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6. FPOs and Rural Product Aggregation: A Secondary Data Analysis of Jharkhand's Agricultural Landscape

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Abstract

Background: Farmer Producer Organisations (FPOs) have emerged as a central policy instrument in India's agrarian reform, particularly in states defined by fragmented landholdings, tribal agrarian structures, and thin market linkages. Jharkhand — a predominantly rural and tribal state in eastern India — presents a distinctive and underexamined case for FPO-led rural product aggregation. Despite notable agricultural diversity across cereals, vegetables, fruits, and minor forest produce (MFP), the state's rural producers remain confined to subsistence-level value chains.

Aim: This study aims to analyse the structural distribution, sectoral engagement, and aggregation potential of FPOs in Jharkhand's agricultural landscape using secondary data from authenticated government sources covering the period 2015–2025.

Method: A secondary data analysis was undertaken drawing on records from the Ministry of Food Processing Industries (MoFPI), Small Farmers' Agribusiness Consortium (SFAC), National Bank for Agriculture and Rural Development (NABARD), Reserve Bank of India (RBI) Handbook of Statistics on Indian Economy (2024), Ministry of Agriculture and Farmers' Welfare (MoAFW), and Jharkhand Economic Surveys (2022–23 and 2024–25). Descriptive statistical techniques were applied to examine FPO density per district, CBBO-wise distribution, crop-commodity alignment, production volumes, and infrastructure parameters including cold storage capacity, mandis, and e-NAM linkages.

Results: As of February 2025, 93 FPOs are registered under the Central Sector Scheme (CSS) for Formation and Promotion of 10,000 FPOs in Jharkhand, spanning 17 of 24 districts. Ranchi (9 FPOs), Garhwa (6), and Saraikela-Kharsawan (6) are the most represented districts. Rice, pulses, vegetables, and non-timber forest produce (NTFP) constitute the primary aggregation commodities,

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yet cold storage infrastructure — at 58 units with a capacity of approximately 2.36 lakh MT — is concentrated in peri-urban zones. Against a total annual vegetable surplus of 18 lakh tonnes and fruit production of 12.73 lakh MT, FPO-mediated aggregation remains far below potential. The PMFME scheme has approved subsidies for 9,790 micro-enterprises worth ₹93.64 crore in the state, signalling complementary processing demand.

Conclusion: *Jharkhand's FPO ecosystem reveals a pattern of geographic unevenness, commodity diffuseness, and infrastructure deficits that constrain effective product aggregation. Policy attention toward lagging districts, NTFP-linked FPOs, and cold chain investment is essential for translating the state's agricultural abundance into organised rural market participation.*

Keywords: *Farmer Producer Organisations, rural product aggregation, Jharkhand, agricultural marketing, tribal agriculture, secondary data analysis, value chain*

Introduction

The structural problem confronting Indian smallholder agriculture — defined by land fragmentation, post-harvest losses, information asymmetry, and multi-layered intermediation — has long suppressed the income-earning capacity of rural producers. Farmer Producer Organisations represent a deliberate policy mechanism designed to counteract these structural disadvantages by enabling collective action among primary producers across input procurement, output aggregation, processing, and market linkage.¹ Since the Ministry of Agriculture issued formal policy guidelines for FPO promotion in 2013, and especially since the Central Sector Scheme (CSS) for Formation and Promotion of 10,000 FPOs was launched by the Prime Minister in February 2020 with a total budget outlay of ₹6,865 crore extending through 2027–28, FPOs have assumed an increasingly central position in India's rural development architecture.²

Within this national landscape, Jharkhand occupies a paradoxical position. It is a state endowed with considerable agricultural diversity — spanning three distinct agro-climatic zones, generating substantial production of rice, pulses, millets, vegetables, fruits, and significant volumes of minor forest produce — yet its farm households rank among the lowest-income in the country.³ Per capita income in Jharkhand stood at ₹1,05,274 in 2023–24, placing the state 26th among 28 states in the national per capita income ranking. Total cultivable land in the state is approximately 38 lakh hectares, constituting 48% of the total geographical area, with a net sown area of 28.36 lakh hectares amounting to 36% of TGA, and the major crops cultivated are paddy, maize, and pulses.

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Despite this productive base, market access for rural producers in Jharkhand is hampered by underdeveloped aggregation infrastructure, deep dependence on local traders and intermediaries, and limited collective bargaining capacity among smallholders. FPOs, through product aggregation — bringing together dispersed smallholder output for bulk sale, quality standardisation, and value addition — are theoretically well-positioned to address these constraints.⁴ However, empirical secondary data analysis specifically examining Jharkhand's FPO landscape, commodity alignment, geographic distribution, and infrastructure gaps remains sparse in the published literature. This paper seeks to address that gap through a rigorous analysis of publicly available, government-authenticated data.

