**System portfolio optimization for rice planting strategies in Indo-Gangetic Plains**

# Abstract

Gridded crop simulations on rice planting dates have demonstrated which locations would benefit from specific strategies e.g., planting long duration variety with monsoon onset. This means that only one strategy is proposed for a particular location. In this paper, we explore if multiple strategies can be proposed with the optimal mix guiding whether that strategy should be promoted for that location. We use a mean-variance portfolio optimization quadratic programming model to propose robust strategies for different locations.

# 1. Introduction

# 2. Approach

Using system partial profits for each strategy and each pixel, we use a quadratic programming model to minimize risk for maximum returns across the years. The optimal weights are then the mapped to identify which strategies should be prioritized for each of the pixels.

# 3. Results and discussion

# 4. Conclusion

# References