

Reforming farmers and farming through mechanization

By Upasana Upadhyaya

India has made a mark on a global level in terms of agriculture production as the highest producer of many crops like cereals, pulses, and oilseed, etc., after the Green Revolution, which marked a transition from traditional agriculture to introduction of mechanization and high-yielding varieties, etc. With the ever-growing population, Indian farmers constantly strive to increase their production; but consistent challenges include the increasing cost of production and lack of exposure, among others. These factors make farming non-remunerative and less productive. Farm mechanization means the use of appropriate machines in agriculture in lieu of traditional approaches.

Agriculture has been described as a core competence of Bihar, which is endowed with fertile alluvial soil as it lies in the river plains of the basin of Ganga. However, given its abundant natural resources, agriculture here is plagued with numerous and well-known constraints, resulting in most of the small and marginal farmers moving from the state in search of better job opportunities. Even though some farm machines are available at subsidized rates, a lack of awareness and information about improved farm practices among the marginal farmers' results in the machines being confined to use by large farmers only. With the increase in migration, the labor costs tend to be high, which results in high expenses for a farmer at harvesting. Here the reaper comes to the rescue, saving time and reaping as much as approx ten acres per day as compared to manual labor.

Based on its intensive experience of working with farming communities, S M Sehgal Foundation, with financial support from Pi Foundation, initiated a two-year project in Samastipur, Bihar, called *Kaushal Krishak*.

Shiv Kumar from Ladaura village, Samastipur district, Bihar, is a small farmer with two acres of land where he cultivates paddy, wheat, and sometimes seasonal vegetables. Shiv had previously purchased a tractor on loan for farming. He harbored a zeal to move out of the traditional methods and use farm machinery, but the high costs and processes involved prevented him from doing so. Shiv became acquainted with the reaper in a



community meeting held by Sehgal Foundation. A reaper is a tractor-mounted machine used for crop-cutting. Its use reduces the demand for labor, saves time, and reduces the cost of harvesting. A bit wary of investing money, Kumar was encouraged by the team and provided with a reaper with a contribution of Rs. 20,000 in 2018. Shiv decided to opt for farm mechanization and entrepreneurship and he rents his machine to fellow villagers charging Rs.1,000 per acre.

Shiv says, "I managed to reap 150 acres of crops in a span of fifteen days and earned almost Rs. 160,000." He shares his reaper machine with nearby villages as well and charges Rs. 1,200 to harvest one acre. When the crops are ready for harvesting, there is huge demand of manual labor. Occasional laborers do not take cash but instead charge 10 percent of the total yield against one acre harvesting as wages. Along with the labor cost, the dearth of laborers also acts as a hindrance since most laborers tend to migrate to other places during harvesting time.



Praveen Kumar, from Babupur, Warisnagar, who also benefited from Shiv Kumar's reaper that helps gather the crop, was able to harvest twenty-five acres of his wheat crop. He shares, "It saves time, reduces drudgery, and prevents us from toiling in the hot weather." Krishna Thakur, who harvested five acres of his crop adds, "The work is fast, and we do not have to wait for the laborers."

The economics as shared by the farmers indicate that the reaper use costs them Rs. 1,000–1,200 per acre (average time taken to harvest one acre is one hour), whereas manual harvesting takes about ten laborers for one acre, each to be paid Rs. 250 per day. Besides cost savings, use of a reaper mitigates risk. Praveen says, "Weather has become unpredictable nowadays with parts of Bihar also receiving hailstorm. Since manual harvesting takes a lot of time, there is a greater risk. Also, there is a dearth of laborers here."

Farm mechanization is revolutionizing agriculture in many ways. There is curiosity and demand for farm machinery. From the four reapers provided under the project, about 150 farmers have benefited and 360 acres of wheat harvested. There is more demand as a majority of farmers still do not have access to the schemes and

subsidies available for farm machinery. The team at Sehgal Foundation conducts regular community meetings, provides information, and addresses farmers' queries over a toll-free number to bridge the low level of awareness and build their capacities to accept and adapt mechanization.

(Upasana Upadhyaya is working with Sehgal Foundation as an Ideosync UNESCO Information Fellow)