

Potassium demand and potassium balance in the Czech and the Slovak Republic



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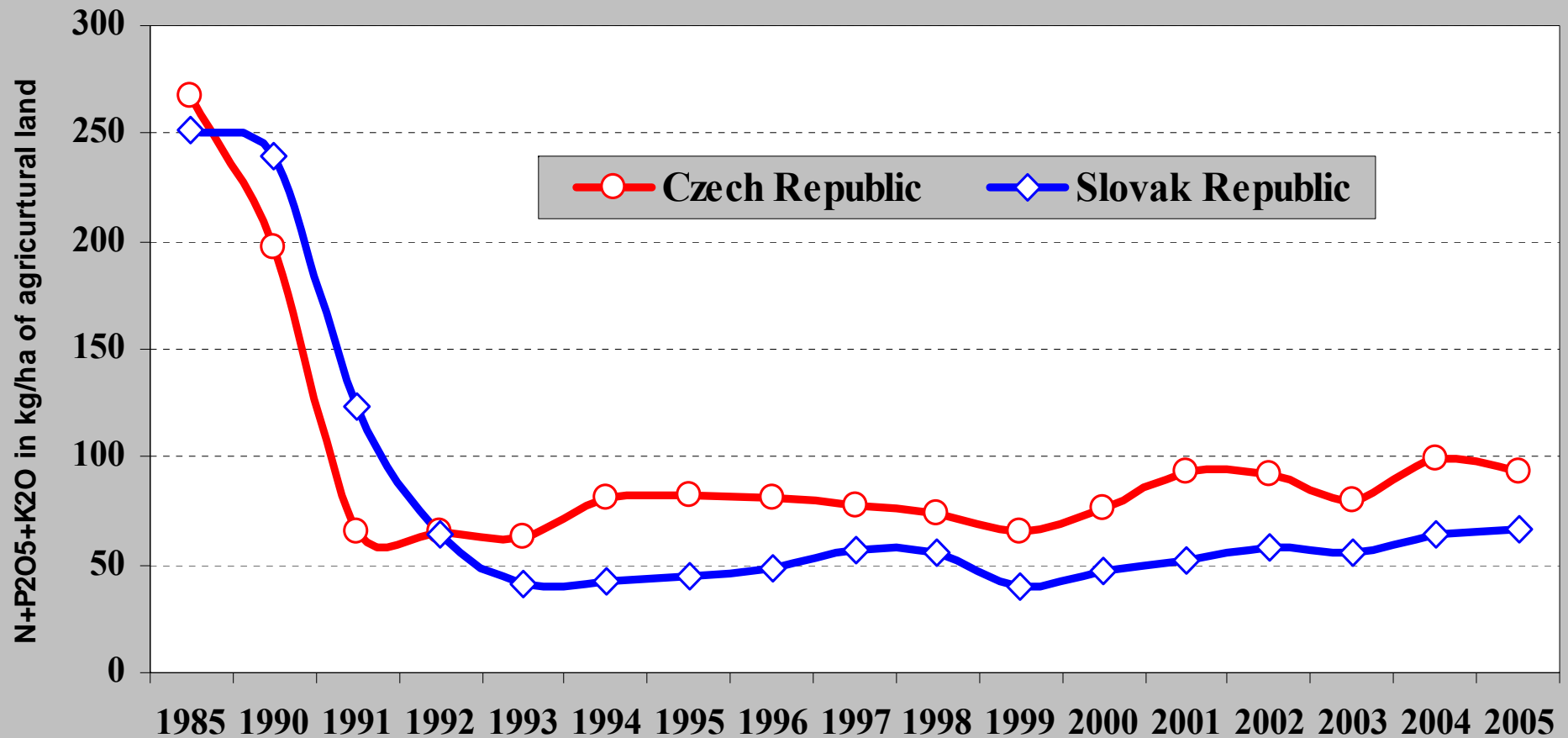
Ministry of Agriculture of the Czech Republic, Praha



Dr. Stanislav Torma

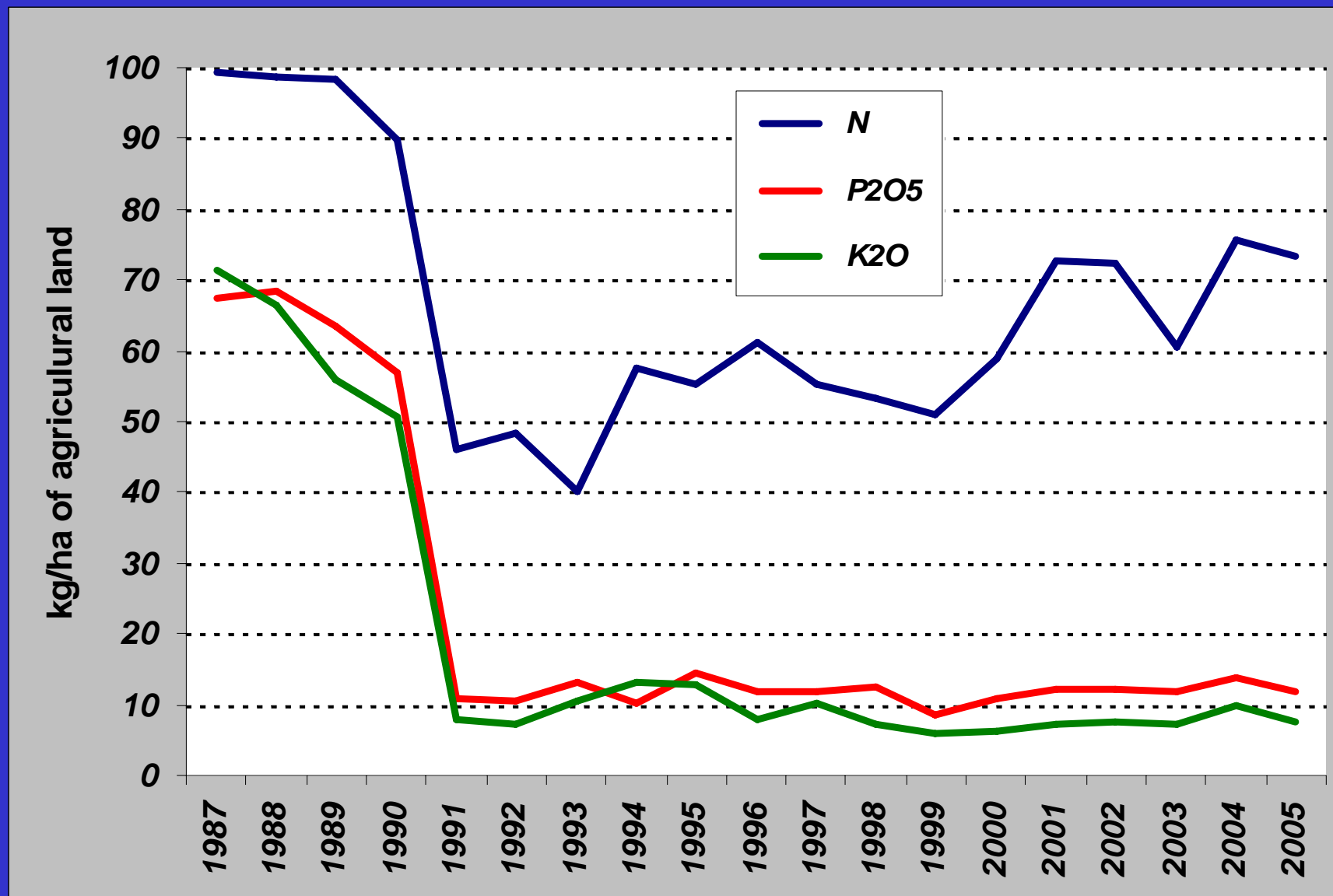
**Soil Science and Conservation Research Institute,
Bratislava, Slovak Republic**