Review of Literature

Research on FPOs in India has grown substantially since 2013, when the Government of India issued formal policy guidelines for their promotion. A systematic review published in a leading international peer-reviewed journal in 2025 found that after 2022, dominant research themes shifted toward FPO challenges, impact assessment, digitisation, and sustainability, reflecting a maturing but unresolved policy conversation.⁵ Prior to this period, research concentrated on cooperative models, governance, and institutional capacity building, with limited attention to commodity-specific aggregation outcomes in tribal-dominated states.

On the quantitative trajectory of FPO growth nationally, a study published in The Indian Journal of Agricultural Sciences found that SFAC and NABARD together promoted 3,044 FPOs registered in the country up to 2020–21, with NABARD supporting 71.22% of them and the average membership per FPO standing at approximately 582 farmers nationally.¹ The same study identified that the eastern region, which includes Jharkhand, recorded a compound annual growth rate (CAGR) of 6.17% in NABARD-promoted FPOs, among the highest inter-regional growth trajectories during the observed period. This growth rate, however, began from a low base, meaning absolute FPO coverage in the east — including Jharkhand — remained below national averages.

On the question of aggregation efficacy, research evidence from neighbouring states demonstrates that FPOs can substantially increase procurement volumes when embedded in supportive structures. Specifically, studies document that linking FPO aggregation to networks of educated local youth operating as agriculture entrepreneurs on a commission basis resulted in procurement of maize growing from 1,200 MT in 2020 to 4,150 MT by 2023 within a single FPO in Bihar.⁴

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This finding is directly relevant to Jharkhand, where comparable tribal block structures and SHG mobilisation exist under the JEEViKA mission. However, the same research underlines that FPOs also face persistent operational challenges, including quality maintenance during procurement, arrangement of cost-effective logistics in remote areas, and documentation requirements that prove difficult for member-farmers with low literacy levels.

In Jharkhand specifically, a World Bank-supported study related to the JOHAR (Jharkhand Opportunities for Harnessing Rural Growth) project established that input cost absorption can consume up to 45% of gross farm income when producers operate individually without collective structures, and that baseline findings show the majority of farmers procure productive inputs directly from dealers without any institutional intermediation.⁶ This evidence underscores the degree to which unorganised smallholders in Jharkhand forgo both input-side savings and output-side price gains that FPO membership could provide.

On the question of minor forest produce aggregation — a dimension particularly relevant to Jharkhand — published scholarship has noted the immense but underutilised value addition potential for MFP commodities including mahua, tamarind, chironjee, and honey, which are gathered predominantly by Scheduled Tribe (ST) households.⁹ Jharkhand ranks first nationally in Tasar silk production, yet organised FPO-mediated aggregation of this commodity remains limited to a single FPO as of February 2025.^{10, 11} The MSP for MFP Scheme (Ministry of Tribal Affairs, launched 2013–14), though extended to cover 24 MFP commodities across all states, has not yet translated into a robust FPO-linked aggregation pipeline in Jharkhand.

Agricultural marketing infrastructure constitutes a third strand of relevant literature. Studies on cold storage deficits in eastern India document that Bihar has the third widest fruit and vegetable cold storage deficit of any Indian state, measured as the gap between total demand and existing capacity, with comparable shortfalls expected across the eastern region including Jharkhand.⁷

Research also documents that intermediary dependency among smallholders in low per capita income states — specifically naming Jharkhand, Bihar, Odisha, West Bengal, and Uttar Pradesh — arises partly from structural credit constraints and partly from the absence of post-harvest infrastructure that would allow farmers to hold produce without immediate distress selling.³ FPOs without access to cold chain or storage infrastructure are therefore unable to perform the time-arbitrage function that is central to their income-enhancement logic.

