



The future of crop protection

*Pesticides in sustainable agriculture: a triple challenge with one solution*



**Christy van Beek (PhD)**

Sustainability Lead  
Bayer CropScience The Netherlands

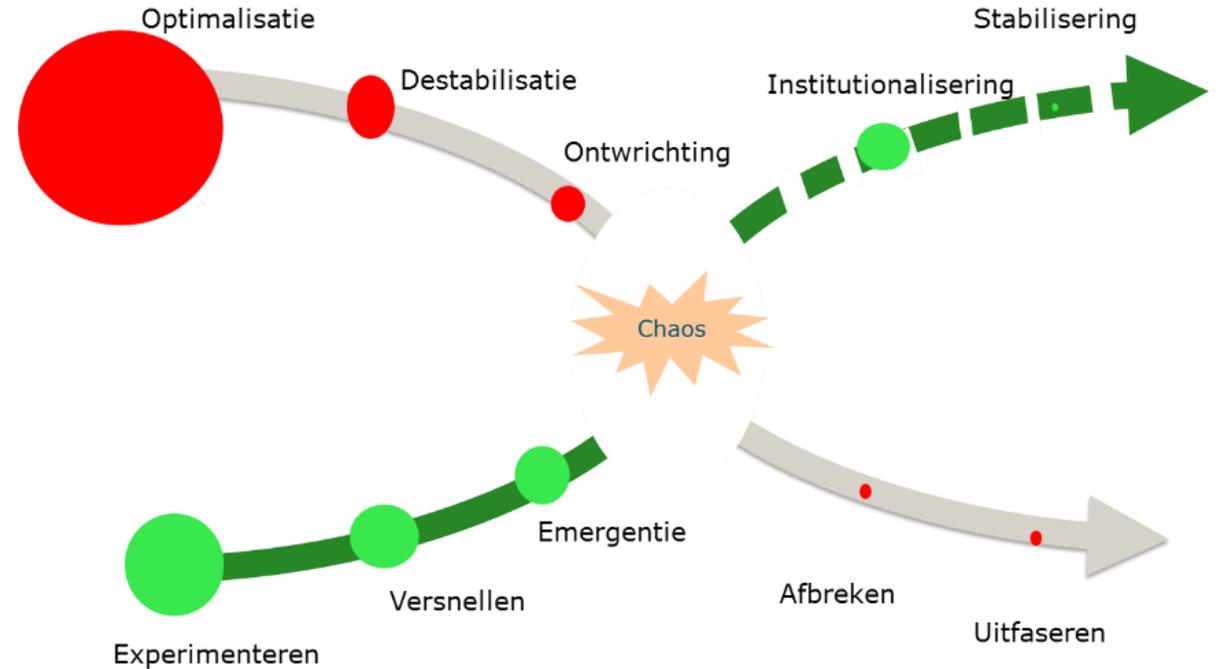
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# A triple challenge with one solution

- // In this presentation I will show you that agriculture as we know it, is at a crossroad.
- // In the coming years we will see agriculture going through a 'chaos' phase.
- // Do we know the outcome? No
- // Will it hurt? Yes





# *Current situation*

*(with regard to CPPs)*

**Approximately 850 crop  
protection products based on  
on 261 active ingredients**

RESTRICTED



# How are CPPs regulated?

Forbidden unless admitted

Positive list of substances

Maximum Residue Levels / Import Tolerances

Harmonized classification and labelling

National authorization



**STEP 1: Active substances are approved at EU LEVEL**

**STEP 2: Formulated products at NATIONAL LEVEL**

// Evaluation by Member States and EFSA

// Evaluation by ECHA

// Approval by EU Commission and Member States

// National authorization in Member States for products that contain the active substance

