



JOINT  
**COCOA**  
RESEARCH  
FUND

# Joint Cocoa Research Fund Call for Concept Notes

**The role of natural pollinators in cocoa yield**

*Issue Date: [August 24<sup>th</sup> 2021]*  
*Submission Deadline: [October 31<sup>st</sup> 2021 at noon CET]*

## Summary

- This call addresses major gaps in knowledge on the role of natural pollinators in limiting yield of cocoa. Whilst manual pollination has been shown to stimulate cocoa yield in the short term (i.e. 1-2 years) it is less clear the extent to which this is sustained over time and the dependence on environmental and management conditions. Whilst manual pollination may be an interim solution, we also need to understand what practical measures can be taken to improve natural pollinator populations on farm in the longer term.
- Deadline for submission of concept notes: October 31<sup>st</sup> 2021.
- Regarding the structure, please make use of the Application Form. **The Concept notes should not be longer than two pages, excluding figures and tables.**
- Point of contact (coordinating Secretariat): European Cocoa Association (ECA), Lucia Hortelano: [lucia.hortelano@eurococoa.com](mailto:lucia.hortelano@eurococoa.com) (CC: Jakub Puzniak: [jakub.puzniak@eurococoa.com](mailto:jakub.puzniak@eurococoa.com))
- Submission Format: electronic only, e.g. PDF, Word, Excel, etc.

## Introduction

- Overview of the topic and Research Questions

The relative roles of light, water, and nutrients on cocoa productivity are recognized as critical. Less understood is the role of pollination on cocoa productivity. The fertilization of cocoa flowers is mostly carried out by insects (Ceratopogonidae), but pollination receives no farmer management inputs or interventions, and simply happens as a “natural” process in the background. The positive short-term effects on cocoa productivity through manual pollination have been reported, but what is not known is the long-term effect on the cocoa tree (physiology, productivity, nutrient needs, etc.) of continuous, multi-season hand pollination. There is a need to better understand the role of pollination in cocoa productivity, not least because Ghana Cocoa Board have recently embarked on a hand pollination programme for farmers. Additionally, there may be simple farmer practices which optimise cocoa flower pollination and could give improved yields (if this did not have any negative effects on trees).

A cocoa pollination project would answer the following questions:

- Does the level of cocoa flower pollination contribute to tree productivity, ie. in conditions of optimal light, water and nutrients, what is the effect on yield of increasing the rate of pollination?
- What is the effect on tree health, yield and physiology of hand pollinating flowers repeatedly over multiple seasons? Is it possible to “over-pollinate”? Are high input conditions necessary to achieve high yields from increased pollination?
- What practices can farmers carry out to stimulate natural pollinator activity and does this make economic sense?
- Does the extent of shade in cocoa cropping systems (i.e. agroforestry vs full sun cocoa) affect the natural pollinator populations and if so what are practical and economical recommendations for optimising yield and natural pollination within a cocoa landscape?

*Timetable / Process Schedule*

- Deadline for submission of concept notes: October 31<sup>st</sup> 2021
- Presentation in the Quality and Productivity Working Group Meeting: November 17<sup>th</sup> 2021
- Evaluation and Request of a full Proposal: November 30<sup>th</sup> 2021