



# PHYTOSANITARY RISK MANAGEMENT PROGRAMME IN PAKISTAN

**Locations** Pakistan

**Dates** 01/09/2014 - 31/08/2019

## Summary

Tackling agricultural pests in Pakistan in a safe and sustainable way will save crop losses and benefit Pakistan's exports. We are strengthening the capacity of Pakistan's systems to implement biocontrol programmes for agricultural pests that cause huge problems. We will also lessen the impact of post-harvest pests and aflatoxins, and improve the capacity of plant health regulators to certify exports of agricultural commodities.

## The problem

Insect pests cause millions of dollars' worth of crop losses throughout the world, and Pakistan is no exception. They can harm crops both before and after they're harvested in storage, and together, they are causing huge losses.

Most farmers in Pakistan are dependent on toxic chemicals in order to tackle these notorious insect pests and these are often applied unselectively. This raises both environmental and human health concerns. However, a system that

integrates current pest management technologies with a sustainable approach will have the potential to save hundreds of millions of dollars in crop losses.

Biological control is a sustainable way of tackling pests on an area wide basis. This entails identifying an insect pest exactly in order to find an appropriate and sustainable solution for it. This method reduces pest infestation and, because it doesn't use toxic chemicals, it ensures that people have safe and healthy food to eat. Not only this, good pest free crops, without heavy pesticide residues, will open new export markets for Pakistan's agricultural products.

Aflatoxins can also be a huge problem in improperly stored crops and produce poisonous carcinogens.

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### **What we are doing**

To help solve Pakistan's agricultural pest problem, the CABI team aim to implement a biological control programme. It will focus on the most destructive insects and in turn, will reduce Pakistan's food losses. If successful, this programme will mitigate the impact of pre and post-harvest pests of rice and horticultural crops.

We will need to improve the technical capacity of national partners to survey pests and to develop and deploy biocontrol agents.

We will also need to analyse and generate actionable information in order to regulate aflatoxins in Pakistan's fresh produce supply chains.

We will also need to improve the capacity of plant health regulators who certify Pakistan's agricultural commodity exports.

In order to do this we will need to mass rear and find ways to conserve important biocontrol agents of papaya mealy bug, apple pests, fruit flies and the giant mealy bug. The team will establish biological control laboratories and in Natural Enemy Field Reservoirs (NEFRs) in Sindh, Balochistan, Gilgit and Skardu.

The CABI team will perform regular on-farm releases of biocontrol agents, and work with farmers to ensure they, and representatives of allied government and private sector agencies, understand the theory of insect biological control and know how to establish and maintain NEFRs and Sanitary and Phytosanitary (SPS) compliance in rice and fresh produce supply chains.

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### **Results so far**

So far, we've established six biological control laboratories at Rawalpindi, Islamabad, Karachi, Quetta, Gilgit and Skardu in order to mass rear natural enemies.

We have developed 14 technologies to tackle the pests of concern including rearing techniques for natural enemies of the papaya and giant mealybugs, apple codling moth, acarid mites and fruit fly. And have so far deployed about 36 million biocontrol agents for papaya mealybug, apple codling moth, spider mites and fruit flies in Sindh, Balochistan and Gilgit respectively.

These interventions have improved in papaya production by almost a quarter (21.85%) and led to a 15% increase in the income of papaya farmers in Sindh. In Balochistan we have achieved a 60-70% parasitism rate for codling moth.

In total, we have trained 5,518 beneficiaries which includes 4,035 farmers, 1,031 technical experts on biological control and SPS compliance in rice and fresh produce supply chains of the country. And have produced a number of brochures and manuals to do so.

We plan to continue implementing biological control in these regions. Building the capacity of farmers and representatives of allied government and private sector agencies in biological control of insect pests, establishing and maintaining

NEFRs, and SPS compliance in rice and fresh produce supply chains. Going forwards we also want to determine aflatoxins in fresh and processed corn and chilies and provide actionable information.

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**Donors**

USAID via United States Department of Agriculture (USDA)

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**Partners**

Rice Exporters Association of Pakistan (REAP), All Pakistan Fruit & Vegetables Exporters, Importers and Merchants Association (PFVA), Southern Zone Agricultural Research Centre, Department of Agriculture, Gilgit Baltistan, Department of Agriculture, Balochistan, Department of Agriculture, Sindh, Pakistan Agricultural Research Council (PARC)

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