

# Review of: "Artificial Intelligence & Nature-Based Solutions in Agriculture: A BT Cotton Pest Management Case Study in India"

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Potential competing interests: No potential competing interests to declare.

Overall, this is a well-written and informative case study on the use of artificial intelligence (AI) for pest management in cotton cultivation in India. The authors have done a commendable job in presenting the details of the AI-based pest monitoring and advisory system developed by the Wadhwani Institute of Artificial Intelligence (WIAI).

## Strengths:

1. The document provides a comprehensive overview of the biology and life cycle of the key cotton pest, the Pink Bollworm (PBW), which is crucial for understanding the rationale behind the AI-based intervention.
2. The pilot studies conducted in Karnataka and Maharashtra demonstrate the practical application of the AI-based system and its potential benefits in terms of increased yield, improved crop quality, and higher farmer incomes.
3. The discussion on the limitations of the AI-based approach, such as the need for manual trap monitoring by farmers, and the comparison with other competing technologies like mating disruption and mechanical IPM advisory, adds depth to the analysis.
4. The acknowledgments section highlights the collaborative nature of the research, involving various stakeholders from academia, industry, and civil society organizations.

## Areas for improvement:

1. The document could benefit from a more structured presentation, with clearer delineation of the different sections (e.g., introduction, methodology, results, discussion, conclusion).
2. While the authors have touched upon the potential impact of AI on labor displacement, a more in-depth discussion on this aspect would be helpful, considering the importance of this issue in the Indian agricultural context.
3. The inclusion of more quantitative data, such as the cost-benefit analysis of the AI-based system compared to the traditional approach, could strengthen the case for its adoption.
4. The document could be further enriched by exploring the potential for integrating the AI-based pest management system with other precision agriculture technologies, such as remote sensing, farm sensors, and automated spraying drones.