



# The Role of Biocontrol in Sustainable Agriculture

Jennifer Lewis  
Executive Director IBMA 15 November 2023



- Introduction to IBMA and Biocontrol
- Global context and EU policies
- IBMA action to support biocontrol
- Biocontrol examples
- Next Steps
- Conclusions



## Part of the Federation of Biocontrol industries Bioprotection Global



### Biocontrol Association

Local associations around Europe – members represent us where no local Association



### SMEs dominate

In Europe 71 SMEs and 76 micro-SMEs



### Global with European Focus

150 member companies in Europe  
Global members learn how to access Europe. 70 more members worldwide

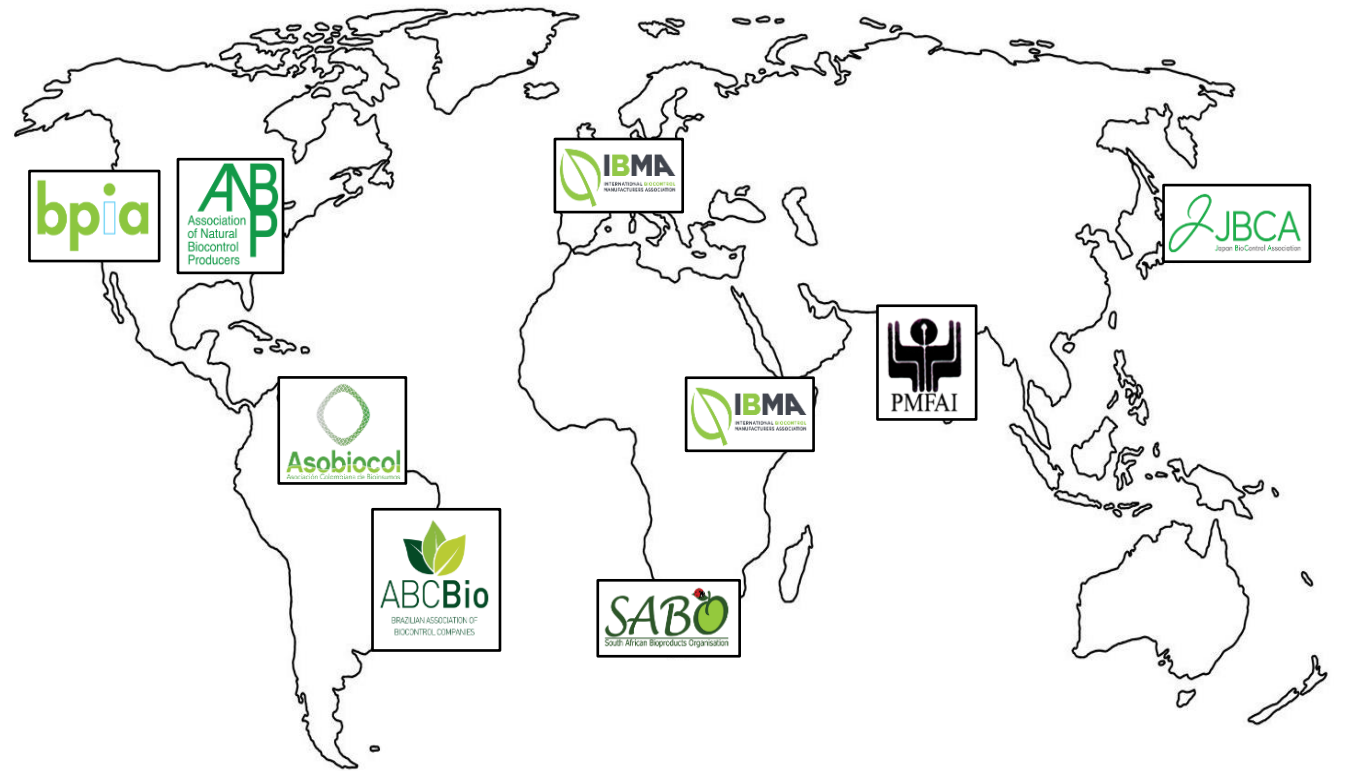


### Established in 1995



### Global reach

Part of Bioprotection Global IBMA  
Kenya and 35% of members from outside Europe  
Annual Biocontrol Industry Meeting  
EU COM present



