I applaud the substantial effort that went into collecting and analyzing this data. This manuscript sets out to determine how drought and nutrient-status of soil interact to control tropical dry forest carbon cycling processes. While this is a meaningful dataset with great potential, I have considerable concerns with its current presentation. The broad scope of the response variables measured, and the complexity of the study ecosystem have come together to create a rather murky message.

My primary concern is on the statistical robustness of tree-species effects. The effective unit of experimental replication for tree-species effects appears to be one. There is no description of how this is dealt with in the statistical analysis, in addition there are results reported on N-fixation and leaf-habitat effects of tree species, which are not evenly distributed across the six species they target, and also, not addressed in the statistical analysis section. An infographic is needed to breakdown what effects are tested with what level of replication. The authors may find the structure of a Before-After-Control-Impact study helpful.

Overall, the paper lacks a strong central theme, is this a manuscript about carbon cycling in tropical dry forests? Or primarily about global change impacts on tropical dry forests? Or both? Currently it reads primarily as a forest study, with some soil microbial ecology added in. It may be easier to focus the manuscript if the tree responses and the microbial responses are reported in two separate manuscripts (just some food for thought). In a shameless act of self-promotion, the authors may find this paper helpful (and no insult will be taken if not):

https://doi.org/10.1016/j.soilbio.2022.108680

Lastly, is nutrient deposition indeed an issue in most tropical dry forests? It seems that the role of innate variation in soil fertility is a more compelling justification of the study, which would be greatly bolstered by pre-treatment nutrient data. After graphing the post-treatment soil C:N data provided in the supplement, it seems that soil nutrients strongly co-vary with certain tree species. Pre-existing variation and the history of the plantation need to be more thoroughly addressed to give context to the manipulation.
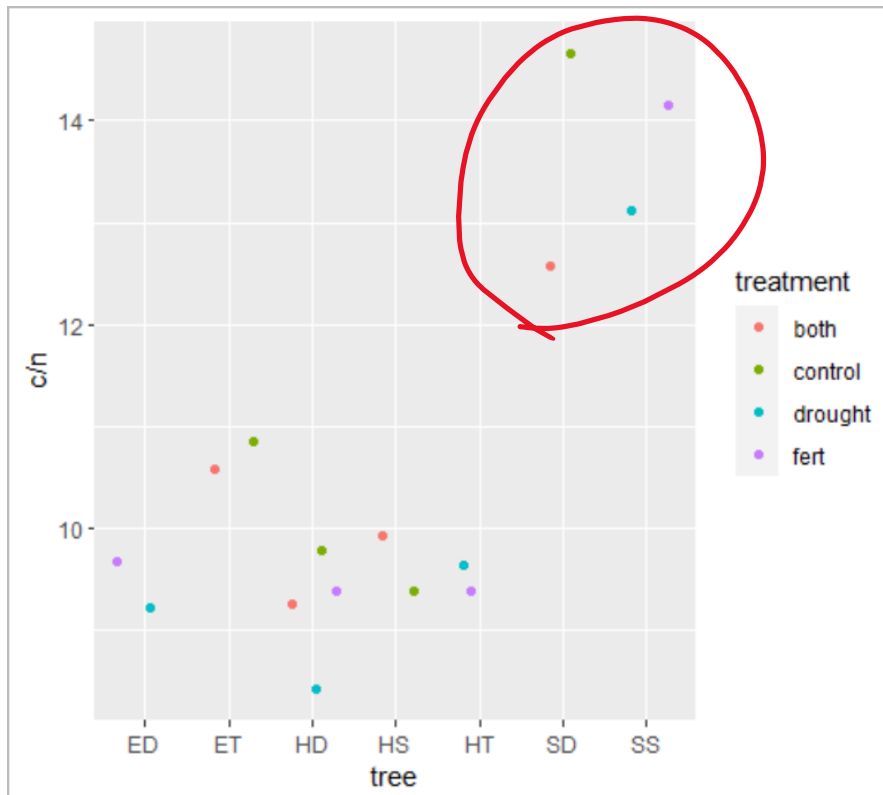
Line comments:

67) because? rather than 'as'?

70) first use of this undefined abbreviation

Section 1.1 This is a little chicken before the eggish. Inverting the paragraph will allow you to first establish that innate variation in soil fertility drives variation in growth-response to rainfall. Then second, the opposite is also true (nutrient limitation negatively affects water use efficiency). This then logically leads to the third point that high nutrient availability could alleviate drought stress BUT at a potential cost to NPP (which is where I assume you are headed).

74) remove 'main'

80) replace the slash with 'or'

82) "Specifically", rather than "Moreover"

89) Why are transpiration rates increasing? Is this a generally accepted phenomenon in response to nutrient deposition?

94) Perhaps "current thinking" would be more appropriate than "Theory", as the later implies an established and tested precedent in the field

259) Priming is of interest here too?! Unless there is a specific hypothesis that you are testing, I don't see that this adds to the manuscript.

294) This is a major flag, if soil properties were so variable that something as basic as volumetric water content cannot be compared across plots, how are any of the other comparisons valid? Especially given that the previous sentence claims that soils were saturated when the plots were established – does this mean that the volumetric content at saturation was meaningfully different for each plot?
The current approach requires either a strong validation or for the analysis to be shown using both response variables, allowing the reader to weigh the value of each.

Table S2 as two sets of boxplots, one by treatment and one by stand type

309) Below 0, I believe is meant.

328) Love the language of evidence used here – please use this throughout!

329) Is the '-v' convention a requirement of the journal? It's a little distracting. This may make a better small table, rather than a string of text, or similar information included in the infographic mentioned above.

I'd like to conclude by saying that I really do think this dataset has great promise, and believe that honing the message will make it easier to digest and therefore more widely cited. Best of luck.