

IMPACT



The impact of direct milk procurement from dairy farmers in Bihar

The impact report delves into the findings of a direct farmer procurement model pilot conducted in the village of Chiranjeevipur in Bihar by Osam.

Overview of Osam as a Dairy Company

Osam Dairy ('Osam') is a vertically-integrated dairy business operating in eastern India. Osam sources, processes, and markets milk and milk products in the states of Jharkhand and Bihar. The company procures 100% of milk from ~22,000 small dairy farmers via a network of village collection centers managed by agents called Dairy Promoters. Through this procurement process, Osam integrates these smallholders into a formal network of dairy supply-chain and enables them to have a sustainable income throughout the year.

This report explores the impact of direct milk procurement on farmers. Through a pilot in the village of Chakka Chiranjivipur in Begusarai, Osam has started direct milk procurement from farmers since February 2020. The report delves into the direct procurement process and lays out the way milk procurement is done and how it impacts the income and livelihood of a smallholder and farmer through a sustainable business model.

Context of Bihar and Osam's milk collection process

With a significant percentage of India's rural population being dependent on subsistence agriculture, the daily aggregate income does not meet the daily requirement of expenses. Consequently, the rural smallholder/farmer settles on animal husbandry and cattle rearing for additional income. In the state of Bihar, a majority of these dairy farmers earn less than USD\$1.5 per family member. The dairy farmers are paid on a periodic basis (generally a 10 day payment cycle) by the dairy processor through a village level middleman. However, with a mutated credit-based milk procurement system, the dairy farmers face a substantial risk of getting trapped in credit cycles and payment delays.

Content

1. Overview
2. Bihar and Osam's milk collection process
3. Milk procurement process
4. Tenets of the new procurement model
5. The technicalities of the new procurement model
6. The impact of the new procurement model
7. The Covid-19 Crisis & Osam Dairy at Chakka Chiranjeevipur
8. Way Forward

India's dairy policy is built upon a co-operative framework under which milk is produced by millions of small dairy farmers (each of whom 2-3 milch cattle) and the milk processors then procure the milk on a daily basis from the dairy farmers.



This risk gets further augmented when the farmers are women or illiterate.

Osam dairy is established on the guidelines of the co-operative structure of the white revolution in India. As a privately owned dairy company, Osam establishes dairy promoters (DPs) in villages in the state of Bihar, who work as the primary buyers and collectors of milk from the dairy farmers in respective villages. Hence, the connection of the dairy farmers and Osam is a secondary one. This enables leakages in this model of procurement which manifests as delayed payments, credit traps, and unethical milk measurement processes. Additionally, demand for ethically sourced milk creates a conducive environment for direct milk procurement from dairy farmers which can avoid these leakages.

Osam is a vertically integrated dairy company which procures milk from dairy farmers through village level dairy promoters.

Singh, M. and Joshi, A.S. 2008. Economic analysis of crop production and dairy farming on marginal and small farmers in Punjab. *Agricultural Economics Research Review*, 21(2): 30

<http://www.aercbhagalpur.org/complete%20study/Study%20No.%2043-47/Study%20No.%2043-47/Study%20No.%2044.pdf%20No.%2044.pdf>

Katar Singh. *Rural Development: Principles, Policies and Management*. ISBN 81-7036-773-5. Retrieved 24 April 2017.



Osam's conventional milk procurement

Osam is a vertically integrated dairy company which procures milk from dairy farmers through village level dairy promoters.

- Osam collects milk from 20K+ smallholder dairy farmers in Bihar
- Farmers deliver milk twice per day to one of Osam's 500+ collection centers
- The collection center is managed by a company agent called a Dairy Promoter who is responsible for aggregating milk volumes on a commission-basis
- The DP measures the milk mass, fat and total solid content and determines a price per kg using a rate card
- Farmer data (quantity, TS content, payment due) are logged by the Dairy Promoter
- Company hires transport vehicles to collect milk from collection centers across transport routes twice per day and transport it to a chilling plant
- At the chilling plants, company tests quality and measures volumes and determines cash due to each DP
- The company sends cash to the DP every 10 days which he then withdraws from the bank and pays cash to the farmers

Osam's existing model of procurement relies on the dairy promoters to nurture the network of farmers to invest in better cattle feed and technology to progressively increase income from milk sales.