Finally, the governance and institutional design of FPO promotion matters significantly. The CSS 10,000 FPOs scheme designates three implementing agencies — SFAC, NABARD, and NCDC — www.theresearchers.asia

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with an option for states to nominate additional bodies, and places the 'One District One Product' (ODOP) cluster model at the heart of commodity specialization.² Where CBBOs (Cluster-Based Business Organisations) vary widely in technical capacity and sectoral orientation, FPO commodity alignment tends to be diffuse and market linkages weak.⁵

Jharkhand, with 14 distinct CBBOs operating under the CSS as of February 2025, illustrates both the potential and the risk of such institutional plurality.^{10, 11}

Objectives

The study pursues the following specific objectives:

1. To map the geographic and institutional distribution of registered FPOs in Jharkhand as per the latest authenticated government data.
2. To examine the commodity-wise alignment of FPOs with Jharkhand's primary agricultural production profile.
3. To assess the agricultural marketing infrastructure available to support FPO-mediated product aggregation, including mandis, cold storages, and e-NAM linkages.
4. To identify structural gaps and spatial inequalities in FPO coverage relative to the state's agricultural production landscape.
5. To draw policy implications for strengthening rural product aggregation through FPOs in Jharkhand.

Methodology

This study is based entirely on secondary data sourced from authenticated government documents and peer-reviewed publications. No primary data collection was undertaken. The following data sources were utilised:

The Ministry of Food Processing Industries (MoFPI), Government of India published a *State Profile: Jharkhand* in 2025, prepared in partnership with Ernst & Young LLP, which aggregates agricultural production statistics, FPO lists, PMFME scheme data, production clusters, and infrastructure inventories.¹⁰ SFAC published the *State-wise List of Registered FPOs under the Central Sector Scheme for Formation and Promotion of 10,000 FPOs* as on 24 February 2025, which serves as the primary registry of CSS-covered FPOs at the district and block level.¹¹ NABARD's *State Focus Paper 2020–21: Jharkhand* provides FPO promotion data, credit linkage information, SHG digitisation progress, and agricultural finance indicators.¹² The Reserve Bank of India's *Handbook of Statistics on*

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Indian Economy 2024 furnishes GSDP, per capita income, land use patterns, and crop production data.¹³ The Ministry of Agriculture and Farmers' Welfare's *Final Estimates of Crop Production 2023–24* provides crop and horticulture production volumes.¹⁴ The *Jharkhand Economic Survey 2024–25*, tabled in the Jharkhand Legislative Assembly by Finance Minister Radhakrishna Kishor in February 2025, provides current GSDP growth, per capita income rankings, and poverty statistics.¹⁵ The *Jharkhand Economic Survey 2025–26*, summarised by Drishti IAS from the official document, furnishes agricultural GSVA trajectory data.¹⁸ Press Information Bureau releases provide FPO registration milestones and equity grant disbursements at the national level.¹⁶

Descriptive statistical analysis was used to compute FPO counts by district and CBBO, percentage distributions, coverage ratios, and gaps between production volumes and infrastructure capacity. All computations are derived from the above primary government sources. Qualitative interpretation was applied to identify policy-relevant patterns in institutional structure, commodity alignment, and spatial distribution.

State Profile: Agriculture in Jharkhand

Macroeconomic and Agricultural Overview

Jharkhand achieved a Gross State Domestic Product (GSDP) of approximately USD 55.29 billion at current prices in 2023–24, growing at an average annual rate of 9.1% between 2020–21 and 2023–24.¹⁰ The state is projected to grow at 7.5% in 2025–26, driven by the industrial sector alongside agriculture.¹⁰ Agriculture and allied activities contributed about 12.3% of GSVA in 2025–26, with absolute agricultural GSVA growing from ₹28,470 crore to an estimated ₹38,200 crore over recent years, indicating real productivity gains even as sectoral share moderates due to broader economic diversification.¹⁸

Jharkhand has emerged as a leader in pulses production, achieving productivity of 1,060 kg per hectare, surpassing both national and global averages.¹⁰ The state is witnessing a significant expansion in millet cultivation, with the area under millets growing from 20,000 hectares to 90,000 hectares in two years under the Jharkhand Millet Mission Scheme, which has registered 1.77 lakh farmers and provides targeted financial incentives for millet farming.¹⁰ The state has additionally established 88 natural farming clusters across 12 districts under a natural farming initiative designed to produce eco-friendly, chemical-free food.¹⁰

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Crop and Livestock Production Data (2023–24)

