

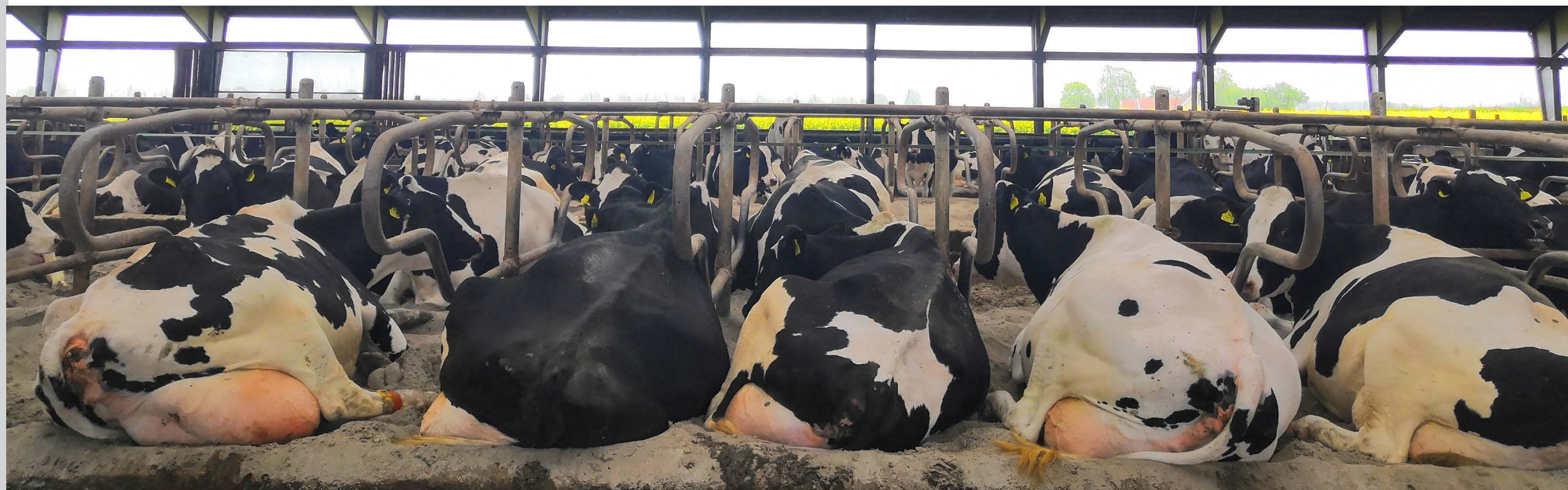


Identify Risks –
Protect Health



Role of benchmarking in the reduction of antibiotic consumption in animal husbandry

Bernd-Alois Tenhagen

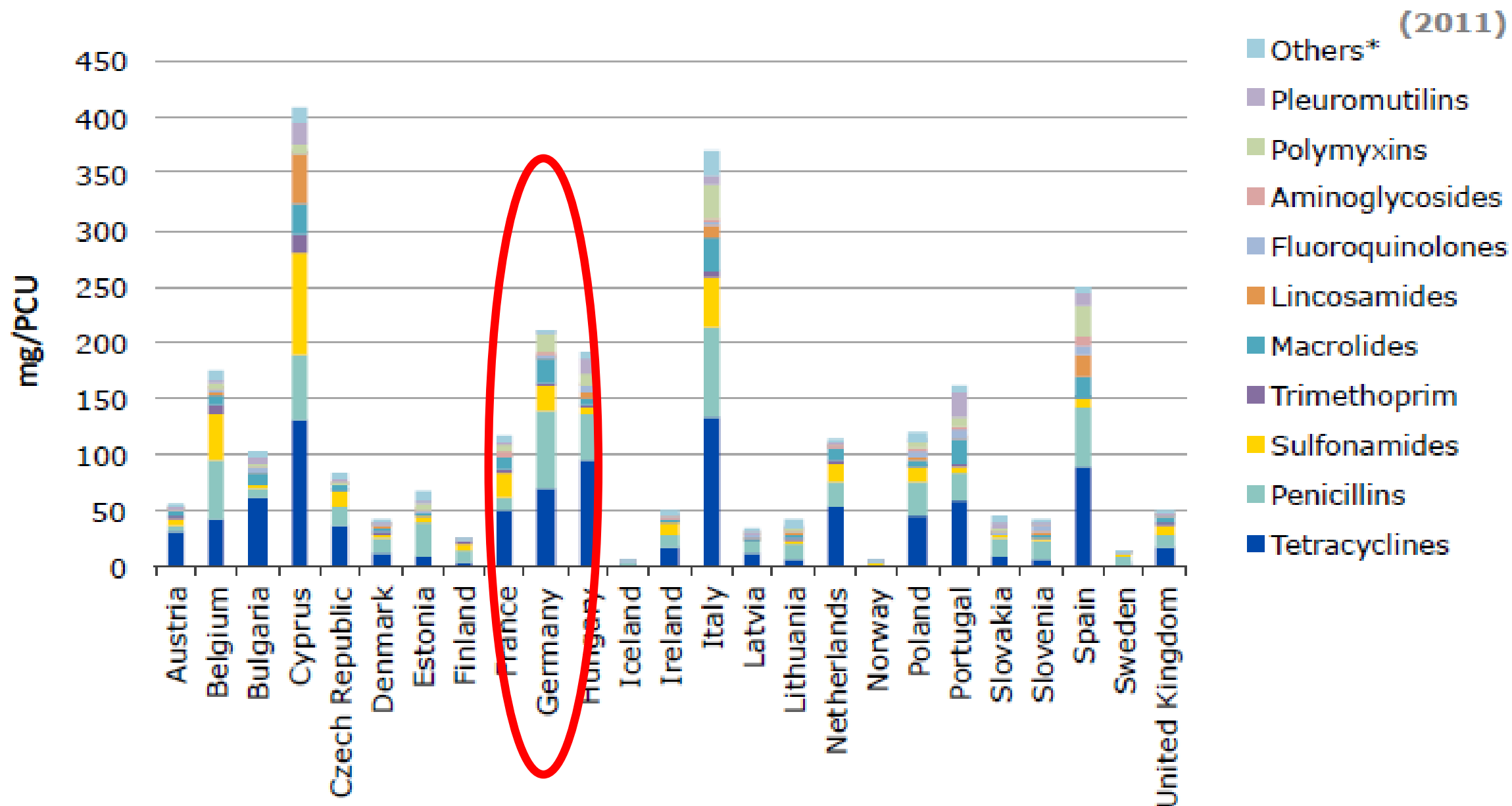


What I will be talking about

- Defining benchmarks and an acceptable level of antimicrobial use
- The idea behind the German benchmarking system
- Did it work?
- To reduce AMU
- To reduce AMR
- Challenges
- Where to go?

