine-Alkali-Complex Tuzla	Reconstruction of pre-treatment facilities. Removes COD, BOD, N and P. BOD red. 632 t/a, COD red. 169 t/a, N red. 26 t/a, P red. 53 t/a.	2.2 Mil. EURO
Pulp and Paper Industry Maglaj	Rehabilitation / reconstruction; COD_{Cr} 697 t/a, SS 784 t/a, SO_4 218 t/a, BOD red. 466 t/a	3.0 Mil. EURO
Coke and Chemical Industry Lukavac	Reconstruction of pre-treatment; removes COD and BOD, BOD red. 35 t/a, COD red. 90 t/a	2.8 Mil. EURO
Cellulose / Viscose Factory INCEL Banja Luka	Reconstruction and improvement of WWTP; no further data	3.5 Mil. EURO
Iron Works Željezara Zenica	Reconstruction of WWTP, BOD red. 937 t/a, COD red. 1,415 t/a	1.6 Mil. EURO
Pulp and Paper Industry CELPAK Prijedor	Construction of WWT Plant; no further data	14.0 Mil. EURO
Pig Breeding Farm Brcko	Construction of WWTP; will remove 1,570 t N per year and 350 t P per year	2.3 Mil. EURO
Sum		29.4 Mil. EURO

1.9 Serbia

1.9.1 JAP – proposed measures 2000 – 2005

(Federal Republic of Yugoslavia)

Name of Location	Remarks as to load reductions	Estimated Investment Cost
Remark: Data from the Federal Republic of Yugoslavia will be incorporated as soon as cooperation has been established.		

1.9.2 JAP – achieved end 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost
No available data with industrial or agricultural point source discharges.		

1.10 Bulgaria

1.10.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost
Gorna Oriahovitza	Reductions of organic carbon (BOD and COD)	n.a. Mil. EURO

1.10.2 JAP – achieved end 2005

The information were provided within the DABLAS project (2005).

Name of Location	Remarks as to load reductions	Estimated Investment Cost
Gorna Oriahovitza – food industry	Reductions BOD 2,571 t/a and COD 3,886 t/a	5.0 Mil. EURO
WWTP Sviloza Svishtov – chemical industry	Reductions BOD 2,571 t/a, COD 3,886 t/a, N 105 t/a and P 1 t/a	7.0 Mil. EURO
WWTP Bulgarska maja – Ruse – food industry	Reductions BOD 1,307 t/a, COD 1,922 t/a, N 284 t/a and P 5 t/a	2.0 Mil. EURO
Lesoplast – Troyan - WWTP	Reductions BOD 765 t/a, COD 1,467 t/a, N 21 t/a and P 4 t/a	n.a. Mil. EURO
WWTP Velur Lovetch – leather industry	Reductions BOD 766 t/a, COD 1,162 t/a, N 273 t/a and P 6 t/a	n.a. Mil. EURO
WWTP Kremikovtsi – Sofia – iron and steel industry	Reductions BOD 101 t/a, Mn (manganese): 1 t/a, NH4-N (ammonium nitrogen): 350 t/a	0.2 Mil. EURO
WWTP Mayer Hofer Nikopol - metal surface treatment	Reductions BOD 34 t/a	n.a. Mil. EURO
WWTP Fazerles Silistra – pulp and paper industry	Reductions BOD 208 t/a, COD 486 t/a, SS (suspended solids): 55 t/a	1.0 Mil. EURO
WWTP-Goliamo Vranovo pig farm	Reductions BOD 1,934 t/a, COD, N 34 t/a and P 222 t/a	11.0 Mil. EURO
WWTP-Udelnik pig farm	Reductions BOD 898 t/a, COD, N 223 t/a and P 148 t/a	4.5 Mil. EURO
WWTP-Brashlen pig farm	Reductions BOD 1,934 t/a, COD, N 34 t/a and P 222 t/a	9.0 Mil. EURO
WWTP-Ivailo pig farm		n.a Mil. EURO
WWTP-Zornitza Kesarevo pig farm		n.a Mil. EURO
Total Sum:		> 39.7 Mil. EURO