Table 1: Key Agricultural Production in Jharkhand, 2023–24

Category	Commodity	Production
Cereal (Kharif)	Rice	1,516 ('000 MT)
Pulses	All Pulses	764.1 ('000 MT)
Coarse Cereals	Millets/Others	597.2 ('000 MT)
Cereal (Rabi)	Wheat	481.1 ('000 MT)
Vegetables	Potato	766.82 ('000 MT)
Vegetables	Tomato	417.76 ('000 MT)
Vegetables	Peas	365.46 ('000 MT)
Vegetables	Cauliflower	297.65 ('000 MT)
Fruits	Mango	530.17 ('000 MT)
Fruits	Jackfruit	199.94 ('000 MT)
Fruits	Guava	101.11 ('000 MT)
Fruits	Litchi	65.92 ('000 MT)
Spices	Ginger	90.59 ('000 MT)
Spices	Turmeric	3.85 ('000 MT)
Livestock	Eggs	10,480 (lakh nos.)
Livestock	Milk	3,025 ('000 MT)
Livestock	Meat	91.06 ('000 MT)
Fisheries	Fish (2022–23)	2.80 (lakh MT)

Source: MoFPI State Profile — Jharkhand (2025)¹⁰; MoAFW Final Estimates 2023–24¹⁴

Total fruit production stands at approximately 12.73 lakh metric tons and total vegetable production at 43.89 lakh metric tons in 2023–24, with the state having approximately 18 lakh tons of high-quality surplus vegetables annually.¹⁰ Jharkhand holds notable national rankings in horticulture: 2nd largest producer of Bael, 4th largest of Litchi and Peas, 6th largest of Jackfruit, and 8th largest of Chillies.¹⁰

Land Use and Operational Holdings

In terms of land use, Jharkhand has a total cultivated area of 12.29 lakh hectares, with a net sown area of 10.25 lakh hectares recorded in 2022–23.¹³ The state's agricultural census data (2015–16) reveals that operational holding sizes in Jharkhand are below the national average of 1.08 hectares, consistent with a predominantly marginal and small farmer profile.³ Small landholders dominate in low per capita income states such as Jharkhand, Bihar, Odisha, West Bengal, and Uttar Pradesh, and these

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farmers earn a higher share of income from wage labour and livestock activities than from crop cultivation itself.³ The marginal and small farmer structural reality is the foundational reason why collective aggregation through FPOs represents not merely a policy preference but an economic necessity for income enhancement in the state.

Forest and Tribal Produce Dimensions

Jharkhand has 23.6 lakh hectares of forest cover, which yields niche minor forest products and agro-forestry products including honey, mahua, chironjee, tamarind, mushrooms, and cashew.¹⁰ Jharkhand ranks first nationally in Tasar silk production, contributing approximately 70% of India's total Tasar output.¹² The forest sector is treated as a potential area for primary sector growth, and MFP aggregation — largely undertaken by Scheduled Tribe (ST) households — offers one of the most direct pathways to income improvement for the most economically marginalised rural communities in the state.⁹

FPO Landscape in Jharkhand: Distribution and Structure

Total FPO Registration

As of February 2025, 93 Farmer Producer Organisations are registered under the Central Sector Scheme for Formation and Promotion of 10,000 FPOs in Jharkhand, as per the SFAC list.¹¹ This figure represents only one stream of FPO formation in the state. Under the earlier PRODUCE Fund (Government of India) and the Producers' Organisation Development Fund (PODF) of NABARD, 190 FPOs had been formed in Jharkhand by 2020, and these were being continuously guided by NABARD for scaling up, business plan development, credit linkage, and market access.¹² Combining both streams, Jharkhand's total registered FPO count across all schemes and agencies exceeded 250 organisations by 2024, although the CSS-registered cohort of 93 FPOs under SFAC represents the most current, formally tracked, and policy-accountable set.

For national context, as of 30 November 2022, 4,028 FPOs had been registered under the CSS nationally, with equity grants of ₹53.4 crore released to 1,415 FPOs and credit guarantee cover of ₹78 crore issued to 447 FPOs (16). Jharkhand's share of these resources remains difficult to isolate from published aggregate data, indicating a gap in state-level financial tracking that itself constitutes a governance concern.

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District-Wise Distribution of CSS FPOs

Table 2: District-wise Distribution of Registered FPOs under CSS, Jharkhand (as on 24 February 2025)

District	Number of FPOs	% of State Total
Ranchi	9	9.68%
Garhwa	6	6.45%
Saraikela-Kharsawan	6	6.45%
Hazaribagh	5	5.38%
Jamtara	4	4.30%
Latehar	4	4.30%
Simdega	4	4.30%
Pakur	4	4.30%
West Singhbhum	4	4.30%
Koderma	3	3.23%
Sahibganj	3	3.23%
East Singhbhum	3	3.23%
Giridih	3	3.23%
Gumla	3	3.23%
Palamu	2	2.15%
Lohardaga	2	2.15%
Ramgarh	2	2.15%
Dumka	2	2.15%
Khunti	1	1.08%
Bokaro	1	1.08%
Deoghar	1	1.08%
Godda	1	1.08%
Total (identifiable)	73	~78.5%

Note: The SFAC list records 93 FPOs total across Jharkhand. Districts including Chatra, Dhanbad, and others may have additional FPOs registered under NABARD or state agency streams not captured in the SFAC CSS list.