The starting point

ESVAC 2011: Germany is No. 4 among Europe's users of antimicrobials in animals



First question: How much is too much? What is acceptable?

Options

1. Any treatment is too much – not realistic
2. Form a working group that will negotiate an acceptable limit
 - Issues with credibility of the WG in the farming community („what do THEY know?“)
 - Requires several working groups for the different animal populations

German approach

- Focus on special branches of animal production
 - Those with a high level of AMR
- Let reality define the targets

2nd Question: How to measure antimicrobial use in animals?

Treatment frequency

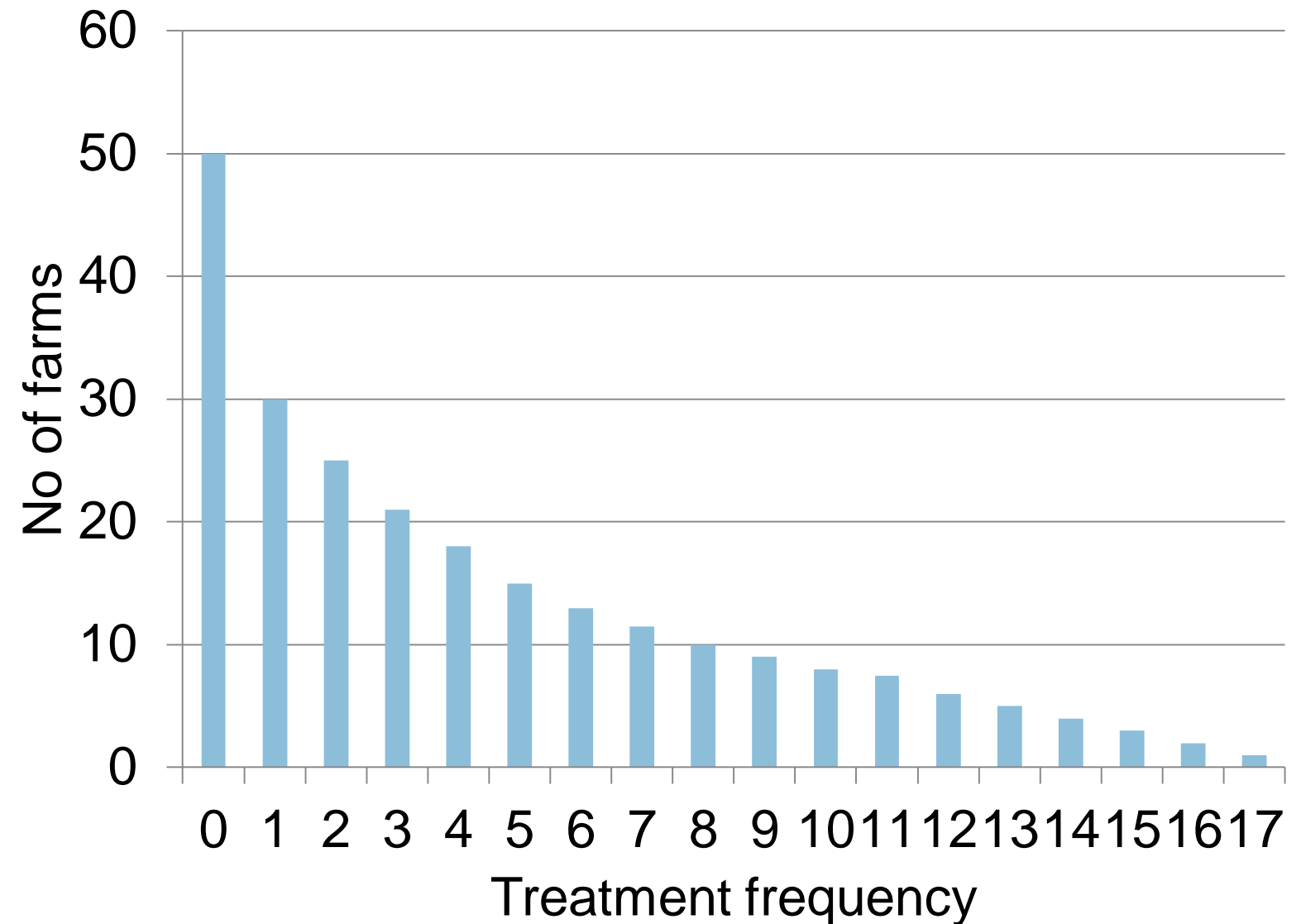
$$\frac{\text{Number of animals treated x days under treatment x antimicrobials}}{\text{Mean no. of animals at risk in the period}}$$

- Calculation done every 6 months
- Separate calculation for each population
- Foundation for a flexible target

