
Figures and Data For: "Image Classification on Satellite Imagery For Sustainable Rainwater Harvesting Placement in Indigenous Communities of Northern Tanzania"

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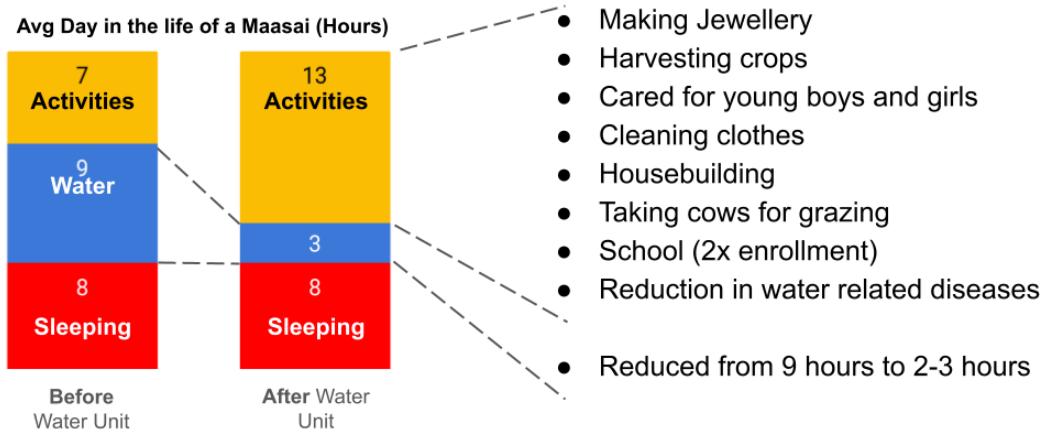


Figure 1: Before and after the Water Harvesting Unit: Doubled the time spent on economic, social, and agricultural activities