1.11 Romania

1.11.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost of load reduction
Iasi, Antibiotics Industry	Organic carbon (COD; BOD)	1.8 Mil. EURO
Pitesti, Arpechim	Organic carbon (COD; BOD)	13.9 Mil. EURO
Somes Dej	Organic carbon (COD; BOD; totN)	0.6 Mil. EURO
Oltchim Rm. Valcea	Organic carbon (COD; BOD; totN)	0.7 Mil. EURO
Fibrex Savinesti	Organic carbon (COD; BOD; totN)	1.2 Mil. EURO
Romfosfochim	Reconstruction of mill area	2.8 Mil. EURO
Integrata Arad	Organic carbon (COD; BOD; totN)	1.0 Mil. EURO
Comsuin Ulmeni, agriculture	Nutrients	1.0 Mil. EURO
Suinprod Independentea, agric.	Nutrients, organic carbon	0.8 Mil. EURO
Comsuin Beregsau	Nutrients, organic carbon	1.9 Mil. EURO

Sum	The total indicated removals are 6,300 t BOD per year, 6,300 t COD per year, 2,060 t totN per year and 153 t totP per year. Remark: The ratio of COD removed versus BOD removed is small, it should be in the order of 1.7 to 1.0	25.7 Mil. EURO

1.11.2 JAP – achieved end 2005

The information provided within the DABLAS project (2005) indicates an amount of 33.2 millions Euro invested for reducing pollution.

Name of Location	**Remarks as to load reductions**	**Estimated Investment Cost of load reduction**
SC Oltchim SA - Ramnicu Valcea – chemical industry	BOD red.: 6,309 t/a, COD red.: 10,495 t/a; SS (suspended solids): 6,553 t/a	9.2 Mil. EURO
SC Celohart Donaris SA Braila pulp and paper industry	BOD red.: 328 t/a, COD red.: 1,704 t/a; SS (suspended solids): 326 t/a; AOX (adsorbable organic halogens): 44 t/a	3.0 Mil. EURO
Arpechim Pitesti - chemical industry	BOD red.: 75 t/a, COD red.: 1,595 t/a; phenols: 5 t/a	10.8 Mil. EURO
SC Azomures SA Turnu Mures-fertiliser industry	Red. NO_3 (nitrate): 2,250 t/a, Red. NH_4-N (ammonium nitrogen): 100 t/a	10.0 Mil. EURO
SC Sinteza Oradea chemical industry	Red. SS (suspended solids): 3 t/a	0.2 Mil. EURO
Sum:	The total indicated removals are 6,712 t BOD per year; 13,794 t COD per year	33.2 Mil. EURO

1.12 Moldova

1.12.1 JAP – proposed measures 2000 – 2005

Name of Location	**Remarks as to load reductions, in t/year**				**Estimated Investment Cost – not only for load reduction?**
	BOD	COD	totN	totP	
Town Falesti, WWTP	4	12	20	4	7.5 Mil. EURO
Town Lipcani, WWTP	3	9	15	3	8.0 Mil. EURO
Town Ocnita, WWTP	2	9	12	3	6.5 Mil. EURO
Village Cucoara, WWTP	1	4	5	1	4.5 Mil. EURO
Village Congaz, WWTP	0	1	4	1	5.5 Mil. EURO
Village Cociuela, WWTP	0	1	4	1	7.0 Mil. EURO
Village Cioc-Maidan, WWTP	0	1	3	1	7.5 Mil. EURO
Village Mereseni, WWTP	0	1	3	1	6.0 Mil. EURO
Town Glodeni, WWTP	2	5	14	3	3.5 Mil. EURO
Town Briceni	3	8	20	5	4.2 Mil. EURO
Town Edinet/Cupcini	5	9	30	6	4.5 Mil. EURO
Others WWTPs	7	15	50	10	20.0 Mil. EURO

Other type of activities:					
Manure treatment facilities	5	20	45	13	7.0 Mil. EURO
Afforestation Programme	5	20	195	2	3.5 Mil. EURO
Soil Conservation Programme	5	20	80	5	8.0 Mil. EURO
Other activities	5	10	30	5	8.0 Mil. EURO
Sums	47	145	530	64	111.2 Mil. EURO

1.12.2 JAP – achieved end 2005

The updated information provided within the DABLAS project (2005) indicates no investments for reducing pollution.