THE EVOLUTION OF FERTILIZERS CONSUMPTION IN THE CZECH AND SLOVAK REPUBLIC (kg/ha of agricultural land) IN YEARS 1985 - 2005



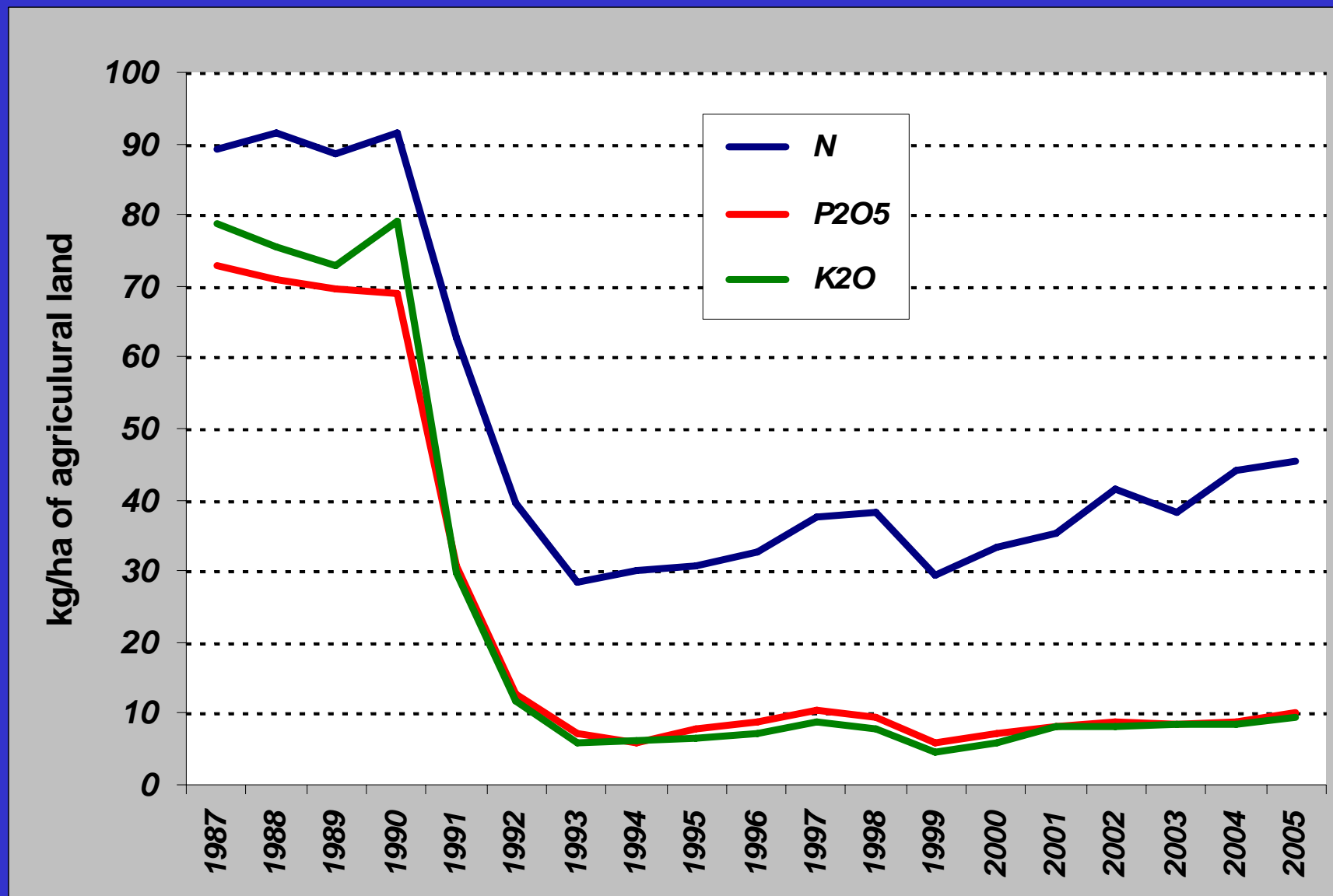
(Source: Ministry of Agriculture of the Czech and Slovak Republic, 2006)

The share of single nutrients in total consumption of mineral nutrients in the Czech Republic



