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TRANSFORMING RICE PRODUCTION: IMPACT OF A ONE-WEEK TRAINING PROGRAMME ON MECHANIZATION & POST-HARVEST TECHNOLOGY

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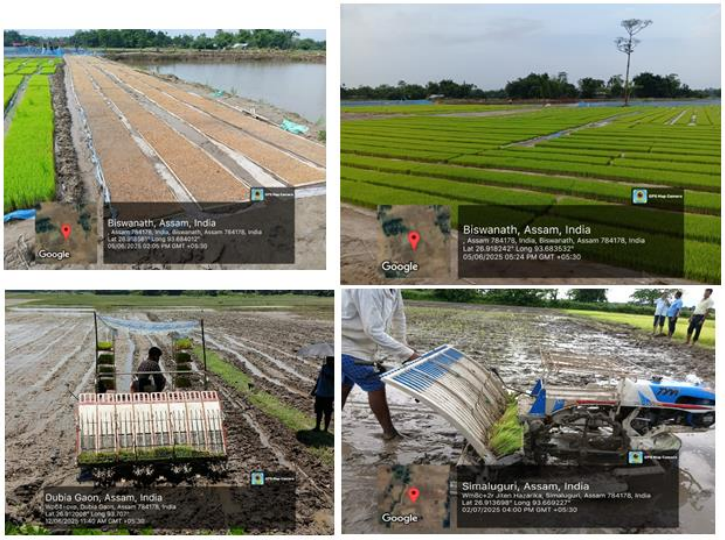
Mechanization is an essential input in modern agriculture to enhance productivity, reduce human drudgery and also the cost of cultivation. The use of efficient machinery also helps in improving the utilization efficiency of other inputs, safety and comfort of the agricultural workers, improvements in the quality and value addition of the produce. Keeping this in line a one-week(1st-7th April 2025) training program on Rice Mechanization and Post-Harvest Technology was organized by the Department of Agricultural Engineering, Assam Agricultural University Jorhat with funding provided by the Government of Assam. The training targeted 26 participants from the INS Trust (GNRC Foundation), comprising office bearers and farmers, with the primary goal of doubling farmers' income in Dubia, Biswanath District, through the adoption of mechanization.

The training programme on Rice Mechanization and Post-Harvest Technology was a comprehensive initiative to enhance participants' skills in modern rice cultivation and processing. On the first day, Dr. Pankaj Barua and Er. Manasjyoti Barooah conducted pre-training evaluations and interactions, followed by Dr. Rintu Saikia's practical session on machine safety and hands-on training with equipment like tandem disc harrow, rotavator, and cultivator, led by Er. Nipen Gogoi. Day two focused on using laser-guided land levelers for uneven fields, with theory sessions by Dr. Saikia and Er. Barooah on land preparation, puddling, and mat nursery preparation. The third day included practical sessions on rice nursery preparation and machine use, showcasing engine- and battery-operated paddy transplanters and drum seeders for direct seeded rice, alongside lectures on weeding, intercultural operations, and harvesting-threshing. Day four featured demonstrations of weeding equipment like cono-weeder and Japanese paddy weeder, dry runs of reapers and combine harvesters, and theory sessions by Dr. Abhijit Borah on rice parboiling and milling, emphasizing moisture content and rubber roller benefits. Er. Kaushik Hazarika discussed drying and storage techniques to minimize losses. On the fifth day, participants explored modern and PTO-operated rice mills, noting minimal breakage, with Dr. Milonjyoti Konwar covering direct seeded rice and agronomy. The sixth day included a field visit to FPC, Lahdoigarh, where participants discussed mechanization benefits with FPC president Mr. Bidur Buragohain. The programme concluded on the seventh day with post-evaluations and a valedictory session, with participants expressing gratitude for the successful training, which equipped them with practical and theoretical knowledge to improve rice production efficiency and reduce drudgery.

Glimpses of the training programme

In consideration of the said training programme, the effect that was created way back in Dubia Development Project in Biswanath, Assam was remarkable. As Assam Agricultural University being consultant in the said project, a technical team consisting of 11 member led by Dr. Prasanta Neog looked after the whole programme. Paddy seed bed preparation with the application of mat nursery method was performed for 1500 bighas of land. 2 nos of riding type and 2 no of man behind/walking type transplanter were procured to complete the required transplanting. The whole process of preparation of land and mat type nursery was initiated from may 2025. The farmers highlighted the advantage of mechanical transplanting since it has benefited them extensively. Earlier they would require 4-5 labours in order to transplant 1 bigha of land, but now with the assistance of a transplanter the same area is covered in half an hour. A transplanter can comfortably cover 1-1.5 ha/day of land based on the operator. It was observed that in Dubia project the ride on transplanter can cover a maximum 3.5 ha/day. Drudgery problem has decreased largely because there is no waiting for manual labours which used to be an exhausting work earlier to deal with such a workforce. With mechanical transplanters getting introduced farmers were advantaged to transplant seedlings early(18-20days) compared to 30-35 days old seedlings. They are eagerly anticipating that such scientific practices would give them proper yield and help in managing weed as it is done in line sowing method. They are grateful that such technology would be able to reach their village and the people are being benefitted from the project. The farmers are looking forward to do more next year as horizontal expansion of the technology is on the cards.

"As a farmer, I've witnessed the relentless challenges of farming, especially when floodwaters devastate our fields each year, breaking my heart. I realized agriculture is fraught with risks, and I wasn't willing to endure them indefinitely. This led me to embrace paddy mechanization, enabling early planning and timely transplantation to outpace floods and secure my crops." said by a farmer.



Glimpses of the on field operations of the Dubia project in Biswanath, Assam

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