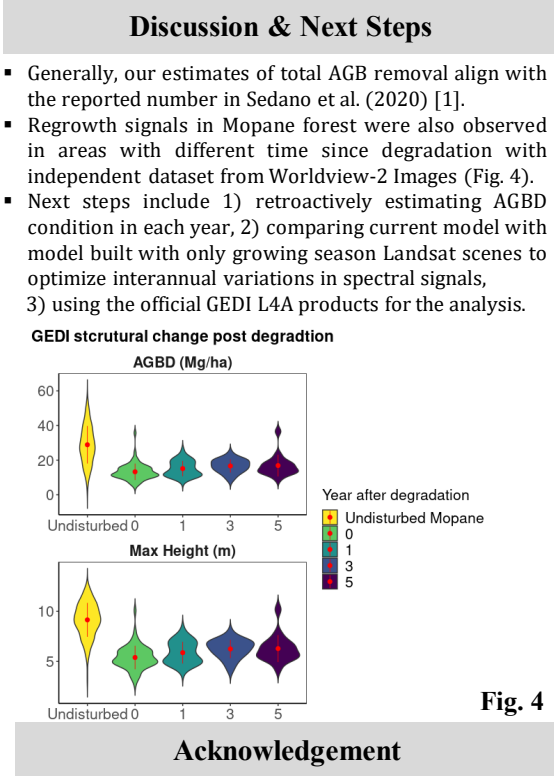
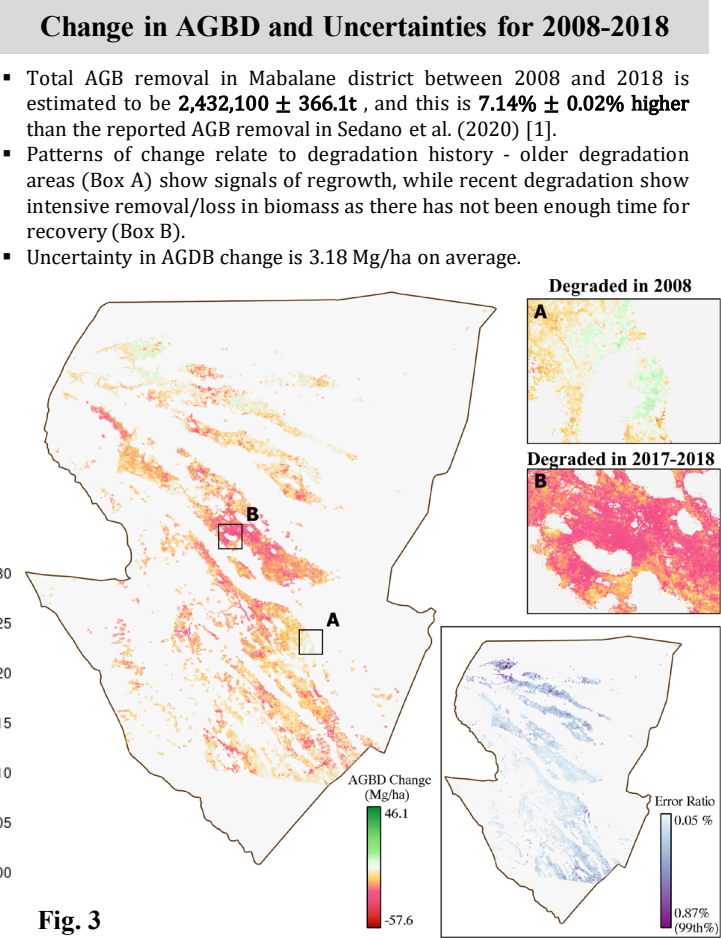
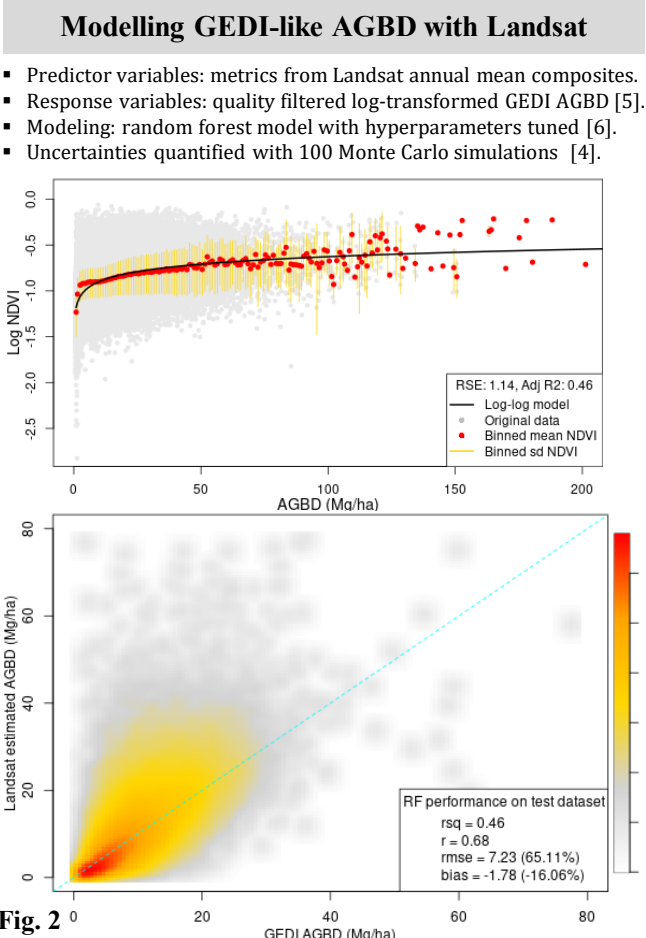
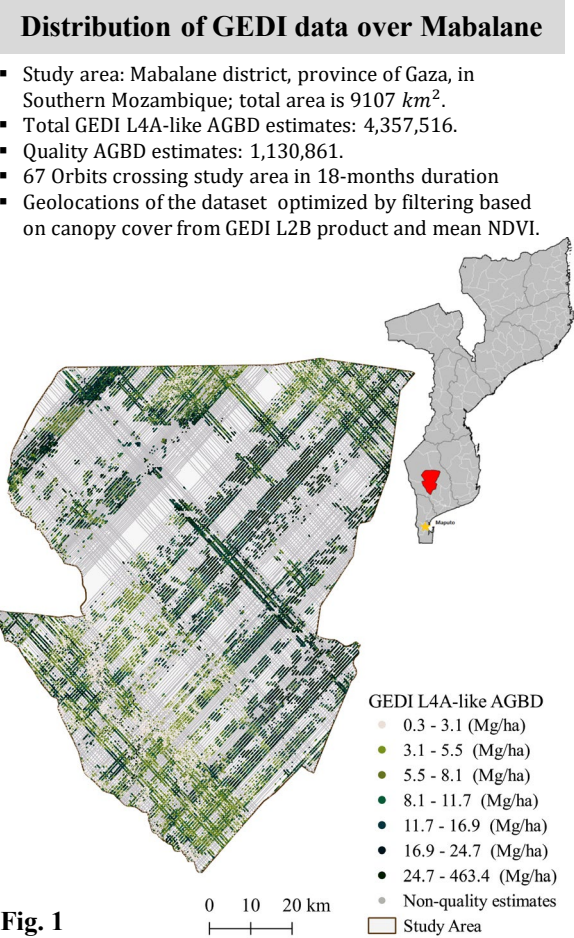


