

# **Fertilizer use strategy for sustainability – Latvian approach**

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# Sustainability

A circular photograph of an industrial facility. In the foreground, there is a long, single-story building with a red-tiled roof and light-colored corrugated metal siding. A row of windows is visible along the side of the building. Behind the building, several large, cylindrical metal silos are visible, along with a tall, lattice-structured tower. The sky is blue with scattered white clouds. The foreground shows a green lawn with some small trees and bushes.

**Strategy and tactics for long-run  
balanced development.**

# Pressures on fertilizer use strategy and methods

## Economic:

- availability
- price
- handling costs, etc.

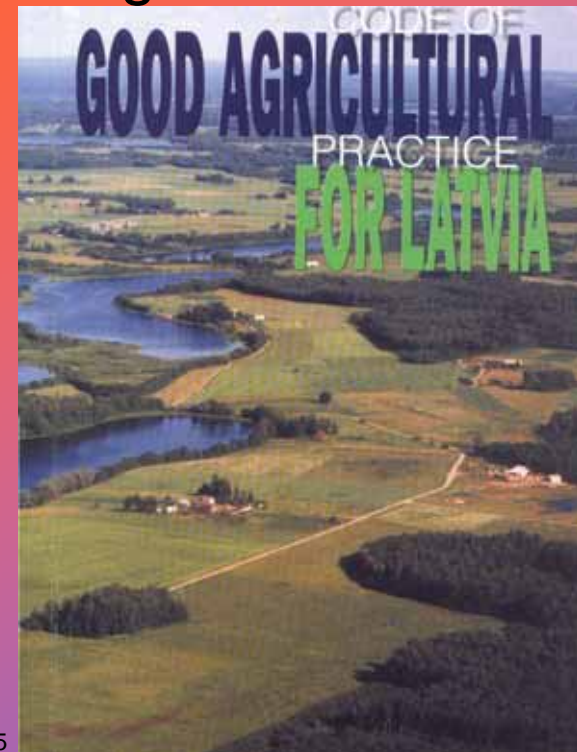
## Legislative:

- EU legislation
- National legislation
- International treaties and binding documents, etc.

# Rationale of legislative pressure

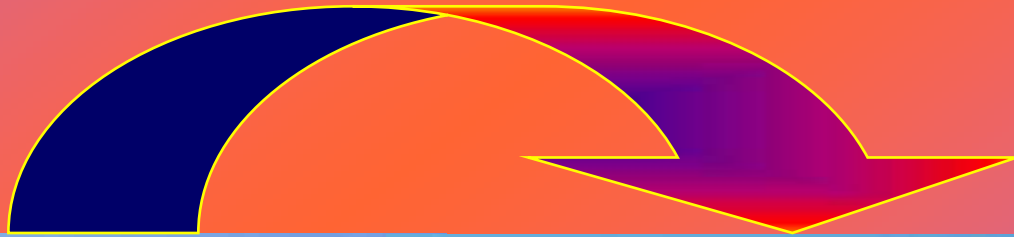
To avoid:

- Nutrient losses through leaching and run-off and pollution of surface waters and groundwater.
- Emission of gases responsible for greenhouse effect and ozone destruction.
- N losses through emission.
- Food unhealthiness.