Source: Computed from SFAC CSS FPO List (24 February 2025) (11); MoFPI State Profile Jharkhand (2025)¹⁰

The data reveal a pronounced geographic concentration: Ranchi alone accounts for nearly 10% of all SFAC-CSS registered FPOs, reflecting its administrative centrality and superior infrastructure

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connectivity. By contrast, districts with substantial agricultural and tribal production bases — including Dumka, Deoghar, Godda, Chatra, and Dhanbad — are comparatively underserved. Seven of Jharkhand's 24 districts appear to have no CSS-registered FPOs in the SFAC list as of February 2025, representing a significant spatial gap in the state's FPO ecosystem.

CBBO-wise Institutional Distribution

Table 3: CBBO-wise Distribution of SFAC-promoted FPOs in Jharkhand (as on 24 February 2025)

CBBO Name	FPOs Promoted	Key Districts Covered
Bhartiya Lok Kalyan Sansthan	17	Ranchi, Latehar, Simdega, Pakur, Dumka, West Singhbhum, Saraikela-Kharsawan, Jamtara
CSC e-Governance Services India Ltd.	13	Garhwa, Godda, Gumla, Latehar, Lohardaga, Pakur, Ranchi, Sahibganj, West Singhbhum, Deoghar
Mart Global Management Solutions LLP	10	Ranchi, Hazaribagh
Social Action for Rural Development & Agriculture (SARDA)	9	Garhwa, Hazaribagh, Jamtara, Khunti, Simdega
PricewaterhouseCoopers Pvt. Ltd.	8	Pakur, Sahibganj, Ranchi, Saraikela-Kharsawan
Sarva Seva Samiti Sanstha	6	Sahibganj, Saraikela-Kharsawan
ShamayitaMath	6	East Singhbhum, West Singhbhum
CTRAN Consulting Limited	5	Koderma, Latehar
Synergy Technofin Pvt. Ltd.	5	Hazaribagh, Lohardaga, Palamu
Samunnati Agro Solution Pvt. Ltd.	5	Ramgarh, West Singhbhum, Simdega
ICAR-National Rice Research Institute, Odisha	5	Ranchi, Gumla
Bayer CropScience Limited	2	Ranchi
Ekgaon Technologies Pvt. Ltd.	2	Gumla, Bokaro
Patanjali Foods Limited	3	Giridih

Source: Computed from MoFPI State Profile Jharkhand (2025)¹⁰ and SFAC CSS FPO List (24 February 2025).¹¹

Bhartiya Lok Kalyan Sansthan is the most prolific CBBO in Jharkhand, having promoted 17 FPOs across 8 districts, spanning both tribal-interior and border districts. CSC e-Governance Services — a

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Government of India enterprise under the Ministry of Electronics and Information Technology — stands second with 13 FPOs across 10 districts, demonstrating the significant and growing role of public-sector CBBOs in FPO formation. Corporate CBBOs including PricewaterhouseCoopers (8 FPOs) and Synergy Technofin (5 FPOs) indicate meaningful private-sector participation. Scientific institutional involvement through ICAR's National Rice Research Institute (5 FPOs in Ranchi and Gumla) reflects a specialised, technology-oriented track that aligns FPO formation with crop research outputs.

FPO Commodity Alignment with Agricultural Production

Commodity Profile of Jharkhand's CSS FPOs

One of the critical determinants of FPO effectiveness in product aggregation is the alignment between the FPO's designated commodity and the region's agricultural production strengths. Based on FPO names, district location, CBBO type, and production cluster data from the MoFPI State Profile and SFAC CSS list, the following commodity mapping is derived:

Table 4: Commodity Alignment of CSS FPOs in Jharkhand (Estimated, February 2025)

Commodity Category	Approx. No. of FPOs	Key Districts
Multi-crop / General Agriculture	~35	Ranchi, Hazaribagh, Garhwa, Latehar
Vegetables (specific)	~12	Jamtara, Hazaribagh, Garhwa
Women-led / Mahila Kisan FPOs (multiple crops)	~11	East Singhbhum, Saraikela-Kharsawan, Simdega, West Singhbhum, Ramgarh
NTFP / Minor Forest Produce	~8	Simdega, Latehar, Khunti
Rice/Paddy (4S4R cluster under ICAR)	5	Ranchi, Gumla
Organic / Millet-focused	3	Giridih
Sericulture/Tasar	1	Khunti
Oilseeds	1	Garhwa
Hydroponics (specialised)	1	Latehar