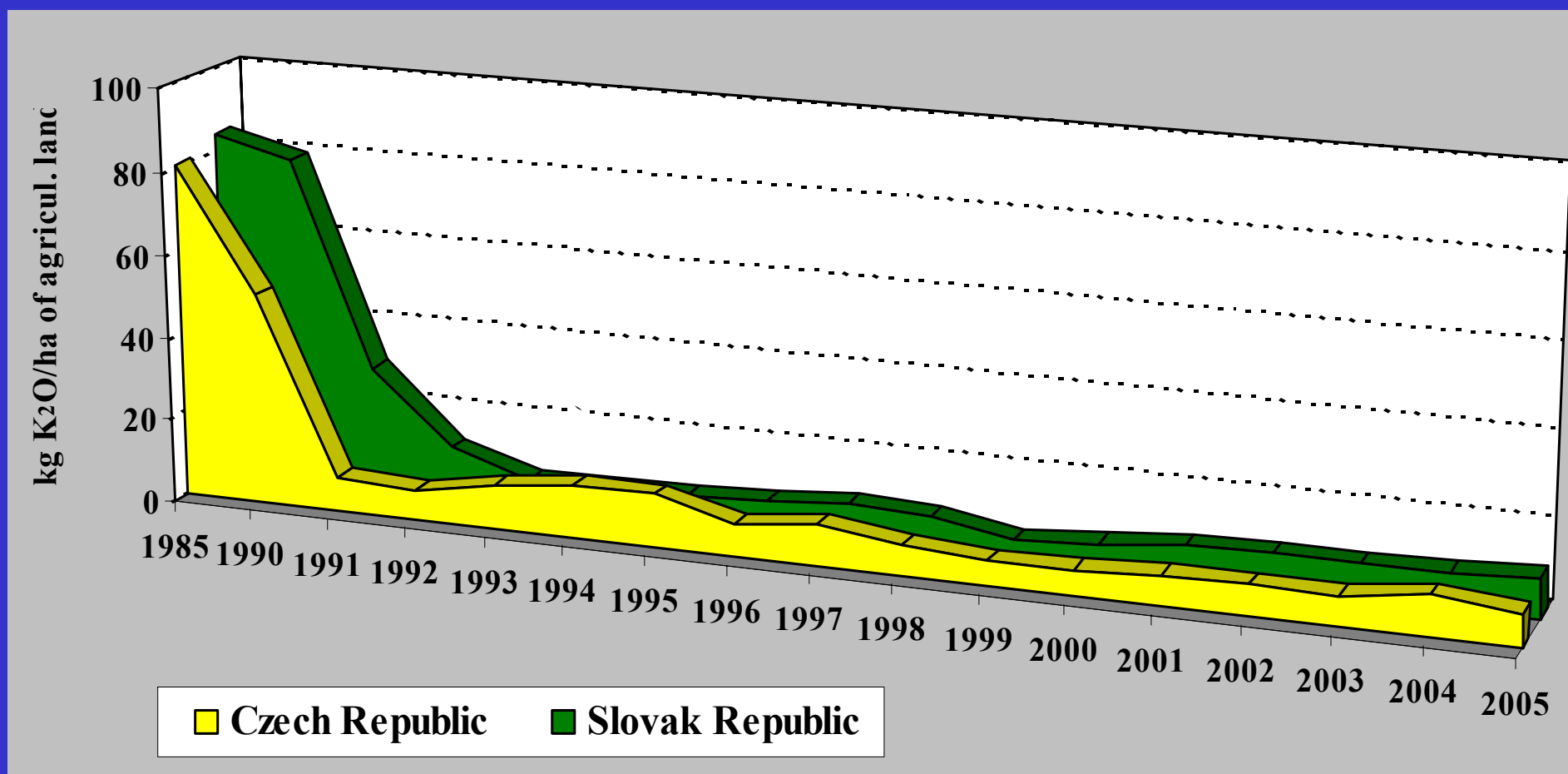
(Source: Ministry of Agriculture of the Czech Republic, 2006)

The share of single nutrients in total consumption of mineral nutrients in the Slovak Republic



(Source: Ministry of Agriculture of the Slovak Republic, 2006)

THE EVOLUTION OF POTASSIUM CONSUMPTION IN THE CZECH AND SLOVAK REPUBLIC (kg/ha of agricultural land) IN YEARS 1985 - 2005



(Source: Ministry of Agriculture of the Czech and Slovak Republic, 2006)

THE POTASSIUM SHARE IN INDIVIDUAL KINDS OF APPLIED FERTILIZERS (%)

Kind of fertilisers	1995	1997	1999	2001	2003	2004	2005
MOP potassium chloride	69,0	45,3	70,6	73,4	73,7	82,0	77,3
Combined fertilizers (NPK)	30,0	43,9	25,8	20,4	23,1	14,9	20,4
SOP sulphate of potash	0,7	1,3	3,6	3,1	3,2	2,7	2,3
Kamex	0,3	9,5	—	3,1	—	0,4	—

(Source: Ministry of Agriculture of the Czech Republic, 2006)

THE DEVELOPMENT OF HEAD OF FARM ANIMALS (in thousand of heads)

Czech Republic

	Livestock	Sheep	Pigs
1989	3 480	399	4 685
1995	2 030	165	3 866
2000	1 574	84	3 688
2005	1 398	140	2 876
2005/1989	0,40	0,35	0,61