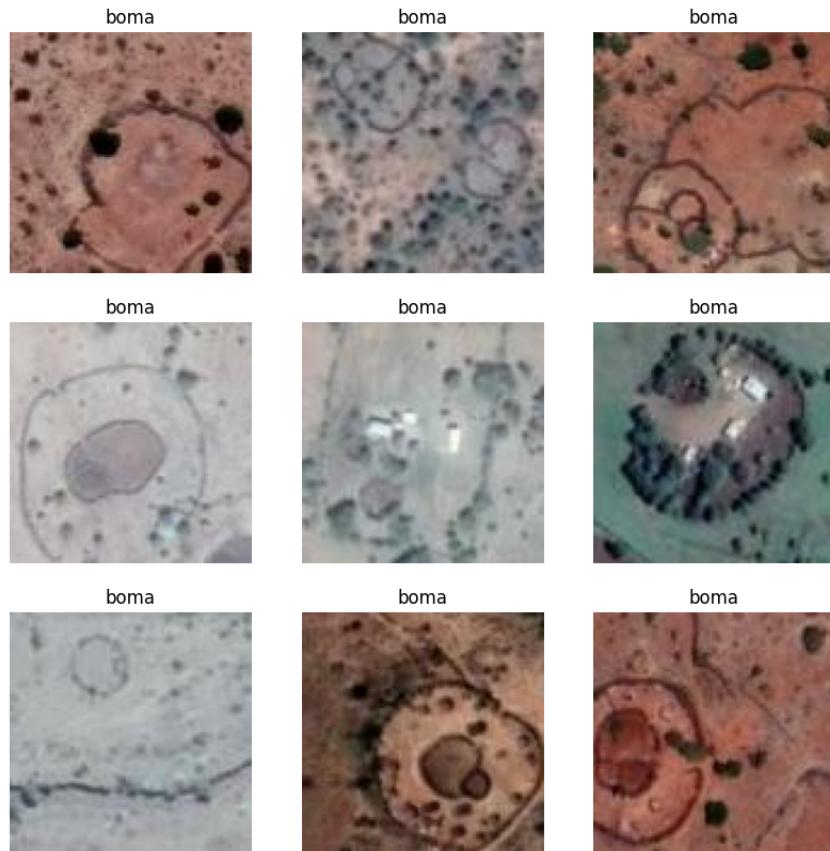


Figure 2: Example of Variation in Landscape, Vegetation and Structure

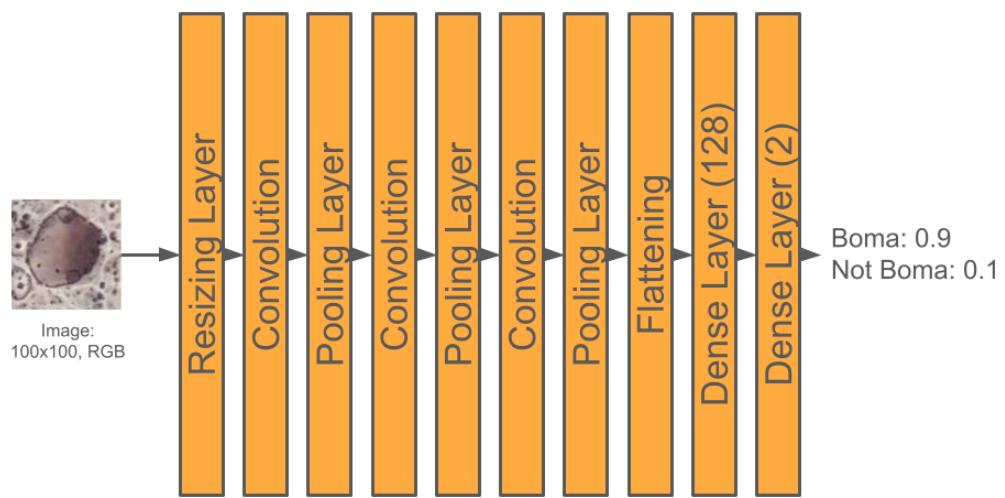


Figure 3: Shape of the Model

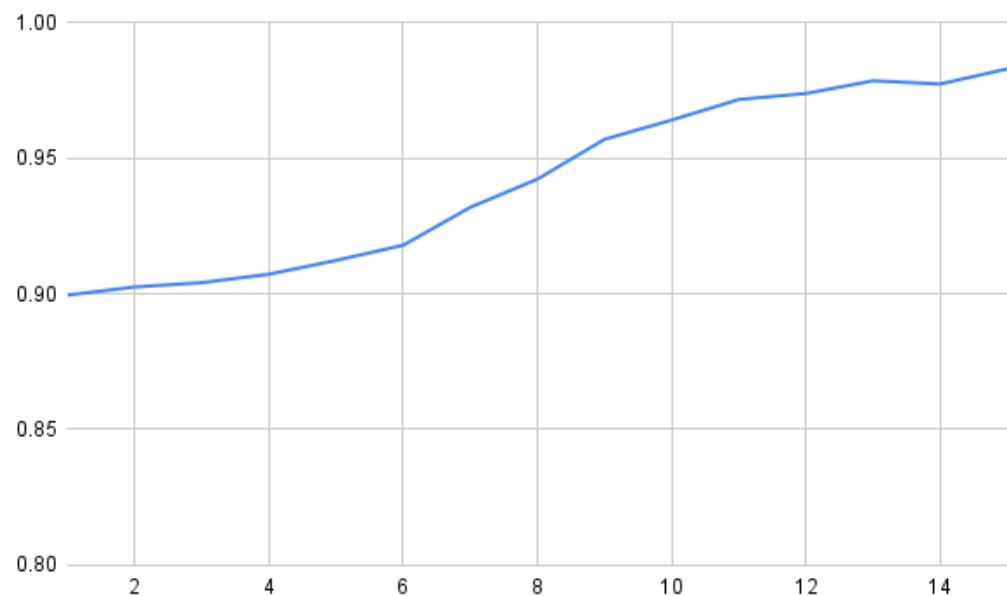


Figure 4: Training Accuracy over 15 epochs

Epoch	Training Loss	Training Accuracy
1	0.3279	0.8995
2	0.3031	0.9025
3	0.2801	0.9041
4	0.2526	0.9072
5	0.2267	0.9123
6	0.1942	0.9179
7	0.1612	0.9319
8	0.1353	0.9423
9	0.1091	0.957
10	0.091	0.9641
11	0.075	0.9717
12	0.0653	0.9739
13	0.0543	0.9786
14	0.0546	0.9774
15	0.044	0.983

Table 1: Raw data from Training for 15 epochs



Figure 5: Designated Area for First Test, 260 square miles between Serengeti and Arusha

Band	Band	Central wavelength (nm)	Bandwidth (nm)	Spatial resolution (m)	Objective
B1	VNIR	443	20	60	Aerosol Correction
B2		490	65	10	Aerosol Correction, Land Measurement Band
B3		560	35	10	Land Measurement Band
B4		665	30	10	Land Measurement Band
B5		705	15	20	Land Measurement Band
B6		740	15	20	Land Measurement Band
B7		783	20	20	Land Measurement Band
B8		842	115	10	Water Vapor Correction, Land Measurement Band
B8a		865	20	20	Water Vapor Correction, Land Measurement Band
B9		945	20	60	Water Vapor Correction
B10	SWIR	1380	20	60	Cirrus Detection
B11		1610	90	20	Land Measurement Band
B12		2190	180	20	Aerosol Correction, Land Measurement Band

