

Reviewer 2, comment 1:

Your explanation of the NDVI calculations that underlie figures 7-9 in the rebuttal are helpful, but the manuscript text and figures need to be improved to reflect this.

For the readers to also understand what you have done, you need to add a subsection to the Methods section (in between 2.3.3 and 2.3.4) in which you explain the different ways that you calculated NDVI anomalies (monthly, seasonal, yearly). The Results section 3.4 needs to be moved there and rephrased for clarity.

Response: Thank you for this comment. We have moved them into the method section and adjusted the whole sentences based on your suggestion for the NDVI anomalies calculations (Line 205-222)

Currently it is unclear what you mean with "types of selections (such as "month selection" based on SPI-3, -6, and -12 (Fig.2 and S1); "year selection" based on both seasonal and annual SPI (Fig.S2); and "wet season of a specific year selection" based on smaller SPI values found during the wet season from Fig.S2a)." (lines 348-351).

Why would you call the seasonal SPI a "year" selection and not add a separate "seasonal" selection?

Would it not be clearer to use the word "timescale" instead of "selection" (so monthly timescale, seasonal timescale, yearly timescale)?

Response: Thank you for this comment. We have changed all the description of "selection" and adjusted the whole sentences in line (210-222).

And for the "months", why have you chosen only the "months at the beginnings and endings of each of drought episodes"? This should be done for all months during the drought. Same for the years. You have included some of these in Supplementary Material. These need to be moved to the paper itself and expended to all events.

Response: Thank you for this suggestion. We have plotted all the months during the drought episodes (Fig. 7, 8, 9), as well as for all the years and seasons (Fig.10 and 11). We have adjusted all the corresponding interpretation as well.

This is especially problematic, because the selection of the drought periods seems quite random. "The selection was based both on the SPI values for each of the regions from Fig. 2-4 (as marked with green rectangles in Fig. 2) and the SPI values averaged over the whole island (Fig. S1)". There is no formal explanation of the method for selecting these time periods. Please explain (in the Methods section) which SPI values over which accumulation period, special domain, and duration were taken as conditions to select the drought events.

Response: Thank you for this comment. We have added in the methodology section the way for selecting these drought events or episodes, in lines (212-214): “The selection of drought episodes is based on simultaneous and continuous occurrence of the most prominently negative SPI values (Fig. 2-4 and Fig. S1).”

In Section 3.4.1 you mention that it “is not appropriate to assess vegetation loss based on months’ selection by referring to the starting and ending months of the drought episode”. This is obvious and you should not have analysed the drought months in this way from the start. Please change the analysis to include all months during a drought event.

Response: Thank you for this comment. The analysis of all months has been done as answered from the previous comment. Also, the mentioned sentence has been removed.

In the manuscript text, the use of the term monthM is confusing, since you did not include an equation in which that term was used. Please change to the formulation you use in the rebuttal.

Response: Thank you for this comment. We have removed it since the whole sentence has been adjusted in methodology section in line (206-209)

It is unclear what is the difference between the seasonal analysis in the “year” type and the “wet season of a specific year” type. If you specify the seasonal time scale as a separate approach and analyse all seasons in the selected year, there is no need anymore for a an analysis of the “wet season of a specific year”. And it is also unclear why there was no seasonal and yearly analysis for Event II.

Response: Thank you for this comment. From the old analysis, the difference between “year” type was to analyze yearly NDVI anomalies based on selected years from seasonal and annual SPI (Fig.S2 as marked with green rectangles) and “wet season of a specific year” was to analyze the wet season anomalies based on selected years from smaller negative SPI value during the wet season SPI analysis (Fig.S2a as marked with green circles).

But we have changed that concept based on your suggestion to analyze the seasonal NDVI anomalies within the drought episodes and not considering anymore the analysis of the “smaller negative SPI during the wet season”. So, we calculated yearly and seasonally NDVI anomalies based on the selected years from both seasonal and annual SPI (Fig.S2). Also, more clarified explanations about this are already put in the methodology section. (Line 205-222)

For the seasonal and annual SPIs, the “Event-II” is not there. It is because we are looking for the continuous and simultaneous occurrence of prominent negative SPI values across seasonal and annual SPI analysis (Fig.S2) to analyze the seasonal and yearly NDVI differences in Fig. 10 and 11. As we mentioned it in line (215-218): “To calculate the 215 seasonal and annual NDVI anomalies, the selection was taken from the seasonal and annual SPI (Fig. S2), in which there are no simultaneous and continuous occurrences of prominent negative SPI values during the Event-

II (Fig.S2). So, for the seasonal and annual timescales, we only concentrate on Event-I and Event-III (marked with green rectangles in Fig. S2).”

Reviewer 2, comment 2:

This is interesting, but formulated in a very confusing way. For example it is unclear whether this dry season is before or after the wet season and what the SPI value of this dry season was. The discussion on the wet and dry season anomalies, which could possibly be related to changes in the timing of the rainfall onset is interesting and important. I would like the authors to show and discuss this more clearly. If the rainy season is shifted that low SPI values in a wet season month would be combined with high SPI values in a dry season month. **What would help is a clear monthly and seasonal analysis of SPI and NDVI anomalies of all the months / seasons in a drought event**, instead of a confusing explanation of a dry season NDVI anomaly in a year that was selected for its low SPI values during the wet season.

Response: Thank you for this comment. As answered earlier, we have plotted all NDVI anomalies for all months, seasons and years during the drought episodes and adjusted all the interpretation.

Reviewer 2, comment 3:

Thanks for rephrasing. I agree with the reviewer and I think there are some more instances where you need to be more careful in describing the patterns you see, for example not confusing events with trends. In lines 481-482 you write for example that “It has already been noticed from SPI analysis (Fig.2-5) that the occurrence of drought has recently become more frequent and intense”, but you have not done a trend analysis on SPI values. Instead you should write something like: “the latest years were characterised by a severe drought, which influenced the NDVI trend analysis.”

Please check the manuscript for statements like these and rephrase.

Response: Thank you for this comment. We have checked and paraphrased the sentence. Line (496-498) also in line (240)