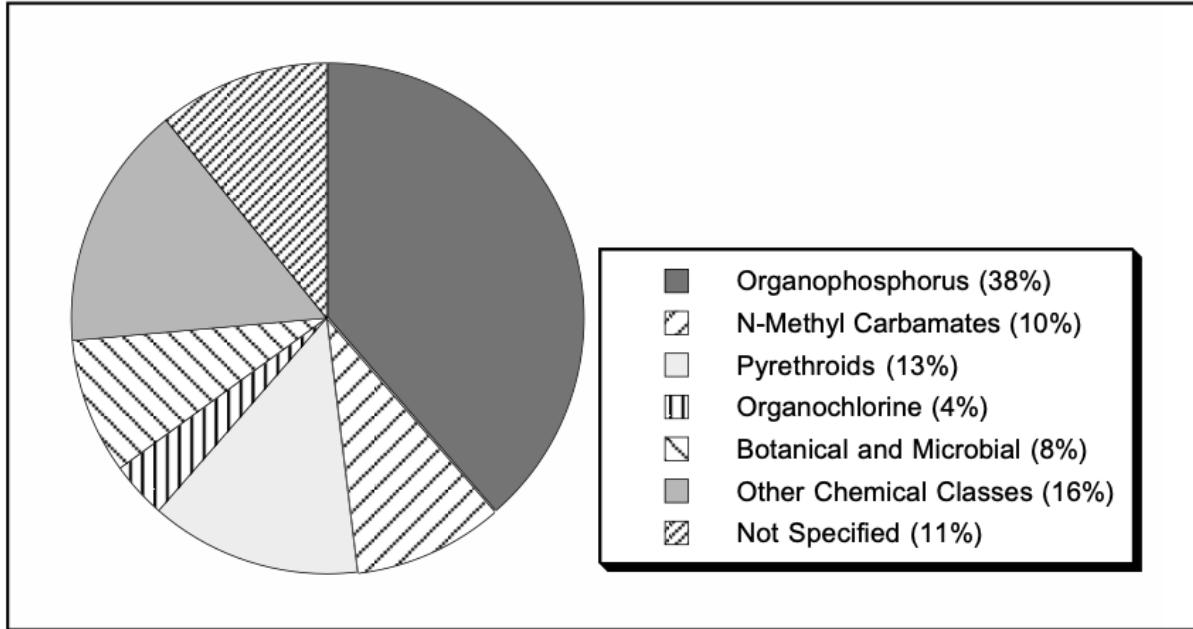


# **An alternative approach to substitute POP pesticides and HHPs**

**Lars Neumeister | pesticide expert**

# 2001

Figure 1: Chemical Classes of the 84 Substitutes



some UNEP „alternatives“ to POPs in 2001:

sulfluramide, chlorpyrifos, lindane,  
monocrotophos

The background of the slide features a photograph of a rural landscape with a river in the foreground, fields, and trees under a cloudy sky. Overlaid on this image are several elements: the PAN Germany logo in the top left corner, the title "Beyond POPs" in large white letters, a subtitle about UNEP chemical substitutes, and two small inset images showing a rice field and a market stall. At the bottom, there is a dotted line and the text "Hamburg, April 2001".

