Re-review 2: "A modeling System for Identification of Maize Ideotypes, optimal sowing dates and nitrogen fertilization under climate change - PREPCLIM-v1" (gmd-2024-105)

The authors have significantly improved this manuscript, but some issues still remain. I think the editor can handle them, though, so I'm happy to say accept after minor revisions.

General

1) Thank you for adding the link to the info platform; I was able to access it successfully. (That's a very nice interface!) Please also add the link to the Code Availability section.
2) Thank you for adding code/data DOIs. Please also mention them in the Code and Data Availability sections.
3) Figures are still too low-resolution, and this results in some of them being hard to read. The authors mention that they're now 1000x800 pixels, but that by itself doesn't mean anything—what matters is the pixels *per inch*. The GMD submission guidelines specify at least 300 ppi. Fig. 8, for example, is conservatively about 6 inches wide. That would require it to be at least 300 x 6 = 1800 pixels across, not 1000. Note that using PDF instead of PNG would be preferable for most of these plots, as—being a vector-based format—it allows "infinite resolution." Fig. 8 might be an exception, because the large number of objects (background points) would cause the PDF to be extremely large.

Sect. 2: Data and Methods

4) New text describing P2 in the tracked-changes version (L150-152) seems not to have made it into the final manuscript. Was this intentional? I find the sentence after "Or:" to be a helpful description.

Sect. 3: Results

5) L280: Replace "exper" with "experiment".
6) L294-297 (Fig. 4 caption):
   a) Replace "exper" with "experiment".
   b) Mention that the lines represent the mean for each treatment x climate.
7) L286-291: "Under warmer climates we note more frequent occurrences of critical situations with suboptimal grain filling and potential crop failure, under fertilization.... In our study premature ending of simulated vegetation season occurred more frequently in treatments with higher nitrogen fertilization, leading in average only small changes in maturity days." Reiterating my request that this be illustrated with a

figure (in the Supplement is okay). The authors provided one in their response (albeit without a legend or Y-axis labels) but seemingly not in the manuscript or Supplement.

8) L303: “in the Ctrl and in model simulations”: Replace “model” with “future”. They’re all *model* simulations.
9) L305-308: When I first re-read this, I thought “they should really look at the changes in extremes, too”—which you do later. Consider saying here something like “Further analysis on the change in intermediate and extreme harvest values can be found in Sect. 3.3.1,” or reorganizing to put these analyses together.
10) L311-313: “The correlation along sowing dates between H and accumulated precipitation until maturity (Pmat, Fig.6), is r(H, Pmat) >0.96 in both scenarios.” Fig. 6 does suggest this, but showing the dots for each ensemble member would help. It would match the text I quoted even better to draw the best-fit lines for each point cloud rather than a line through their means at each date. Also, the X-axis (and independent variable in the correlation tests) should be the quantitative sowing date rather than the categorical “treatment”—these are almost identically-spaced but not exactly.
11) L354: Upper limit of “intermediate” interval still says 70% here, whereas in their response the authors say they changed it to 75%.
12) L355: Replace “projected higher H values in GI” with “projected higher intermediate H values”.
13) L369-375:
    a) L371-372: Replace “GI and also in GX” with “both the intermediate and top percentiles”.
    b) L374: “leading”?
    c) Mention any interesting results from Fig. S3. E.g., how some ensemble members actually show improvements. Also, it seems like there is substantial inter-model spread in the historical and to a lesser extent future periods—this is not a dealbreaker but it should be acknowledged in the main text.
14) Fig. 7a
    a) This is actually harder to read in some ways than it was before (then Fig. 9a). The first two lines for each color are impossible to distinguish. Using a PDF as requested in the guidelines could help with this.
    b) Fig. S3 should be mentioned in the Fig. 7a caption.
    c) I still don’t understand what I’m supposed to take away from the “mitigation window.” How was it drawn, exactly? I.e., how were the edges determined?
15) Figs. 7b and 7c: Y-axis labels should be “Difference in harvest relative to Hist”.
16) Fig. 8 is still too low-resolution to properly display the point clouds in the background.
17) L423: “Ox” should be changed to “X axis”.

18) L452: “Ox” should be changed to “X axis”.
19) L459: “lead” should be “lead to”.
20) L462-466: I still don’t understand this part (although the preceding part of this section is better than before; my previous comment 41). I don’t really get what “expectancy” means, and I don’t know what the Y-axis in Fig. S5 is. I think “border” at L464 should be “broader”?

Sect. 4: Discussions

21) L500: Leftover “P0i” that didn’t get changed.
22) L544: Leftover “P01” that didn’t get changed.
23) L545: Leftover “P0i” that didn’t get changed.

Supplement:

24) Throughout: Start section headers with “Section” and figure captions with “Figure” to clearly distinguish them each other.
25) Fig. S.1b (previously Fig. 5): The authors mention that my comments 24b (“Needs in-figure legend explaining the lines, their colors, and what the shading represents”) and 24c (“Y-axis labels needed with text explanations and units”) were addressed, but it doesn’t look like those changes made it into the updated Supplement file.
26) L19: “Fertlization” typo
27) L26: “string” should be “strong”.
28) L28: “dt-line” should be “dot-dash line”.
29) Fig. S3:
    a) Refer back to Fig. 7a in the caption.
    b) These figures should also be remade to match the design of Fig. 7a.
30) Fig. S5:
    a) What is the Y-axis here?
    b) Why split at the 200th parameter instead of percentiles as in the rest of the paper?
    c) Linear regression doesn’t look like a good fit for the two plots on the left.
31) L59: Replace “TR12” with the actual details of the treatment.
32) L60: Delete “GI”.