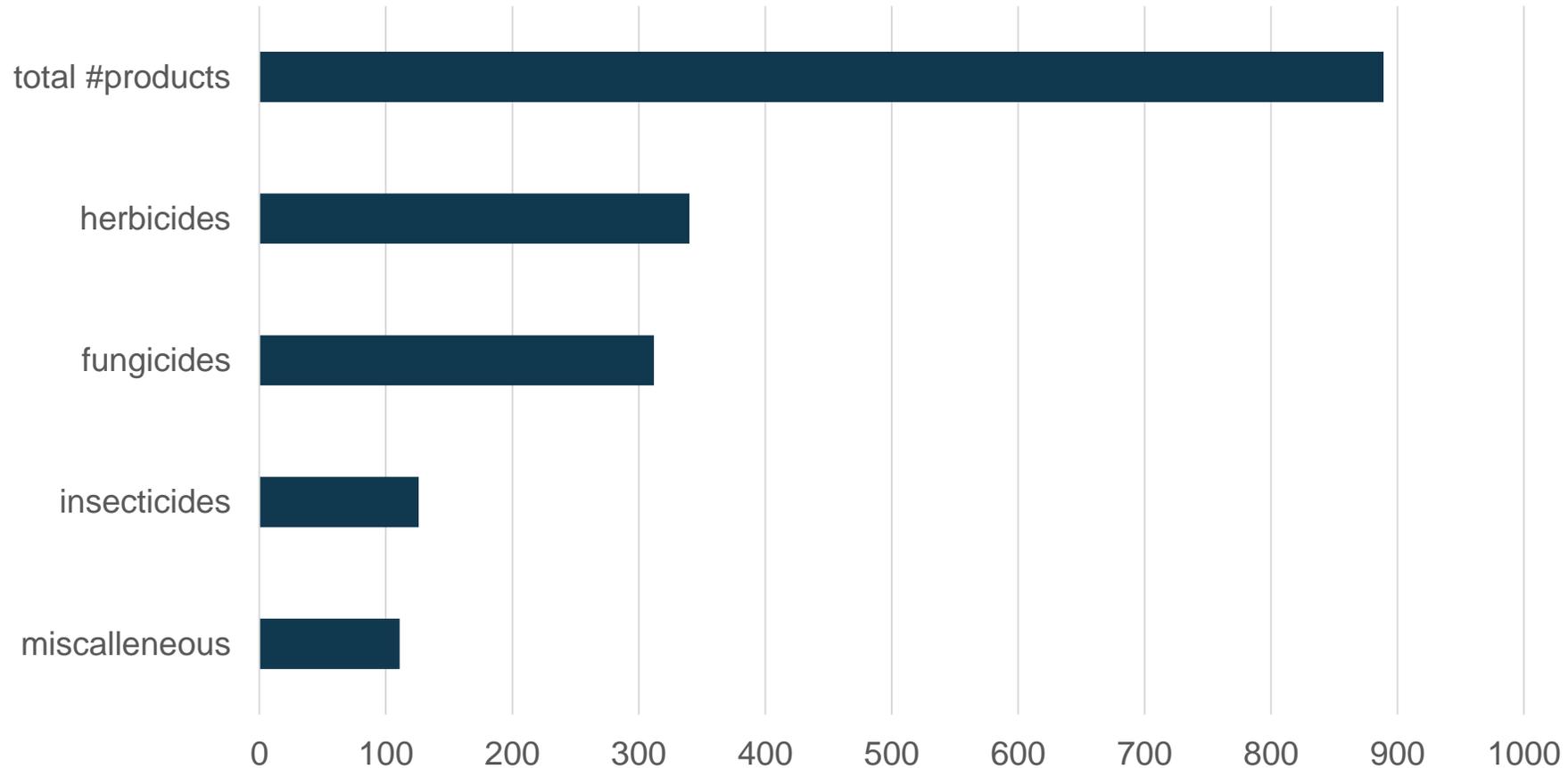


Science-based regulations ensure the safety CPPs for operators, environment and consumer