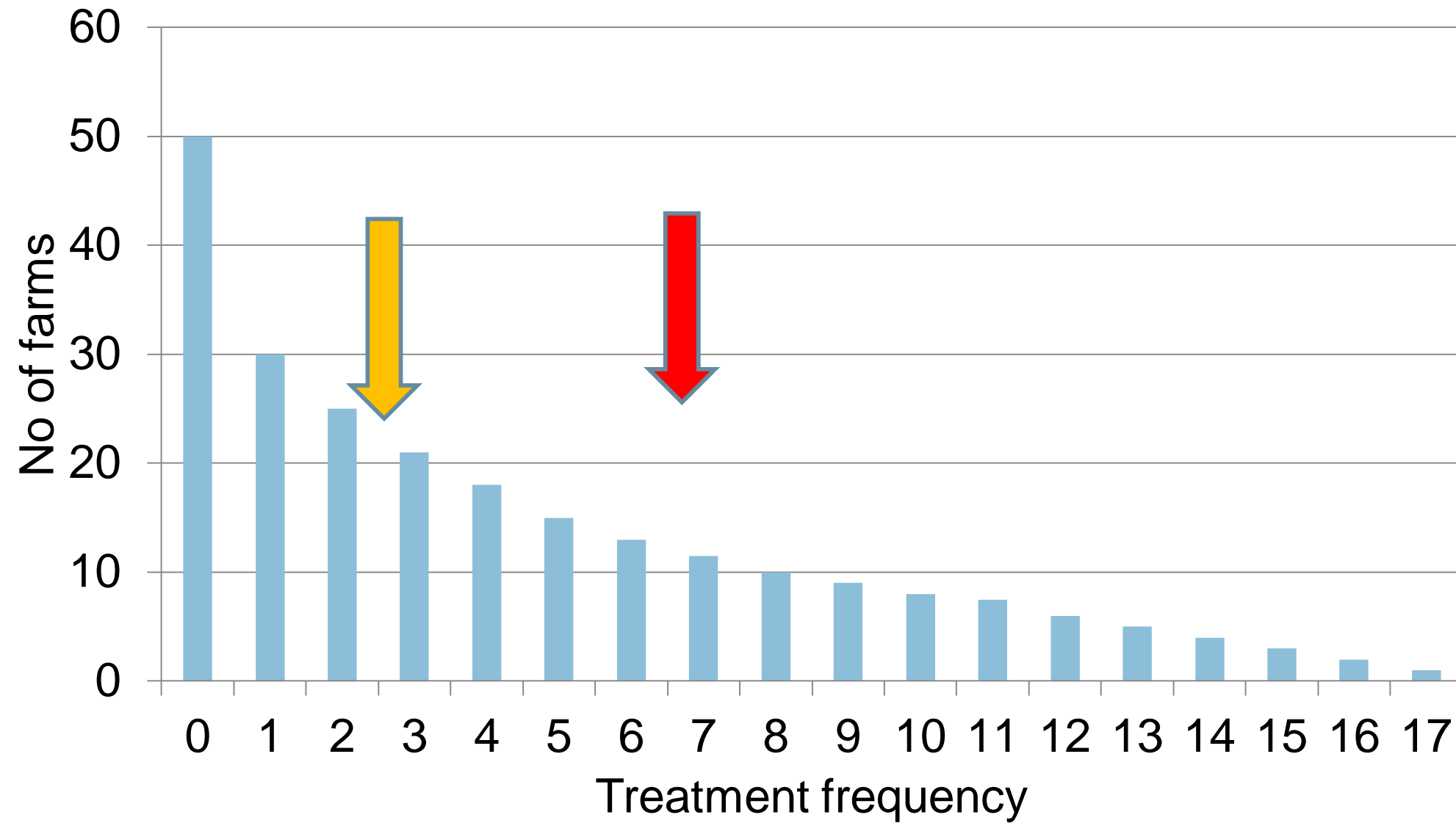
Idea of the flexible target

Concept:

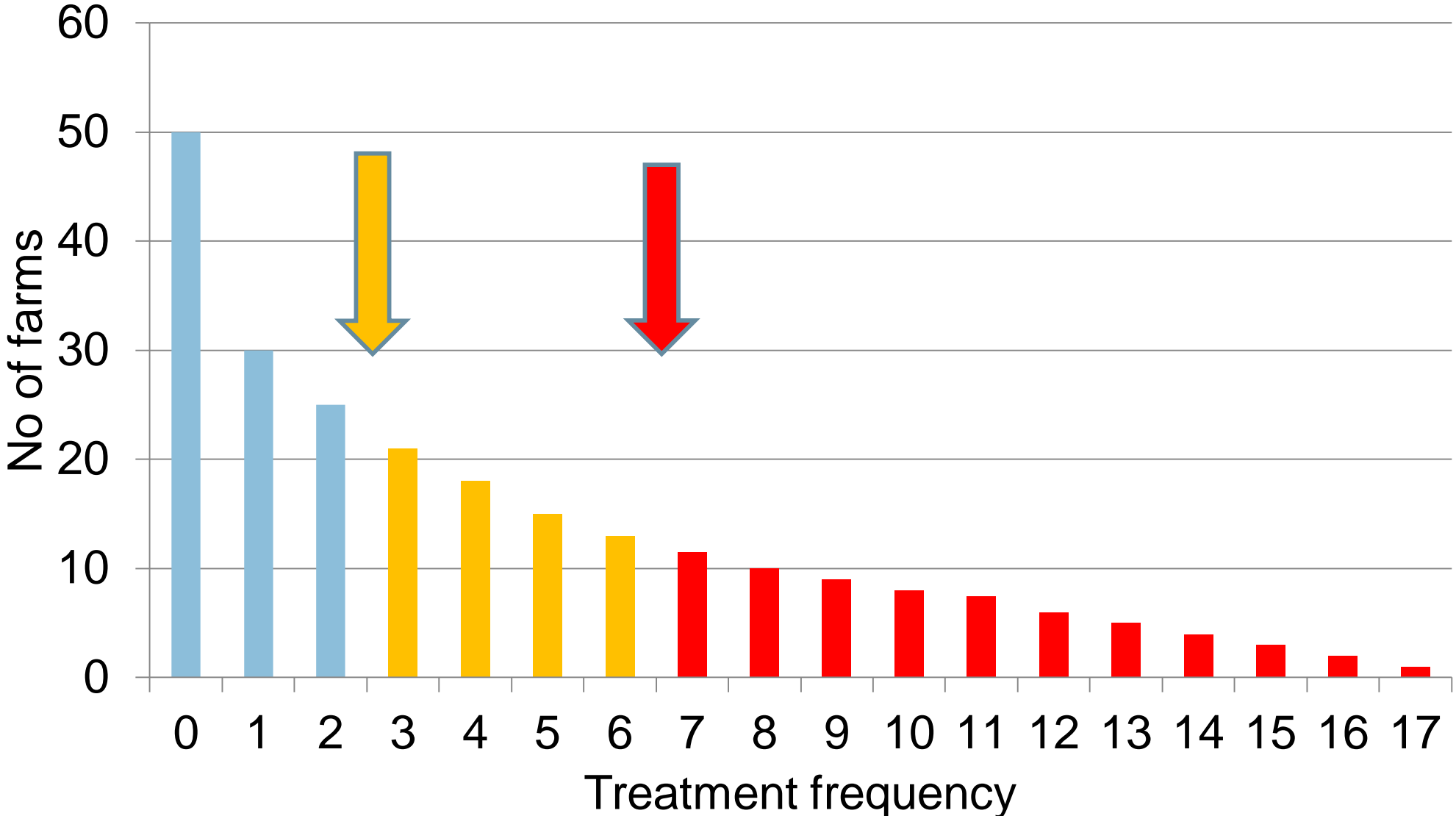
1. If targets are derived from current use, their credibility is high
2. Targets that seem unrealistic now, may be feasible in the future (optimizing husbandry takes time)



