**Response to reviewer 1 comments**

Reviewer #1:

This paper demonstrates a risk-based evaluation of six agronomy decisions for rice and wheat planting strategy in Indo Gangetic Plains. The spatial representation of the result is interesting. However, more details on the reasoning behind key decisions need to be added. The introduction needs to be re-organized and the research objectives need to be clearly described. Also, an entire discussion section is not included. Especially, the authors need to discuss how their suggested approach is compared with the existing ones and what their limitations are.

Response: We thank the reviewer for the comments.

On re-organization and objectives, we have added an objective statement in the first paragraph.

We have now included a separate discussion section which includes a discussion of the limitations of the proposed approach and future research.

We have also compared our approach to the mean-variance and conditional value at risk approaches which are the competing outcome-based risk analysis methods. Our approach does not allow for a diversified portfolio of robust outcomes unlike the other approaches.

Specific comments are shown below.  
1. The authors describe two studies that use gridded crop simulations for IGP to investigate the impact of different rice planting strategies (L70-L73). They also mention that the re-evaluation of results from Urfels et al., 2022 is used to demonstrate the need for incorporating risk (L81-L83). It is unclear that why the authors only select to re-evaluate just the Urfels' work, and not the Montes', or both.  
The citation is also inconsistent: Montes et al., 2023 (L86) vs. Montes et al. 2022 (L70). Please check and correct.

Response: The gridded crop simulations in Urfels and Montes are the same. The difference is that in Montes only Bihar is cropped out of the IGP for the specific contribution in that paper.

Thanks for pointing the inconsistency in the years for the citations. We have edited the text accordingly.

2. Incorporation of farmer risk-aversion is not a new idea. The authors need to elaborate on what this study addresses. For example, spatial risk assessment has also been demonstrated in Hudley et al., 2018. Please explain why it is necessary to consider "a rice-wheat multi-crop system" instead of the one that focuses on "maize only (L113) as in Hudley's study", and why "pairwise comparisons" (L114) alone is insufficient?

Response: We thank the reviewer for the response. We indeed agree that it is not a new idea but in the context of crop growth modelling, except for Hurley et al (2018) there is a dearth of literature that provides decision support from crop growth results that takes into account risk aversion. We have emphasized throughout the paper that we have followed the approach of Hurley et al (2018) and our paper is probably the only second paper which uses this approach in the context of agricultural risk analysis.

The added value of a multi-crop systems analysis is that the decision may be optimal in one crop but not in the other crop. That is why we have presented sets of results for rice, wheat and rice-wheat system to showcase how farmer prioritization of the crop may also alter the strategy they can choose.

On pairwise comparisons, we have only added the aspect of choosing the strategy that gives the maximal gains among the pairwise comparisons. This adds value in pinpointing not just the dominant strategies but also the one that is most profitable.

3. The key idea of this study needs to be explained clearly. The authors only state that they "follow the approach proposed by Hurely et al., (2018) to estimate willingness to pay bounds" without providing any contexts on what willingness to pay bounds are. Additionally, the methodology is also unclear. Figure 1 does not show the four parameters included in the main text (L164-L174) and note (L177-L180).

Response: We thank the reviewer for this comment. We have added additional text to explain the reasoning behind the approach.

We think showing these parameters in the graph will make it look cluttered. These parameters were hypothetically chosen to demonstrate the methodology.

4. After the results section, the discussions are moved to "recommended rice planting date strategy per grid cell" directly. More discussions need to be included. For example, please discuss how incorporation of risk improves the evaluation results and what limitations of your proposed approach are.

Response: We thank the reviewer for this suggestion. We have now included a separate discussion section and explained the differences between our risk based approach and the average caloric yield approach in the prior works (Urfels et al 2022).

On the questions of limitations, we have now included a limitations and future research section with four limitations including computational burden, failure to provide diversified optimal portfolio,e.t.c.

Minor comments  
1. L206-L209: The authors need to better explain what the baseline scenario is.

Response: We have added edits to reflect that fixed long (S1) was considered the baseline scenario.   
2. The authors should keep the expression of units consistent throughout the manuscript. For example, "tons/ha" (L175), "ton/ha" (L246), and "t/ha" (L267) are used for the same unit.

Response: We have revised the text accordingly.

3. Figure 2 and Figure 3: it is suggested to add "S1", "S3", "S4" and so on into the figure as annotations to help readers find the corresponding information more easily in Table 1. Please also keep the image size within each grid consistent (a-f) and place the legend elsewhere beside the entire image. A compass for indicating the direction is also missing in the map. Some texts in the figures are also truncated.

Response: We thank the reviewer for the suggestion. We have reproduced all the figures in the paper following this advice. Our inclusion of the latitude and longitudes helps the reader know the compass.