

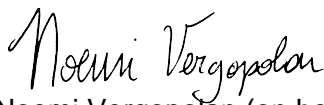
Dear Dr. Wang,

We would like to thank you for handling the manuscript and the reviewers for their thorough assessment and helpful comments. The point-to-point reply to the reviewers was uploaded for discussion on October 22nd, and based on their comments we made the following changes:

1. In the evaluation of the random forest maize yield model, we replaced the randomly selected 20% (testing) and 80% (training) sample split approach for a year-based cross-validation approach. We now report the random forest model testing statistics per year (in which only the other years were used for training) and the average statistics.
2. This year-based cross-validation approach was extended to the recursive feature elimination method, to avoid relying on a single testing set. We updated the workflow in Table S1 and Figure 3.
3. We updated the scatter plot in Figure 2 to show the district-level comparisons per year (with the other years used for model training, and the year in question used for testing). In addition, we included Figure S6 showing the time series of predicted field-level maize yields at different locations across the country.
4. L 165. Included explanation on why MODIS was used in favor of Landsat.
5. L 428. Included a sentence on the influence of cropland/shrubland commission errors on yields.
6. L 137. Included sentence clarifying the HydroBlocks calibration.
7. L 480. Expanded the discussion about why ensemble models (e.g., random forests) have difficulties in predicting extreme low and high yield values.
8. L 490 Discussed the limitations of NDVI in capturing under-canopy plant-soil-water dynamics as represented by data on soil moisture and surface temperature.
9. L 455. Included a discussion on the implications of fine vs. coarse-scale hydrological data on yield estimates.
10. L 345. Improved Figure 8 discussion.
11. Numerous other minor textual corrections.

We uploaded updated versions of our manuscript and supplemental material, as well as a track-changes version of the manuscript.

Sincerely,



Noemi Vergopolan (on behalf of all co-authors)