Name of Location	Remarks as to load reductions	Estimated Investment Cost
	Moldova has not achieved reductions with industrial or agricultural point source discharges	Mil. EURO

1.13 Ukraine

1.13.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost
	Ukraine has not nominated reductions with industrial or agricultural point source discharges	Mil. EURO

1.13.2 JAP – achieved in 2005

Name of Location	Remarks as to load reductions	Estimated Investment Cost
	Ukraine has not nominated reductions with industrial or agricultural point source discharges	Mil. EURO

1.14 Summary of the investment into industrial discharges, by State

1.14.1 JAP 2000 - 2005

(also includes large agricultural point discharges and some other agricultural activities)

State	Cost (investment)
Austria	33.0 Mil. EURO
Bosnia-Herzegovina	29.4 Mil. EURO
Bulgaria	n.a. Mil. EURO
Croatia	
Czech Republic	10.6 Mil. EURO
Federal Republic of Germany	3.0 Mil. EURO
Hungary	66.7 Mil. EURO
Moldova	111.2 Mil. EURO
Romania	25.7 Mil. EURO

Slovak Republic	14.2 Mil. EURO
Slovenia	1.7 Mil. EURO
Ukraine	
Federal Republic of Yugoslavia (to be filled in later)	
Sum over the Danube Basin	> 295.5 Mil. EURO

1.14.2 JAP achieved in 2005

The information was provided within the DABLAS project (2005) for the Interim Implementation report.

State	**Cost (investment)**
Austria	120.3 Mil. EURO
Bosnia-Herzegovina	29.4 Mil. EURO
Bulgaria	39.7 Mil. EURO
Croatia	4.5 Mil. EURO
Czech Republic	3.0 Mil. EURO
Germany	0.6 Mil. EURO
Hungary	41.6 Mil. EURO
Moldova	
Romania	33.2 Mil. EURO
Slovak Republic	36.2 Mil. EURO
Slovenia, incl. agro measures	19.7 Mil. EURO
Ukraine	-
Serbia	-
Sum over the Danube Basin	> 328.2 Mil. EURO

Annex 3 - Planned projects for wetland and floodplain restoration

1.1 Germany

1.1.1 JAP – proposed 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
The Federal Republic of Germany has nominated wetland and floodplain projects as follows: Rehabilitation of rivers; strengthening natural retention at e.g. Danube, Iller, Wertach, Isar, Wörnitz, Regen, Mindel, Schwarzach, Lauterach, Kollbach, Strogen, Glonn, Schmutter. For land purchases and for reducing the agricultural intensity, the amount of 13.0 Mil. EURO has been allocated		

1.1.2 JAP – achieved end 2005

Name of Location	Remarks as to load reductions	Cost estimate
The Federal Republic of Germany has nominated wetland and floodplain projects as follows: Rehabilitation of rivers; strengthening natural retention at e.g. Danube, Iller, Wertach, Isar, Inn, Altmühl, Wörnitz, Regen, Mindel, Schwarzach, Lauterach, Kollbach, Strogen, Glonn, Schmutter. For land purchases and for reducing the agricultural intensity, the amount of 135.0 Mil. EURO has been allocated		

1.2 Austria

1.2.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Austria has nominated the following wetland projects:		
In Nationalpark Donauauen 5,150 ha with a cost estimate of		10.94 Mil. EURO
In the March-Thaya region 1,000 ha with accost estimate of		0.95 Mil. EURO
At other rivers (e.g. Drau, Lech, Mur)		4.38 Mil. EURO
Sum		16.27 Mil. EURO

1.2.2 JAP – achieved end 2005

Name of Project	Area size [ha]	End of project [mo/yr]	Aproximate Costs (MEUR)
Danube (1) Nationalpark Donauauen: LIFE Project "Restauration and management of the alluvial Danube floodplains"	1,500	I / 2003	2.8

Name of Project	Area size [ha]	End of project [mo/yr]	Aproximate Costs (MEUR)
MARCH / MORAVA 2.1 Droesing: 2.2 Marchegg White Stork Reservat (WWF)	 200 1,200	 1 / 2002 2003	 0.07 0.2
DRAU / DRAVA (between I/ 2001 and II/2003)	100	II / 2003	5.0
LECH	4138	I / 2007	7.8
Danube / Donau (2) LIFE Project "Restoration of the Danube River Banks" between Vienna and Bratislava	2000	III/2006	1.8
Lafnitz River Valley	1.045	III/2003	4.65
Sum:	10.1		22.32