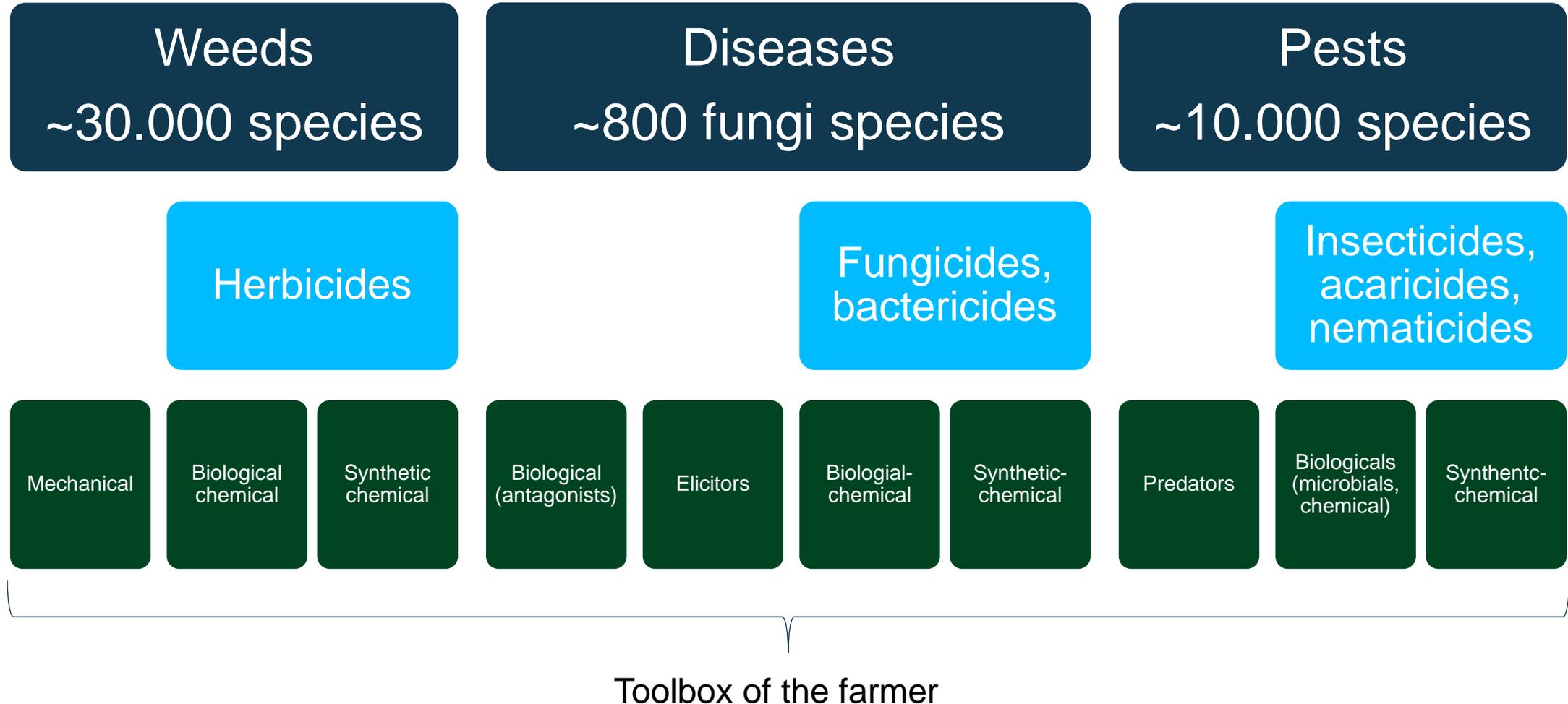
# Current portfolio: 261 AIs admitted in NL

present in about 850 formulations (products)





