Radiant MLHub
EARTH IMAGERY FOR IMPACT

Dataset Documentation

Dataset Name: Great African Food Company Tanzania Ground Reference Crop Type Dataset

Location and boundaries

Overall Location Method

- ☐ Ground collection only
- ☒ Ground collection with boundary drawn using imagery
- ☐ Ground collection with spatial buffer added
- ☐ Boundary drawn from imagery
- ☐ Other _____
- ☐ Unknown

GeoLocation Device

- ☐ Industrial grade GPS (List model) _____
- ☐ Retail grade GPS
- ☐ Mobile Phone GPS
- ☐ N/A
- ☒ Unknown

Ground Boundary Method (Details explained in Appendix A)

- ☐ Live/Continuous point capture of walk-around
- ☐ Manual point capture of walk-around
- ☐ Manual point capture of polygon boundaries (not whole field)
- ☒ Manual point capture for later image annotation
- ☐ Manual point capture for spatial buffer within field
- ☐ Manual point capture while looking at but not in field, with heading recorded
- ☐ Other _____
- ☐ Unknown

Imagery used (Skip if no imagery used)

Sensor: Google basemap and Sentinel-2

Date(s): Various scenes during the growing season from Sentinel-2

List scenes used in Appendix B

Imagery Annotation methods

- ☒ Boundaries drawn based on a single ground point captured
- ☐ Boundaries drawn/edited based on multiple ground points captured
- ☐ Buffer validated from ground point captured
- ☐ Boundary drawn without ground reference data (Include description of methods in Appendix C)
- ☐ Pixels annotated without ground reference data (Include description of methods in Appendix C)
- ☐ Unknown

Radiant MLHub
EARTH IMAGERY FOR IMPACT

Boundary inclusion

- ☐ Captured polygon includes the entire field/area
- ☒ Captured polygon includes only a sample of the field/area

Classification

Classification Type

- ☐ Land cover
- ☒ Crop type
- ☐ Other _____

Classes/fields used

Describe in Appendix D

Ground Referenced Classification

- ☐ Observation (Describe methods of determination in Appendix E)
- ☒ Survey/interview with land holder (Describe methods in Appendix E)
- ☐ Other (Describe methods in Appendix E)

Image Referenced Classification

Describe methods used in Appendix C

Data Properties

Property name	Property Description	Parameters/Allowed responses (optional)
Village	Name of the closest village to the field	
Region	Name of the Region where the field is located	
Plot Area (acre)	Area of the plot in acres	
Planting Date	Date that the seeds are planted	
Estimated Harvest Date	Harvest dates are not recorded for this dataset, and are estimated using the Planting Date and a common growing season length from FAO crop calendar	
Crop	Crop type in the plot	

Appendix A: Describe the method of geographic ground data collection

Great African Food Company used Farmforce app to collect one point within the field, and record other properties including area of the plot.

Radiant MLHub
EARTH IMAGERY FOR IMPACT

Appendix B: List imagery scenes used for annotation (ideally also included in metadata)

Two sources of imagery were used to annotate the data:

- Google basemap imagery
- Sentinel-2 true color and falsecolor imagery: multiple scenes during the growing season were used. Scenes were different for each region depending on the cloud cover.

Appendix C: Describe how boundaries and classes were determined without ground reference data

Radiant Earth Foundation team used the point measurements from the ground data collection and the area of the farm on top of imagery from Sentinel-2 (multiple during the growing season, and Google basemap) to draw the polygons in each field. These polygons do no cover the entirety of the field, and are always enclosed within the field. Data points that were not clear if they belong to a neighboring farm (e.g. the point was on the edge of two farms) were removed from the dataset.

Appendix D: List all top-level classes or the classification guidance used

Crops include: Bush Bean, Dry Bean, Safflower, Sunflower, White Sorghum, Yellow Maize

Appendix E: Describe methods for determining classes based on direct/ground observation