Source: Computed from FPO names and locations in MoFPI State Profile Jharkhand (2025)¹⁰ and SFAC CSS FPO List¹¹

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The predominance of multi-crop general agriculture FPOs — approximately 38% of all CSS-registered FPOs — indicates that commodity specialisation under the ‘One District One Product’ principle, a cornerstone of the CSS scheme design, is not yet fully institutionalised in Jharkhand. Only two clearly specialised tracks exist: the rice-focused 4S4R cluster under ICAR-NRRI in Ranchi and Gumla, and the Giridih organic FPOs promoted by Patanjali Foods Limited. Both demonstrate that commodity-specific FPOs with clear value chain linkages are achievable within the state, and their relative absence elsewhere reflects a policy implementation gap rather than a production-side constraint.

PMFME Scheme and Complementary Processing Infrastructure

The PMFME scheme, which provides cluster-based processing and formalisation support, is an important downstream complement to FPO aggregation activity. Its production clusters in Jharkhand span 15 districts and 15 commodity categories, creating a geographic and commodity template within which FPO aggregation could be productively embedded.

These PMFME clusters include peda in Deoghar and Dumka; tomato-based products in East Singhbhum, Giridih, Chatra, and Palamu; jaggery in Hazaribagh; chilly-based products in Jamtara and Gumla; minor forest produce tamarind in Khunti; honey in Lohardaga; mango-based products in Pakur, Simdega, Godda, and Sahebganj; guava-based products in Ranchi; jackfruit-based products in Bokaro; potato-based products in Dhanbad and Garhwa; papaya-based products in Ramgarh; and chironjee in Saraikela-Kharsawan.¹⁰

Under the PMFME scheme as on 31 May 2025, Jharkhand has an approved subsidy for 3,651 micro enterprises amounting to ₹73.00 crore, support for 6,139 SHG members worth ₹20.64 crore, and net enterprises of 9,790, with total PMFME subsidy standing at ₹93.64 crore.¹⁰ The geographic overlap between PMFME production clusters and active FPO districts is broad but not systematically coordinated, representing an important policy convergence opportunity that currently remains underexploited.

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Agricultural Marketing Infrastructure: A Gap Analysis

Core Infrastructure Indicators

Table 5: Agricultural Marketing Infrastructure in Jharkhand

Infrastructure Parameter	Quantity/Capacity	Source
Regulated Mandis (APMCs)	26	Agmarket/DMI (10)
FPOs (CSSS-registered, Feb 2025)	93	SFAC (11)
e-NAM-linked Mandis	19	PIB (10)
Food Processing Industries	266	ASI 2022–23 (10)
Cold Storages	58	MoFPI State Profile (10)
Cold Storage Capacity	2.36 lakh MT	MoFPI State Profile (10)
Warehouse Capacity	7.22 lakh MT	MoFPI State Profile (10)

Source: MoFPI State Profile — Jharkhand (2025)¹⁰

The mandi network of only 26 regulated markets for a state spanning 79,716 sq. km is inadequate. The ratio of approximately one mandi per 3,066 sq. km is far below the recommended national norm of one mandi per 80 sq. km of cultivated area as proposed by the National Commission on Farmers. Only 19 of the 26 mandis are connected to the e-NAM platform, limiting digital price discovery for FPO members across large parts of the state. The state has established two Food Parks and one Meat Park planned at Birsa Agriculture University, alongside 266 food processing industries and 58 cold storages.¹⁰

Cold Chain Adequacy

The cold storage capacity of 2.36 lakh MT, when set against total annual vegetable and fruit production of approximately 56.62 lakh MT (43.89 lakh MT vegetables plus 12.73 lakh MT fruits), represents a coverage ratio of barely 4.2%. Even accounting for the fact that not all produce requires refrigerated storage, the effective cold storage deficit for perishable horticulture commodities — for which Jharkhand holds multiple national production rankings — is very large. In comparable eastern Indian states, cold storage deficits have been documented as a primary driver of distress selling at harvest time, forcing smallholders to accept below-market prices from intermediaries who possess

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private storage capacity.⁷ The 58 cold storages in Jharkhand are additionally concentrated in peri-urban and commercial centres including Ranchi, Jamshedpur, Dhanbad, and Bokaro, while the principal FPO and agricultural production clusters in Simdega, Gumla, Pakur, Latehar, Sahibganj, and West Singhbhum remain without adequate cold chain access.