Idea of the flexible target



Idea of the flexible target



Consequences

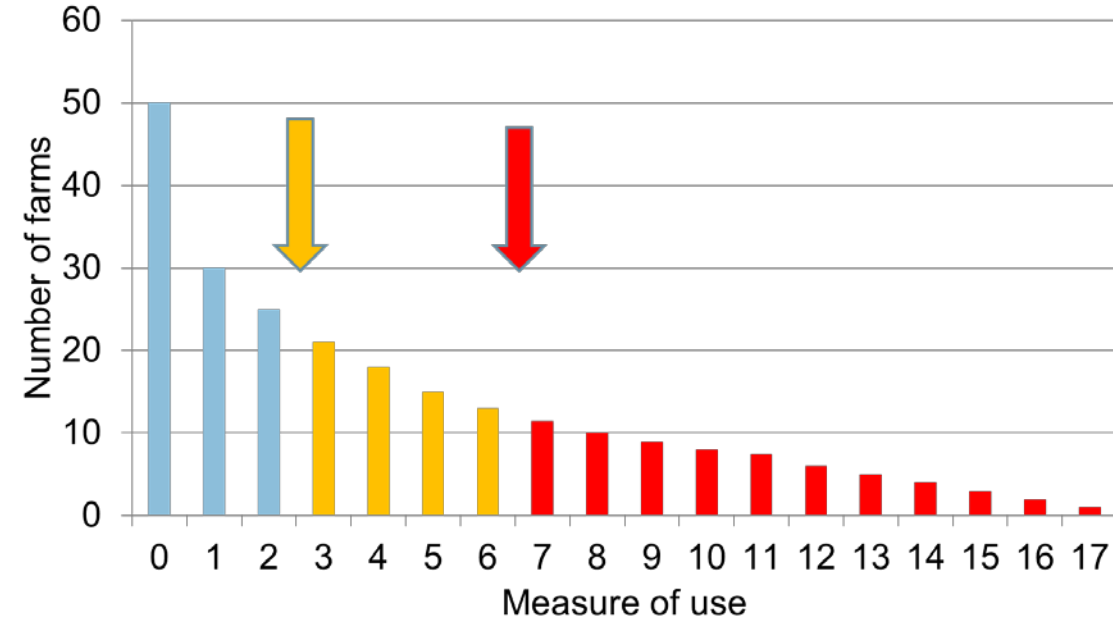
If above median (i.e. **yellow**)

- You are using more than 50 % of your colleagues
- You should try to change this with your vet

If in upper quartile (**red**)

You are using more than 75 % of your colleagues

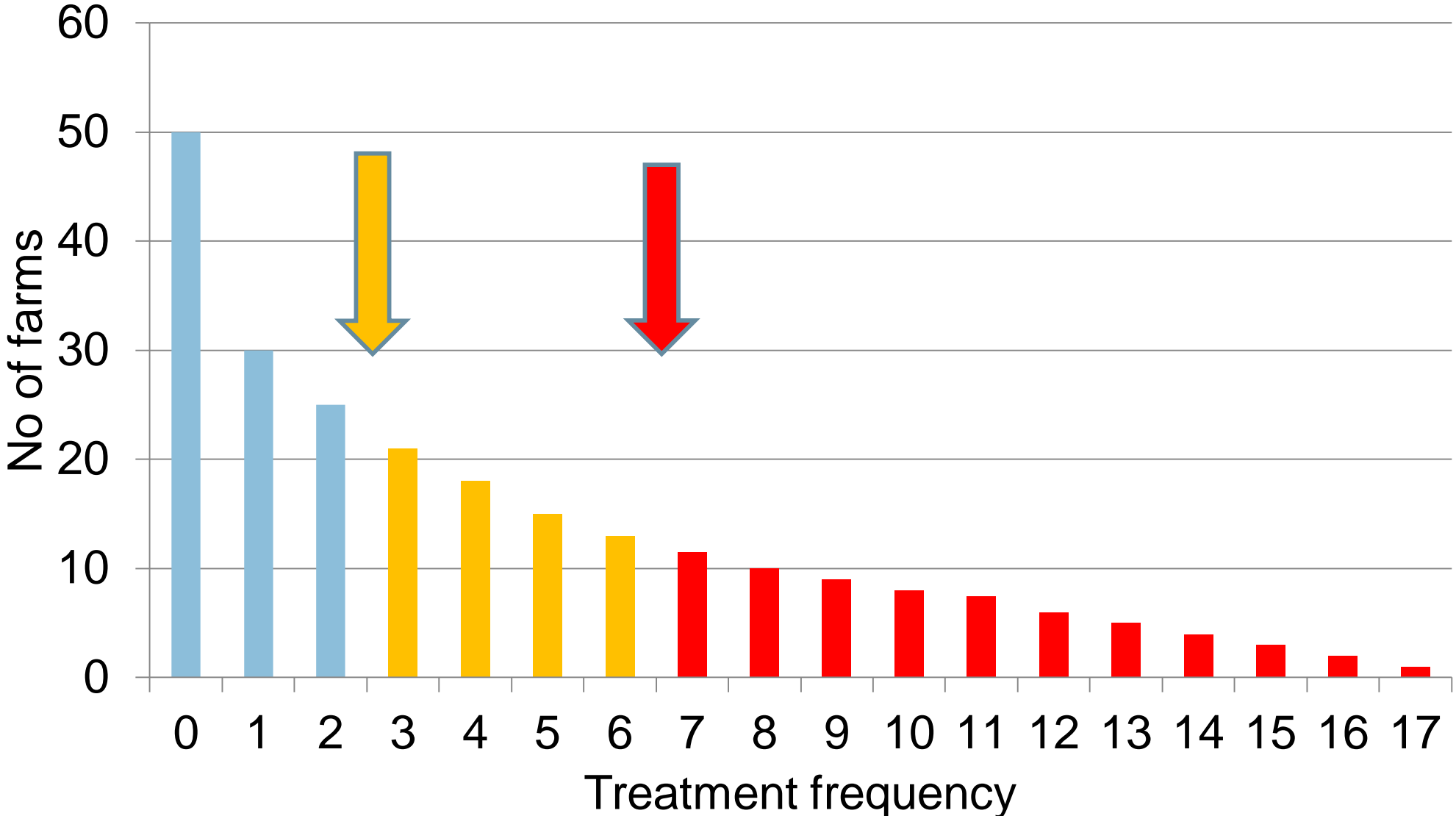
- You **have to** change that
- Prepare a report for the local authority outlining your plans (with your vet)



