



Cornell Sathguru Foundation
for Development



Improving Employment and Livelihood Opportunities in Agriculture through Drone Technology (Project EOD)

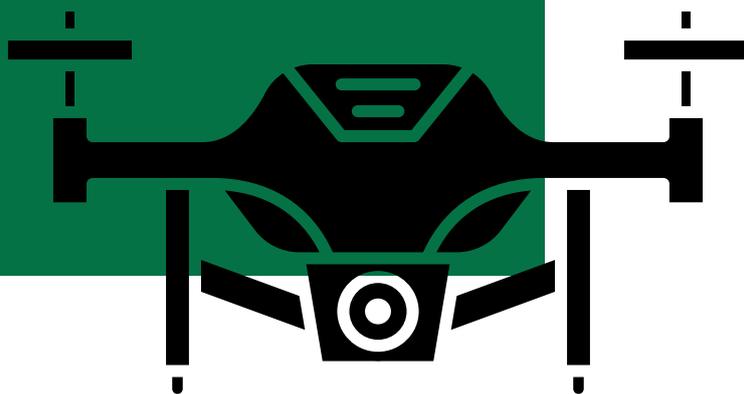
Cornell Sathguru Foundation for Development (CSFD)

Project Location

Telangana - (9 districts) Warangal, Adilabad, Nalgonda, Nizamabad, Hanamkonda, Mahbubnagar, Asifabad, Medak, and Jangaon

Project Timeline

2024 - 2025





Drone Services Inaugurated in Warangal by Smt. Susheela Chintala, CGM – NABARD

Background

India, as an agrarian economy, depends heavily on agriculture for sustaining rural livelihoods. However, the sector faces two critical challenges: the migration of rural youth to urban areas in search of employment, and the lose interest and slow adoption of modern technologies in farming. This growing disconnect threatens both food security and the future of agriculture in the country.

One promising solution lies in agricultural drone technology. Drones offer precision farming capabilities that can enhance efficiency, reduce input costs, optimize water use, improve soil health, and build resilience to climate change. Despite this potential, Telangana currently has only around 300 trained drone pilots, highlighting a significant gap in skilled manpower.

To address these challenges, it is essential to retain youth in agriculture by equipping them with the skills and opportunities to thrive in the evolving agri-tech landscape. Training rural youth as drone pilots can transform agriculture into a more profitable and sustainable career path while also promoting environmental stewardship.

Cornell Sathguru Foundation for Development (CSFD), with financial support from NABARD and technical partnership of National Institute of Plant Health Management (NIPHM) has launched a pioneering initiative to promote drone-based agriculture and livelihoods across nine districts of Telangana.

Project Aim

To leverage drone technology for agricultural transformation, creating sustainable livelihood and employment opportunities for rural youth.

Objectives

- 1.To enhance rural employment and income generation by establishing FPO-level drone hiring centres across 15 FPOs in nine districts.
- 2.To promote environmental sustainability through the adoption of precision agriculture practices and advocacy climate resilient practices.



Trainees Attending the Drone Pilot Training

How CSFD Achieved

Skilling Rural Youth

- Identified and mobilized rural youth from FPOs across nine districts in Telangana. Selection was based on interest, minimum educational qualifications, and entrepreneurial intent.
- In partnership with NIPHM, conducted a DGCA-certified 12-day training program, equipping youth with skills in remote flying and entrepreneurship.

Facilitating Access to Finance and Drone Procurement

- Assisted in preparing Detailed Project Reports (DPRs) to secure financing from banks.
- Supported applications under the Agriculture Infrastructure Fund (AIF) for 3% interest subsidies.
- Guided FPOs and youth in the selection and purchase of suitable drone models.
- Facilitated the establishment of FPO level drone hiring centers, standardized pricing for spraying, pilot commissions, defined booking procedures, and streamlined operational workflows

Deployment and Awareness Generation

- Raised awareness among farmers about the benefits of drone spraying—including enhanced efficiency, reduced input costs, and improved precision.
- To improve marketability organized drone launch and demonstration events in all participating districts.
- Enabled service bookings through FPO-led systems for hiring services.

Livelihood and Enterprise Development

- Enabled FPOs to generate revenue by establishing drone hiring centres and offering drone-based agricultural services to farmers.
- Supported rural youth to earn livelihoods through placements of trained pilots with agri-input and seed companies.

Monitoring and Mentorship

- The CSFD team conducted regular field visits and provided continuous mentorship to drone pilots and FPOs.
- Assisted with operational troubleshooting, field deployment, and documentation processes.

Project Impact



30% increase in FPO profit



Youth earning ₹25,000-30,000 through drone piloting



90% reduction in water use



15%–25% reduction in chemical usage



22,000 acres covered through drone spraying



10,500 shareholders and 9,000 farmers reached



80%–90% time savings in spraying operations



Reduced labor dependency, improved farmer health, and promoted biodiversity

*Impact for one season

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Project Execution



Financial Partner



Technical Partners



Mentoring Partner



Financial Inclusion Partner



Sri Kadiyam Srihari, Hon'ble MLA of Ghanpur, flags off drone services in Jangaon



FPO Members Commence Drone Spraying Activities

Transforming Rural Livelihoods: The Impact of Drone Technology on Kangal FPO

"The drone business has doubled my FPO's income. What we earned year-long through input and paddy procurement, we achieved in just six months with drone services," Anumula Sudhakar Kangal CEO of FPO.