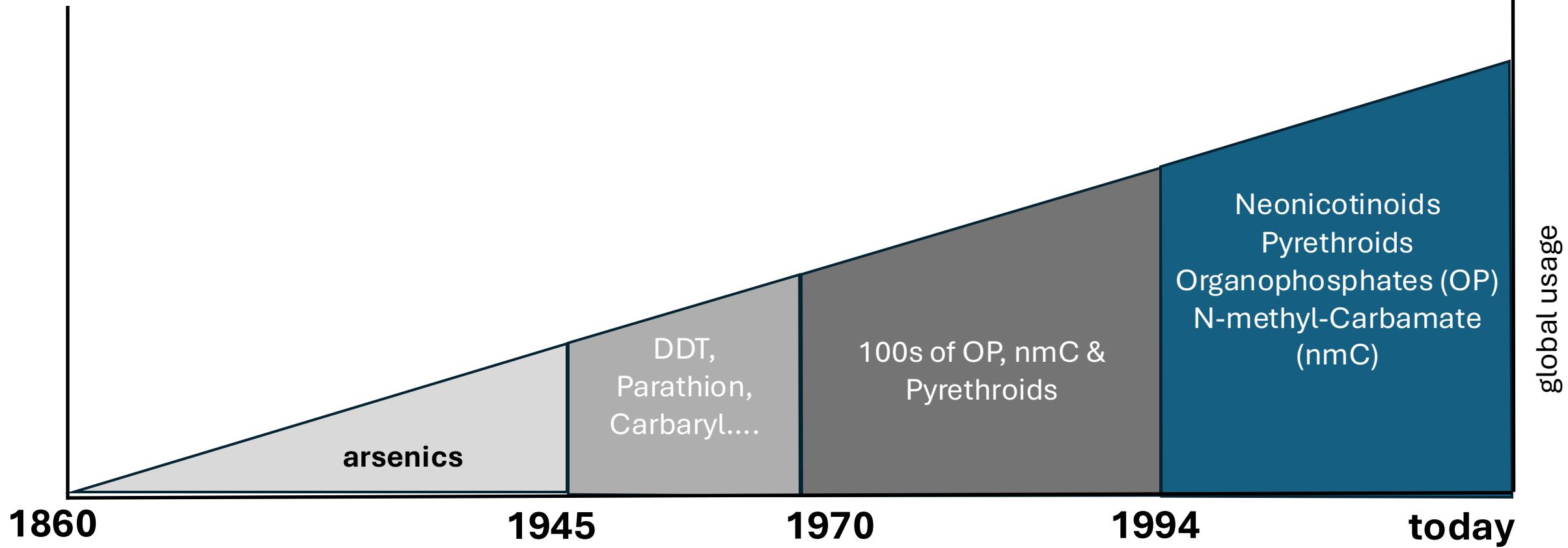
PAN  
Germany

# Beyond POPs

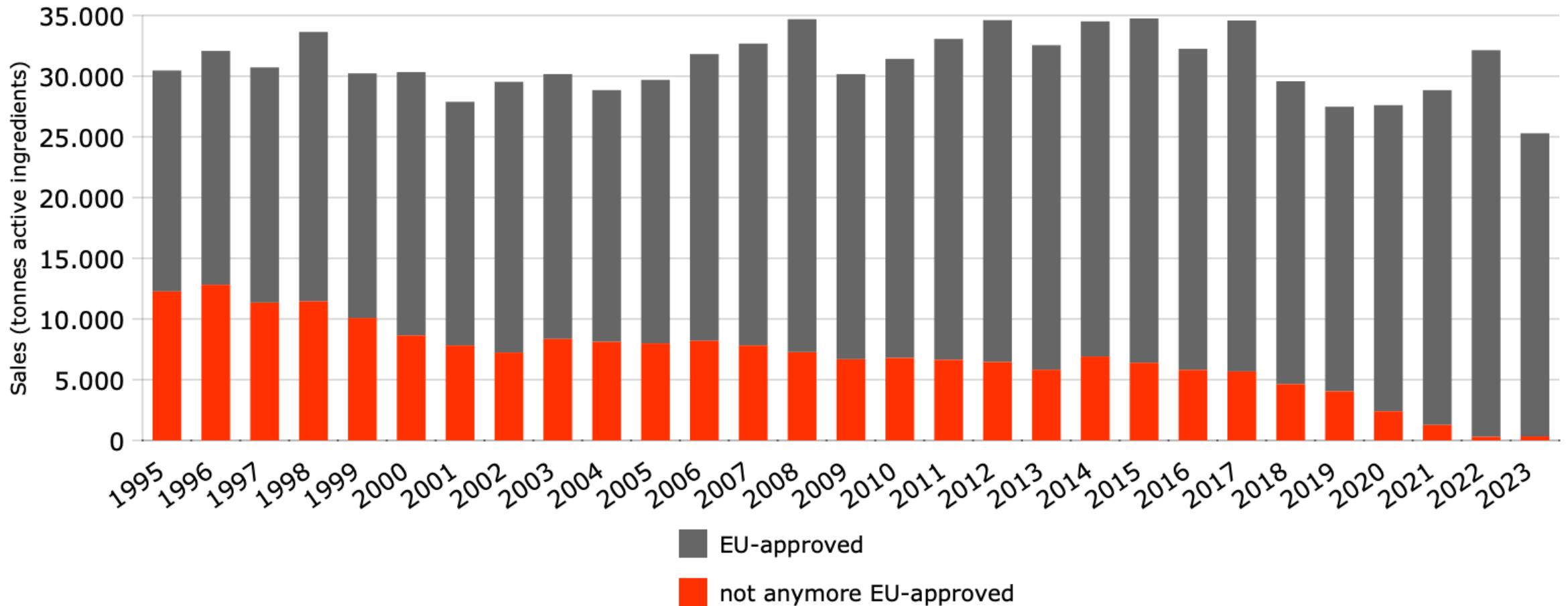
Evaluation of the UNEP Chemical Substitutes of the  
POPs Pesticides Regarding Their Human  
and Environmental Toxicity