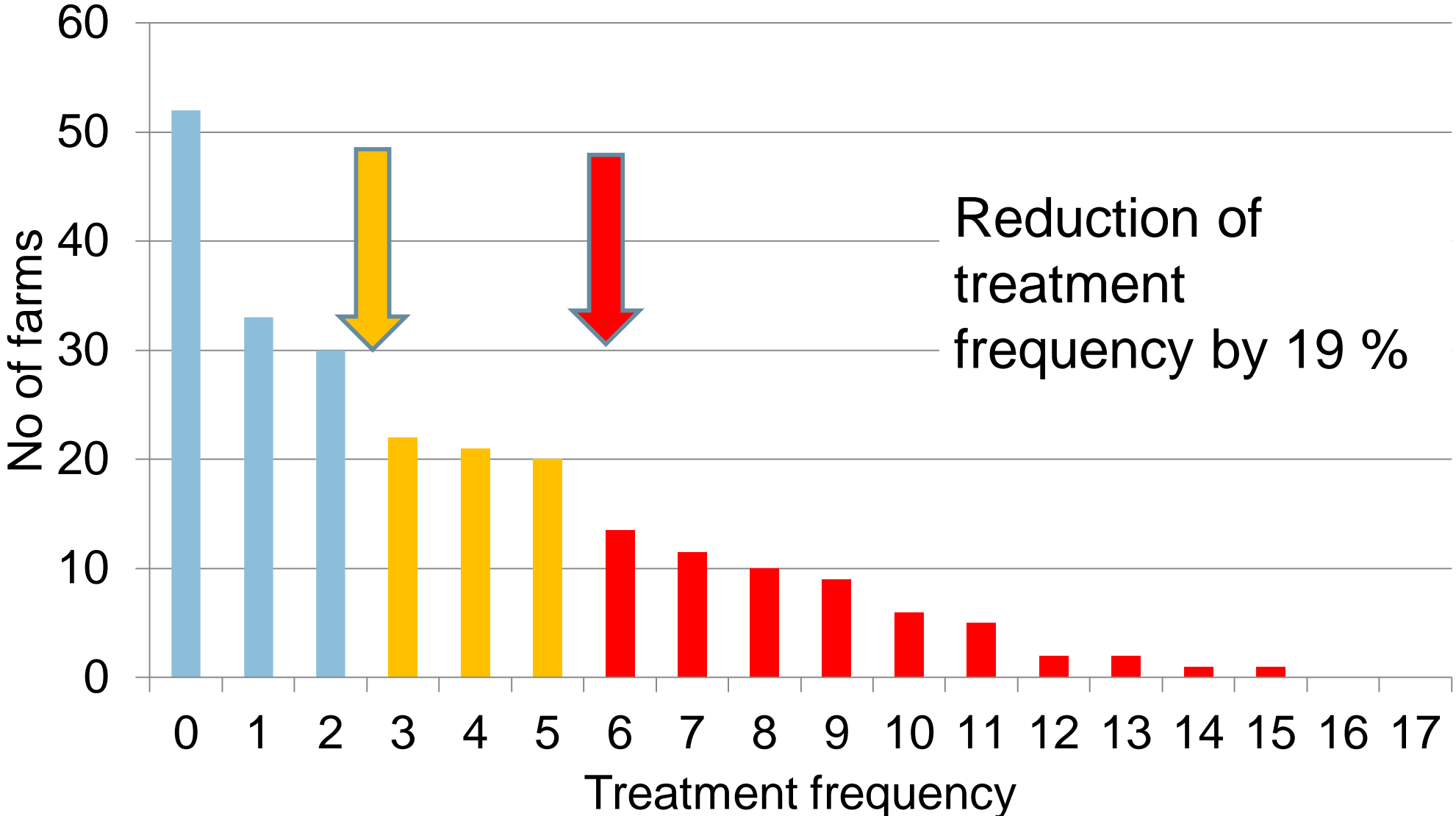
Reasoning

1. High credibility and acceptance of targets
2. High users can contribute a lot to reduction
3. If high users reduce, median and 3rd quartile will decline
4. New targets are set based on the new situation
5. Targets that seem unrealistic now, may be feasible in the future
(optimizing husbandry takes time)