Integrating drone technology has diversified the income sources of the Kangal Farmer Producer Organization (FPO), impacting farmers in Nalgonda. With the support of the Cornell Sathguru Foundation for Development (CSFD), Kangal FPO's CEO, Anumula Sudhakar, underwent DGCA-certified Remote Pilot Training (RPTC), enabling him to lead a pioneering initiative in agricultural innovation.



During the last Kharif and Rabi seasons, and in the ongoing Kharif season, drone spraying operations have covered over 2,700 acres, generating around ₹13.5 lakh in revenue for the FPO. This has resulted in a net profit of ₹7.4 lakh (approximately ₹53,000 per month), effectively doubling the FPO's income potential. Through these operations, Sudhakar has earned a stable monthly income of ₹30,000, showcasing the strong financial empowerment achieved through the adoption of drone technology.

This success story highlights the profound impact of drone technology on boosting agricultural income, diversifying revenue streams, and fostering sustainable livelihoods in rural communities. Kangal FPO is a beacon of innovation, showcasing how emerging technologies can revolutionize farming practices and secure brighter futures for rural farmers.

Empowering Agriculture Through Technology: The Journey of Zaffergadh FPO, Warangal

"I feel proud to contribute directly to the success and growth of my FPO." – Oruganti Ramesh, trained drone pilot.

Following their training, Zaffergadh FPCL, Warangal, secured a loan of ₹7.21 lakh from NABKISAN to purchase a drone from Marut Drones and launched their operations in January 2025.

Over a span of 75 days, he successfully completed drone spraying across 820 acres, generating a total revenue of ₹4 lakh. The FPO recorded a net profit of ₹2.16 lakh, while Oruganti Ramesh earned ₹80,000 as his commission for operating the drone.

This achievement demonstrates how drone technology can strengthen FPO operations, empower members, and open new avenues for income generation. The story of Zaffergadh FPO showcases how innovation, skill development, and commitment can transform rural agriculture, making it more efficient, profitable, and resilient



Impact Stories

Driving Growth Through Innovation: The Story of Nekkonda FPO, Warangal

"We are not just members of the FPO, but active economic contributors to its growth and success." Vanga Ravi Kumar and Varre Ajith – trained pilots.

After completing the training, two drone pilots from Nekkonda FPCL, Warangal, availed a loan of ₹7.21 lakh from the Andhra Pradesh Grameena Vikas Bank (APGVB) to purchase a drone from Marut Drones. They officially began their operations in October 2024.

Within 155 days of spraying, the pilots covered over 760 acres, generating a total revenue of ₹3.8 lakh. The FPO recorded a net profit of ₹2.05 lakh, while Ravi Kumar and Ajith collectively earned ₹76,000 as drone pilots — reflecting the growing potential of drone-based livelihood opportunities in agriculture.

Mr. Bhopal FPO incharge noted that "This initiative has boosted our income and strengthened our community's confidence in adopting innovative farming practices."

This remarkable success highlights how drone technology can drive FPO growth, empower members, and create sustainable livelihoods. The Nekkonda FPO story underscores the transformative power of technology, showing how determination and innovation can revolutionize rural agriculture and foster economic resilience.



Breaking Barriers: Introducing Drone Technology while Earning in Rural Nizamabad, Telangana

The Journey of Mankoj Raju and Sri Ganesh Trained pilots – Kedareswara Nandipet FPO Despite low awareness and skepticism about the viability of drone technology in rural villages, the Kedareswara Nandipet FPO and its trained pilots, Mankoj Raju and Sri Ganesh, did not stop from embracing innovation.

To address concerns about the return on investment and build trust in the technology, CSFD facilitated employment for the two pilots at Coromandel International, ensuring they remained actively engaged in their profession while creating awareness about drones among local farmers.

Since joining Coromandel, Mankoj and Sri Ganesh have sprayed over 2800 acres of farmland, earning a stable monthly salary of ₹32,000 each. Their work not only provides them with a livelihood but also demonstrates the practical benefits of drone technology to farming communities.



By bridging gaps in awareness and trust among farmers, FPO is gearing up to invest in drones, paving the way for higher incomes and a tech-driven future in farming.

Empowering Rural Entrepreneurs: Soaring Above Challenges

Hari Kiran and Dattatri Journey

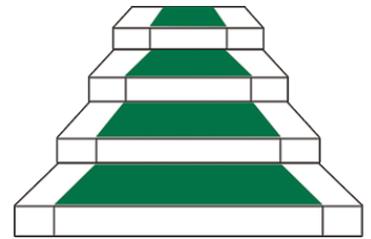
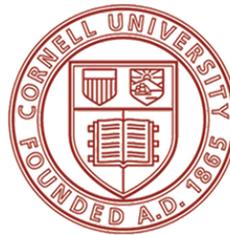
Hari Kiran and Dattatri, trained pilots from the Ekachakrapura Bodhan FPO, Nizamabad, have turned obstacles into opportunities using innovative drone technology. Certified under the CSFD and NABARD drone project, their journey exemplifies resilience and a drive to transform their community through self-employment and agricultural progress

Their entrepreneurial venture began with the ambitious step of leasing a drone for ₹25,000 per month. However, unforeseen challenges in the leasing process led to the drone being reclaimed. While many might have viewed this as a stopping point, Hari Kiran and Dattatri saw it as an opportunity to innovate



Determined to continue, they collaborated with local drone owners, adopting a commission-based model. Earning ₹150 for every acre sprayed, their hard work and determination paid off. They had successfully sprayed over 1450 acres, earning an impressive ₹2,17,500 in commissions in 2 seasons.

Hari Kiran and Dattatri's story is more than a tale of personal success—it is a powerful example of how technology and determination can overcome adversity to drive economic growth in rural areas.



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