Hamburg, April 2001

# A history of substitution



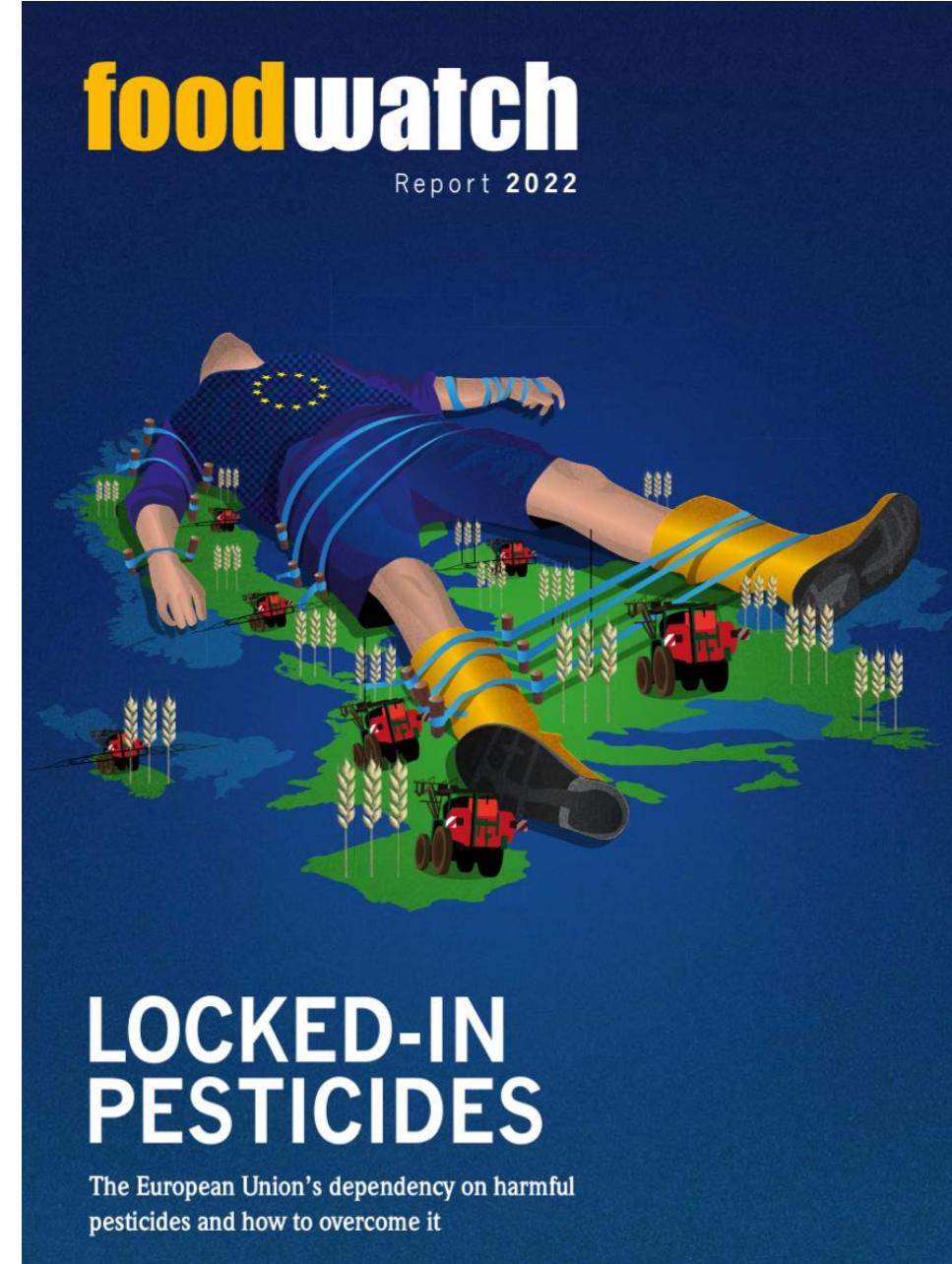
# Example Germany:



Created from governmental sales data (by pesticide) linked with the EU authorization status of each pesticide.

