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# Eyes on the PRISE: Creating new partnerships to exploit EO data for sustainable development

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An estimated 40% of the world's crops are lost to agricultural pests and pathogens, impacting on the ability of smallholder farmers to feed their families and compromising food security. These losses also affect international trade, food supply chains and hamper the pursuit of UN Sustainable Development Goals (SDGs) 1 and 2. A combination of changing management practices, land use and climate change is exacerbating the problem creating new challenges for smallholders, policymakers and donors alike.

Addressing these problems, development agencies and funding bodies are increasingly looking toward integrated technology solutions that generally involve some combination of mobile communication networks, novel data sources, modelling techniques and detailed agronomic and entomological science. Organisations are often experienced in one or more of these domains but rarely all of them. This leads toward a model of collaborative solution development involving a number of partners and domain specialists.

A collaborative approach to agricultural pest and disease risk forecasting is central to PRISE – the Pest Risk Information SErvice. PRISE is a 5-year flagship project of the UK Space Agency International Partnership Programme seeking to alert farmers to pest and pathogen risk using a combination of entomological modelling driven by EO, in-situ and crowdsourced information. Initially developed for a limited range of crops and associated pests in Ghana, Kenya and Zambia, PRISE will soon be rolled out to Malawi and Rwanda while seeking to broaden the range of crops and pest models available to users.

The lead partner in PRISE is CAB International (CABI), a UK-based organisation that supports farmers mitigate loss from agricultural pest and diseases. CABI run a multi-donor funded programme called Plantwise that runs clinics for smallholder farmers where trained 'Plant Doctors' can meet growers to diagnose problems, advise on sustainable solutions and support ongoing measures to reduce risk and increase production. Using information derived from Plant Clinics, CABI are collaborating with Assimila Ltd and King's College London to develop pest risk models that are validated with farmers' own observational data and then provide warnings and advisory notices communicated via a variety of channels and networks.

In this session, we will reflect on the issues, challenges and benefits that EO can bring to international development. We will describe the scale of the challenge from agricultural pests facing developing countries and how EO is an increasingly important resource for modelling and mapping risk. However, the project has experienced the challenges of collaboration in a complex political, economic, scientific and social environment. We will discuss how PRISE is meeting these challenges and lessons that can be learned in related development situations. In particular, we will focus on how to maintain a productive balance between user-focused technology, responsible science and sustainable outcomes.