# Legislative pressure

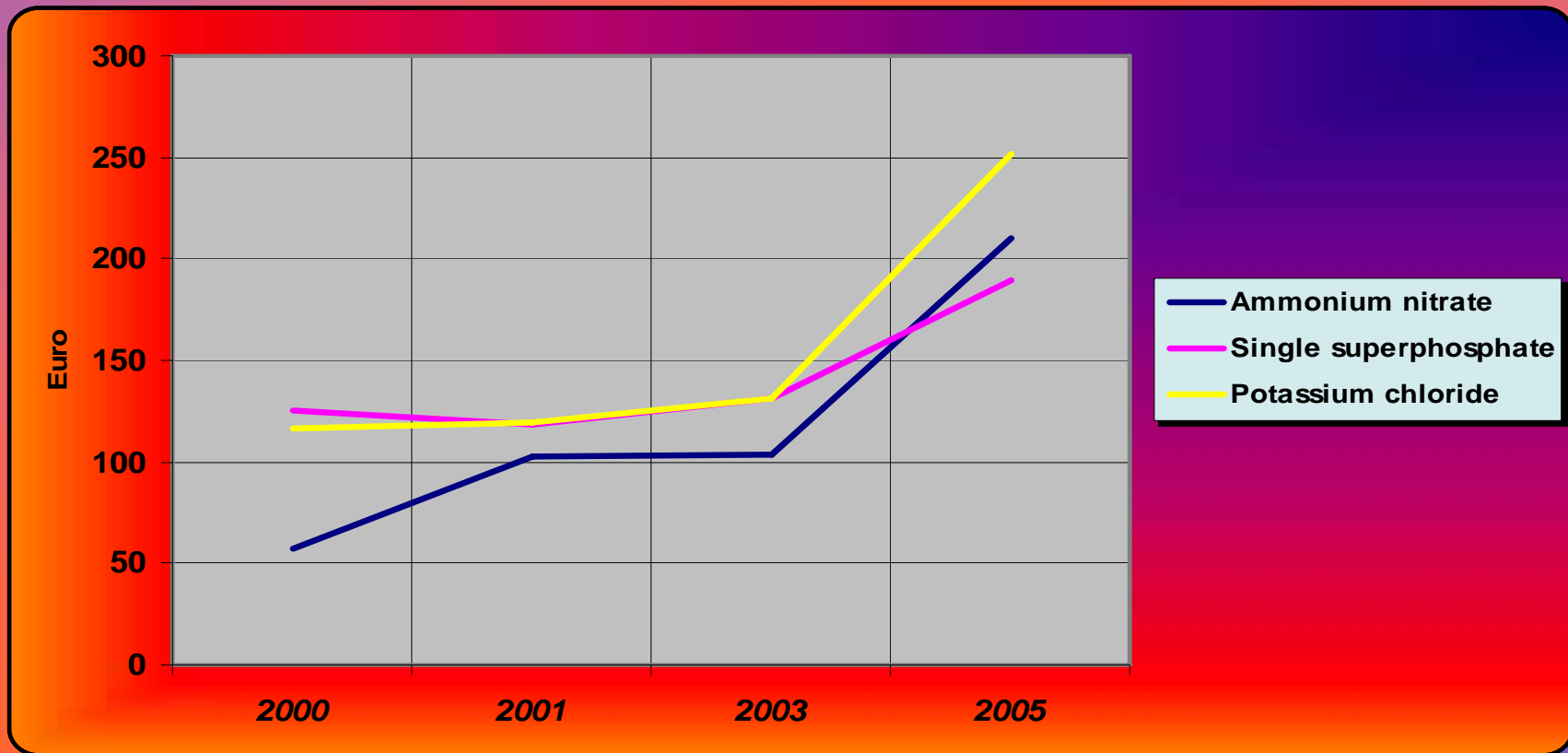
Objectives are motivated, methods of realization are delivered.  
Is time frame realistic?



# Economic pressure

Fertilizer price is not “Farmer friendly”!

Price, Euro per ton of product.



# Cost-price ratio

	Price kg	
	Euro	Wheat
<b>N</b>	<b>0.63</b>	<b>7</b>
<b>P<sub>2</sub>O<sub>5</sub></b>	<b>1.00</b>	<b>10</b>
<b>K<sub>2</sub>O</b>	<b>0.43</b>	<b>4</b>



## Recommended nutrients for 5 t ha<sup>-1</sup> of winter wheat yield

Parameter	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
Recommended nutrients, kg	130	70/55	110/80
Price of nutrients, Euro	80.52	66.23/52.04	44.46/32.34
Removal by yield, kg	123.5	50.5	93.0
Predictable balance, kg	6.5	19.5/4.5	17.0/-13.0

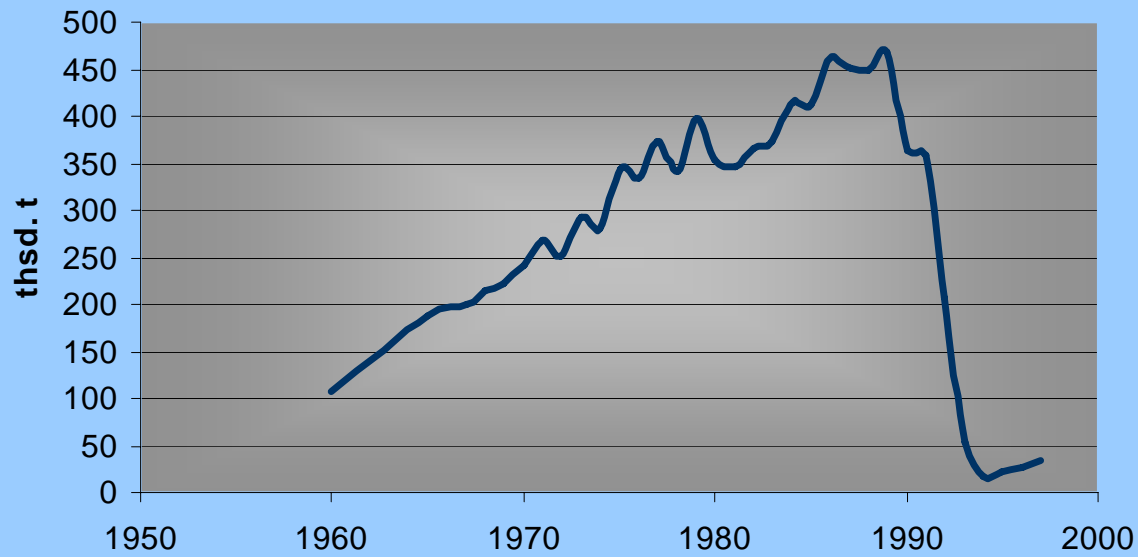
Value of the yield is 445 Euro (long term average).



