

Detergents in Slovenia

- KPC
- History
- Detergents related statistic
- Nutrients - Point and Diffuse sources
- Current status - environmental indicators

Association of Cosmetic, Detergent and Cleaning products Producers of Slovenia

- Working group within Chamber of Commerce and Association of chemical industry:
- Members are dealing with:
 - production of cosmetics
 - production of washing and cleaning products
- **Members** of KPC are also
 - producers of raw materials for detergent & cosmetic products
- KPC - 24 members



Environment in Slovenia

No lag behind the most developed industrial countries.

- Increased discharges of phosphates: 1960's and 1970'.
(industrial development & intensified agriculture)
- Green Paper on the Environment
Slovenia marked the first UN Conference on the Environment (in 1972).
- The first environmental protection regulations (in 70s'),
- Conference on ecology, energy and economy (mid-80s)
- Ecological Fund established (second half of the 80s)



Detergent related developments

in 50s', 60s' & 70s' Slovenia within Yugoslavia had:

- One of the biggest Yugoslav and middle Europe detergent producer
- A first producer of the anionic surface-active substances in South-East Europe
- Plant for production of STPP
- Advanced products on the market
 - synthetic laundry detergents for white, colored & fine garments
 - Liquid detergents
 - Detergent on the basis of biodegradable surfactants and enzymes.

in 80s'

- Technical cooperation with international companies starts
- SMEs in Slovenia are starting the sales of consumer goods in the field of detergents & cleaning products



- **Detergent related developments**

- **Early 90s'**

- Independence: 25 June 1991 (from Yugoslavia)
- Slovenia starts faster development of WWTP
- Nil-P products are present on the market
- International companies enter the market (P&G, Reckitt & Benkiser, Henkel,) as joint ventures or as import
- Sales tax on detergents (implemented on 1.2.1992)
 - Two levels:
 - Phosphate free: 10%
 - Other detergents: 20%
- SMEs' continue sales of consumer goods in the field of detergents
- Improvements in Slovenian STPP production



- **Detergent related developments**

- **mid 90s'**

- International companies gain market share
- In spite of higher sales tax on P detergents, P detergent sales continues but on the lower level.
- Henkel Zlatorog stops production of detergents in Slovenia
- VAT implemented on 1.7.1999 (@ 19%)
difference among P and nil-P detergents abolished

- **2001**

- P detergents represent ~3% of the market



• Detergent related developments

From 2001 till 2004

- Growth of private labels (mostly P based)
- P-detergent sales among international companies increases
- End of 2004 P-containing detergents represent $\sim 1/4$ of the market.
- Sales of liquid detergents picks up



Detergent trade in Slovenia 1993, 1994, 2004

	1993 *	1994 *	2004 **
Retail trade detergents total (t)	~18.000	~18.500	~20.000

* Slovenian Statistics

** AISE Laundry sustainability project data

Companies are producing polyphosphates, zeolites and sodium perborate in Slovenia throughout the period. Even today STPP is important product sold by SMEs'.



Data from the domestic producers for the year 1994 *

	P containing detergents (t)			P free detergents (t)			
	Powdered		Liquid	Powdered		Liquid	
	Tot.pr.	SLO	Tot.pr.	Tot.pr.	SLO	Tot.pr.	SLO
Total (t)	6,231	1,218	-	16,325	16,556	1,833	1,699

Total production: 24,389 t

Sold in Slovenia: 19,483 t

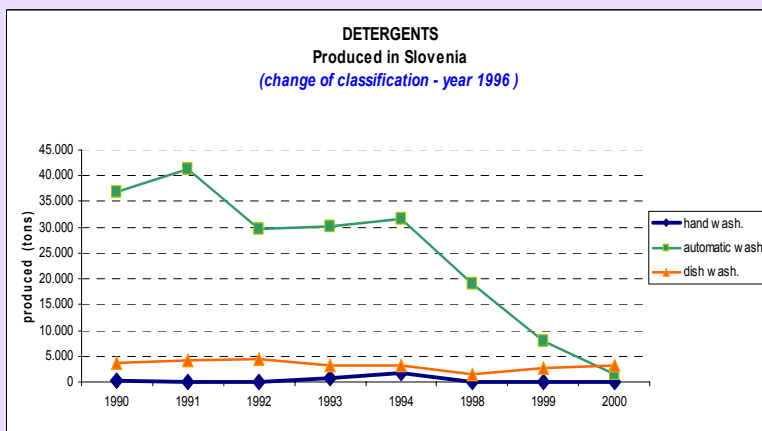
Mass fraction of detergents containing P : 25,5%

Average concentration / amount of P in P containing detergents : 5%

* Slovenian Statistics



Production of detergents in Slovenia*



* Slovenian Statistics



Part of P load from point sources (tons)