The evolving target

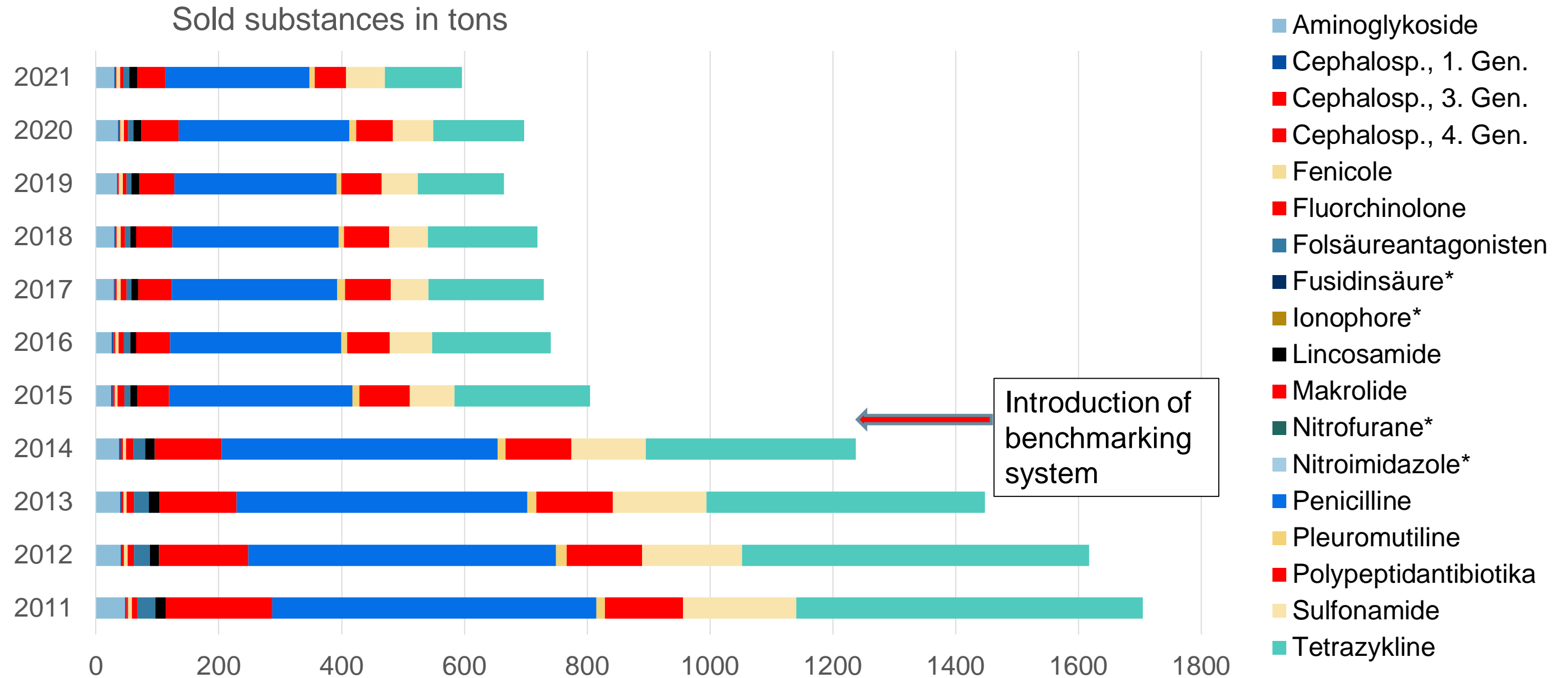


The evolving target



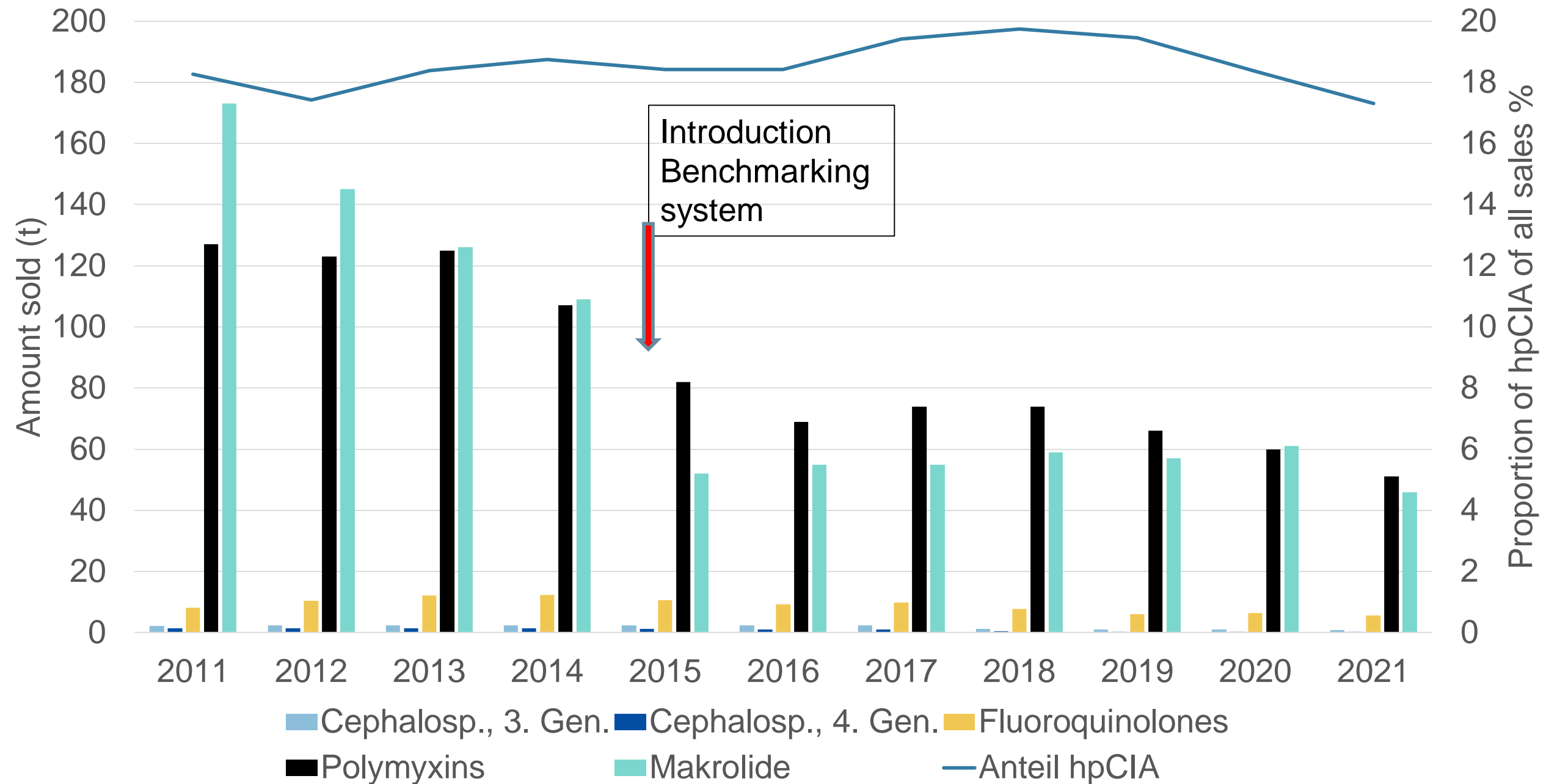
Did it work?

Antimicrobial sales to veterinarians in Germany 2011-2021 (BVL 2022)



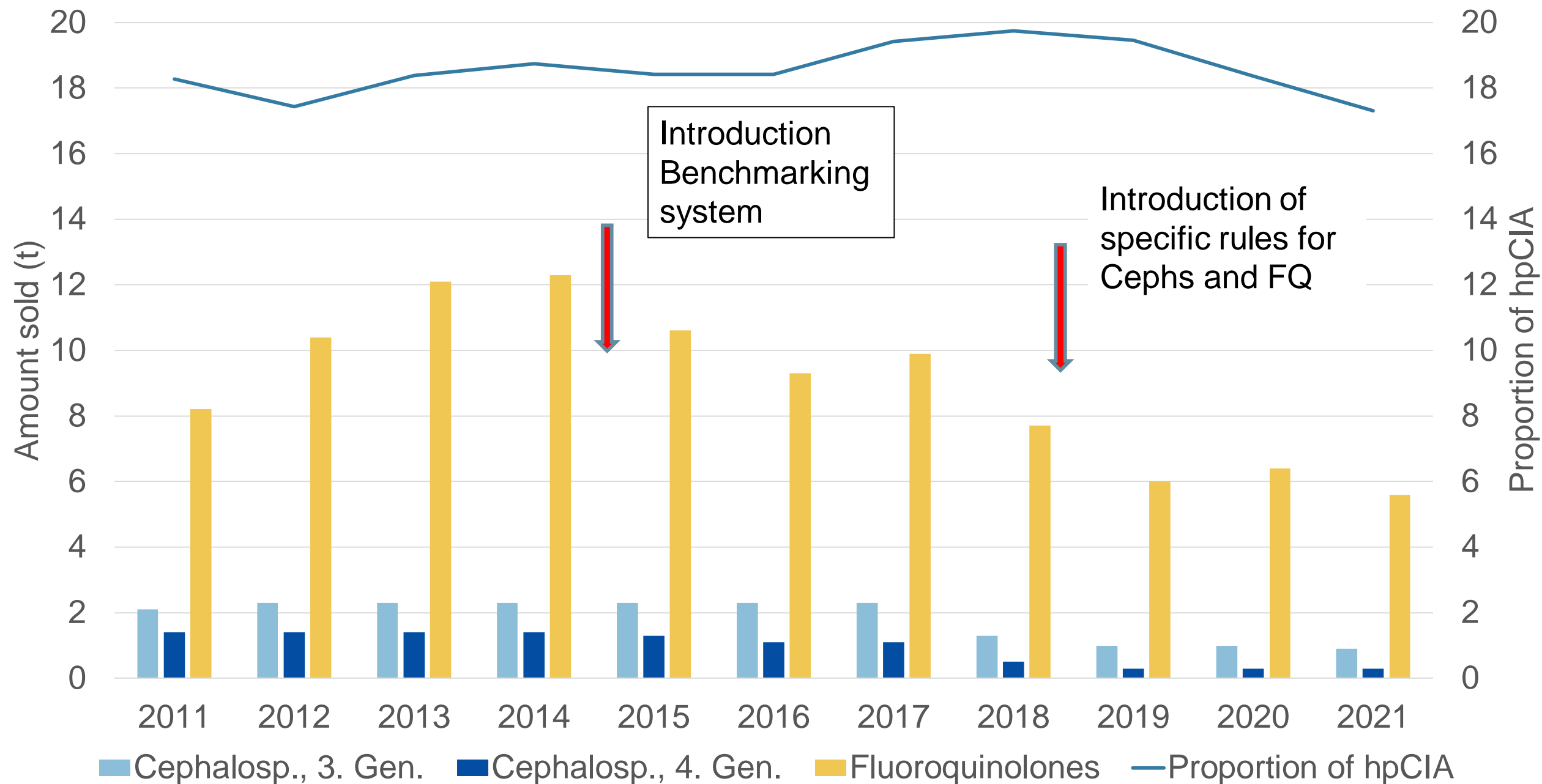
Antimicrobial sales to veterinarians hpCIA 2011-2021