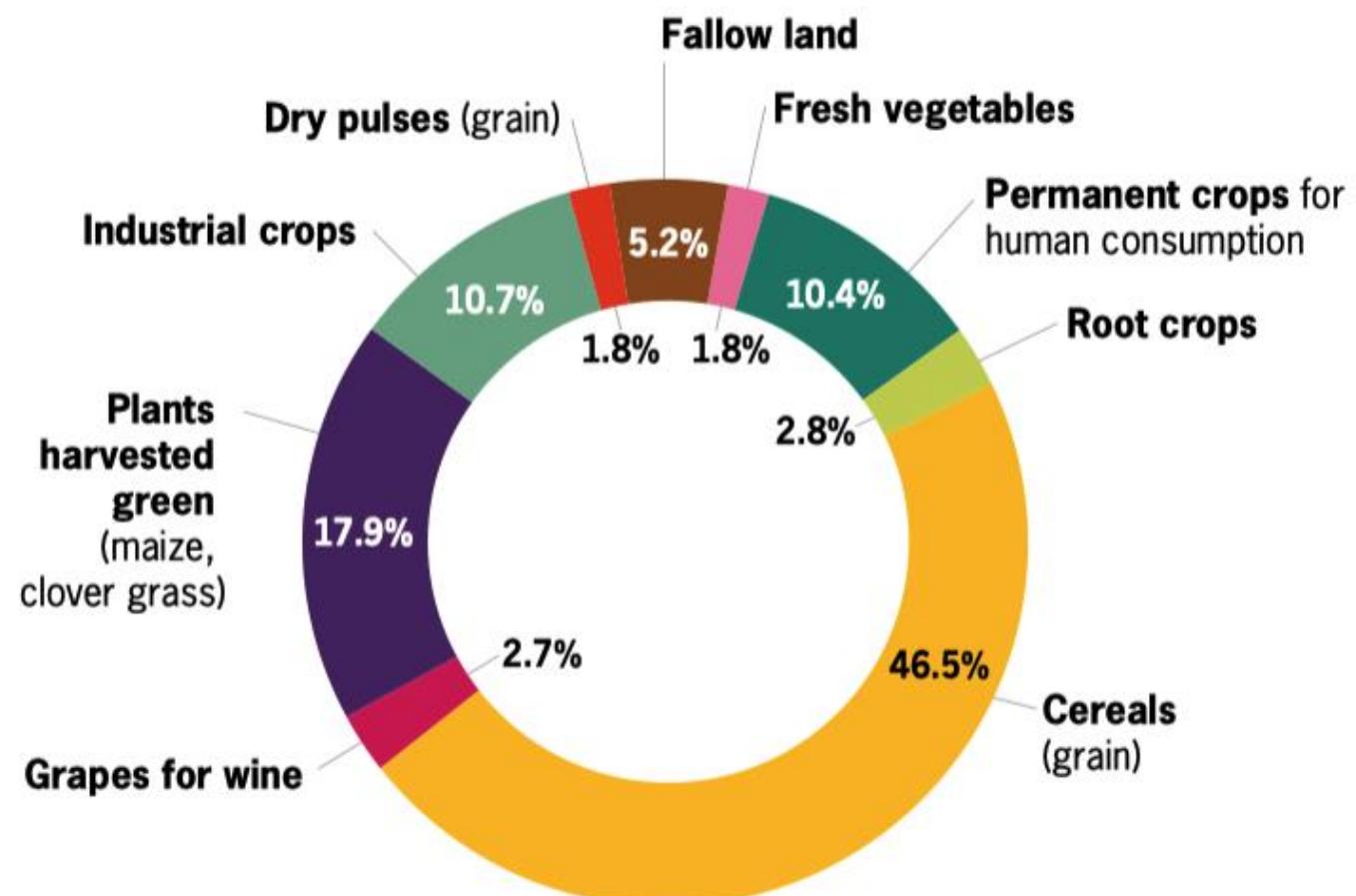
# 1. Conclusion

- conventional farmers always substitute one prohibited chemical with the next chemical
- **LOCK-IN**
- pesticides are not (anymore) a defence against „plagues“ – they are a key tools in a ***economic and environmental race to the bottom***