Mandi Deficit and e-NAM Limitations

With 19 e-NAM-linked mandis serving 24 districts of Jharkhand, and with road connectivity in tribal blocks — particularly in West Singhbhum, Simdega, Latehar, and Pakur — remaining below the national average, FPOs in remote blocks face serious physical barriers to routing aggregated produce to regulated markets. Research on market linkage challenges for FPOs consistently finds that without physical market proximity, even well-organised aggregation exercises yield diminished returns because logistics costs and spoilage losses erode margins before produce reaches buyers.⁴ In Jharkhand's topography, which combines plateaus, forested interior belts, and a dispersed settlement pattern, this challenge is structurally amplified for FPOs in tribal interior districts.

Women-led FPOs and Tribal Inclusion

One notable feature of Jharkhand's FPO landscape is the significant presence of women-led and Mahila Kisan-focused FPOs. Approximately 11 of the 93 CSS-registered FPOs bear explicit nomenclature or institutional design indicating women's leadership or SHG-linked formation. These include Prerita Mahila Kisan Producer Company Limited and Bahragora Mahila Kisan Producer Company Limited in East Singhbhum (promoted by ShamayitaMath); Chowkabhumichandil Women Producer Company Limited, Ichagarh Mahila Farmer Producer Company Limited, and Jhimriagro Mahila Farmer Producer Company Limited in Saraikela-Kharsawan (promoted by Sarva Seva Samiti Sanstha); Gola Lakhpati Mahila Kisan Producer Company Limited in Ramgarh; and five Mahila Kisan Producer Companies promoted by Samunnati Agro Solution in Simdega, West Singhbhum, and Ramgarh.^{10, 11}

The formation of five FPOs in Gumla district supported through NABARD and Caritas India established that around 752 smallholder farmers are directly linked to those organisations, with almost 1,200 additional smallholders benefiting indirectly from nearby non-target areas, demonstrating the community-level reach achievable through motivated FPO formation even in remote tribal blocks.¹⁷ Nationally, as of May 2022, 64 FPOs had been registered in tribal districts and 85 in aspirational districts under the CSS, with many aspirational districts falling in the scheduled areas of Jharkhand,

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Chhattisgarh, Maharashtra, and Gujarat.¹⁹ Jharkhand's 24 districts include 12 aspirational districts, of which several — including Pakur, Gumla, Simdega, Latehar, West Singhbhum, and Dumka — have fewer than three CSS-registered FPOs each, representing the sharpest priority gap in the state's FPO coverage.

The JOHAR project, initiated in 2017 with World Bank support, targeted a 50% increase in real income of farmers between 2017 and 2023 across 68 selected blocks in 17 districts of Jharkhand, with its primary beneficiaries being rural producer households from SHGs with the capacity to generate a marketable surplus.⁶ FPO formation is a natural institutional continuation and formalisation of this SHG-to-market pathway, and the women-led FPO models emerging in Singhbhum and Saraikela-Kharsawan represent precisely the transition that the JOHAR framework intended to catalyse.

Key Findings

The secondary data analysis yields the following structured findings, derived directly from the government data examined in the preceding sections:

Finding 1 — Geographic Concentration of FPOs. FPO density is highest in administratively central and infrastructure-rich districts (Ranchi: 9 FPOs; Hazaribagh: 5 FPOs) and lowest in remote tribal and aspirational districts. Of Jharkhand's 24 districts, approximately 7 have no CSS-registered FPOs as of February 2025, despite hosting significant agricultural and forest produce activity. This spatial inequality is inconsistent with the CSS objective of inclusive FPO formation across aspirational and tribal districts.

Finding 2 — Commodity Diffuseness. Approximately 38% of CSS-registered FPOs in Jharkhand are classified as multi-crop or general agriculture organisations, indicating limited adherence to the ODOP-cluster principle embedded in the CSS design. Jharkhand's demonstrated comparative advantages — in pulses productivity (1,060 kg/ha), litchi (4th largest nationally), jackfruit (6th), Tasar silk (1st), and minor forest produce — are poorly reflected in FPO commodity specialisation, leaving high-value commodity aggregation chains underdeveloped.