(BVL 2022 + own calculations)

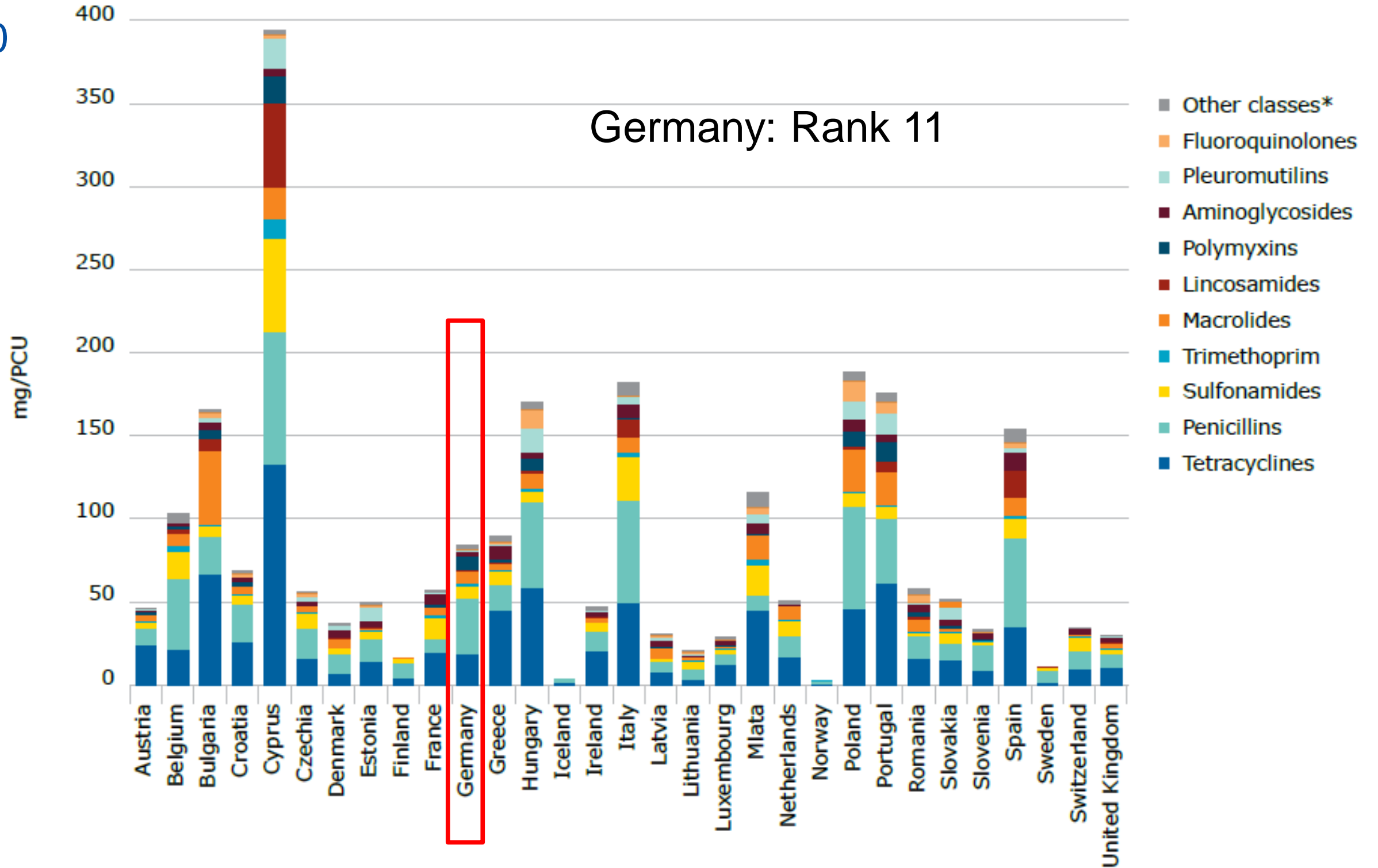


Sales of hpCIA to veterinarians 2011-2021

(BVL 2022 + own calculations)