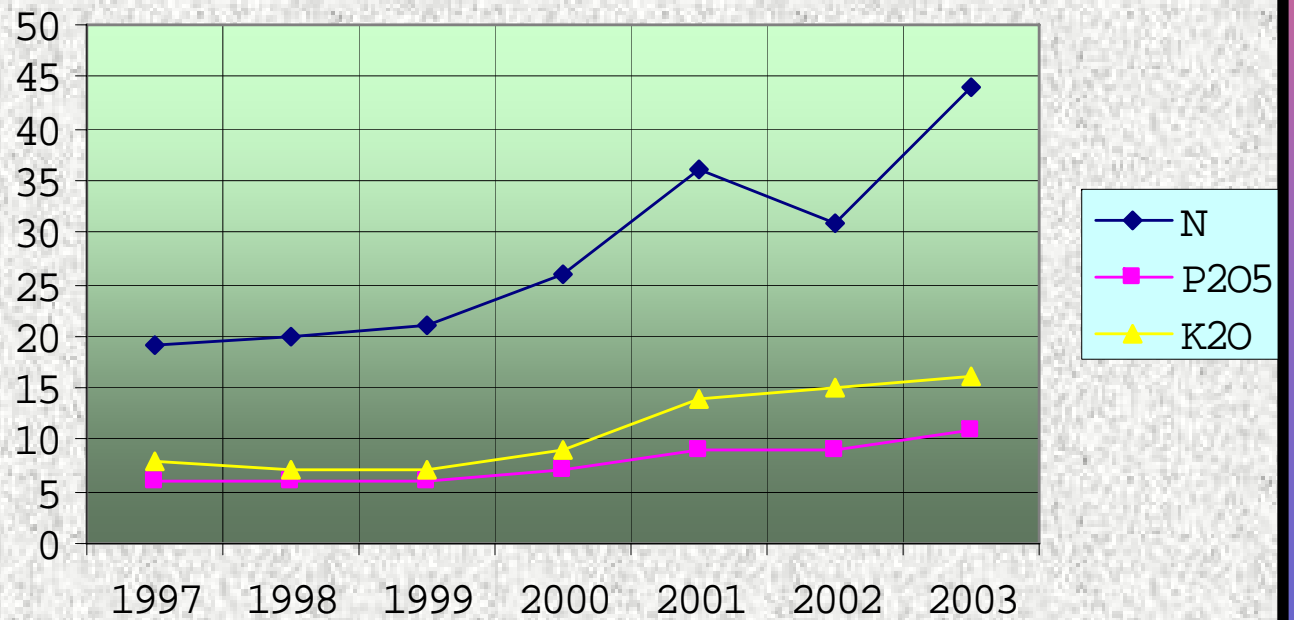
# How to survive?

- ❖ Yield level – 5 t ha<sup>-1</sup> at minimum.
- ❖ Sown area – 50 ha at minimum.
- ❖ Good agronomic knowledge.
- ❖ Economizing on inputs but providing as necessary.
- ❖ Successful marketing.
- ❖ To follow the requirements of GAP to be eligible for the EU and National subsidies.