	1995	2001	2004
Laundry detergents	61	55	350
Population	1300	N.A.	1100

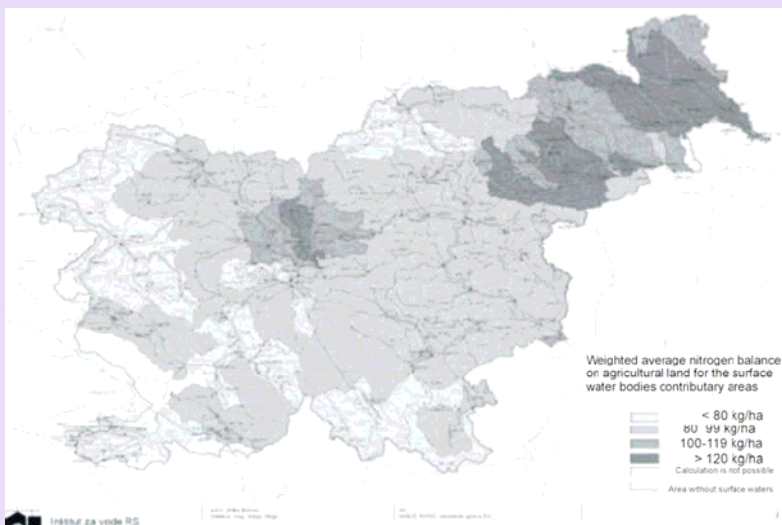
(ADW, industrial point sources)

Nutrient load from diffuse sources (tons)

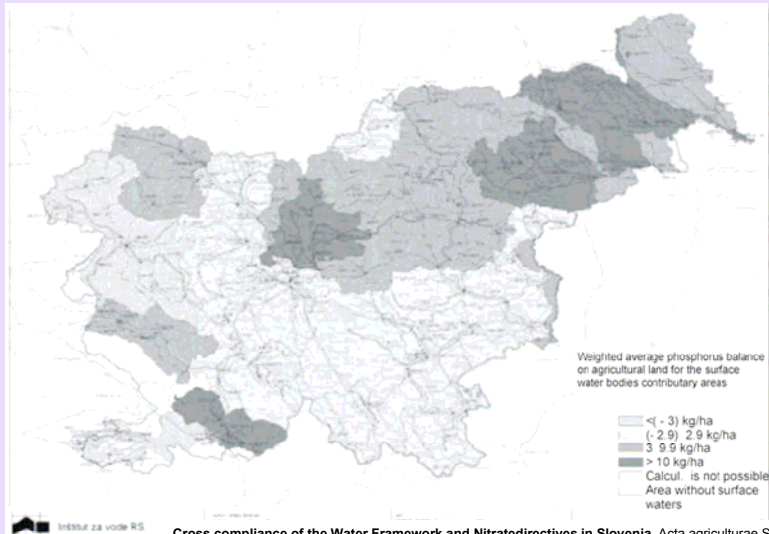
		1995	2001	2004
N	t	32235	34765	30264
P205	t	17391	16607	14640
P	t	~7600	~7200	~6400



- Weighted average nitrogen balance (kg of N/ha/a) for the surface water bodies contributory areas.



- Weighted average phosphorus balance (kg of P/ha/a) for the surface water bodies contributory areas.



Cross compliance of the Water Framework and Nitratedirectives in Slovenia, Acta agriculturae Slovenica, 87 - 1, april 2006; L. GLOBEVNIK, M. PINTAR, U. BREMEC

2004 data



Phosphorus in lakes

- Some issues in artificial accumulations

Reasons:

- Polluted influents from areas of intensive agriculture or with less developed sewage infrastructure
- erosion



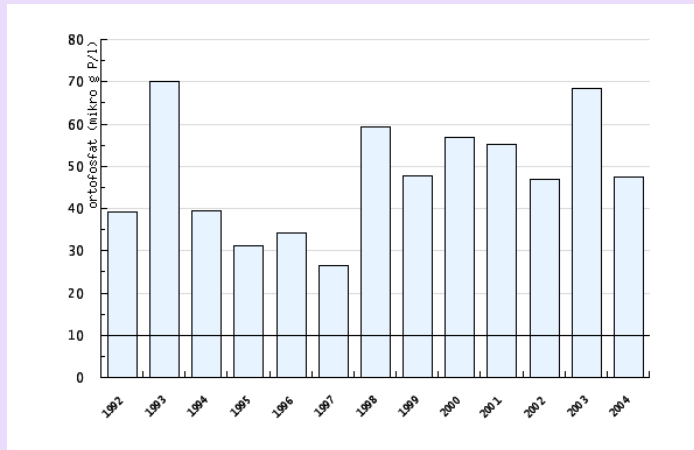
Wastewater treatment

- WWTP for agglomerates >100.000 PE.
 - Ljubljana & Maribor, (1/4 of population in Slovenia)
 - Built and working (2006 results will show effectiveness)
- Other data:

		1998	1999	2000	2001	2002	2003	2004	target for 2005
cesspools	%	45	45	45	45	47.6	47.6	47.6	44
primary	%	10.5	8.4	9.3	8.7	6.1	5.2	4.4	5.1
secondary	%	5.9	7.6	4.7	6.7	10.9	13.8	16.4	40.2
tertiary	%	2.6	3.2	4.5	5	2.9	2.1	6	5.2



- Improved water quality: probably related to improved waste water treatment and lower number of industries with high levels of waste water emissions.

Average yearly content of orthophosphates in rivers ($\mu\text{g P/l}$)

- No statistically observable changes are noticeable from 1992 till 2004.
- **Note:** in 1998 a Slovenian changed a method to analyze orthophosphates in water.

Companies able to produce P and Nil-P detergents

However p-detergents have merits from sustainability POW

- Phosphate based detergents are important for SME (presence of P detergents under higher tax & private labels)
- Phosphate based detergents are consumer relevant (growth of P private labels)
- P is not replaceable for some applications (ADW)

To note:

- P detergents represent a small part of total P load
- Tax on P detergents was coupled with
 - development of WWTP
 - Improvement of agricultural practices
 - Decrease # of industrial point sources



Thank you for attention!

