

## JyoSH AI: Revolutionising Cotton Farming with Robotics and AI

Discover how JyoSH AI Solutions is transforming cotton farming in India using robotics and AI to boost yields and sustainability.

Friday May 23, 2025



In the heart of India's agrarian economy, where cotton is hailed as "white gold" yet marred by inefficiencies and economic distress, JyoSH AI Solutions Pvt.

Ltd. emerges as a game-changer. Founded by Dr. Sharadchandra Lohokare, JyoSH is redefining cotton farming through the power of artificial intelligence, advanced robotics, and a deeply personal mission.

### From Personal Loss to National Mission

Dr. Lohokare, a seasoned technocrat with over 35 years of experience in mechatronics and software engineering, left his senior corporate role to address a profound agricultural crisis and to honour his late wife, Jyoti. The startup's name, JyoSH, is a blend of Jyoti and Sharad, symbolising a personal tribute transformed into a mission to uplift millions of Indian farmers.

### Addressing Cotton Farming's Core Challenges

India's 5.8 million cotton farmers contend with a daunting mix of high cultivation costs, chronic labour shortages, and the environmental toll of excessive chemical use. These pressures culminate in staggering annual losses estimated at \$11 billion. Despite the scale of cotton farming, spanning over 12 million hectares, mechanisation remains limited, largely confined to basic soil preparation, while the rest of the process remains manual and inefficient.

JyoSH AI Solutions confronts these entrenched issues through its flagship innovation: the Integrated Agriculture Robot. This semi-autonomous electric vehicle integrates intelligent seed sowing, AI-powered weed and crop health monitoring, and a patented cotton harvester tailored for Indian conditions. By reducing cultivation costs by up to 60% and cutting chemical usage by 80%, the JyoSH Robot enhances profitability and supports environmental resilience.

Founder Dr. Sharadchandra Lohokare's ethos reflects hard-earned insight: "Conduct deep market surveys. Don't build in isolation. Network, collaborate, and always listen to the end user."

## **A Unique Tech-Driven Agritech Solution**

What sets JyoSH apart is its holistic, AI-driven approach:

- Computer Vision identifies weeds, pests, diseases, and ripened cotton bolls.
- Edge Computing powers on-field AI decision-making.
- Advanced Robotics ensures precision in spraying and harvesting.
- Custom AI/ML Models adapt the system for various cotton species and cultivation practices.

The modular and scalable design also makes JyoSH adaptable for other crops, paving the way for future diversification.

## **Business Model and Market Potential**

Operating across B2B, B2C, and CCAS (Cotton Cultivation As a Service) models, JyoSH targets both large-scale and marginal

farmers. An Android app connects smallholders with nearby robots, democratizing access without the burden of ownership. With an estimated requirement of 600,000 agri-robots in 15 years, the potential market value touches Rs. 60,000 crores.

## **Backed by Recognition and Partnerships**

JyoSH's journey is already decorated with key milestones: five proprietary products developed in under four years, LOIs from multiple FPOs, and strategic incubations at SINE IIT Bombay, Venture Center, VJTI TBI , TIH Foundation and AIC RMP, collaboration with PDKV Akola for agriculture domain knowledge. It has won accolades from the NASSCOM Deep Tech Club, AgrilIndia Hackathon, Maharashtra Innovation Society and TATA IIM Kolkata as one of top 50 social enterprises in India. .

## **Looking Ahead**

JyoSH aims to solidify its footprint in Maharashtra, Gujarat, and Telangana in the short term, targeting Rs. 50 crores in revenue within three years. Long-term plans include expanding to other crops and entering international markets, particularly in the APAC, Africa, and eventually the U.S.

The social impact is equally ambitious: doubling farmer incomes, minimising environmental harm, fostering rural employment, and empowering women through operator-friendly technology.