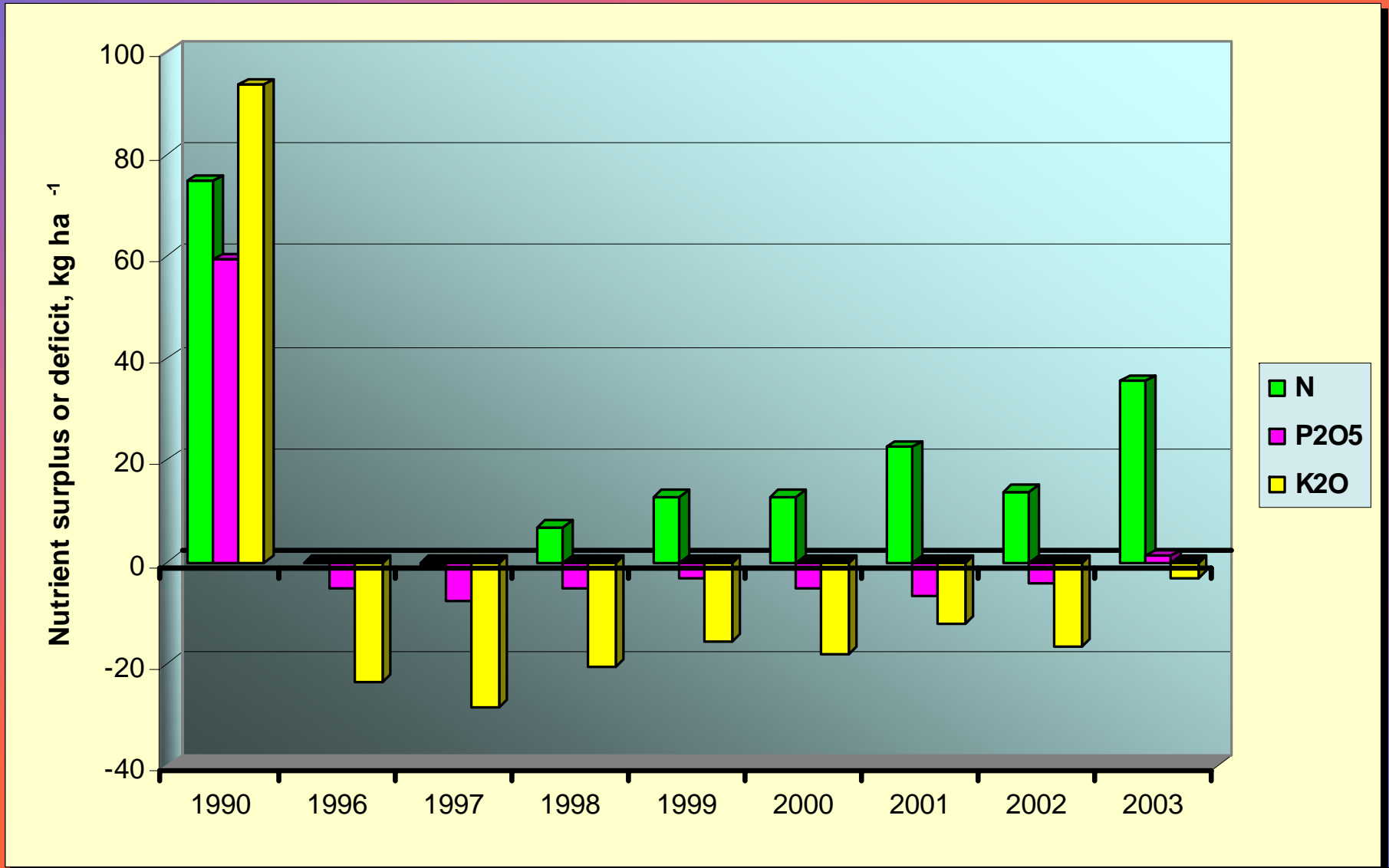
# Fertilizer use



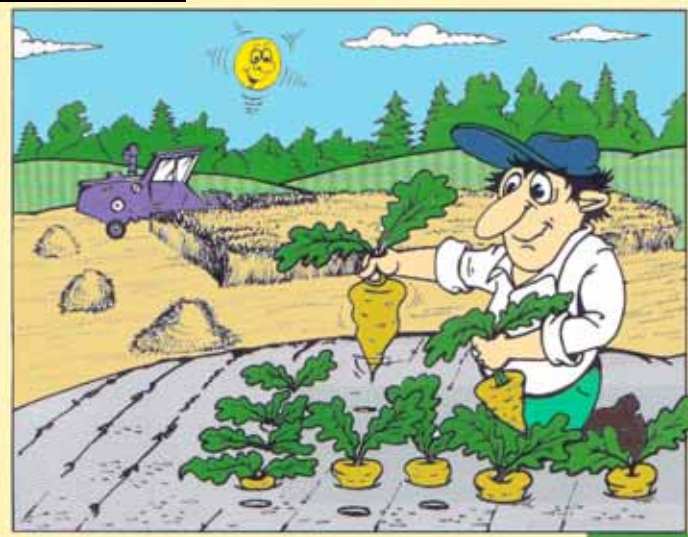
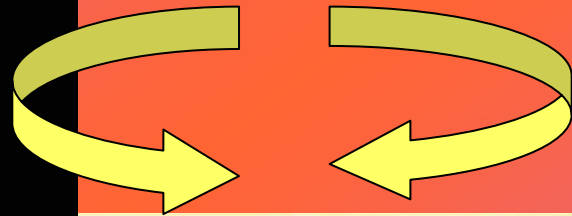
kg ha<sup>-1</sup>



# NPK Soil surface balance in Latvia



# Are the pressures working together for the sake of development or strangle farmer?



# Our challenge

To balance between what we will and what we are able to do  
- it is one of the most important missions for researchers, advisors and educators to keep competitiveness of farming.





**Thanks for attention!**