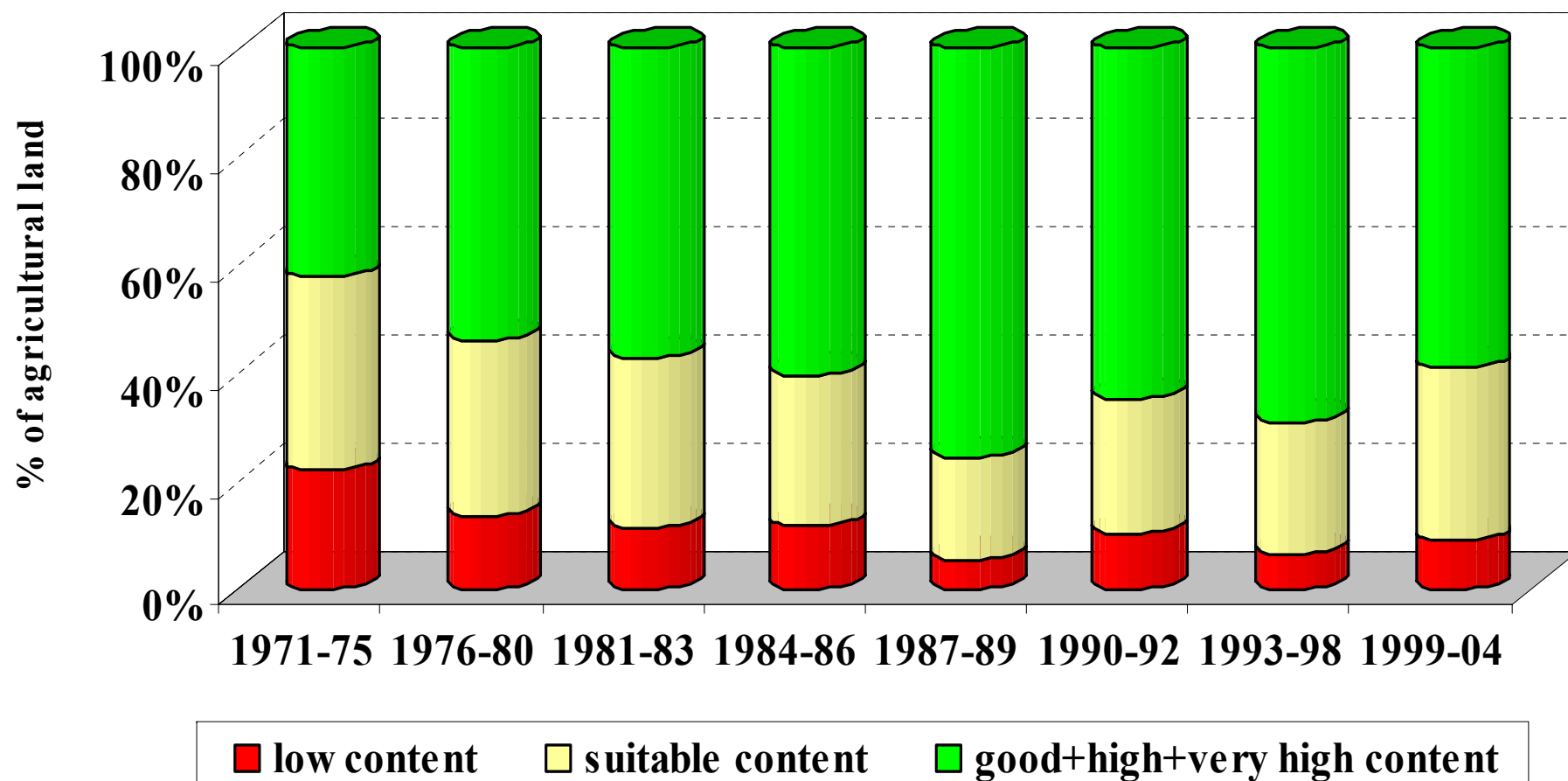


Slovak Republic



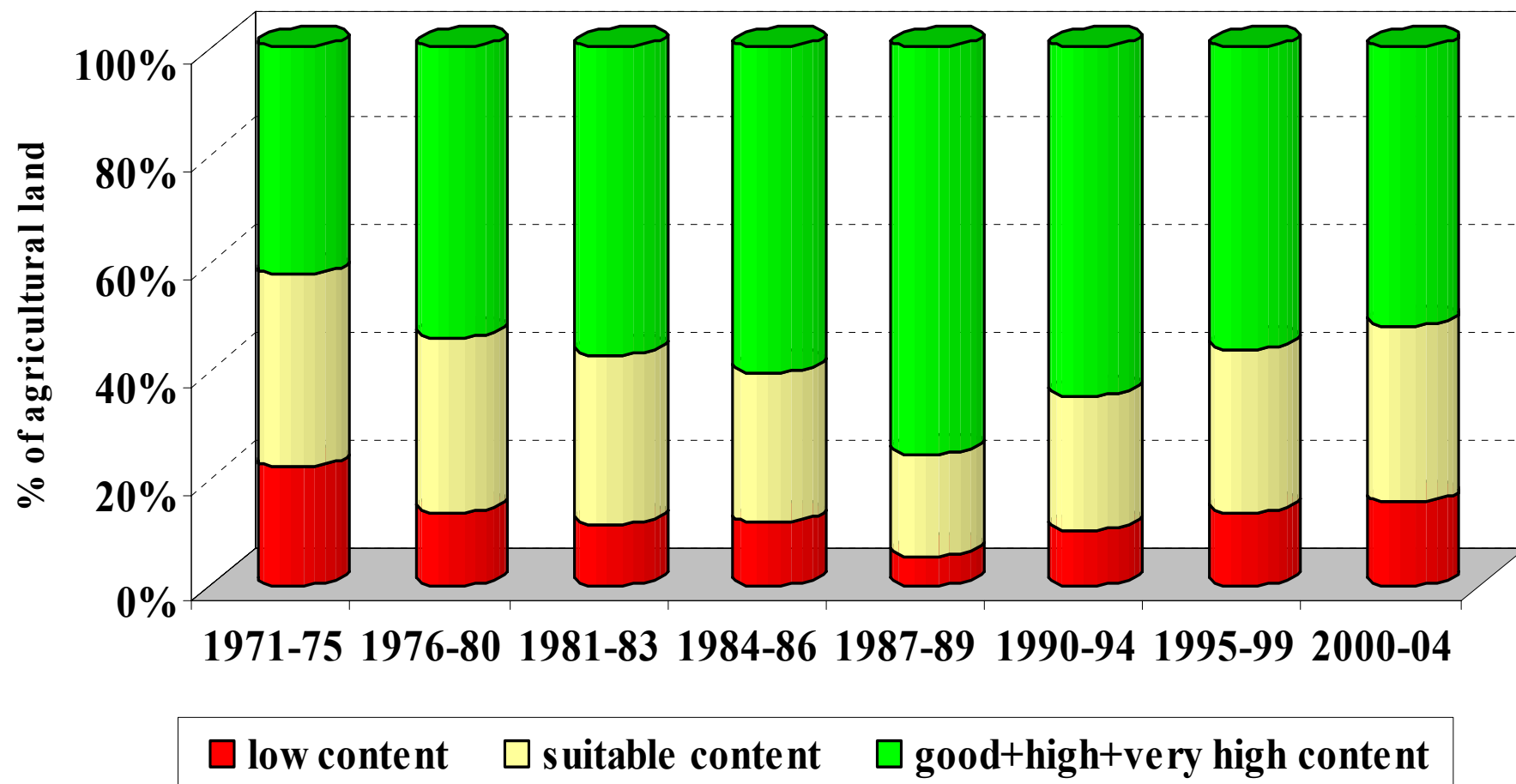
	Livestock	Sheep	Pigs
1989	1 623	621	2 709
1995	929	428	2 076
2000	593	348	1 488
2005	528	320	1 108
2005/1989	0,32	0,51	0,41