# Quantifying Local-scale Forest Degradation Intensity from Charcoal Production Using a Fusion of GEDI and Landsat Data

Mengyu Liang [1\*], Laura Duncanson [1], Fernando Sedano [1]

✉ mliang77@umd.edu [1] Department of Geographical Sciences, University of Maryland

**Problem statement/Goal:** Solely relying on passive remote sensing presents challenges for monitoring and quantification of loss of woody biomass from forest degradation. Here we demonstrate the potentials of fusing data from the spaceborne LIDAR mission, GEDI, with Landsat to facilitate the quantification of aboveground biomass (AGB) removal and uncertainties associated with charcoal production at a local scale.



References:

- Sedano, Fernando, et al. "Monitoring intra and inter annual dynamics of forest degradation from charcoal production in Southern Africa with Sentinel-2 imagery." *International Journal of Applied Earth Observation and Geoinformation* 92 (2020): 102184.
- Bouvet, Alexandre, et al. "An above-ground biomass map of African savannahs and woodlands at 25 m resolution derived from ALOS PALSAR." *Remote sensing of environment* 206 (2018): 156-173.
- Duncanson, Laura, et al. "Biomass estimation from simulated GEDI, ICESat-2 and NISAR across environmental gradients in Sonoma County, California." *Remote Sensing of Environment* 242 (2020): 111779.

- Duncanson, Laura, et al. "Aboveground Woody Biomass Product Validation Good Practices Protocol." (2021).
- Pflugmacher, Dirk, et al. "Using Landsat-derived disturbance and recovery history and lidar to map forest biomass dynamics." *Remote Sensing of Environment* 151 (2014): 124-137.
- H Nguyen, Trung, et al. "Landsat time-series for estimating forest aboveground biomass and its dynamics across space and time: A review." *Remote Sensing* 12.1 (2020): 98. 8. Duncanson, L., et al. "Aboveground Woody Biomass Product Validation Good Practices Protocol." (2021).