Escaping the „lock-in“

# A crop-by-crop approach



EU crop distribution on arable land

Cereals and „maize on EU arable land = 64% > 50-60% of the pesticide use



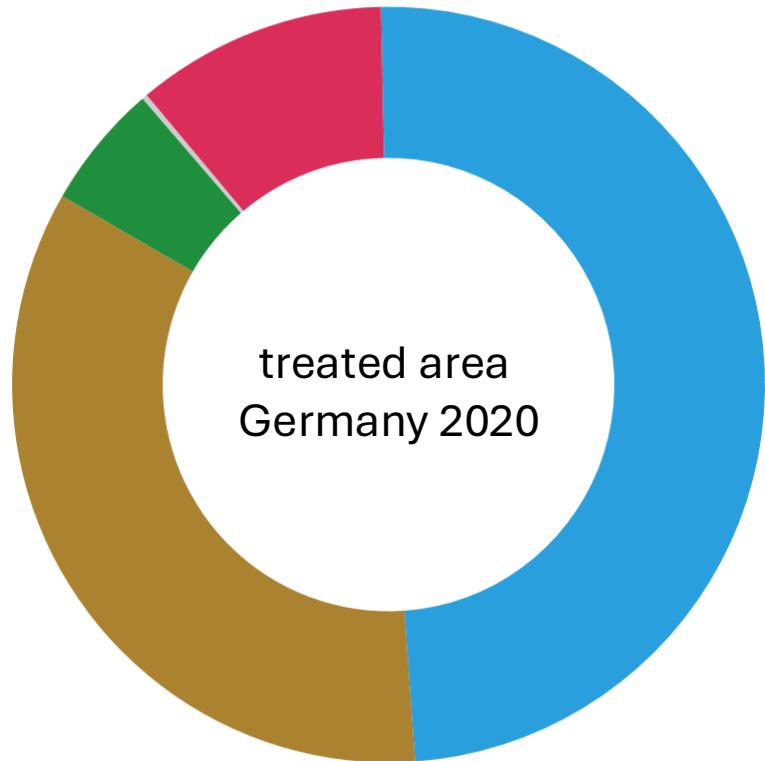
**Unser Ziel: bis 2023 gänzlich  
pestizidfrei**

Der Weizenanbau ganz ohne Pestizide ist eine grosse Herausforderung für die landwirtschaftlich Beschäftigten und die Verarbeiter\*innen.

**MEHR ERFAHREN >**

**MIGROS**

## On farm level....



### **Insecticides (11%)**

functional biodiversity  
spatial heterogeneity  
adjustment of sowing time (arable crop)

### **Herbicides (49%)**

wider crop rotation incl. intercropping  
***mechanical weeding***

### **Fungicides (34%)**

wider crop rotation incl. intercropping  
spatial heterogeneity incl. mixed variety cropping  
resistant varieties  
reduction of N-fertilization

### **Growth Regulators (5%)**

reduction of N-fertilization  
choice of varieties

pesticide tax

CO<sub>2</sub> price €180/ton

redirection of subsidies

withdrawal of  
authorizations - HHP first

change of belief system

international agreement  
on *fair* agricultural trade

**2025**



Cereals

**2028**



Sugar Beet

**2031**

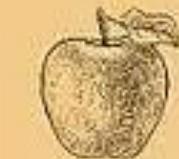


Fruit and Vegetables

**2034**



Grapes



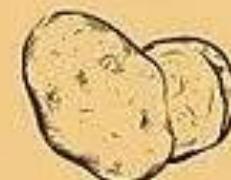
Apples



Maize



Rapsseed



Potatoes

# Development of a crop-by crop approach

## Key questions:

- What **large scale** crops could be grown ***rather easily*** without pesticide use?
- What prevents farmers from doing so?
- How can obstacles be removed?
  - What is the belief system preventing change?
  - What could be positive & negative incentives?

Banana\*, apples\*, grapes...