1.2.3 Wetland Projects - started in 2001-2005

Name of Project	Area size [ha]	End of project [mo/yr]	Estimated costs (MEUR)
Lafnitz Valley II fishpasses	2	IV/2007	4.6
Mur	878	III/ 2007	2.1
Ybbs-Danube Network	6	II/2009	3.2
Danube / Donau (3) **Wachau**	10.700	III/2008	5.3
Sum:	11.6		15.2

1.3 Czech Republic

1.3.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Morava; activation of oxbows at Rohatec/Hodonin		0.019 Mil. EURO
Dyje; activation of oxbows at Lanzhot/Breclav		0.083 Mil. EURO
Rehabilitation of river Miroslavka		0.139 Mil. EURO
Rehabilitazion measures in polder Pritluky		0.117 Mil. EURO
Rehabilitation of wetland area along Morava river at Rohatec, Straznice and Vnorovy		0.222 Mil. EURO
Rehabilitation of river Dlouha at Buchlovice		0.167 Mil. EURO
Rehabilitation of river Prasnice at Hluk		0.069 Mil. EURO
Rehabilitation of up-reach parts of river Haraska at Boleradice		0.139 Mil. EURO
Rehabilitation of river Roketnice at Jirikovice, Velatice and Ponetovice		0.067 Mil. EURO
Rehabilitation of the stream Moutnicky potok at Moutnice, Tesany and Menin		0.128 Mil. EURO
Rehabilitation of river Zamecka Morava at Mladec and Litovel		0.417 Mil. EURO
Construction of the fish pass at the Nove Mlyny weir		0.069 Mil. EURO
Rehabilitation of littoral zones in the natural reservation Chomoutovske jezero		0.222 Mil. EURO
Rehabilitation of the rivers Tridvorka and Cerlinka at Litovel and Cervenka		0.194 Mil. EURO
Rehabilitation of river Morava next to Nove Zamky, at Mladec		0.167 Mil. EURO
Rehabilitation of the Morava river / overcoming anthropogenic interventions, at Stepanov		0.222 Mil. EURO
Reconstruction of the water junction at Hynkov, incl. a fish pass		0.194 Mil. EURO
Rehabilitation of the rivers Pisecna, Kobylnik and Treti voda		0.083 Mil. EURO
Flow optimisation at Dije river downstream of the Vranov dam		not stated
Rehabilitation of forest channel network at Tvrdonice, Kostice and Lanzhot		0.167 Mil. EURO
Rehabilitation of forest channel network at forest Vranovsky les (Vranov, Pouzdrany)		0.139 Mil. EURO

Rehabilitation of floodplain forests at the confluence of Dyje and Morava rivers	0.194 Mil. EURO
Rehabilitation of forest Bori les / overcoming anthropogenic impacts (Valtice / Postorna)	0.056 Mil. EURO
Rehabilitation of the floodplain forest Drnholecky luh	0.083 Mil. EURO
Sum	3.357 Mil. EURO

1.3.2 JAP – achieved end 2005 in preparation / implementation of wetland rehabilitation projects in the Czech Republic

Location realised by organisation/institution

Organization / Institution	**Wetland rehabilitation or restoration projects**			
	Altogether	**Implemented and finished**	**Under construct**	**Planned**
Morava River Basin Administration	2	0	0	2
Agricultural Water Management Administration	8	2	1	5
Protected Landscape Area Litovelske Pomoravi	8	2	3	3
National Park Podyji	1	0	1	0
Forests of the Czech	5	0[1]	3	2
Total sum	**24**	**4**	**8**	**12**

[1] 3 other project locations have been implemented not mentioned in JAP

Name of Location	**Remarks as to load reductions**	**Cost estimate**
Morava; activation of oxbows at Rohatec/Hodonin		0.7 Mil. EURO
Dyje; activation of oxbows at Lanzhot/Breclav		0.9 Mil. EURO
Rehabilitation of wetlands within the Protected Landscape Area "Litovelské Pomoravi" (2 projects)		3.2 Mil. EURO
Rehabilitation of small watercourses in the agricultural landscape east, south-east and south from Brno – Morava River basin		1.0 Mil. EURO
Rehabilitation of small watercourses in the forest floodplain, near the confluence of the Dyje and Morava rivers		0.7 Mil. EURO
Rehabilitation measures in the Protected Landscape Area Palava		0.5 Mil. EURO
Sum		7.0 Mil. EURO