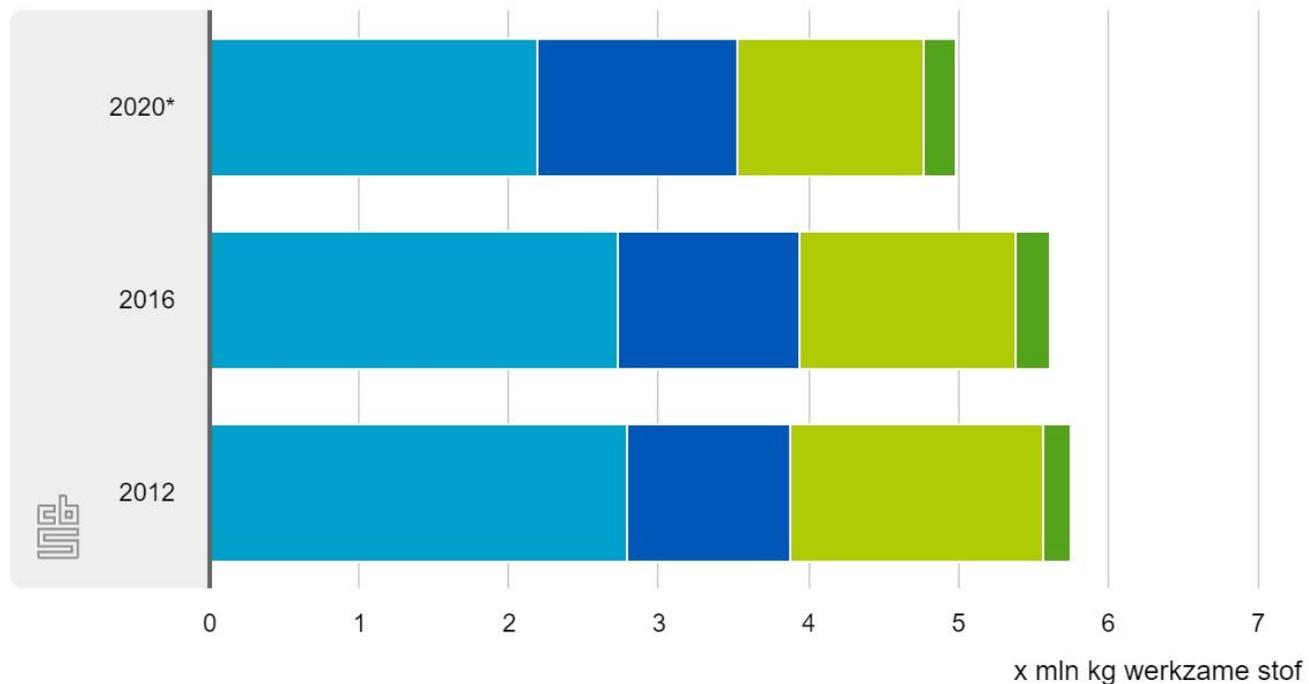
... to control a multitude of threats\*



\* Global figures



## Trends in use and impact (2012-2020)



Between 2016-2020 CPP use declined with 11%. Dose rates decreased with about 13% in the same period\*.

Schimmels en bacteriën      Insecten en mijten  
Onkruid en loofdoding      Overige middelen

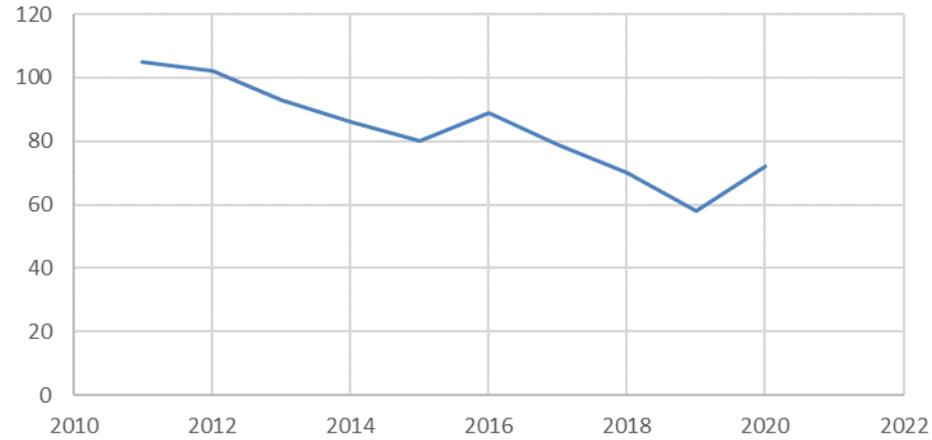
\*voorlopige cijfers

\*CBS (2022)



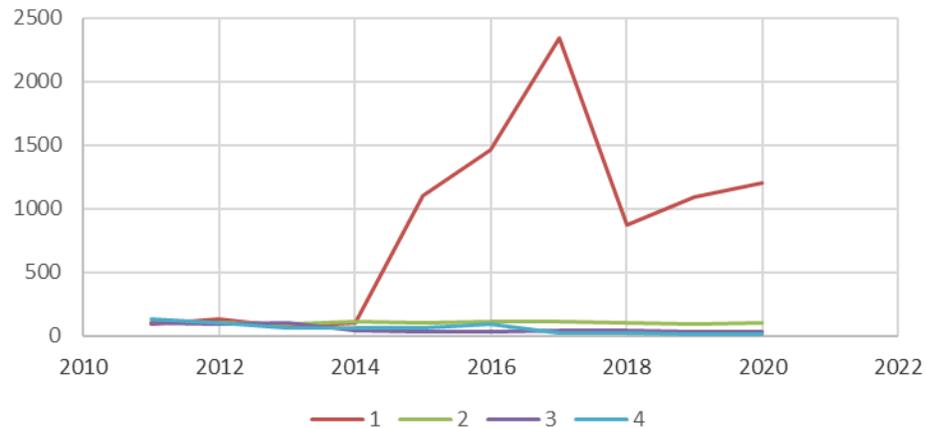
# Trends using the Harmonised Risk Indicator (HRI)

Total



Group	Description	Weight
Group 1	Low risk products	1
Group 2	Chemical and microbial products	8
Group 3	Candidates for Substitution	16
Group 4	Products without admission	64

Per group





Use and impact are decreasing, what about the toolbox?



