K_cam: Hardware/software app to estimate crop coefficients (Kc) through Normalized Difference Vegetation Index (NDVI) using low-cost infra red filter cameras

Project Title: P262 - Research and engagement for scaling climate-smart agriculture in Latin America

Description of the innovation: The app displays on a cellphone images taken with low-cost Rasberry pi cameras that measure the spectral reflectance of crops, calculate vegetation-indices and water-requirements in different phenological stages of the crop. This technology is useful to determine the water-demand of different crops and varieties, as well as to make management decisions about when and how much to irrigate. It also generates information on the best materials to sow depending on the LTACs seasonal-forecasts.

New Innovation: Yes

Stage of innovation: Stage 1: discovery/proof of concept (PC - end of research phase)

Innovation type: Production systems and Management practices

Geographic Scope: Global

Number of individual improved lines/varieties: <Not Applicable>

Description of Stage reached: We did field evaluations to determine the sensitivity of the cameras to phenological changes. However, the camera has not yet been calibrated with commercial sensors. There is also an app that is programing to automate the capture of images, processing them and transforming them to Kc and visualize the data.

Name of lead organization/entity to take innovation to this stage: CIAT (Alliance) - Alliance of Bioversity and CIAT - Regional Hub (Centro Internacional de Agricultura Tropical)

Names of top five contributing organizations/entities to this stage:

- CASM - COMISIÓN DE ACCIÓN SOCIAL MENONITA
- ASORECH - Asociación Regional Campesina Chorti

Milestones:

- CSA technologies and practices potentials for scaling out assessed and communicated with partners from key development initiatives

Sub-IDOs:

- 2 - Reduced smallholders production risk
- 8 - More efficient use of inputs

Contributing Centers/PPA partners:

- CIAT (Alliance) - Alliance of Bioversity and CIAT - Regional Hub (Centro Internacional de Agricultura Tropical)

Evidence link:

- https://tinyurl.com/y64zpxdo

Deliverables associated: <Not Defined>

Contributing CRPs/Platforms:

- CCAFS - Climate Change, Agriculture and Food Security