# What is Biocontrol?

Examples of successful implementation of Biocontrol



**Invertebrates**



**Semiochemicals**



**Microbials**



**Natural substances**

# Biocontrol is so much more than just pest and disease control



## BIODIVERSITY

- Biocontrol respects non-targeted fauna and flora
- Example of organic farming



## FARM ECONOMICS

- Proven efficacy of biocontrol
- Response to chemical pesticide ban/restrictions
- High benefit/cost ratio

## SOIL

- Biocontrol enhances soil life and soil health
- It reduces risks of chemical contamination



## CLIMATE

- Potentially less emissions
- Enabler for sustainable farming



## HUMAN HEALTH

- Less exposure to pesticides for farm workers
- No chemical residues in food



## GOVERNANCE

- Biocontrol goes together with ecosystem knowledge and holistic approach

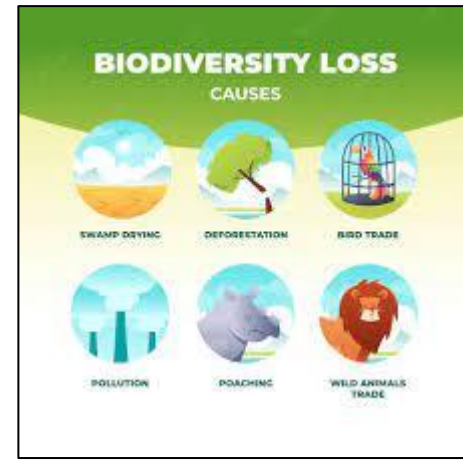
NEWS ARTICLE | 4 May 2023 | Directorate-General for European Civil Protection and Humanitarian Aid Operations (ECHO)

## Report from Global Network on Food Crises shows highest number of people facing acute food insecurity since 2017



The UN's latest global assessment report on biodiversity and ecosystem services highlights the responsibility of human activities in the massive loss of biodiversity.

Climate change plays an increasing role in the global decline of biodiversity.