# Regulation 1107(2009): from risk to hazard



Risk = hazard x exposure

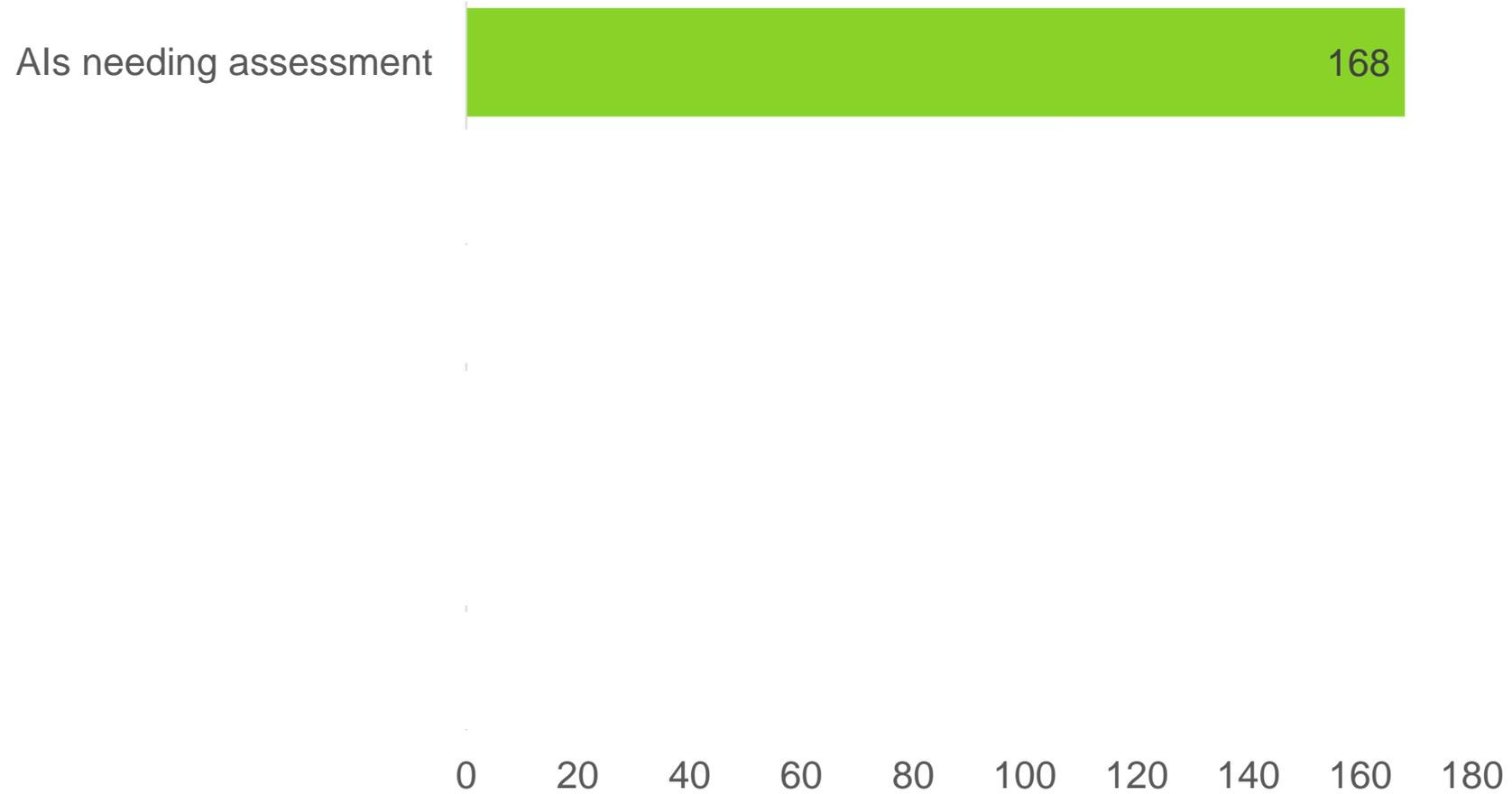
Cut-off criteria of intrinsic properties

- Carcinogenic
- Mutagenic
- Reproduction toxic
- Endocrine disruption





# Of 168 AIs eligible for review, 58 passed (in 3 years)

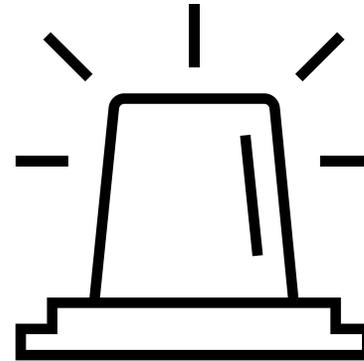




Since 2018 2/3 of AIs  
eligible for (re)evaluation  
were taken off the market



# Is this a problem?



De kans dat teelten verdwijnen of telers te maken krijgen met misoogsten en niet-bestrijdbare plagen, is volgens de telers reëel. - Foto: Mark Pasveer