Tenets of the new procurement model

The basic tenets of the direct farmer procurement are

1. Purchase of milk directly by the Company from the farmer and not through the middleman ie Dairy promoter;
2. Daily payment to the farmers directly to their bank accounts
3. Making banking services available for the farmers through a bank (Airtel Payment Bank) network to withdraw and deposit cash

How it works:

The procurement process involved:

- Osam's representative visited the respective village and reached out to farmers individually to understand concerns and receive suggestions
- Osam rented a place in the village where the milk collection process could take place. We then organised a meeting with all the farmers in the village.
- We then finalised a centre operator (who would operate the milk collection machine and operate the centre on behalf of the Company) and payment partner after consulting with the farmers.
- Each farmer is provided with a unique card. The farmer comes to the centre and swipes the card for identification. The centre operator measures the weight and total solid content in the milk through a sensor-based milk analyser machine.

The data is automatically collected through a cloud based automatic milk collection system and the amount due to the farmer is immediately flashed through a Visual Display Unit and the information is also send to the mobile number of the farmer through SMS. The information is stored in the Company cloud for accounting and payment process;

- The payment is processed immediately after the receipt of milk and is reflected in the farmer's bank account within 24 hours.

There is in fact a backward integration of the Company cloud based real time accounting system and the bank's payment system. On receipt of the milk and the determination of the amount due to the farmers the money is automatically debited from the Company's bank account and is transferred to the farmer's bank account. The farmer can withdraw the cash whenever they need at the centre or through the payment partner through AADHAR(UIDAI) enabled payment system.

- Company hired transport to collect milk from the collection center and transport it to a chilling plant.



The technicalities of the new procurement model

For the pilot, we compared several metrics of farmers of Chakka Chiranjeevipur village within the two procurement models over a period of one month.

Metric	Conventional Procurement April - May 2019	Direct Farmer Procurement April - May 2020
Daily Milk Poured	386.3 litres	596 litres
Farmer Network Size	25 Total 21 Active	78 Total 44 Active 34% women farmers
Average Pay-out per farmer	391 INR	574 INR
Farmers using Unified Payment interface	NA	34%

We can observe the willingness of farmers to pour milk at Osam's milk collection centre rose by 54 percent with the direct from farmer milk procurement model in comparison to the conventional dairy promoter model. (See Table row 1) Qualitative surveys comprehensively tell us that the experience of selling milk directly to Osam ensures a better service and transparency of milk quality check standards.

Similarly, we can see a significant gain in numbers of farmers in the direct farmer procurement model. It is important to note here that the data representing the conventional model was after 12 months of commencement whereas the data for direct farmer model was after 2 months of commencement of the village

Osam conducted a pilot to procure milk directly from its farmer network in Chakka Chiranjeevipur village in Begusarai district of Bihar. The duration of the pilot study lasted for 60 days. The village was chosen for its proximity to the nearest bulk milk cooler(BMC).

The impact of the new procurement model

collection centre. The growth of the direct farmer payment model can be attributed to the credit traps and delay in payment to farmers by existing conventional procurement channels.

Increasing participation of women farmers with the direct farmer procurement model shows that transparency and daily payment has encouraged women farmers to take an active role in the management of funds from milk sales. Qualitative interviews tell us that this has significantly helped the intra-household monetary decision making process.

The farmer payment data reflects that the average payment to farmers increased by a significant 46.5 percent with the direct from farmer procurement model. This could be attributed to the mitigation of leakages through transparent and correct quality checks of fat and solids in milk.

Approximately 90% of the farmers have successfully adapted the digital payment structure system that enables Osam to pay these farmers every day. With an integrated banking system that has accessibility options both on feature phones and smartphones, the easiness of cash transfers has enabled and incentivised farmers to sell more milk at Osam's village-level collection centre. Qualitative interviews tell us that even though cooperatives had attempted for digitised payments, farmers needed to go to the bank to withdraw cash which worked as a counterproductive measure for farmers who have to go to work every day and could not go to the bank to withdraw cash.

Women farmers report that money spent by their husbands on leisure activities are now being spent on health and education due to the direct cash transfer into the bank accounts.

The impact of the new procurement model

The integrated payment system through Osam's direct farmer procurement model comes to the dairy farmers as a unique experience. **Before Osam, no other private or cooperative dairy company had ever made any banking facilities available for farmers in the village of Chakka Chiranjeevipur and a meagre 5% of the dairy farmers even had any knowledge regarding direct account payment** and access through mobile application/ USSD(Unstructured Supplementary Service Data) service. However, most of the dairy farmers in the village of Chakka Chiranjeevipur are now aware of the direct payment system as well as the savings and free insurance instrument that comes with it.