1.4 Slovakia

1.4.1 JAP – proposed measures 2000 – 2005

Name of Location	**Remarks as to load reductions**	**Cost estimate**
The Slovak Republic has nominated projects for floodplain / wetlands restoration. They are located in the Olsavica River Basin, in the Lower Morava River Basin and in the Laborec River Basin.		0.9 – 1.155 Mil. EURO

1.4.2 JAP – achieved end 2005

Olšavica river basin

During period 2000 - 2005 project of support of wetland restoration was in the frame of the UNDP/GEF implemented. Costs: 44 500 USD.

Lower Morava river basin

In period 2000-2005 project restoration of 140 ha area (change of arable land on meadows with high abundance of sorts). Project supported by EPPD, costs: 100 000 USD.

Laborec river basin

In years 2000-2005 preparation of extensive project for wetland restoration. Costs: 50 000 USD. Project should be approved, planned costs 1 000 000 USD.

Total estimated costs for implementation of Slovak National Wetland Policy - Action Plan for years 2003 – 2007 represents about **6.141** Mil. EURO.

1.5 Hungary

1.5.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Hungary has nominated wetland projects. They are located in the Danube-Drava area (Gemenc), and at the mouth of the Bodrog into the Tisza River, and in the Hanság area		17.9 Mil. EURO

1.5.2 JAP – achieved end 2005

Name of Project	Area size [ha]	Start of project [mo/yr]	End of project [mo/yr]	Estimated costs [Mio. EUR]	Source of financing	Implementation Status	Responsible
Duna-Dráva a) Gemenc	1,000	9/2004	12/2008	3.5	HU Government 20%, GEF co-financing 80%	under implementation	South-Transdanubian Environment Protection and Water management Directorate

Name of Project	Area size [ha]	Start of project [mo/yr]	End of project [mo/yr]	Estimated costs [Mio. EUR]	Source of financing	Implementation Status	Responsible
Duna-Dráva b) Gemenc Vén-Duna	130	5/1998	10/2005	0.32	HU Government	completed	Danube-Drava National Park Directorate
Duna-Dráva c) Beda-Karapancsa Riha-tó	50	4/2003	12/2005	0.176	NL Government	completed	Danube-Drava National Park Directorate
Hanság a) Nyirkai-Hany	420	5/2001	8/2005	1.0	I: HU Government, 20% NL Government; II: HU Government +LIFE	completed	Fertő-Hanság National Park Directorate
Hanság b) Osli-Hany	1,360			2.5		waiting for funding	Fertő-Hanság National Park Directorate
Tisza LIFE Project "Management of floodplains on the Tisza"	8,380	1/2001	12/2005	0.44	EU LIFE Nature, WWF Hungary, WWF Austria, Austrian Ministry of Environment	completed	WWF Hungary
Bölcske – Danube branch restoration	12	1/2006	12/2007	0.1	Ministry of Environment and Water 90%, Bölcske Municipality 10%	under implementation	Bölcske Municipality

1.6 Slovenia

1.6.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Slovenia has not nominated wetland projects.		

1.6.2 JAP – achieved end 2005

Name of Location	Remarks as to load reductions	Cost estimate
Slovenia has indicated wetland projects in Triglav National Park, Ljubljansko Barje and Mura River.		3.5 Mil. EURO

1.7 Croatia

1.7.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Croatia did not yet nominated wetland projects.		

1.7.2 JAP – achieved end 2005

Name of Location	Remarks as to load reductions	Cost estimate
Croatia did not nominated wetland projects.		

1.8 Bosnia and Herzegovina

1.8.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Bosnia-Herzegovina has not nominated any wetland projects.		

1.8.2 JAP – achieved end 2005

The information was provided within the DABLAS project (2005) for the Interim Implementation report.

Name of Location	Remarks as to load reductions	Cost estimate
Bosnia-Herzegovina nominated wetland projects in Odzacka Posavina area, Srednja Posavina area and Bardaca wetland - Banja Luka Region.		11.9 Mil. EURO

1.9 Serbia

1.9.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Serbia has not nominated wetland projects.		
Remark: Data from the Federal Republic of Yugoslavia will be incorporated as soon as cooperation has been established.		