Figure 6: Band Resolutions Provided by Copernicus

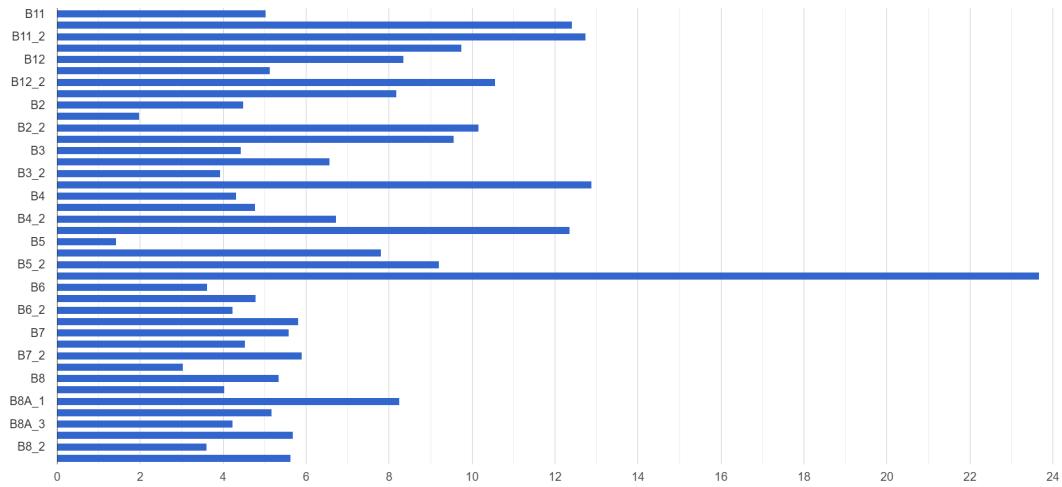


Figure 7: Variable Band Priority

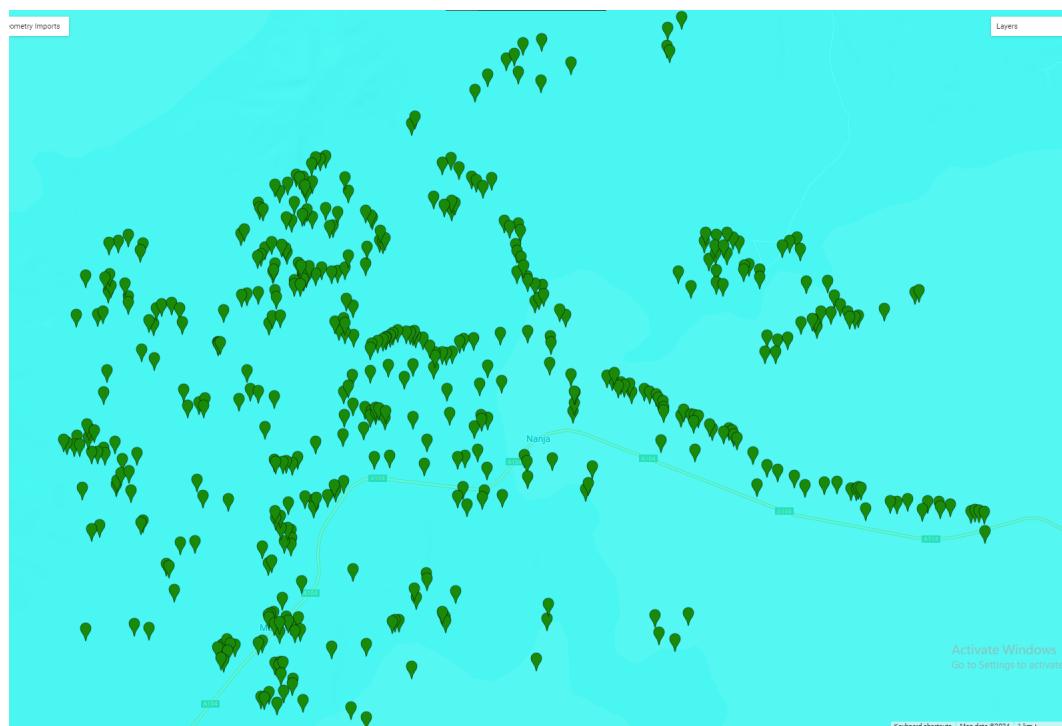


Figure 8: Output with relative coordinates



Figure 9: Output Overlayed Over Image Stack



Figure 10: Large High-Density Community Collections of Bomas Highlighted with Major Highway