In addition to the increased income level of the farmers through dairy farming, the system also enabled:

- a) The farmers to become part of the formal banking network. The farmers will have a much better chance of accessing bank credit than before because their regular income stream is now being formally reflected in the banking system;
- b) The farmers get interest on the money kept in the bank account which not only increases his income but also incentivises him to save more;
- c) The farmers get free insurance between Rs 1 to 5 lacs on opening of bank accounts. The farmer is now experiencing how modern financial instruments such as insurance can help in mitigating risks,

The willingness of farmers to pour milk at Osam's collection centre increased by a significant 54 percent with the direct farmer procurement model

The Covid-19 Crisis & Osam Dairy at Chakka Chiranjeevipur



With the onset of COVID, as early as on the 22th of March, OSAM had issued advisory for all its dairy promoters and farmers to adhere to social distancing norms and to maintain the highest standards of hygiene.

For the village of Chakka Chiranjeevipur, Osam issued a special advisory for the centre operator to strictly maintain the operational hygiene through social distancing.

Osam did not default on a single payment cycle to its farmers of Chakka Chiranjeevipur.

And, the payment for the farmers were processed every five days directly to the dairy farmers directly in their bank accounts.

Even though the demand shock due to COVID-19 was very rapid, **Osam did not let it trickle down to negatively affect the procurement prices of farmers during the critical point of demand crisis in March.** Osam continued to procure the full and surplus amount of milk from the dairy farmers of Chakka Chiranjeevipur. Osam had to eventually drop the prices by 2.5 rupees for 9 days from April 3rd 2020 to April 11th 2020,

which was a response to stabilise the ongoing drop in demand and spike in milk collection. However, as soon as the market demand condition got better, Osam immediately shifted the prices back to normal for the dairy farmers of Chakka Chiranjeevipur.

Way Forward

The pilot showed that Osam's direct farmer milk procurement model is helping farmers get better and ethical milk procurement prices. The metrics show that the model increased transparency and accountability of the dairy company in front of its farmer network. The reach of technology through superior collection and payment services is higher with the direct farmer procurement model. The qualitative interviews comprehensively tell us that the transparency in quality checks combined with the daily direct to bank transfer payment system is the greatest value proposition that Osam has to offer.

Qualitative Interview Snippets:

"I was surprised at first about how a dairy company could pay us before selling the milk. Usually we have seen 10 days to 17 days payment cycles but never a daily payment cycle. The supervisors from Osam helped me set up my account and taught me how to operate and see my balance. They also helped me set up nominee details for the free insurance of 5 lakh rupees. **Earlier, we never got to see proper milk quality testing regularly and now with Osam, we get both the testing and the payment directly in my bank account.** "

- **MANJU DEVI, OSAM DAIRY FARMER**

"With rising inflation, it is hard to meet daily needs without taking credit. To get out of that credit cycle, I somehow managed to convince my husband to start cattle rearing for which I took full responsibility.

However, I could never get the details of the fat and SNF percentages from the cooperatives. They always delayed my payments and I had finally decided to not continue with the cattle rearing business. It was then when two ground representatives of Osam came to my house to have a general chat regarding the milk collection process and payment process. With a daily payment system, I could think of a way through which I could pay off all my credits. After that, I started pouring milk at Osam's centre regularly. Not only do I receive the information regarding my milk quantity and quality but also, I get the payment directly in my bank account."

SWETA KUMARI, OSAM DAIRY FARMER



“My son used to pour milk at a cooperative centre earlier. He could never give me the correct amount that I should receive from the secretary. However, after starting to pour milk at Osam's direct farmer milk collection centre, I am getting SMS alerts of the quality and quantity of milk that my son pours at the centre. **I also received the full amount the next day directly in my bank account which helped me verify the ledger and I even invested the money saved from the milk sales to make a better shed for my cattle this summer.**”

USHA DEVI, OSAM DAIRY FARMER

“My husband works outside of Bihar. It is either my daughter or I who go to the milk counter to pour milk. However, we have rarely seen the dairy promoter quality checking our milk. There was always a difference in the quantity of milk and the promoter never used to pay us in time. He used to avoid us during the payment days. He has never shown us our ledger or paid the full amount even when he pays. With Osam's direct farmer model, the operator now quality checks our milk every shift correctly and writes down the amount to be received in my passbook. **I do not have to go around to ask for my money anymore. The money automatically gets credited into my bank account. This might be a small thing for others but a very significant thing for me being a woman.**”

PINKU DEVI, OSAM DAIRY FARMER

This report has been written by Abhinav Shah, CEO and Procurement Director, Baba Prasad Nath (Senior Procurement Manager) and designed by Sarabpreet Singh(IT Manager) with the help of Mayank Sinha (AVPS Marketing). The design structure is influenced by CDC investment work's Insight Series.