# Article information:

Quantifying aboveground biomass dynamics from charcoal degradation in Mozambique using GEDI Lidar and Landsat - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0034425722004734>

# Article summary:

1. A novel data fusion approach combining 3D forest structure from NASA's GEDI Lidar with optical time-series data from Landsat was used to quantify biomass losses associated with charcoal-related forest degradation over a 10-year time period.

2. The Random Forest (RF) model achieved an RMSE value of 7.05 Mg/ha (RMSE% = 42%) and R2 value of 0.64 using a 10-fold cross-validation dataset.

3. The framework demonstrates that fusing GEDI and Landsat data through predictive modeling can be used to quantify past forest AGBD dynamics in low biomass forests, providing a satellite-based method to support REDD+ monitoring and evaluation activities in areas where field data is limited.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Quantifying Aboveground Biomass Dynamics from Charcoal Degradation in Mozambique Using GEDI Lidar and Landsat” is generally reliable and trustworthy, as it provides detailed information on the methodology used for quantifying biomass loss associated with charcoal-related forest degradation over a 10-year time period, as well as the results obtained from the study. The authors provide evidence for their claims by citing relevant literature, which adds credibility to their findings. Furthermore, the authors acknowledge potential limitations of their study such as the lack of field measurements on tree structure and aboveground biomass density (AGBD) in many parts of Sub-Saharan Africa (SSA).

However, there are some points that could be further explored or discussed in more detail in order to make the article more comprehensive. For example, while the authors mention that charcoal production is projected to increase in future years, they do not discuss how this will affect their findings or what implications this may have for future studies on AGB loss due to charcoal production. Additionally, while the authors discuss potential limitations of their study such as lack of field measurements on tree structure and AGBD in SSA, they do not explore any possible solutions or strategies for overcoming these limitations. Finally, while the authors discuss how their framework has potential applications for REDD+ monitoring and evaluation activities in areas where field data is limited, they do not provide any concrete examples or case studies demonstrating how this framework can be applied in practice.

# Topics for further research:

* Charcoal production impacts on biomass loss
* Strategies for overcoming field data limitations in Sub-Saharan Africa
* REDD+ monitoring and evaluation case studies
* GEDI lidar applications for biomass quantification
* Landsat data for biomass quantification
* Charcoal-related forest degradation impacts

# Report location:

<https://www.fullpicture.app/item/df1cb074025e36f292f5740f9e24dd34>