# FAO & IPPC: Scientific review of the impact of climate change on plant pests, Rome 2021

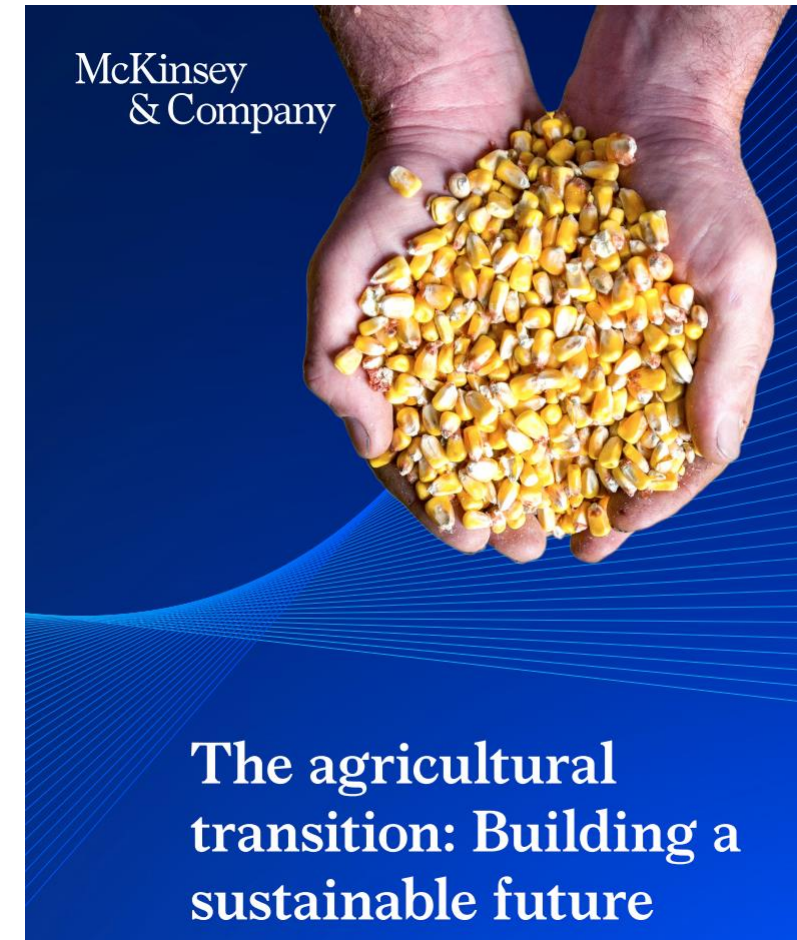


Climate change increases pest risks in agricultural ecosystems, especially in cooler Arctic, boreal, temperate and subtropical regions. Some pests have already expanded their host range or distribution due to changes in climate.



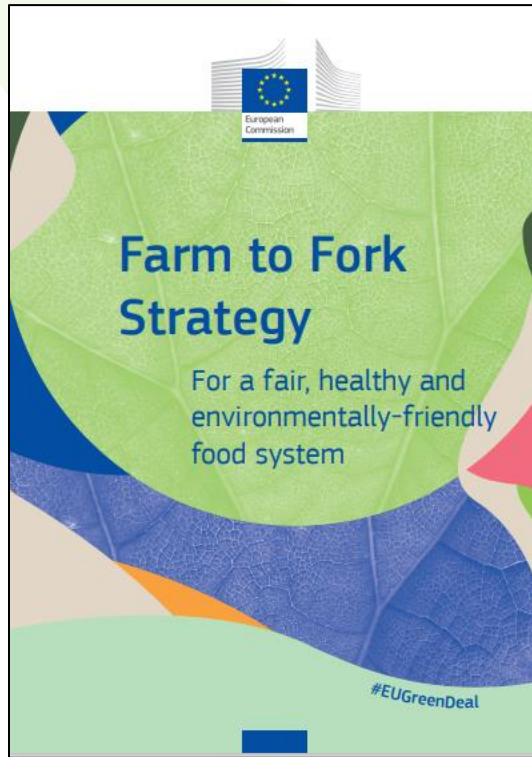
# Switching to Biologicals in second most important on farm climate mitigation action

- McKinsey Report on the agricultural transition (June 2023) lists 28 on farm measures to decarbonise farming
- Switching to biostimulants and biocontrol provides 177M tonnes Carbon dioxide equivalents mitigation potential





# EU policies to address these crisis



## Sustainable use of pesticides

### Farm to Fork targets - Progress

EU: Trends  
Member States: Trends

### Main Actions

Directive 2009/128/EC aims to achieve a sustainable use of pesticides in the EU by reducing the risks and impacts of pesticide use.

### Harmonised risk indicators

Trends in Harmonised Risk Indicators for Member States  
Trends in Harmonised Risk Indicators for the European Union

### National Action Plans

National Action Plans per Member State

### Integrated Pest Management (IPM)

IPM is one of the tools for low-pesticide-input pest management, and IPM must be implemented by all professional users.



### Evaluation and Impact Assessment

The Commission has carried out an evaluation of the sustainable use of pesticides directive and an impact assessment of its possible future revision. This work has been carried out in line with the Commission's guidance on Better Regulation.



## Nature restoration law

The Commission has proposed a new law to restore ecosystems for people, the climate and the planet.

- **Green Deal:** Farm to Fork Strategy aims to:
  - Reduce use and risk of chemical pesticides (50% by 2030)
  - Pave the way to alternatives
  - Enhance provisions on integrated pest management (IPM)
- **Transition of Agriculture** is key to EU Green Deal
  - Biocontrol is key to the transition
  - Integrated Pest Management is core to the transition
- **Biocontrol, other non-chemical solutions and Innovation** are necessary to meet the targets of the Green Deal and to facilitate the transition of agriculture.
- **Biodiversity and healthy soil are necessary to mitigate climate change.** Biocontrol maintains and builds soil health and biodiversity.

# Biocontrol is key but there is an elephant in the room

Many biocontrol solutions exist but ..