THE DEVELOPMENT OF POTASSIUM CONTENT IN AGRICULTURAL SOILS IN THE CZECH REPUBLIC

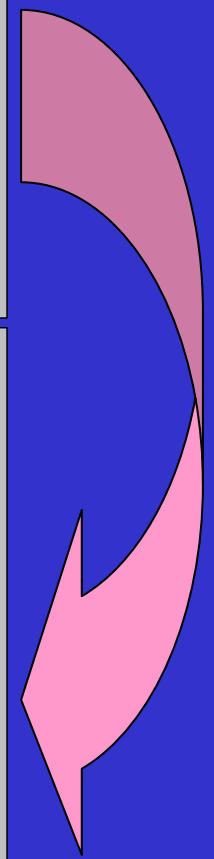
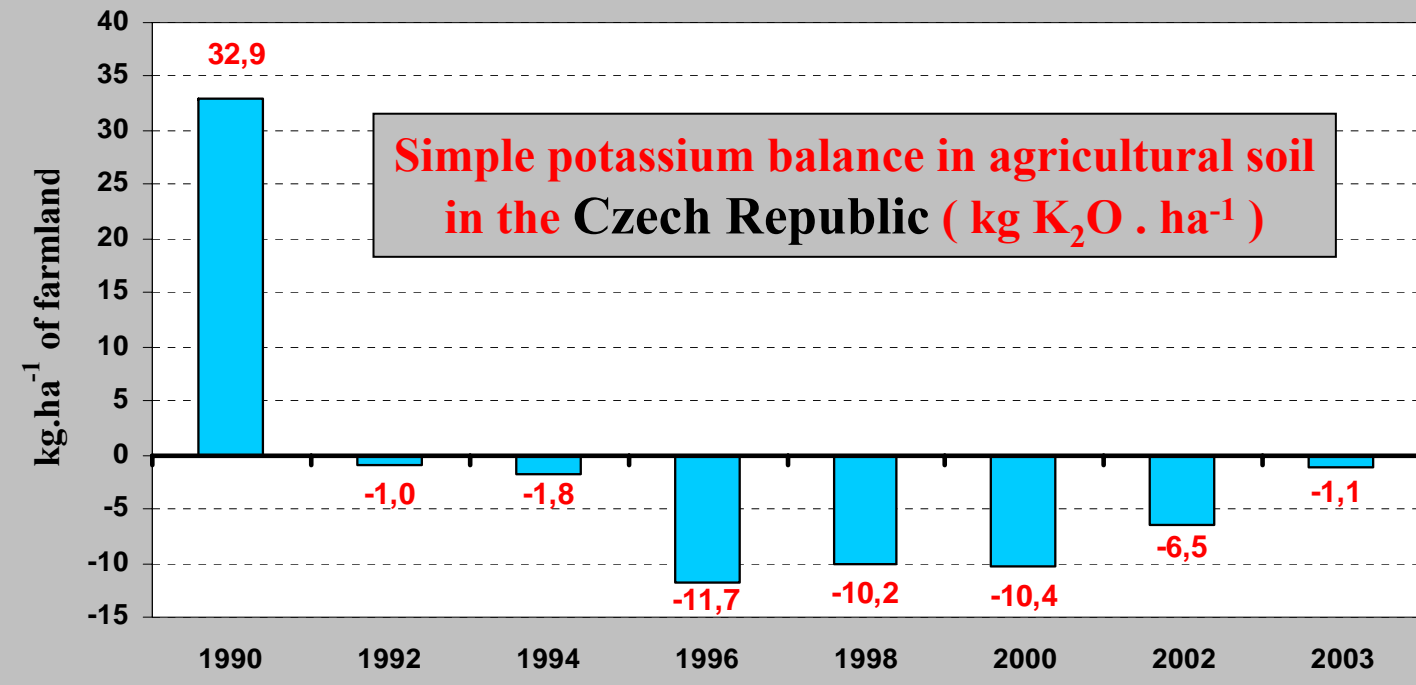
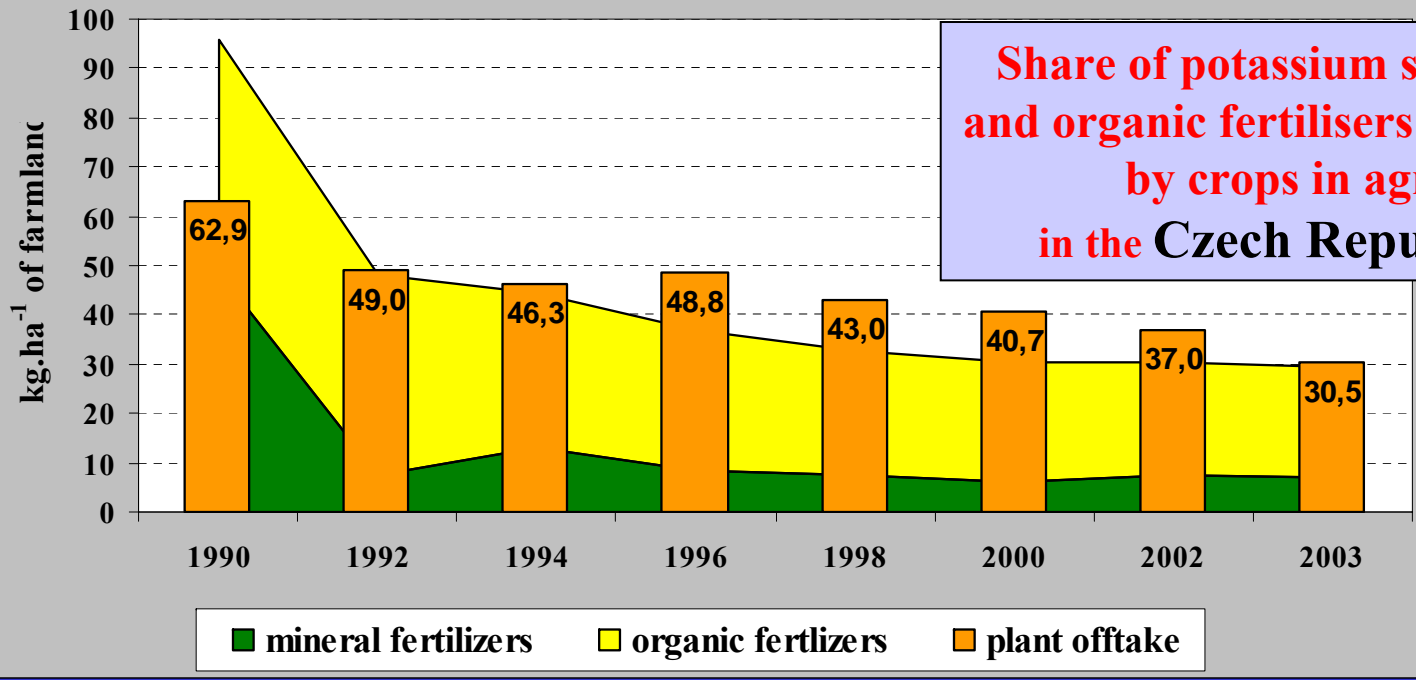