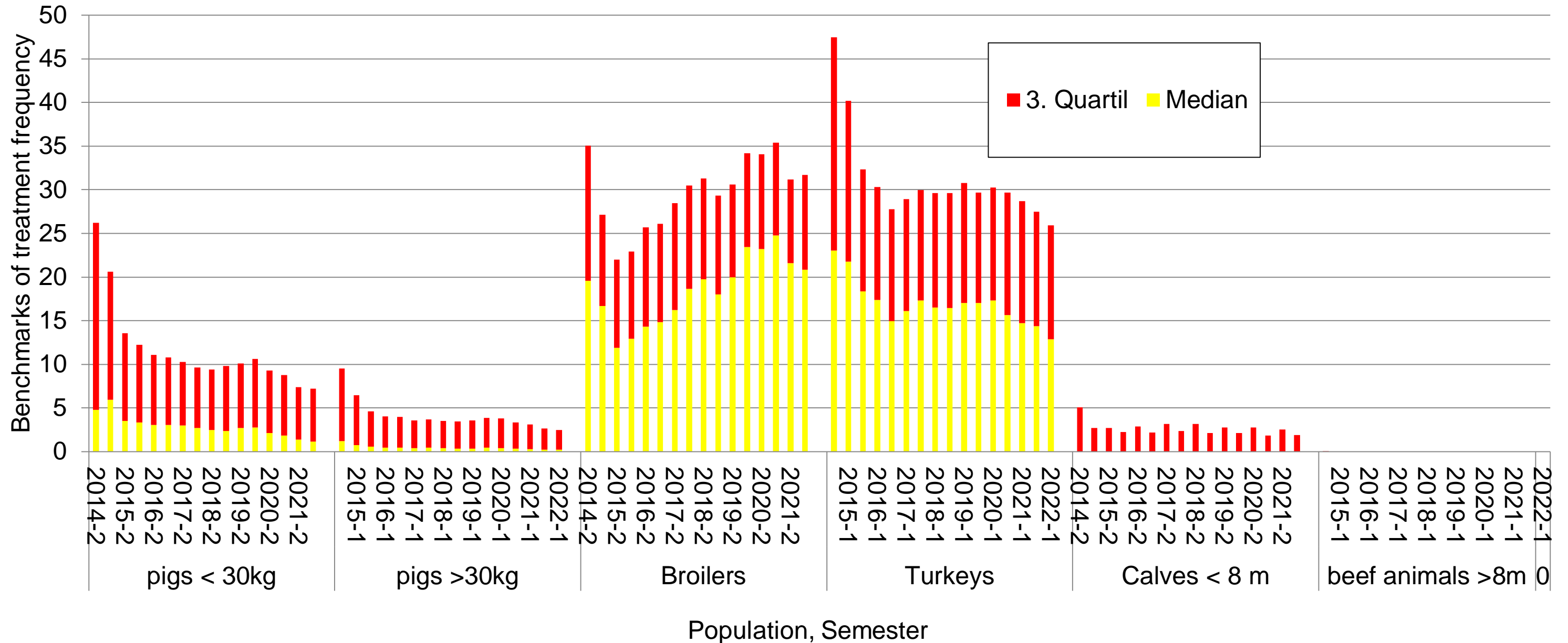
ESVAC 2020



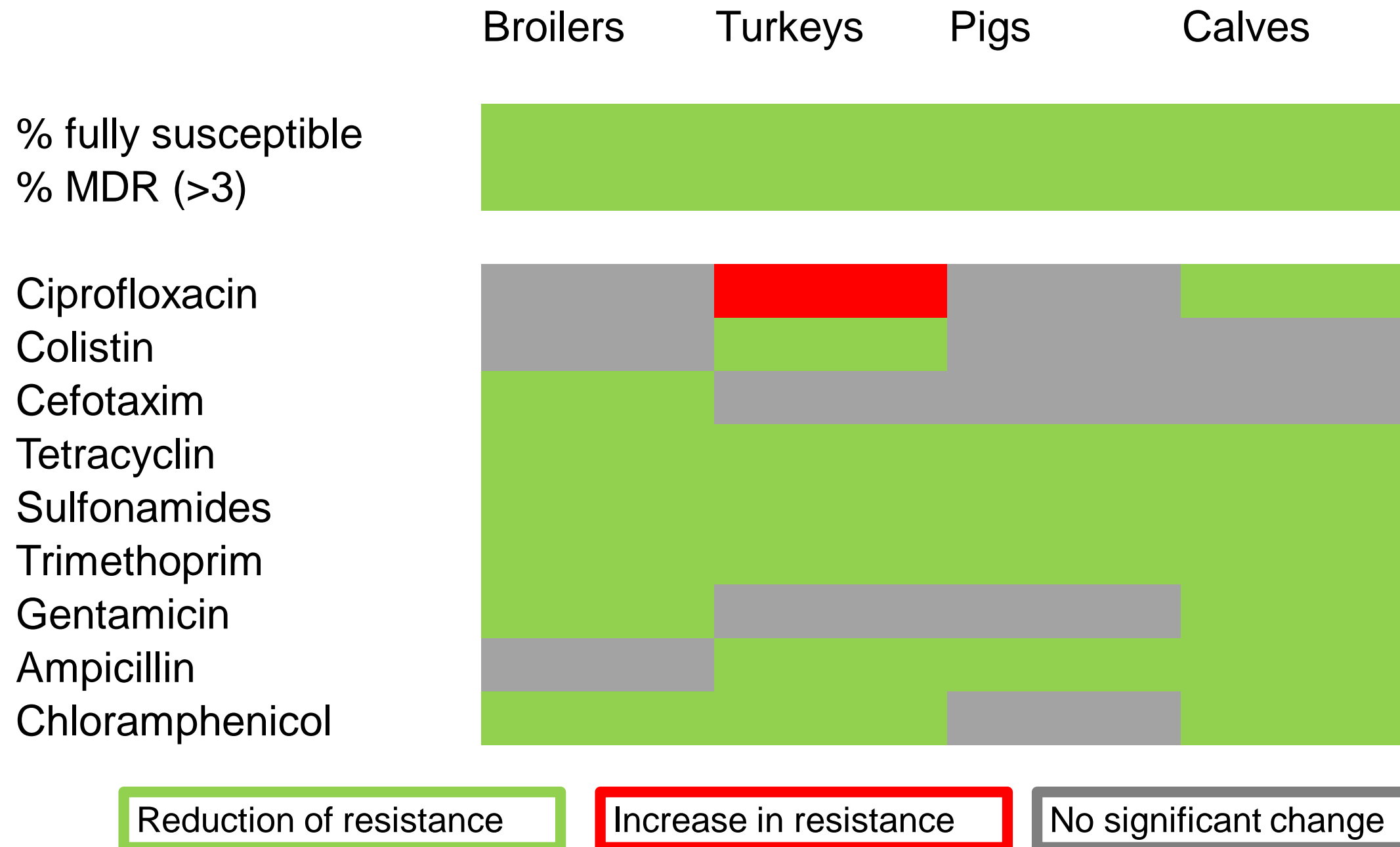
So it did work?

Yes, but....

Treatment frequencies in 6 animal populations 2014 to 2022 (BMEL, own graph)



Did it reduce resistance ? (AMR of *E. coli* 2009-2017)



Resistance of *Campylobacter* 2009-2017

	Turkey		Broiler		Pig		Calf	
	<i>C. coli</i>	<i>C. jejuni</i>	<i>C. coli</i>	<i>C. jejuni</i>	<i>C. coli</i>	<i>C. jejuni</i>	<i>C. coli</i>	<i>C. jejuni</i>
% of susceptible isolates								
Ciprofloxacin		Red		Red				
Nalidixic acid		Red		Red				Red
Erythromycin	Green							
Tetracycline	Green							
Streptomycin		Green		Green				
Gentamicin								

Summary – did it work?

Yes

- Overall the benchmarking process was successful in helping to reduce antimicrobial use
- Little debate about the feasibility of targets
- Reduction of total sales from 1230 to 600 t / year between 2014 and 2021

No

- Not all addressed populations reacted as expected

Where to go?

Legal framework is currently under revision

- No. of included populations will be extended (dairy cows, laying hens, sows etc.)
 - Consequences of being a high user will be adjusted
 - Negative incentives for using hpCIA
 - Validity of targets over longer periods
 - More detailed progress reports will be published annually
- Further progress is possible and should be achieved



Identify Risks –
Protect Health



Thanks for your attention