## Groentetelers luiden noodklok over toekomst van de spruit

Feedback

05-04 | Agri | Nieuws



Vollegroondsgroentetelers vrezen dat de  
deel van hun teelten in overvloed



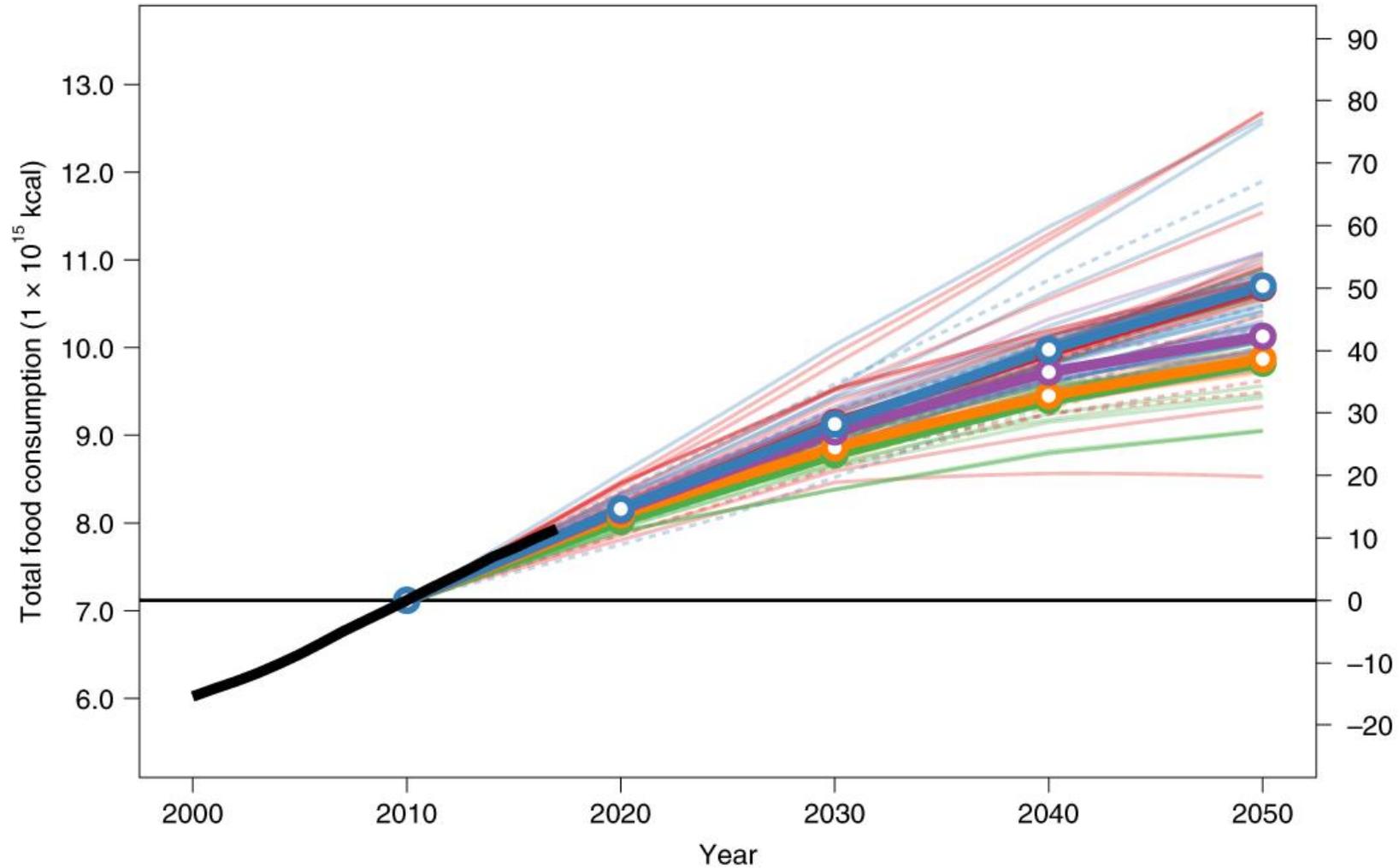


## Triple challenge

*Food*  
*Climate*  
*Environment*



# Challenge 1: At a global level produce more on same area





## Challenge 2: New threats due to climate change



Education &  
Programme

Home ▾

Climate change increases chance of harvest failures by pests and diseases

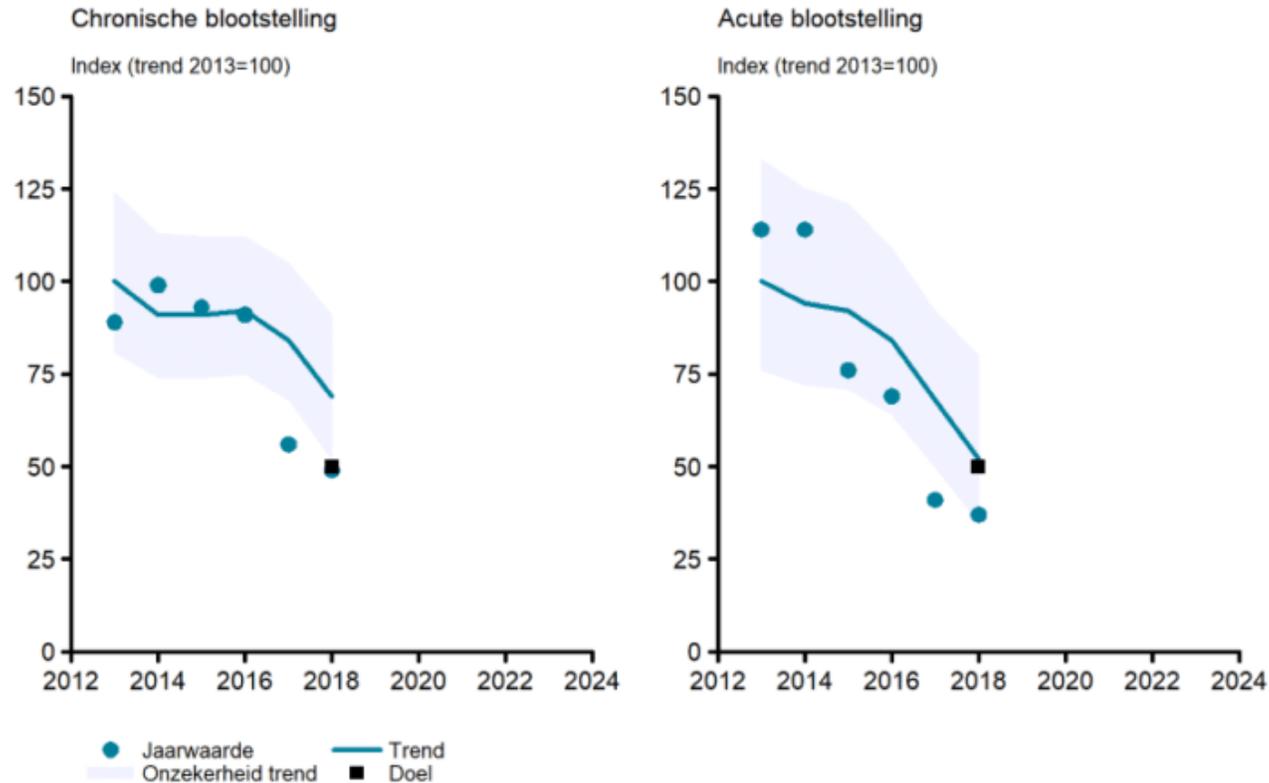
### Climate change increases chance of harvest failures by pests and diseases

Climate change leads to higher crop losses caused by pests and diseases. But it is impossible to predict where and how these will strike. This is why scientists of Plant Research International are working on the development of robust cultivation systems to prevent immediate crop failure at the moment that a disease strikes.

*“Climate models hardly ever take plant pests and diseases into account”.... “This means that food security is lower than currently taken into account in climate models”.*



# Challenge 3: reduce emissions



Aandeel overschrijdingen van de waterkwaliteitsnorm Kaderrichtlijn Water Bron: PBL

Both volumes and intensities are decreasing, resulting in less emissions to e.g. surface water, but continued efforts are required.