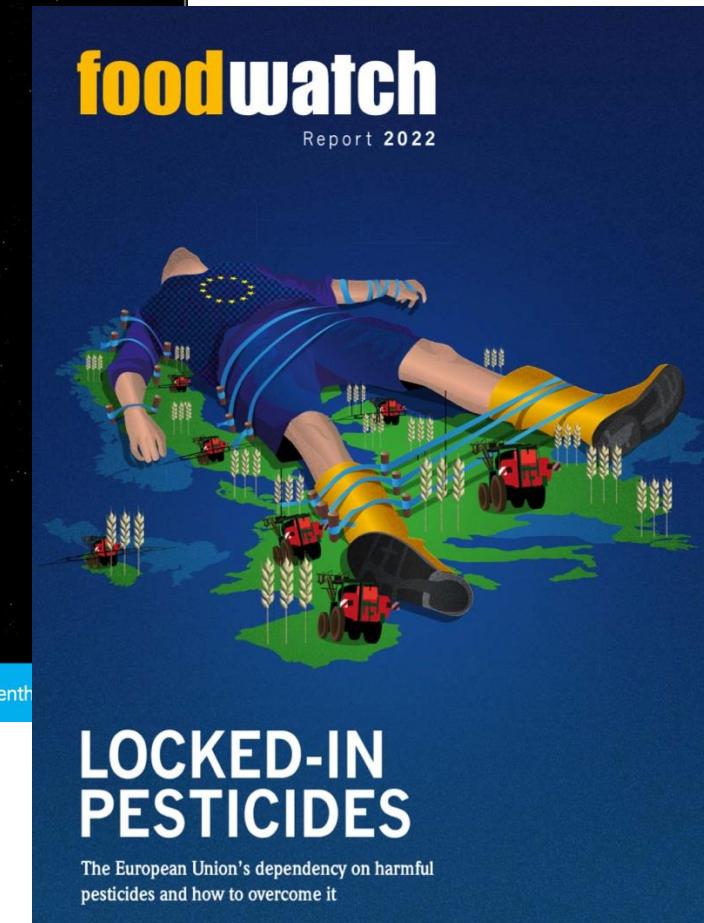
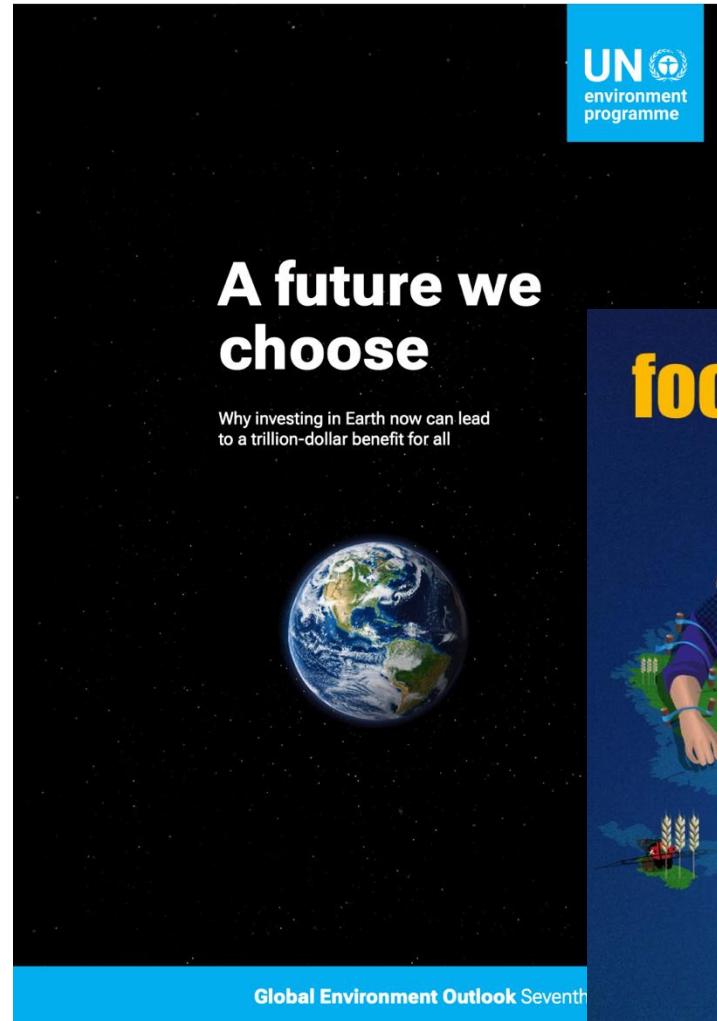
pesticide lock-in level

cereals, maize

\*for fresh consumption, export

*“The science is good.  
The solutions are  
known. What is  
required is the courage  
to act at the scale and  
speed that history  
demands”\**

Thank you very much



\*Professor Edgar Gutiérrez-Espeleta in The Guardian referring to the 7th UNEP GEO Assessment

<https://www.theguardian.com/environment/2025/dec/09/food-fossil-fuel-production-5bn-environmental-damage-an-hour-un-geo-report->