

Pest Risk Information Service (PRISE) Baseline Terms of Reference (ToR)

1.0 Introduction

1.1. Project background

An estimated 40% of the world's crops are lost to pests¹, impacting on smallholder farmers' ability to feed their families, on international trade and food supply chains and hampering the pursuit of Sustainable Development Goals 1 and 2. Pest outbreaks are devastating, respect no political boundaries and are becoming increasingly unpredictable due to climate change. Innovation is essential to provide new solutions and this project brings together novel Earth observation technology, satellite positioning, and plant health modelling and on-the-ground real-time observations to deliver a science-based **Pest Risk Information Service (PRISE)** for sub-Saharan Africa. This early-warning system unites the capability of the UK partners to: collect and combine disparate datasets; manipulate data using computational and modelling expertise; and leverage well-established international development networks. Commitment from Ministries of Agriculture in Zambia, Ghana and Kenya ensures their engagement and active participation, linking into their widespread extension experts. PRISE will use cutting-edge space infrastructure and state-of-the-art algorithms to deliver solutions to real-time pest problems. In-country data collected from the field will be fed into the model, and also used to ground-truth results, enabling iterative improvements to the system. Appropriate communication methods will deliver risk messages and mitigation measures to, and collect feedback from, users. Monitoring and Evaluation processes will assess impact compared with baseline conditions. In-country capacity development and stakeholder representation from the private and public sectors will enable the development of business plans for long-term sustainability.

Pest Risk Information Service (PRISE) - Theory of Change

The project will develop a system which uses Earth Observation data, biological modelling and on-the-ground data on pest occurrence, to forecast potential immediate threats to crops in sub-Saharan Africa.

Information from the system will be relayed to farmers so that mitigation measures can be taken - existing in-country Plantwise clinics, alongside additional ICT pathways, will be the main conduit for information dissemination. The relevant ministries in each country will provide resources to support system development and testing while receiving investment in their own capacity to use Earth Observation data in pest forecasting. Smallholder farming communities will test the information in their own crop protection activities. A cross cutting Monitoring and Evaluation component will measure and assess the changes and benefits in-country.

This project will improve incomes for smallholders and productivity contributing to SDGs 1 and 2.

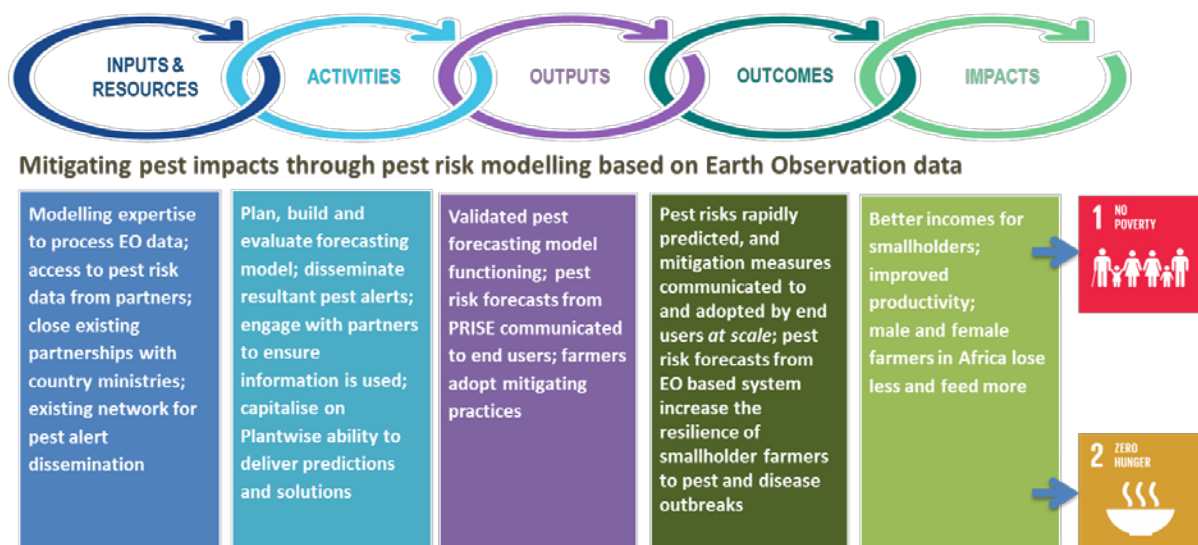


Figure 1: Theory of Change of the PRISE Project

¹The term 'pests' is used throughout this document to include insects, mites and plant pathogens

1.2. Baseline Study Objective

The baseline study will focus on a set of impact and outcome indicators outlined in the project proposal and the M&E plan at time zero. The study design must allow for follow up studies to evaluate progress and assess impact against the key project impact indicators. The study report will be used as a measurement to monitor project progress and more importantly to assess impact against the indicators.