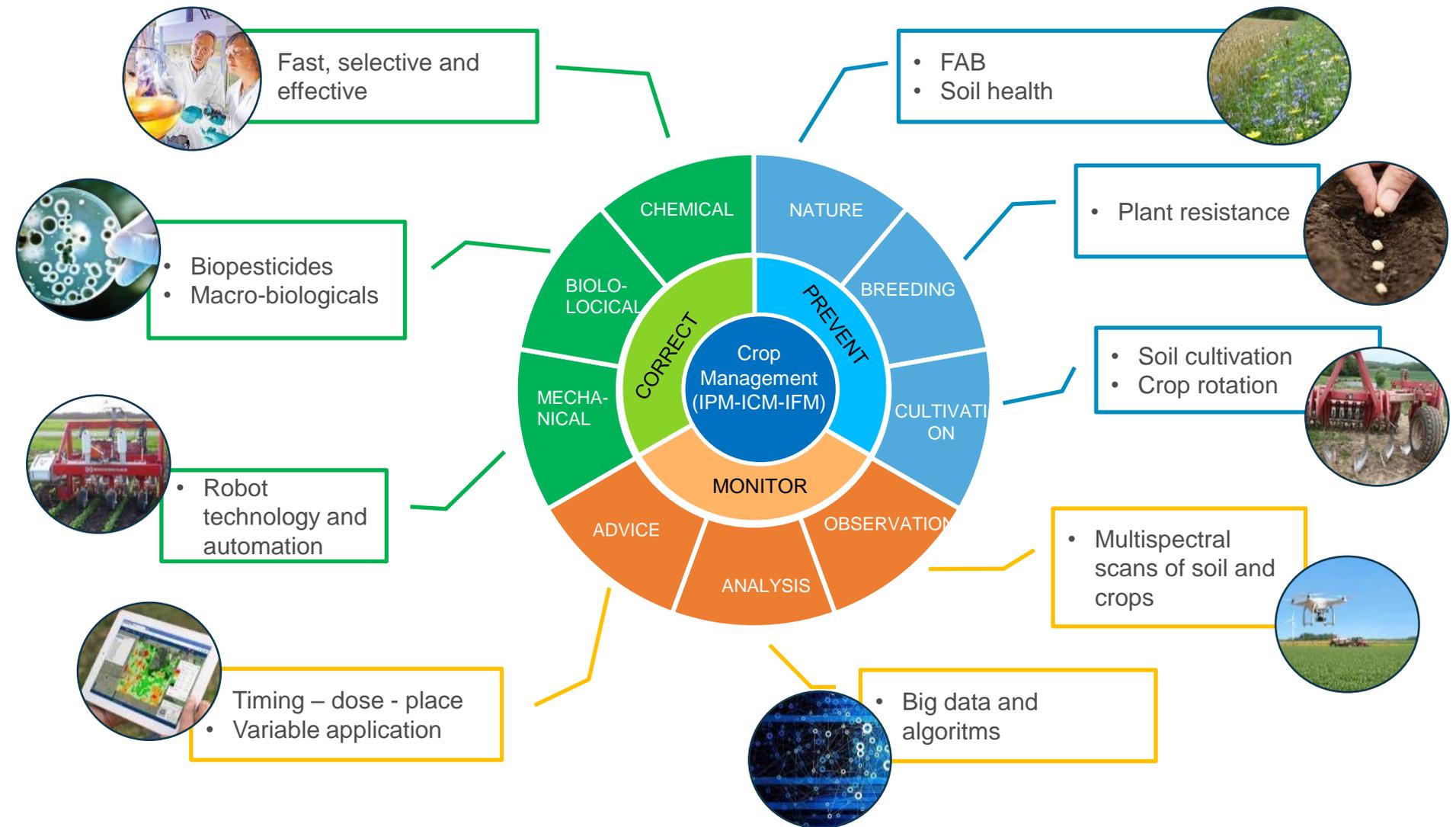


## Triple challenge

With less CPPs, maintain production while anticipating for new threats due to climate change and reduce emissions



# Integrated crop management





# Triple challenge; are we on track?

Reduce emissions

Maintain production

Adapt for climate change



# Conclusions

- // Amounts and rates of CPPs are decreasing; emissions are reducing, but continued efforts are required.
- // The toolkit of the farmer is rapidly decreasing. This does not necessarily result in more sustainable production.
- // To respond to the triple challenge integrated approaches are needed.
- // For ICM a broad spectrum of solutions is required.

Will there be a future for CPPs. Yes, but not as we know it.

No food without impact; first design the desired food production system, then the products.



*Thank you!*



[Christy.vanbeek@bayer.com](mailto:Christy.vanbeek@bayer.com)