01

Biocontrol authorisation process is too slow

02

EU Regulation is not designed for biocontrol

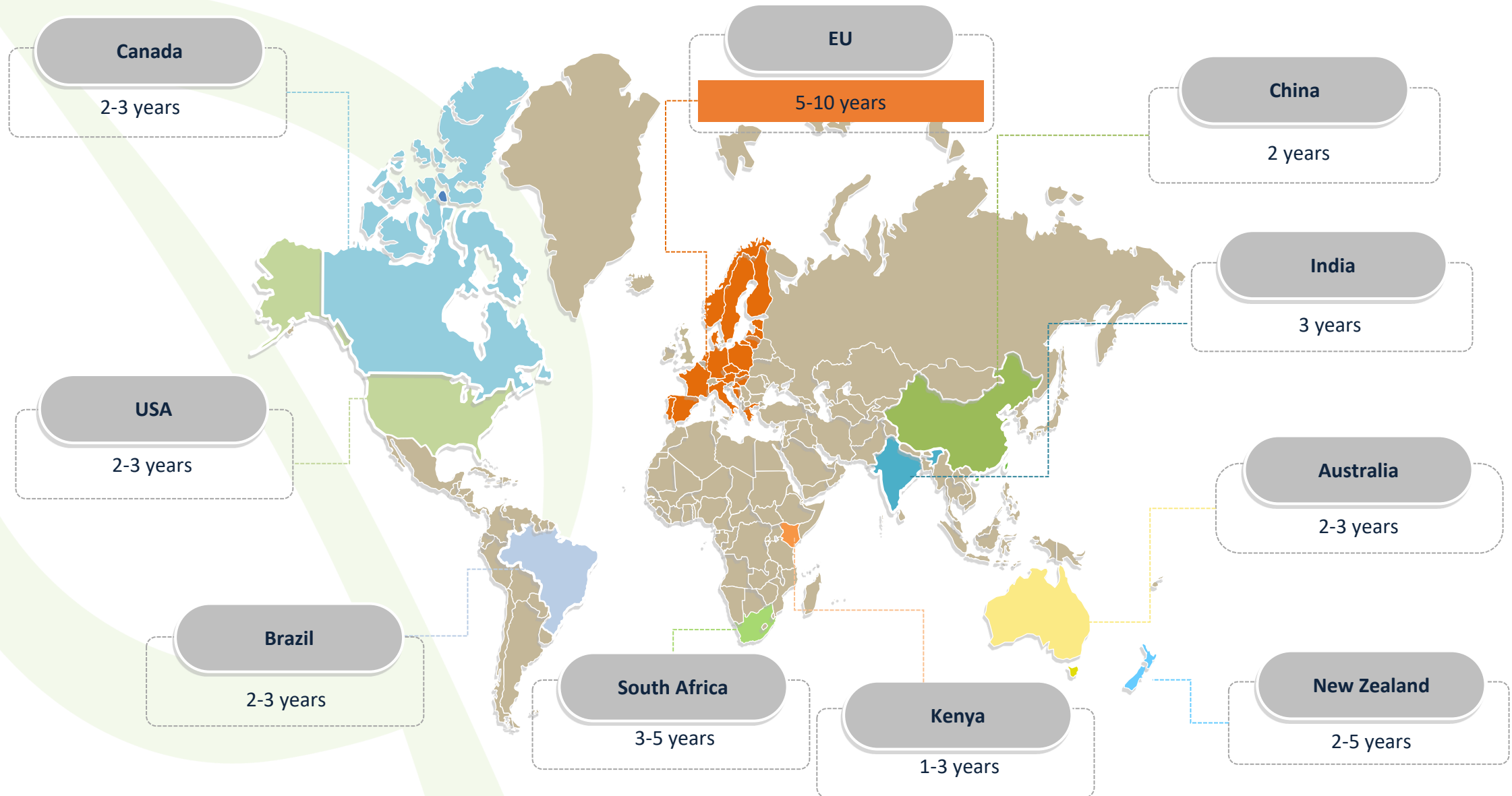
03

Farmers and Advisers are not sure how to optimise biocontrol performance

04

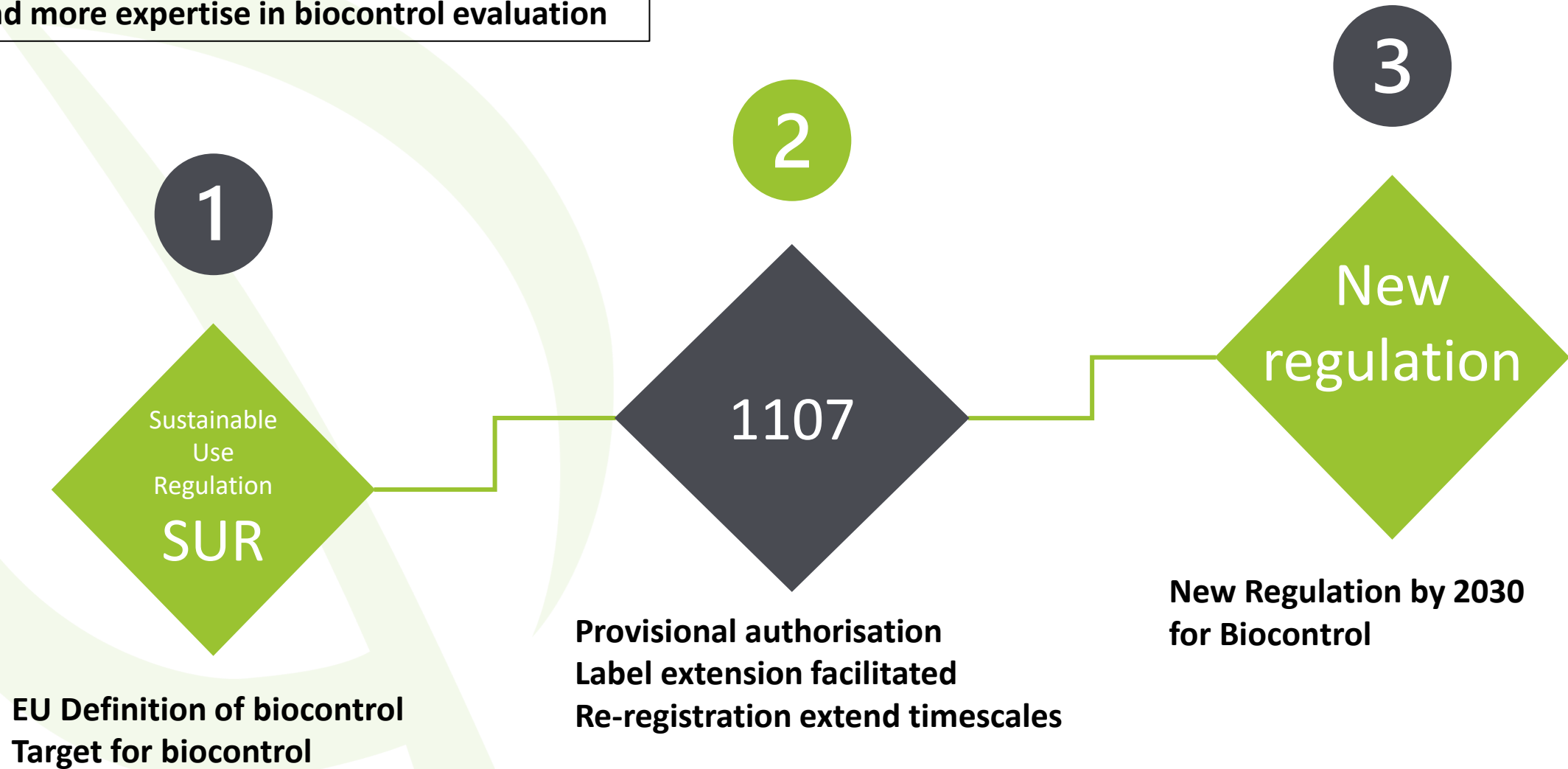
Farmers and advisers need incentives to initiate change

# Faster biocontrol authorisation is needed in EU



# IBMA Actions - Three steps to speeding up biocontrol

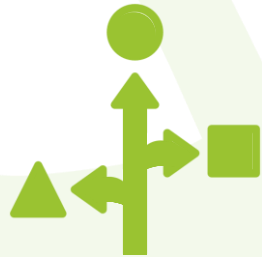
.....And more expertise in biocontrol evaluation



# The Sustainable Use Regulation is about enabling alternatives

## The Sustainable Use Regulation contains an EU wide definition of biocontrol

There is no other legislation today to enable biocontrol.  
We need the SUR to do this.