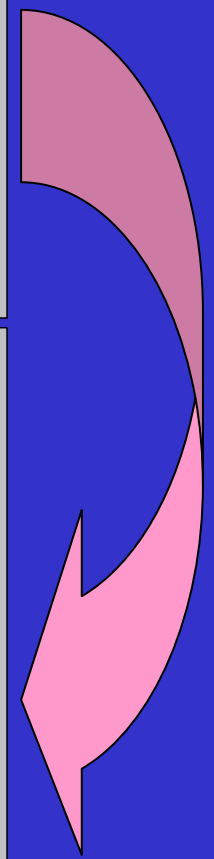
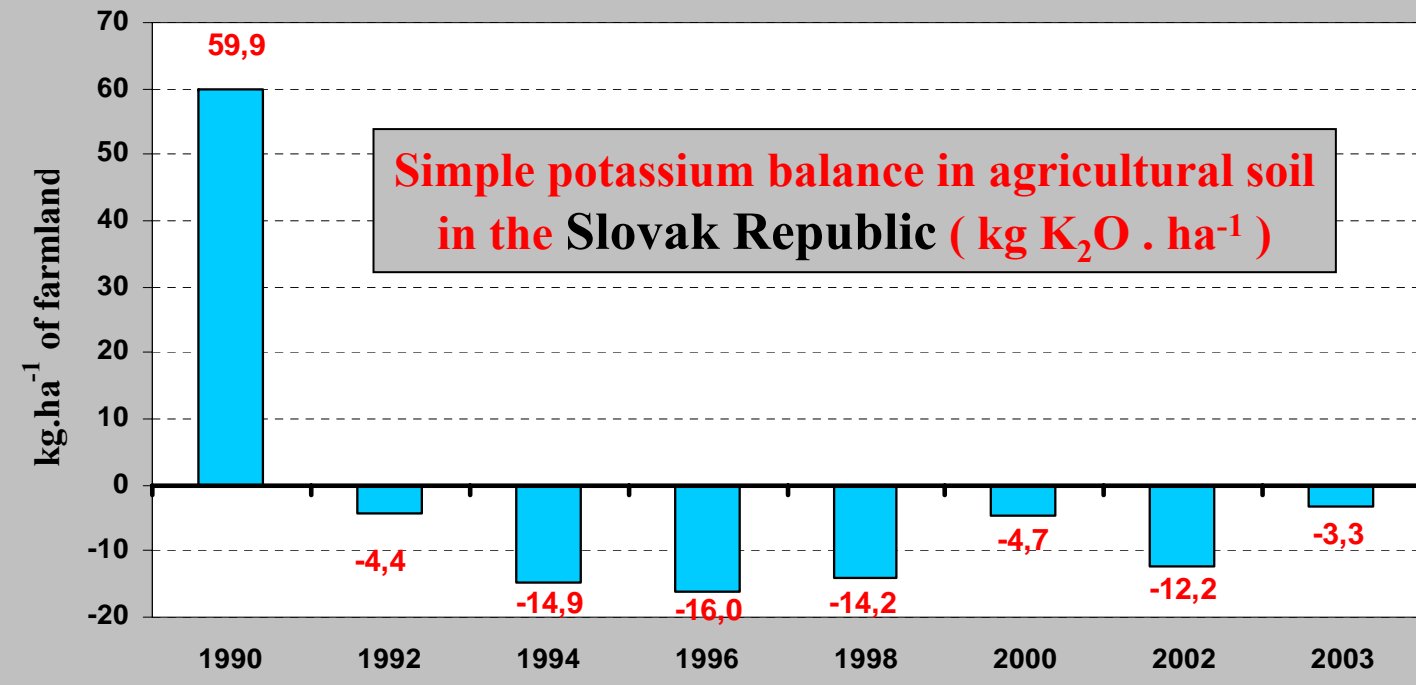
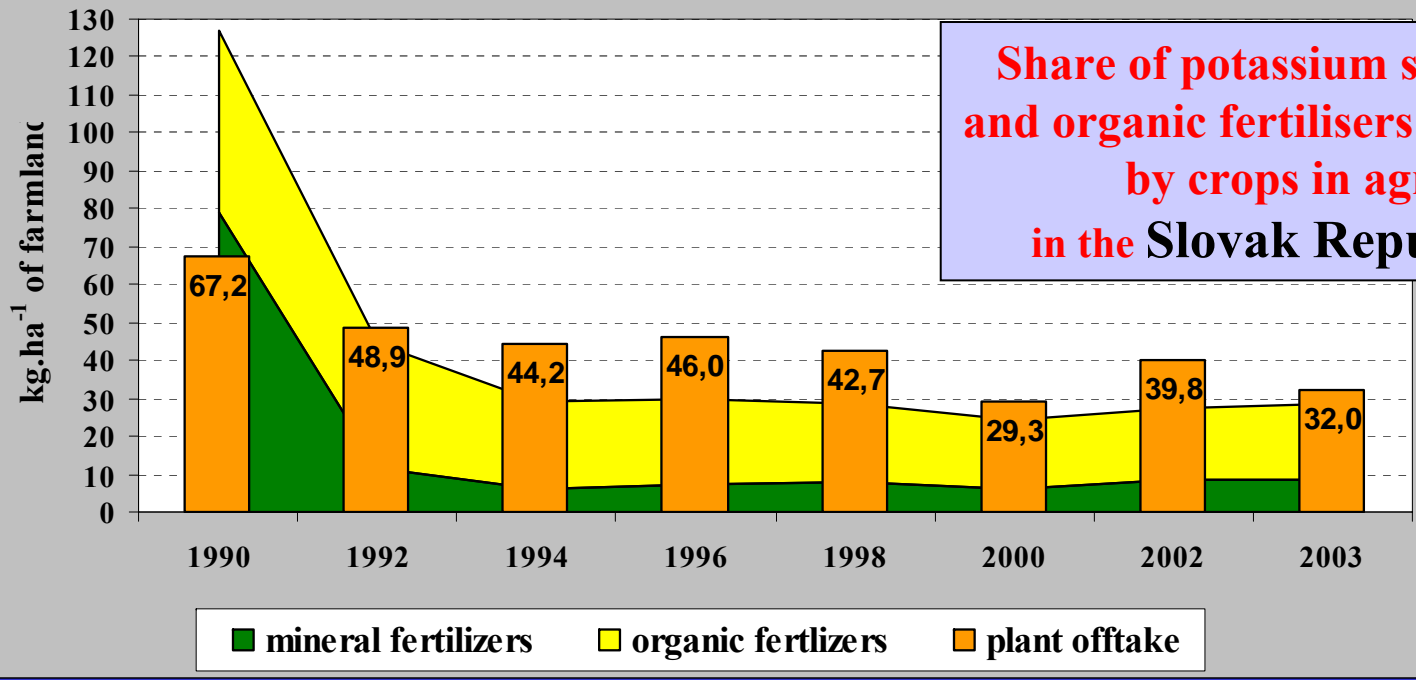
(Source: CISTA, CZ, 2006)