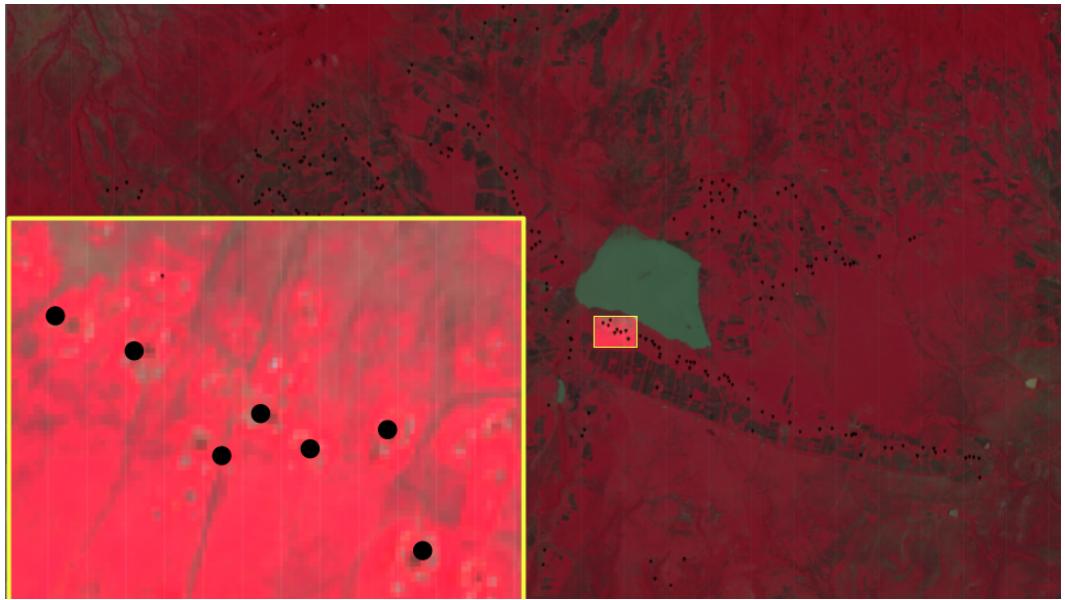


Figure 11: Zoomed In Portion on GEE



Figure 12: Zoomed In Portion Displaying Exact same location with drone photography

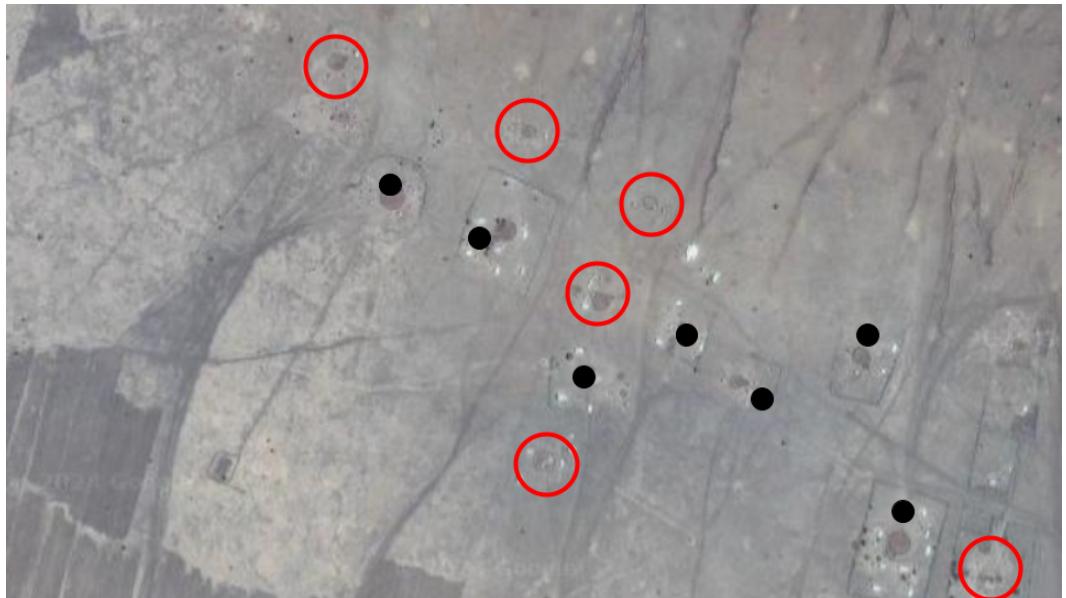


Figure 13: Zoomed In Portion on Google Maps Displaying False Negatives