



Session 4

Pesticide Risk Reduction at CABI

Creating and facilitating the move towards safer and sustainable food systems where human health and the environment are protected

Dr. Ulrich Kuhlmann, 19/02/2025



World population and food production

The world's population is expected to exceed 10 billion during the 2080s. Approximately **828 million out of the current 8 billion people do not have enough food to eat** or to meet their daily dietary requirements*

Due to increasing plant health threats, the global demand for, and production and use of, pesticides have increased steadily during the past decades and are projected to continue growing**

The amount of **pesticide use per hectares of cropland increased by about 30%** between 2002 and 2018***

*Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development, United Nations Children's Fund, World Food Programme & World Health Organization. (2022). The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. Rome, FAO. <https://doi.org/10.4060/cc0639en> **UNEP (2022) Synthesis Report on the Environmental and Health Impacts of Pesticides and Fertilizers and Ways to Minimize them. Geneva, 59 pages.

***Food and Agriculture Organization of the United Nations (2021). FAOSTAT. Data: Pesticide use. <https://www.fao.org/faostat/en/#data/RP/visualize>.



Pesticide risk reduction



Pesticide use is **negatively impacting** food systems, human health and the environment.



Pesticide Risk Reduction initiatives **reduce harm to human health and the environment** while ensuring continued production of high quality, safe crops.



Why is pesticide risk reduction important

Through reducing reliance on pesticides, selecting pesticides with the lowest risk and ensuring proper use of the selected products:

- Farmers will be exposed to lower levels of pesticide, and **experience fewer health problems** and acute poisonings resulting in improved health
- We can ensure **delivery of safer produce into food systems**
- Fewer rejections will be experienced through exceeding maximum residue levels when trading internationally leading to an **increase in net income for farmers.**
- We will see **benefits to biodiversity, soil and aquatic health,** and lower levels of toxic chemicals circulating in the environment.



CABI's approach to pesticide risk reduction

CABI aligns with the FAO Guidance on Pest and Pesticide Management Policy Development (FAO, 2010), working across three steps:

- 1. Reducing reliance on pesticides.** Determine what levels of pesticide use are actually needed. Make optimum use of non-chemical pest management and eliminate unjustified pesticide use.
- 2. Selecting pesticides with the lowest risk.** If use of pesticides is deemed necessary, select products with the lowest risk to human health and the environment from the available registered products that are effective against the pest or disease.
- 3. Ensuring proper use of the selected products** for approved applications and in compliance with international standards.



CABI's approach to pesticide risk reduction

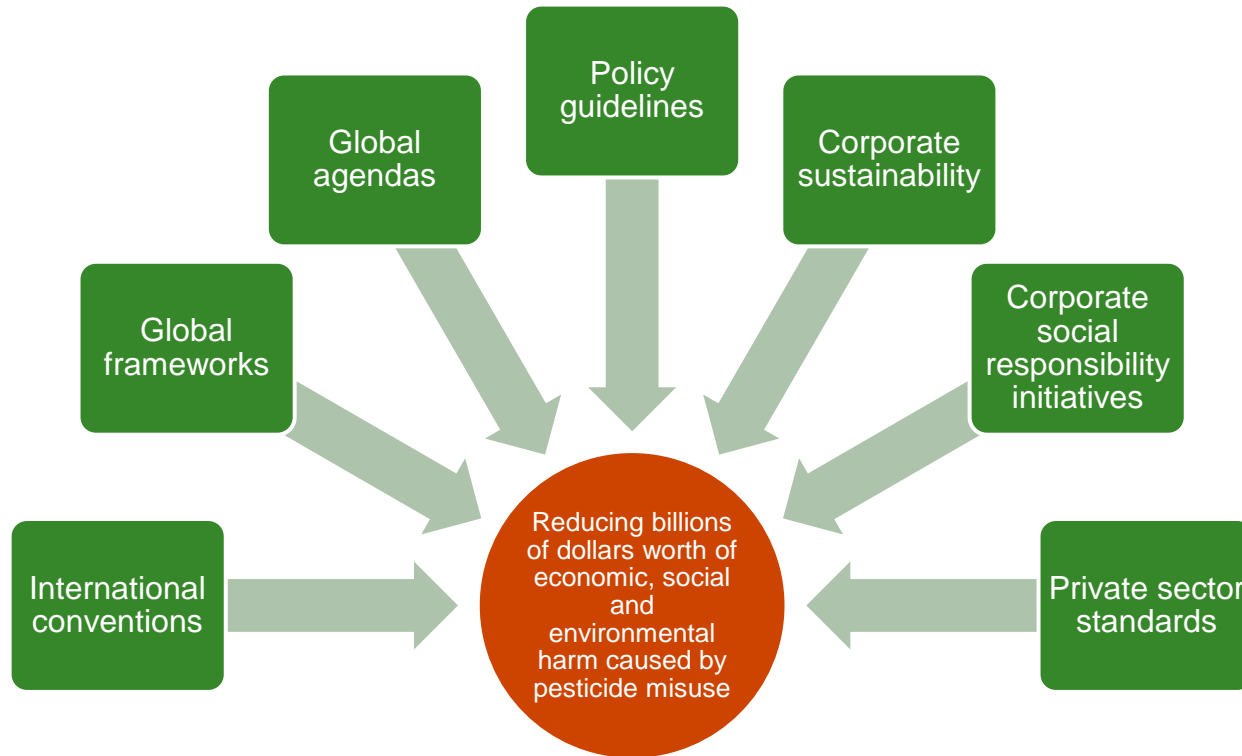
Through working with Member Countries and other stakeholders we will:

- Support the development and implementation of **policies and regulations**
- Collaborate on **research and development** of innovative IPM solutions
- **Support value chain actors** to transition to lower-risk production practices

By applying **Integrated Pest Management (IPM)** practices we will:

- Encompass **diverse, safer practices** to manage pests
- Encourage **judicious and carefully managed** use of appropriate chemicals
- **Reduce the risks** posed by hazardous chemical pesticides

Partnerships are essential



Multiple global initiatives include targets and goals to reduce the harm caused by pesticides however much work need to be done

100's of public and private sector organizations worldwide are working towards reducing the environmental and health risks associated with pesticides

Collaboration is key to meeting these international targets

We recognize that the barriers faced, and progress made around pesticide risk reduction vary substantially between countries therefore **collaboration between CABI and its member countries is vital**

Proven expertise: We support the development and implementation of policies and regulations

Our convening power and research outcomes are used to inform policy discussions and the development of national pest management strategies, to encourage government level recommendations to use low-risk options¹

We work with bioprotection manufacturers to assist with registration in CABI member countries (i.e. Kenya²)

We work with regulatory bodies to develop protocols for registration of lower risk products³

¹Kansiime MK, Beseh P, Hevi W, Lamontagne-Godwin J, Clotey VA, Rwomushana I, Day R, Rware H, Aboagye E, Williams F. (2020) Implementation of fall armyworm management plan in Ghana: outcomes and lessons. CABI Study Brief 34: Learning.

²CABI (2021) Mating disruption pheromone now registered to fight fall armyworm in Kenya. CABI News article

³Musebe, R., Day, R., Kipkoech, S., Musavi, F., Kimani, M., Opiyo, P., & Hassan, N. (2011). Putting research into use: community-based armyworm forecasting in Kenya. East African Agricultural and Forestry Journal, 76.





Proven expertise: We collaborate on research and development of innovative IPM solutions

The biopesticide “Green Muscle” was developed by LUBILOSA a multistakeholder programme led by CABI. The product was deployed successfully in multiple locust outbreaks and continues to be produced by commercially¹.

We have a strong record implementing and creating impact through classical biocontrol projects, with Benefit:Cost ratios ranging between 53-808:1 over 10 separate projects²

¹Imperial College London (2014). The development and application of successful mycoinsecticides for locust control in Africa and Australia: Green Muscle and Green Guard. Research Excellence Framework Impact Case Study

²Cock, M. J. W., Day, R. K., Hinz, H. L., Pollard, K. M., Thomas, S. E., Williams, F. E., ... & Shaw, R. H. (2016). The impacts of some classical biological control successes. CABI Reviews, (2015), 1-58.



Proven expertise: We support value chain actors to transition towards lower risk production



Farmers who attend plant clinics are more likely to use sustainable alternatives to chemical pest control and to wear PPE while working with pesticides.¹



Through training **plant doctors**, we increased the % of advisories relating to biological control by 38%, pest monitoring by 8%, cultural controls by 11% and almost eliminated advisories for red list chemicals from 1.2% to 0.2% in China²



Integrated Pest and Disease Management package has become part of the national cocoa strategy and is formally recommended by the **Papua New Guinea Cocoa Coconut Institute Limited (CCIL)** in its IPDM manual for farmers.³

¹Tambo, J. A., Romney, D., Mugambi, I., Mbugua, F., Bundi, M., Uzayisenga, B., ... & Ndhlovu, M. (2021). Can plant clinics enhance judicious use of pesticides? Evidence from Rwanda and Zambia. *Food Policy*, 101, 102073. ²Toepfer, S., Zhang, T., Wang, B., Qiao, Y., Peng, H., Luo, H., ... & Wan, M. (2020). Sustainable pest management through improved advice in agricultural extension. *Sustainability*, 12(17), 6767. ³Keong, J. N. C., Gende, P., & Crozier, J. (2016). Integrated management of the cocoa pod borer in Papua New Guinea: an impact study. CABI Impact Case Study Series, 15.

Aims of Session 4: Pesticide Risk Reduction

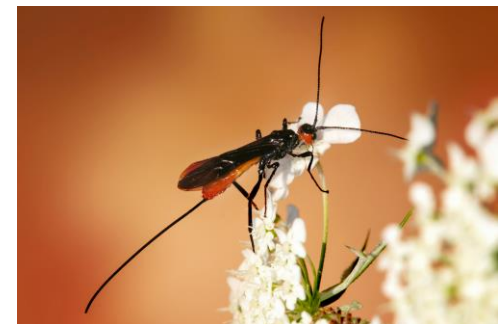
We recognize that the barriers faced, and progress made around pesticide risk reduction vary substantially between countries.

The sessions on pesticide risk reduction today aims to explore:

- how can CABI's reformulated pesticide risk reduction offering can **meet the particular demands and needs of specific Member Countries**
- how CABI, Member Countries and other partners can **collaborate** on concrete plans to achieve pesticide risk reduction
- how CABI, Member Countries and other partners can work together to **secure external funding** for that work.

We will explore:

- **barriers and opportunities** to implementation of bioprotection
- **partnerships** and the role of different stakeholders in the uptake of IPM and bioprotection
- understand **regional experiences** and policy
- explore **key global drivers** in the movement towards pesticide risk reduction





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