THE DEVELOPMENT OF POTASSIUM CONTENT IN AGRICULTURAL SOILS IN THE SLOVAK REPUBLIC



(Source: CISTA, SK, 2006)

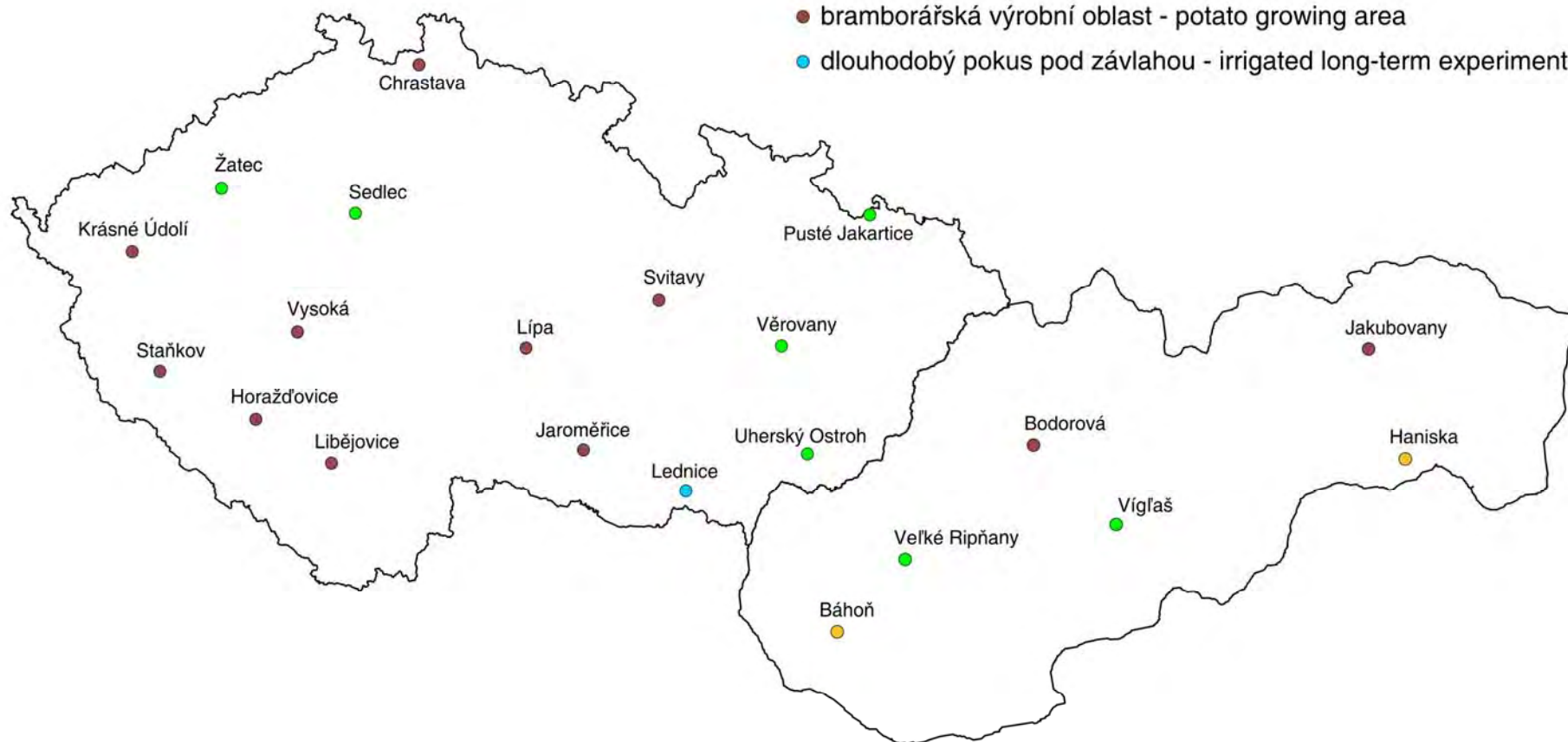




The net of long-term experiments in the Czech and Slovak Republic

Legend:

- kukuřičná výrobní oblast - maize growing area
- řepařská výrobní oblast - sugar-beet growing area
- bramborářská výrobní oblast - potato growing area
- dlouhodobý pokus pod závlahou - irrigated long-term experiment



Average annual doses of nutrients in mineral fertilisers during crop rotations in long-term experiments