# IBMA Members shared their Biocontrol Pipeline with the EU Commission – Many products coming

Biocontrol developments on **129 substances** are planned for submission by 2028 in the EU:

- 75 new active substances
- 54 label expansions
- 28 M ha of potential use of which 23M ha in arable uses
- 26 companies completed the survey representing ca 15% of the 160 companies actively developing biocontrol

# The EU COM Supplemental Study (Art 241) to support the Sustainable Use Regulation – 5 July 2023 – supports acceleration

- ✓ Faster authorisation at MS level
- ✓ Provisional Authorisation
- ✓ Unlimited Registration
- ✓ Label extensions



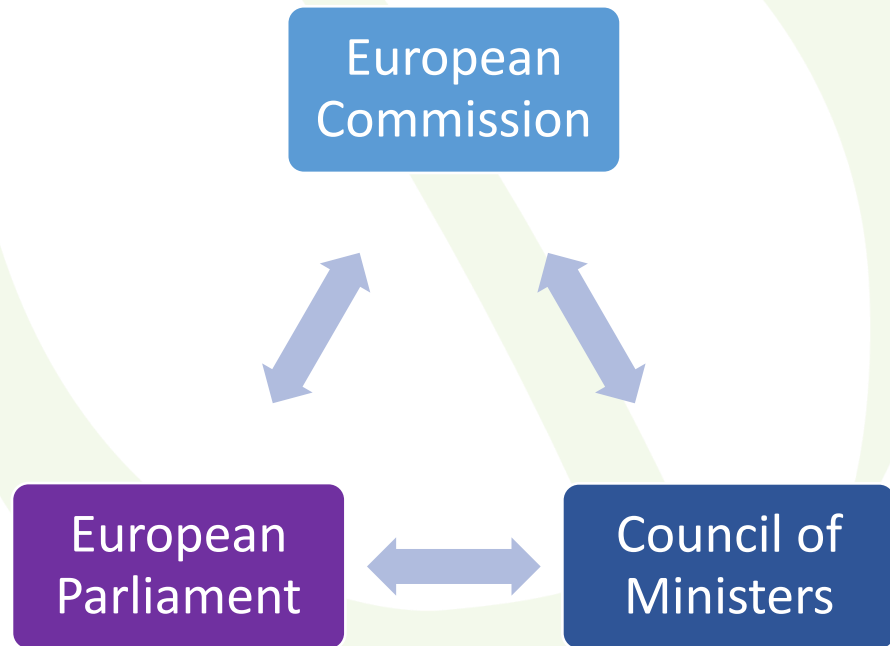
Commission Response  
to

Council Decision (EU) 2022/2572 of 19 December 2022

requesting that the Commission submit a study complementing the impact assessment of the proposal for a regulation of the European Parliament and of the Council on the sustainable use of plant protection products and amending Regulation (EU) 2021/2115.



## 3 Institutions Need to Approve the SUR



- 01** EU Commission – 5 July Report – supports SUR and biocontrol
- 02** European Parliament – ENVI Committee Positive Vote – Plenary Vote 22 November
- 03** Council of Ministers – Concerns on Pesticide Reduction Targets
- 04** Progress on SUR essential for biocontrol

# Brazil Case Study – the growth of biocontrol

Year	Actions	Biocontrol authorisations (product)
2014	Authorisation Process Change <ul style="list-style-type: none"><li>- Accelerate process - duration 1-2 years</li><li>- Allowed use on one crop to be extended to other crops without upfront efficacy data</li></ul>	107 (number is from 2013)
2019	Market Penetration biocontrol 10 M ha	433
2021	Market Penetration biocontrol 23 M ha	
2022	Market Penetration biocontrol 44M ha	
2018	Farmer survey showed 98% of farmers would use the same biocontrol product again	

In 2022, 60% of Brazilian Agricultural Area uses some form of Biocontrol

## On Farm Implementation

- Convergence of technologies
- On farm multi-stakeholder field programmes
- Farmer to farmer networks



**Protected Crops**  
Normal practice



**Perennial crops**  
Many good examples, work in progress



**Arable**  
Some good examples but a lot to do

Some **success stories** on the next slides.....

