

Appendix 1. Descriptions and sources of spatial data utilized for analyses and maps. For R scripts used for this analysis, see <https://github.com/akkagawa/DrylandAg>.

Dataset	Description		Source
Dryland field systems	polygon		Ladefoged et al. (2009)
Ahupua‘a boundaries	polygon		Office of Hawaiian Affairs (2009)
Elevation (m)	10 m DEM		U.S. Geological Survey (2015)

Climate datasets (250 m)	Mean annual	Mean monthly	Source
Rainfall (P, mm)	x	x	Giambelluca et al. (2013)
Cloud frequency (ratio)	x	x	Giambelluca et al. (2014)
Shortwave solar radiation (Wm^{-2})	x	x	
Diffuse solar radiation (Wm^{-2})	x	x	
T_{max} ($^{\circ}C$)	x	x	
T_{min} ($^{\circ}C$)	x	x	
T_{mean} ($^{\circ}C$)	x	x	
Relative humidity (%)	x	x	
Vapor pressure deficit (Pa)	x	x	
Wind speed (ms^{-1})	x	n/a	
Penman Monteith potential evapotranspiration (PET, mm)	x	x	
Actual evapotranspiration (mm)	x	x	
Aridity	x	x	Derived as PET/P from Giambelluca et al. (2013, 2014)
Rainfall seasonality metrics	n/a	x	Derived from Giambelluca et al. (2013) based on methods of Feng et al. (2013)