

Four Crops, One Cold Room

A Farmer Producer Company's Journey from Distant Storage to Local Value Addition

From Paying for Storage to Charging for It

Every lemon harvest at Shankarpurwadi began with a journey. The nearest cold storage was 54 km away in Kannad Taluka, so Shamraj Bahadur Farmer Producer Company (FPC) loaded its produce, paid around INR 6,000 to move it there and back, and then paid INR 2 per crate per day to keep it cool. By the time the lemons reached a buyer, the margin had thinned to less than 8%. Each farmer in the FPC held an average of 2.5 acres and grew banana, mango, chilli, and lemon, but the only crop earning anything from cold storage was earning it 54 km away.

The constraint was location, not demand. Value was leaking into transport and service fees before the produce ever reached a market. A cold room on site would close that gap, but it would only pay for itself if it worked across the whole cropping calendar rather than a single crop. Financing was the harder obstacle. Banks were unfamiliar with biomass-based cold rooms and reluctant to lend against a technology they had not assessed before.



With the MCS in place, farmers can now send full loads to the market, confident that unsold produce can be stored for later sales, reducing the need for distress disposal and the risk of transport spoilage

Karbhari Mangate, Director, Shamraj Bahadur Farmer Producer Company, on what changed once produce no longer had to sell the day it arrived

SUGAM-CSS approached it as a business case rather than an equipment purchase. The project team assessed the opportunity, selected a 20 MT biomass-based micro cold room sized to the FPO's aggregate volumes, and made the investment viable through viability gap funding. AEEE drove policy awareness through an SOP handbook and documentation guidance, while market linkage support connected the unit with buyers in Chhatrapati Sambhajinagar.

The 54 km journey disappeared. Lemons are now held on site for an additional 10 to 12 days and released when prices improve. Bananas procured at around INR 8 per kilogram are ripened under controlled conditions and sold at approximately INR 18. And mango, which the FPO does not buy, is ripened for farmers for a fee, turning the cold room from a cost into a service.





By the Numbers: What Year-Round Use Is Worth

Particulars	Banana January – Ripening (9,600 kg 3 cycles ~5 days/ cycle)	Chilli October – Cooling & Storage (234 kg 6 days)	Lemon January – Cooling & Storage (5,000 kg 15 days)	Lemon January – Cooling & Storage (5,000 kg 15 days)
Expenses (INR)				
Procurement	67,200	1,170	90,000	1,11,000
Biomass	1,688	525	1,313	1,313
Labour	6,000	2,400	6,000	6,000
Transport	14,700	1,600	1,600	1,600
Coating/Waxing	-	-	150	150
Total Cost (INR)	89,588	5,695	98,913	1,19,913
Revenue (INR)	1,72,800	2,808	1,23,900	2,22,750
Profit/Loss (INR)	83,213 (48%)	-2,887	24,988 (20%)	1,02,838 (46%)

percentages represent profit margin on revenue

Learning from Operations: While banana and lemon operations generated strong returns, the chilli batch incurred a loss due to the small quantity handled (234 kg), highlighting the importance of achieving sufficient volumes for commercial viability.





Parameter	March (5 days)	April (3 cycles ~5 days/cycle)
Commodity Mix	2400 Kg Mango (Service Model) + 3600 kg Banana (Trader Model)	7200 Kg Mango (Service Model) + 7200 Kg Banana (Trader Model)
Total Quantity Processed	6000 Kg	14,400 Kg
Mango Business Model (Service)	Ripening service (INR 15/crate)	Ripening service (INR 15/crate)
Banana Business Model (Trader)	Purchase at INR 8/kg; Sale at INR 18/kg	Purchase at INR 8/kg; Sale at INR 18/kg
Mango Revenue (INR)	36,000	1,08,000
Banana Purchase Cost (INR)	28,800	57,600
Banana Sales Revenue (INR)	64,800	1,29,600
Biomass Cost (INR)	563	1,688
Total Operating Cost (INR)	32,563	68,888
Profit (Combined Batch) (INR)	34,038 (51%)	66,113 (49%)

percentages represent profit margin on revenue

During April, three 5-day ripening cycles were completed, with 2,400 kg each of mangoes and bananas processed in every cycle. The table presents the combined data for all three cycles (7,200 kg of mangoes and 7,200 kg of bananas).





Impact on Ground

54 km Transport Avoided

Elimination of lemon transport to Kannad, reducing logistics burden

10–12 days

Extra holding time for lemon, enabling better price realisation

49–51%

Consistent profit margin across ripening operations

3 revenue streams

Banana trading, mango ripening service, and lemon and chilli storage



What Made It Work

Cash flow

Blending fee-for-service (mango) with high-margin trading (banana) ensured stable cash flow

Asset use

Strong FPO aggregation and multi-commodity use improved scale and asset efficiency

Market access

Access to the Chhatrapati Sambhajinagar market strengthened demand linkages and improved price realisation

Financing

End-to-end SUGAM-CSS support including VGF, de-risked the adoption of micro cold storage technology