# Invertebrate biocontrol supported by PPPs such as *Trichoderma harzianum*

- Farmers shifted to invertebrate biological control to avoid chemical residues.
- Major shift as a result of use of Chinese counterfeit pesticide resulted in illegal residues and fruit refused for export
- *Trichoderma harzianum* controls plant parasitic nematodes, *Botrytis cinerea* and *Phytophthora capsici* in cucumber and sweet pepper.



## Cervisane controls powdery and downy mildew and Botrytis in grapevine in Italy

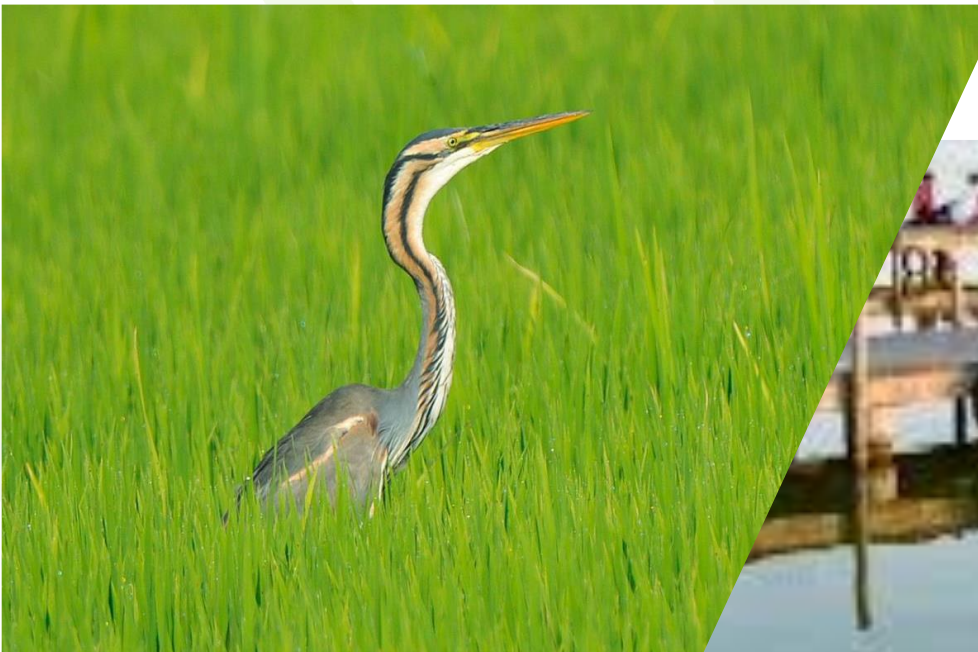
- In Grape vine in Italy Cervisane (cell walls of the yeast *Sachharomyces cervicae* LAS 117) controls powdery and downey mildew and Botrytis.
- The synergistic biological agent Cervisane is used successfully for fungal disease control and as a result the use of copper has been reduced to 4kg/ Ha in downy mildew control in North and Central Italy.