The baseline study aims to achieve following objectives:

	Information to seek for baseline
Impacts: Reduce hunger and increase food security by enabling male and female farmers to reduce pest losses by xxx% and increase their incomes by xxx% in 3 project countries over 5 years	<ul style="list-style-type: none"> Levels of crop losses by male and female farmers related to pest infestation (project areas and control villages) per season/year Levels of HH income from crop production disaggregated by gender To what extent is crop losses from pests and diseases linked to food security Amount of annual crops (harvest) sold and consumed at hh level per year by gender
Outcomes	
Outcome 1: Increased resilience of X Male and X female smallholder farmers to pest and pathogen outbreaks by use of results of space forecasting expertise by the end of year 5	<ul style="list-style-type: none"> Number of pest risks incidences/outbreaks detected by existing early warning systems (if any) and communicated How many/what proportion of male and female farmers reports to access to pest related information, from different sources (Plant clinics, plant doctors, Extension workers, agro input dealers, Mobile phone alerts, PRISE) What are the communication channels used currently to pass information to farmers Which information source/channel preferred by farmers and why Reliability or effectiveness of the sources of pests related information to farmers (is it timely or not) Level of awareness by male and female farmers on crop pests Average time taken for a communication to end users of new pest and pathogen outbreaks Number of male and female farmers using the pests information and giving feedback Numbers (or %) of male and female farmers that consider pests as a problem Number of male and female farmers using different methods in controlling pests e.g. Integrated Pest Management
Outcome 2: X stakeholders using PRISE decision support tools in their own work for ecosystem monitoring	<ul style="list-style-type: none"> Are scientists from participating countries aware of space science How many of these scientists from participating organisations are able to use the space science to monitor crop pests(disaggregated by organizations, gender and countries) How many stakeholders are aware and have the ability to use pest predictive models in the target countries How many organisations have skills related to space science? How many organisations are using space science to monitor pest risks? What capacity exists for forecasting pest occurrences and to monitor/ do surveillance and relay the information to the farmers and other stakeholders
Outcome 3: Increased use of PRISE outputs and space expertise in enabling X government agencies to influence policy change to address crop pest and diseases in the target countries	<ul style="list-style-type: none"> Are there existing crop protection policies in the target countries How is pest forecasting been given prominence in national systems plan/strategy/policies by the government and other stakeholders Are there governments agencies/departments making use/planning to use space information (pest risks information) No. of stakeholders aware and able to use the predictive model in the target countries
Outcome 4: Increased and strengthened partnerships between UK and X public/private partners in 3 project countries for sustainability of outcomes	<ul style="list-style-type: none"> What partnership exists with UK and the (public and Private sector) in addressing the challenges on crop pests and diseases Are there existing partnerships addressing the pest problem in the participating countries? How does this partnership work in addressing the crop pest related diseases

1.3. Scope and focus of the assignment

The baseline will be conducted in three countries (Kenya, Zambia and Ghana) focusing on but not limited to the following informants: project partners and or institutions; policy makers; input dealers; and farmers (commercial and individual) etc. The study will be conducted through the use of mixed methods. The information will be collected, analysed and the report in English will be shared with CABI and partners for consultation before it is finalized.

Study Design and Methodology

The focus will be on ensuring that the baseline provides usable information for comparison in later evaluation surveys. Consideration needs to be given to ensuring information collected from both beneficiaries (project villages) and non-beneficiaries (non-project villages) (as the counterfactual) can be used for direct comparison in later years of the project. Prospective consultant(s) will need to consider the most rigorous approach to establishing a comparable baseline and counterfactual that enables measurement of outcome and impact indicators later in the project.

Qualifications of the consultant/firm

We are looking for a consultant/team with the following skills and qualifications:

- Lead consultant to have PhD or relevant master's degree with more than 5 years of experience in designing and implementing baseline surveys that set the stage for measuring the impacts of an intervention
- M&E practitioner, agricultural economics/natural resources/agronomist/with broad knowledge with accumulated experience in the field and broad understanding of impact studies
- Demonstrable expertise on impact evaluation in agricultural sector in Africa
- Previous experience working with in agricultural sector baseline studies and impact studies
- Track record in developing and conducting various types of evaluation including qualitative and quantitative data collection
- Experience in managing and coordinating evaluation/research exercises, delivering agreed outputs on time and on budget
- Experience in data collection and analysis using multiple and participatory methodologies
- Excellent and demonstrated understanding of pests and diseases in agricultural sector and early warning systems
- Ability to respond to comments and questions in a timely, appropriate manner
- Ability to write high quality, clear, concise reports in English

Deliverables

- Inception Report After the preparatory meeting, the research team is to provide and to share a detailed inception report CABI. The report shall provide information on:
 - The selection of key informants and respondents
 - The proposed sample sizes
 - The proposed study schedule
 - The roles and responsibilities of the research team and CABI
 - The detailed and specified methodology which meets the objectives and questions of the study as well as developed data collection tools (questionnaires).
 - All questionnaires or interview guidelines must be submitted to CABI for approval before being applied in the field.
- A baseline study report should basically include the following points: -

- Glossary/Acronyms
- Introduction
- Executive Summary
- Study Methodology
- Findings with the gender and country disaggregation
- Limitation of the study
- Conclusion and recommendations
- Raw data sets
- Appendices

Application process and timeline

The consultancy will run for a period of a maximum 3 months from 10 /3/2017. We invite interested individuals and companies to submit the following application documents:

- Submit a technical proposal outlining how the consultant(s) meets the selection criteria and their understanding of the ToR;
- A well thought methodology for undertaking the baseline, including activities schedule/work plan with time frame;
- Copy of CV of the consultant(s) who will undertake the evaluation;
- 2 recent examples of similar evaluation reports done by the applicant;
- Financial proposal detailing consultant(s) itemized fees, data collection and administrative costs

Email your proposal and accompanying documents to recruitment@cabi.org by 27th February 2017