1. **Comment**: **L 38:** Citation required

Response: The following reference will be added to the revised manuscript: Government of Tamil Nadu, (2022a).

2. **Comment**: **L 46:** Citation required

Response: The following references will be added to the revised manuscript: Arjune and Kumar (2023), Balaganesh *et al.* (2020), Gardas *et al.* (2018), Malaiarasan *et al.* (2021).

3. **Comment**: **L 53**: Citation required

Response: The following references will be added to the revised manuscript: Radhakrishnan et al. (2024), Lalmuanzuala et al. (2023), Paramasivam (2023)

4. **Comment**: Citation required

Response: The reference was taken from IPCC Sixth Assessment Report (IPCC, 2023)

5. **Comment**: **L 77**: Table

Response: Required changes will be made in the revised manuscript.

6. **Comment:** This part is not required in the introduction, and it can be included in the dataset

Response: As suggested by the reviewer, the section will be removed from the Introduction and included in the 'Dataset'.

7. **Comment:** ~~precipitation~~

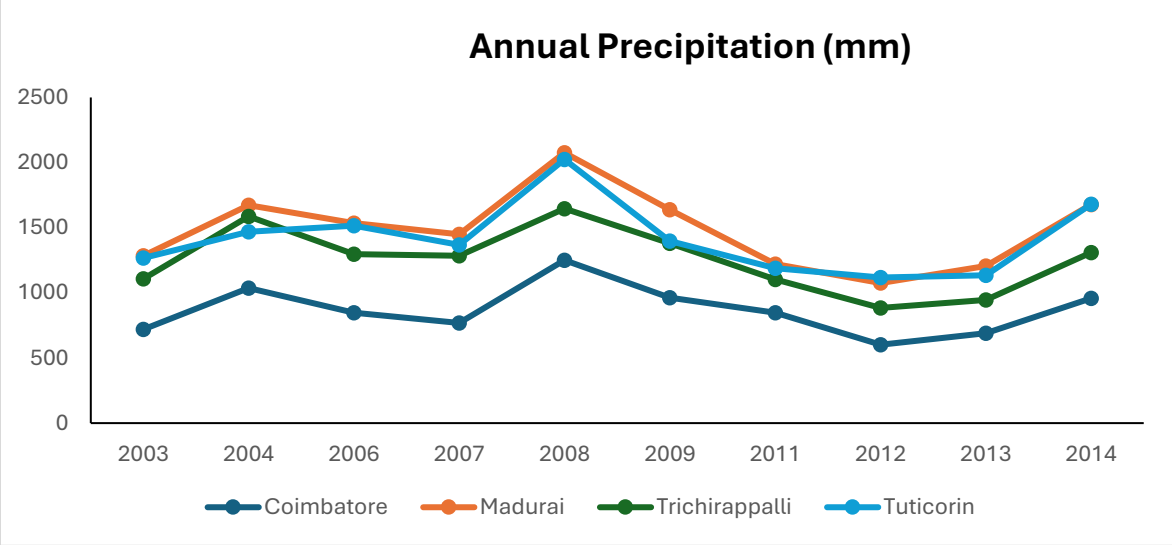
Response: Required changes will be made in the revised manuscript.

8. **Comment:** L **119**: Study region

Response: To avoid redundancy in the information presented, Section 2.1 and Section 3.1 will be merged in the revised manuscript.

9. **Comment**: **L 127:** long-term variability and change can also be represented to show the changes in pattern

Response: The precipitation pattern showed inter-annual variability, as shown in the figure below. The year 2008 recorded the highest precipitation, whereas the year 2012 indicated the lowest. The results of the Mann-Kendall test (MK-test) indicated no significant trend in the annual precipitation for these four regions.



10. **Comment: L 144:** Highest spatial resolution

Response: We selected products with spatial resolutions between 0.1° and 0.25°. While reanalysis products typically have coarser resolutions, we included MERRA2 and NCEP2 in our selection due to their unique advantages. Both products provide global coverage on a daily timescale and incorporate significant advancements. For example, NCEP2 improves precipitation parameterizations using cloud-top cooling (Kanamitsu et al., 2002), while MERRA2 integrates atmospheric aerosols into its analysis (Bosilovich et al., 2015).

11. **Comment**: **L 235:** Methodology can be as section 2, and the study region should come as sub-section. Then, tehre wont be any repetion of the sections. Sectio 2.1 and 3.1 are repeating, these can be combined together

Response: We will merge sections 2.1 and 3.1 to avoid redundancy. So, the revised section now looks like,

1. Introduction
2. Methodology
   2.1 Study region and Ground station
   2.2 Datasets
   2.3 Comparison of ground data with satellite and observational reanalysis-based data
      2.3.1 Grid scale comparison
      2.3.2 District scale comparison
   2.4 Evaluation metrics
3. Results
4. Discussion
5. Conclusion

12. **Comment: L 251:** what was the duration of data used to compare

Response: The study used 10 years of precipitation data for evaluation of the products. Many previous studies have used the approach of interpolating station data onto a grid and then conducting evaluations using the grid-to-grid method (Duan et al. 2016, Liu et al. 2015, Shukla et al. 2019). The present study adopted this approach to align with the commonly used practice.

13. **Comment: L 261:** Evaluation can be included as a separate sub-heading as section 3.3

Response: 'Evaluation metrics**'** will be included as a separate sub-heading in the revised manuscript. Section in the revised manuscript as response to Comment: 12.

14. **Comment**: **L 734:** The bullet points can be avoided in conclusion

Response: We thank the reviewer for the suggestion. Conclusion will be presented as a paragraph in the revised manuscript.

15. **Comment**: **L 747:** So the study can not generalise the use if any precipiattion data. Is ERA5 can be adopted to other similar agro-climatic conditions? What is the

controbution of this study towards other data-sparse regions in India, other than the selected 4 locations?good to include future prospect.

Response: The following section on future prospects will be included in the revised manuscript:

The results of the study can be useful for the districts falling within the same agro-climatic regions. The state of the Tamil Nadu is divided into 7 agroclimatic zones. The present study includes 3 important agricultural zones. The results can be used for other districts within the same agroclimatic zones. The findings of this study are designed to support field-level experimentation and also provide a proof of concept for modelers developing climate data products, with the potential for extrapolation to other regions with similar agro-climatic conditions.

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