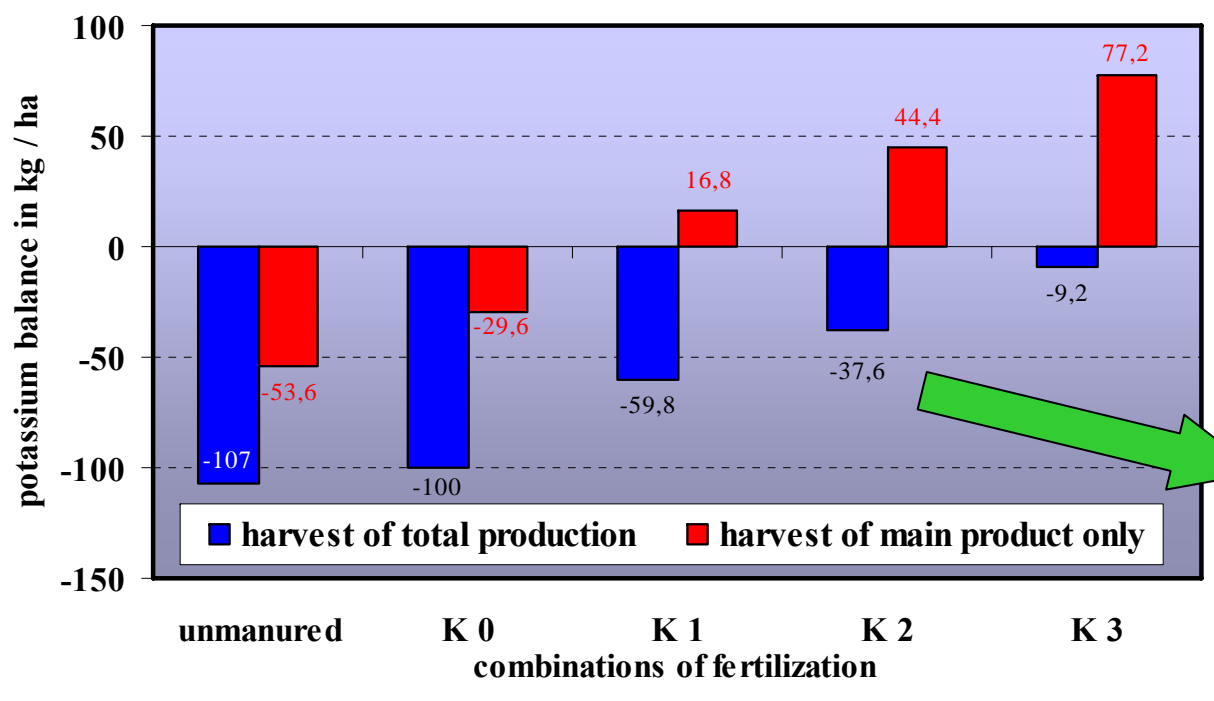
The republic	level of nutrients	mineral fertilization in kg.ha ⁻¹ of pure nutrients		
		N	P ₂ O ₅ (P)	K ₂ O (K)
Czech Republic	1– low	58	50 (22)	65 (54)
	2 – middle	88	78 (34)	103 (86)
	3 – high	116	114 (50)	150 (125)
Slovak Republic	1– low	70	50 (22)	65 (54)
	2 – middle	105	75 (33)	98 (81)
	3 – high	140	100 (44)	130 (108)

(Source: CISTA, CZ+SK, 2006)

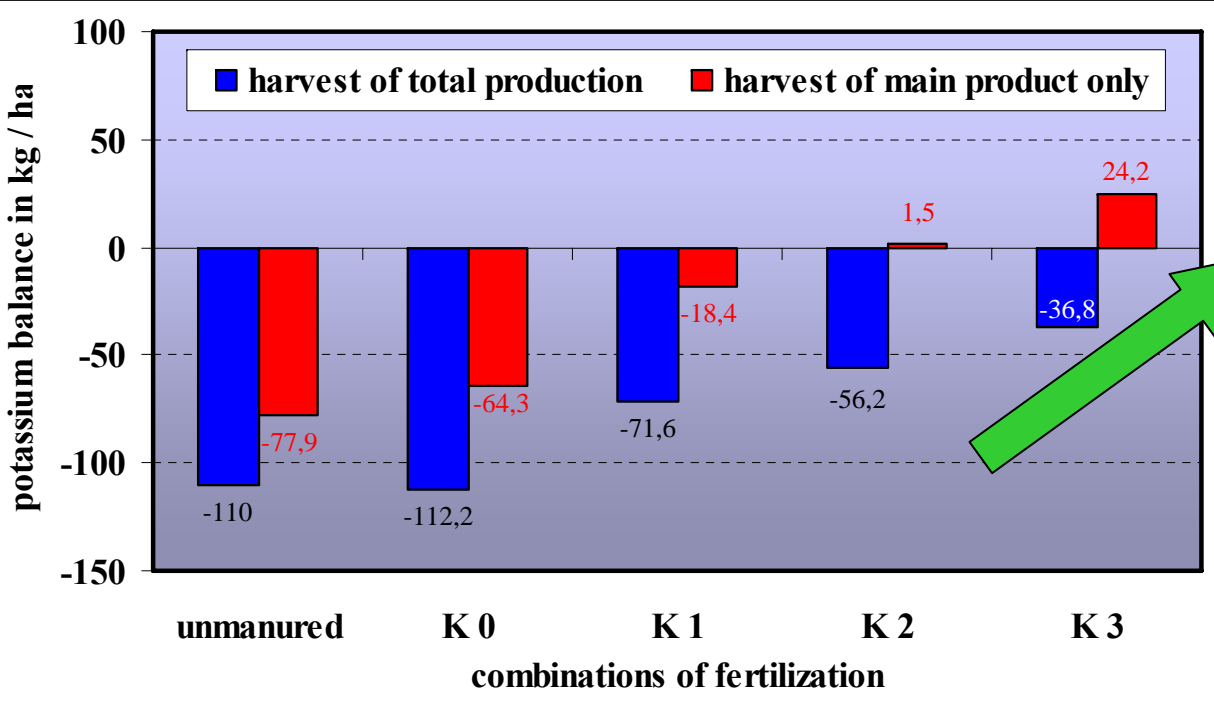
Czech Republic

sugar-beet growing area

The harvest of main product only has positive balance in all three K levels



By the harvest total production all combinations of fertilisation have negative potassium balance



Slovak Republic

potato growing area

The harvest of main product only has positive balance in 2nd + 3th K level

CONCLUSIONS

1. The average applications of potassium fertilisers in Slovakia and in the Czech Republic are with less than $10 \text{ kg}\cdot\text{ha}^{-1}$ of agricultural land
2. The part of soils with a very low and low content of potassium grows in both countries
3. Since 1990, the amount of mineral and organic fertilizers was reduced significantly, the potassium balance has become negative.
4. Based on the results from long-term field trials the optimal application rate for intensive agricultural areas must be approximately above 120 kg of K per hectare

Thank you for your attention



It's time to finish !!!!!