1.9.2 JAP – achieved end 2005

Name of Location	Remarks as to load reductions	Cost estimate
Serbia has not nominated wetland projects.		

1.10 Bulgaria

1.10.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Bulgaria has nominated wetland projects for the Kalimok and Brushlen Marshes and the Belen wetland complex.		13.5 Mil. EURO

1.10.2 JAP – achieved end 2005

The information was provided within the DABLAS project (2005) for the Interim Implementation report.

Name of Location	Remarks as to load reductions	Cost estimate
Belene island / Persina Nature Park	Restoration of wetlands to reduse nutrient pollution and to conserve the biodivercity. Emp. N Red. 129 t/a, Emp. P Red. 13 t/a.	2.0 Mil. EURO
Kalimok - Brushlen Protected Site	To restore the previos Kalimok marches, to reduce nutrient pollution load, to protect the biodivercity, and to support local communities to adopt sustainable natural resources management. Emp. N Red. 106 t/a, Emp. P Red. 11 t/a.	2.0 Mil. EURO

1.11 Romania

1.11.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Romania has nominated wetland projects. They are located in the Lower Prut area and at Balta Potelu, the area of the Bulgarian Danube, the Island Balta Greaca, and in the Calarasi area.		73.9 Mil. EURO

1.11.2 JAP – achieved end 2005

The information was provided within the DABLAS project (2005) for the Interim Implementation report.

Name of Location	Remarks as to load reductions	Cost estimate
Romania has nominated wetland projects. They are located in the Prut area, Lower Danube Area Zimnicea-Giurgiu sector, Lower Danube exter floodplain Tulcea-Nufaru sector, Zaghen Lake and Calarasi county.		1.9 Mil. EURO

1.12 Moldova

1.12.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate

Moldova has nominated wetland projects. The main ones are located in the Lower Prut area, and in the Lower Yalpugh River area.	85.0 Mil. EURO

1.12.2 JAP – achieved in 2005

The information was provided within the DABLAS project (2005) for the Interim Implementation report.

Name of Location	Remarks as to load reductions	Cost estimate
Moldova has nominated wetland projects. The main ones are located in the Lower Prut area, and in the Lower Yalpugh River area		5.9 Mil. EURO

1.13 Ukraine

1.13.1 JAP – proposed measures 2000 – 2005

Name of Location	Remarks as to load reductions	Cost estimate
Ukraine has not nominated wetland projects.		

1.13.2 JAP – achieved in 2005

The information was provided within the DABLAS project (2005) for the Interim Implementation report.

Name of Location	Remarks as to load reductions	Cost estimate
Ukraine has nominated wetland projects in Zakarpattia, Ivano-Frankivski, Chernivtsi and Odessa Region for areas > 90 ha.		15.1 Mil. EURO

1.14 Summary of the investment into wetlands, by countries

1.14.1 JAP 2000 - 2005

(also includes large agricultural point discharges and some other agricultural activities)

State	Cost (investment)
Austria	16.3 Mil. EURO
Bosnia-Herzegovina	
Bulgaria	13.5 Mil. EURO
Croatia	
Czech Republic	3.4 Mil. EURO
Federal Republic of Germany	13.0 Mil. EURO
Hungary	17.9 Mil. EURO
Moldova	85.0 Mil. EURO
Romania	73.9 Mil. EURO
Slovak Republic	0.9 – 1.155 Mil. EURO
Slovenia	
Ukraine	
Federal Republic of Yugoslavia (to be filled in later)	
Sum over the Danube Basin	223.9 – 224.2 Mil. EURO

1.14.2 JAP implemented measures end 2005

(including newly started projects and those, indicated in the interim reporting DABLAS II)

State	Cost (investment)
Austria	22.32 Mil. EURO
Bosnia-Herzegovina	11.9 Mil. EURO
Bulgaria	4.0 Mil. EURO
Croatia	
Czech Republic	7.0 Mil. EURO
Federal Republic of Germany	135.0 Mil. EURO
Hungary	8.1 Mil. EURO
Moldova	5.9 Mil. EURO
Romania	1.9 Mil. EURO
Slovak Republic	6.1 Mil. EURO
Slovenia	3.5 Mil. EURO
Ukraine	15.1 Mil. EURO
Serbia	
Sum over the Danube Basin	~ 220.8 Mil. EURO