# Rice Stem Borer Mating Disruption Pheromone



## Spain Albufera challenge



# Biodiversity Maintained and Enhanced over time using Biocontrol

## Technical Result

- Since 2006, rice stem borer is fully controlled by mating disruption over the full 16000 ha.
- Reduction in ca 50,000 litres of insecticide use

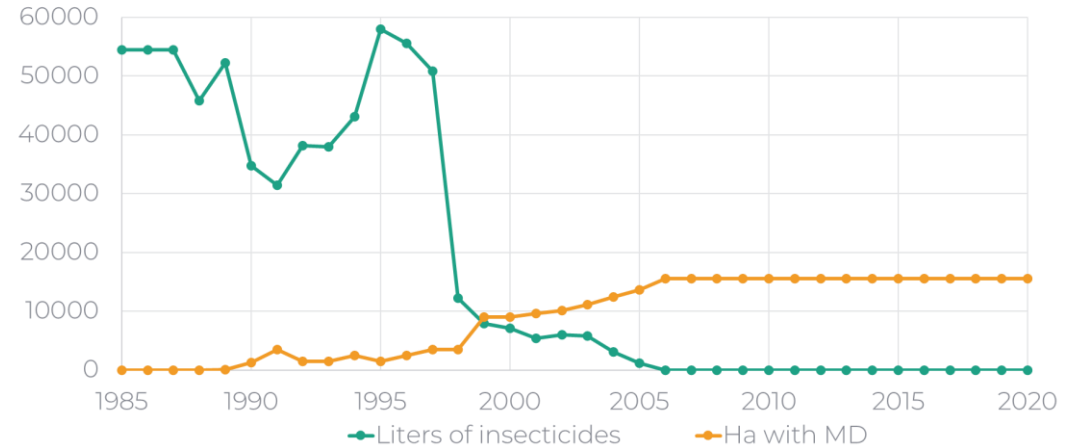
## Economic Result

- Profitable rice production continues in an important migratory site for birds. Tourist trade and importance of local paella is maintained

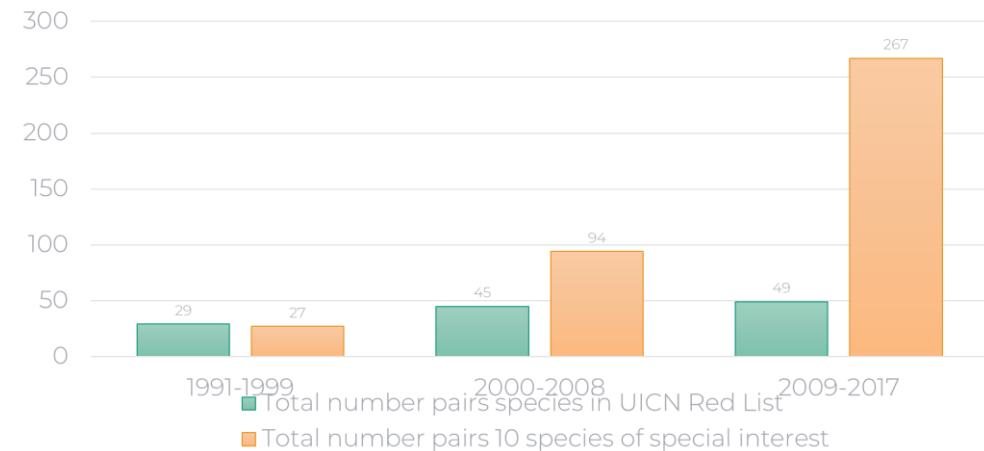
## Biodiversity Result

- 10 x increase in nesting of species of aquatic birds.

Evolution of insecticide use



Evolution of nesting aquatic birds



# Get Ready for the Transformation – Next Steps

- Farmer to farmer networks in the field
- Advisers, Growers, Purchasers, Manufacturers and Universities work to create best practice in field programmes
- Incentivise and reward best practice and switching – ecoschemes and CAP 2027
- Get ready for the transformation



[Innovative Farmers](#)

Knowledge transfer with advisers and farmers is key to enabling biocontrol



- The time for biocontrol is now
- Convergence of different types of (novel) technologies will optimise the use and potential of biocontrol.
- The Sustainable Use Regulation is about alternatives not about pesticide reduction
- A lot of products are already available and more are coming; exploit the potential for perennial/arable crops by registration, training and knowledge transfer.
- Biocontrol is the only crop protection input that brings pest and disease control with benefits of biodiversity and decarbonisation.

# Thank you



“Biological Life is a force and once unleashed it will continue to grow and generate new life”

Gabe Brown (2018) Author of Dirt to Soil