Number	Comment	Adjustments	Relevant sections / page numbers
1	*It uses as predictors climate variables, soil moisture, and drought indices such as SPI and SPEI at multiple time scales. The article lacks the use of substantial and proper references about the matter*	Included new references for the calculation of SPEI and SPI to the methods section	Pages 5-6, sections
2	*The article does not state a clear definition of the objectives, which could lead to a better structure for the manuscript. Due to this, it was hard to follow and understand the storyline*	Included new objectives list at the end of the introduction	Page 3, section 2.1
3	*The word "impact" in the title induces me to think about the consequences of drought (socio-economic, human, etc.). The title should be improved*	Changed title to remove the word impact	Title
4	*The introduction is not easy to follow; it doesn't have a clear scientific meaning, has vague sentences, and does not have a proper order of ideas. It needs some improvements to make it scientifically sound. For example, the paragraph talking about drought impacts on Brazil should be moved up before the paragraph talking about drought monitoring (L35)*	Restructured introduction entirely. 3 paragraph structure now follows as Introduction to drought, then discussion of the topic of drought monitoring, then specifically drought monitoring in Brazil	Pages 1-3, section 2
5	*Also, it should be presented with some numeric figures of the real impact rather than solely indicate where it has impacted*	Included cited example of drought impact causing economic losses and figures relating drought to inflation and food price increases in Brazil	Page 2 section 2
6	*The paragraph describing previous works using machine learning lacks robustness; it should not only describe what types of methods have been used but also describe what results these works have had*	We have included new text to describe the results of some relevant studies to demonstrate the value of the methods used in this work	Page 2, section 2
7	*The definition of the objectives is vague; the authors should go directly to the scientific aims of the work rather than deviate toward the potential benefits of the results or come back to defining the importance of the indices. Defining*	Included new objectives list at the end of the introduction	Page 3, section 2.1

	two or three clear objectives that will lead the work is preferred.		
8	*It is needed to provide a better description and justification for the use of the crop grid dataset (Tang et. al, 2023) instead of just presenting the reference*	Included the justification of using the crop grids dataset under study area “The crop grids dataset was chosen because it is the newest dataset found with estimates of crop specific growing area for maize and soybean in Brazil.”	Page 4, section 3.1
9	*In the sentence (L130), it says, "... NDVI which is in turn converted to TCI, VCI, and the vegetation health index (VHI)," which implies that the TCI is derived from NDVI when in fact it is derived from the thermal bands*	This sentence has been removed	Page 5, section 3.2.1
10	*Please add a table for a better comprehension of all the satellite data used in this work and its characteristics*	We have included information on VHI in the already existing predictor variables table	Page 8 section 3.3
11	*There is too much description of the data used, but it was not calculated in this work. I believe it should be good to reduce this and focus on what was made in this work, i.e., forecasting by machine learning. The acronym for the method used is not described here*	Removed detail from descriptions of VHI, and RZSM data	Pages 5-7, section 3.2.1
12	*I think it is important to somehow analyze the spatial cross-validation. But, as it is currently written, it is not clear to me what the purpose of the spatial clustering analysis is. It needs further clarification regarding its link with the rest of the methodology. Also, authors should not cite figures from results in the methods section. The cluster allows for the splitting of the data (training and testing), and it affects the regression (forecasting) and classification (onset of drought)*	The section on spatial clustering has been removed from the paper. This decision was made for several reasons including clarity and flow of the story of the paper.	n/a
13	*There is an excessive number of figures that can be reduced. For example, Figs. 14, 15, and 16 could be reduced to one and perhaps a table summarizing the results*	Removed Figures on temporal autocorrelations and variability, Combined Figures on future months and monthly	n/a

		model performance and moved to the appendix Combined Figures which describe recall and precision into one. Reduced number of Figures in the main text to 8	
14	*The study area includes crops of soybean and maize; it would be good to know how the ML model performs per crop type*	Some discussion has been added to explain why soybean and maize growing areas are used together rather than separately	Page 29, section 5.4
15	*The quality of Fig. 17 is poor.*	This Figure was removed	
16	*The conclusion is too general and does not specifically state what the main results are. What variables were the best predictors for VHI? What machine-learning methods achieve the best performance? What is the main contribution to the drought research in the article?*	Rewrote the conclusions to be clearer and provide the significance of the work for both Brazil and broader agricultural drought forecasting	Pages 29-30, section 6
	Reviewer 2		
17	*There are too many paragraphs in the introduction. I suggest to rewrite the introduction with 3 paragraphs, highlighting the basic content of the research field in the first paragraph. Then review the research progress of the literature in the second paragraph, and in the third paragraph, analyze the limitations of past research and clarify the innovation of your own research*	Restructured introduction entirely. 3 paragraph structure now follows as Introduction to drought, then discussion of the topic of drought monitoring, then specifically drought monitoring in Brazil	Pages 1-3, section 2
18	*The importance of ML compared to other methods such as statistical, probabilistic, and time series modeling for drought monitoring and drought forecasting is missing in the introduction section. I would suggest to add this in the introduction section*	Explained the advantages of ML methods as opposed to statistical approaches in the introduction, provided a reference to paper which compares a statistical and machine learning approach for crop yield prediction	Page 2 section 2
19	*The description under section 2 (page 3; line 85, 90, and 95) is not so much important. Please delete these lines*	These lines have been deleted	Section 2

20	*Rewrite the study area highlighting the key geographic features, climate, and physiography of the study area. Please omit the first three line of the study area*	Deleted first 3 lines and included a paragraph on the different climates and biomes of Brazil	Pages 3-4, section 3.1
21	*The author used 1,2- and 3-month SPI. Why did the author not use the SPI 6? SPI 6 indicates the seasonality of agricultural drought*	Provided a justification for the exclusion of accumulation periods above 3 months	Page 6, section 3.2.3
22	*Why was only precipitation used as a predictor variable? Was it average precipitation or total precipitation? I think using only precipitation does not make any sense as the author used SPI and SPEI index, which is the form of precipitation-based drought index. In this regard, I would suggest adding precipitation anomaly index (PAI) as a predictor variable instead of only using precipitation.*	Made it clearer that precipitation is total monthly precipitation. Provided a justification for the use of total monthly precipitation	Page 7, section 3.2.6
23	*In case of the machine learning model what amount of data was used for training, validation and testing of the model? I mean, how was the model built? How was it calibrated? The most important parameters and the choice of values for the model were not explained sufficiently much more explanation needed*	Section labelled Cross validation and training procedure now more clearly describes the training, optimization and evaluation of the models	Page 8, section 3.5
24	*What does "SEA AV" mean for? What kind of model was it? What is the utility of using "SEA AV" model?*	Provided a paragraph in the methods section to describe the purpose and meaning of the SEA AV model	Page 8, section 3.4
25	*Page-16 (line 300): Please close the first bracket for "(Figure 7*	Further proof reads of document	n/a
26	*The author discussed only the forecasting performance of various machine learning models. But I did not see any forecasted results of VHI by the machine learning model, which performed better compared to other models. It is very important to add results of forecasted VHI by the best machine learning model.*	Changed text to make more clear that GBM model is the best and is used exclusively for some analysis	Pages 13-14 section 4.2
27	*Conclusion can be improved by highlighting the innovation content of the paper, future research direction, and recommendation for policy formulation*	Rewrote the conclusions to be clearer and provide the significance of the work for both Brazil and broader	Pages 29-30, section 6

		agricultural drought forecasting	