Finding 3 — Cold Chain Infrastructure Deficit. Against an estimated annual perishable produce surplus of 30+ lakh MT (vegetables and fruits), cold storage capacity stands at only 2.36 lakh MT, a coverage ratio of approximately 4.2%. The spatial mismatch between cold storage locations (peri-urban centres) and FPO locations (rural and tribal blocks) further reduces the effective aggregation utility of these organisations, since harvested produce must be transported to urban cold stores before any value protection can occur.

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Finding 4 — Mandi and e-NAM Inadequacy. With 26 regulated mandis and 19 e-NAM nodes across 24 districts and 79,716 sq. km, physical and digital market access for FPO members is structurally limited. Remote tribal blocks face the most severe barriers, compounded by road connectivity gaps.

Finding 5 — Institutional Plurality Without Coordination. Fourteen distinct CBBOs operate in Jharkhand's CSS FPO promotion landscape, ranging from civil society bodies and government enterprises to corporate advisory firms and crop science companies. This diversification broadens geographic reach but risks producing fragmented, non-interoperable FPO models without strong state-level coordination mechanisms.

Finding 6 — NTFP Aggregation Underrepresentation. Given Jharkhand's 23.6 lakh hectares of forest cover and its national leadership in Tasar silk, as well as substantial volumes of mahua, honey, tamarind, and chironjee collected by tribal households, only approximately 8 of the 93 CSS-registered FPOs are identifiably NTFP-focused. This represents the most consequential commodity gap in the state's FPO ecosystem, as NTFP aggregation offers the most direct income pathway to ST households who constitute the most economically marginalised rural population.

Table 6: Summary of Key Secondary Data Indicators, Jharkhand

Indicator	Value	Source
CSS-registered FPOs (Feb 2025)	93	SFAC ¹¹
FPOs under NABARD/PRODUCE Fund	190	NABARD SFP ¹²
Districts covered by CSS FPOs	17 of 24	MoFPI/SFAC ^{10, 11}
Total vegetable production (2023–24)	43.89 lakh MT	MoAFW ¹⁴
Total fruit production (2023–24)	12.73 lakh MT	MoAFW ¹⁴
Vegetable surplus (annual)	~18 lakh MT	MoFPI ¹⁰
Cold storage capacity	2.36 lakh MT	MoFPI ¹⁰
Cold storage coverage ratio	~4.2% of produce	Computed
Regulated mandis	26	DMI/MoFPI ¹⁰
e-NAM-linked mandis	19	PIB/MoFPI ¹⁰
PMFME micro enterprises (net)	9,790	MoFPI ¹⁰
Total PMFME subsidy approved	₹93.64 crore	MoFPI ¹⁰
GSDP at current prices (2023–24)	USD 55.29 billion	RBI Handbook ¹³

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Indicator	Value	Source
Per capita income (2023–24)	₹1,05,274	Economic Survey ¹⁵
State rank in per capita income	26th of 28 states	Economic Survey ¹⁵
Agri GSVA growth (recent trend)	₹28,470 cr → ₹38,200 cr	Economic Survey 2025–26 ¹⁸

Discussion

The findings presented above illuminate a state poised between structural agricultural abundance and institutional underperformance in rural market aggregation. Jharkhand's 93 CSS-registered FPOs operating across 17 districts serve a state with over 32 million people and 12.29 lakh hectares of cultivated land. Nationally, the average FPO membership stands at 582 farmers.¹ implying that even if all 93 Jharkhand FPOs attained this average membership, they would collectively cover fewer than 55,000 farmers — under 5% of the state's estimated 1.2 million farm households. This coverage gap is not primarily a failure of FPO policy intent but a reflection of implementation pace, resource allocation, and institutional capacity constraints in a geographically challenging terrain.

The multi-crop nature of the majority of Jharkhand's FPOs, while reflecting the genuinely mixed farming systems prevalent among smallholders, limits aggregation efficiency in practical terms. Commodity-specific FPOs demonstrate clearer market linkage pathways and better prospects for organised bulk trade. The 4S4R paddy clusters under ICAR-NRRI in Ranchi and Gumla, and the Patanjali-promoted organic Giridih FPOs, show that technology-embedded, commodity-specific FPOs are viable within the state. The JEEViKA experience from neighbouring Bihar, where FPOs linked to agriculture entrepreneur networks increased single-commodity procurement nearly fourfold in three years,⁴ offers a directly relevant model for tribal-block FPOs in Jharkhand seeking to scale aggregation without requiring large fixed infrastructure investments.

The women-led FPO pattern concentrated in East Singhbhum, Saraikela-Kharsawan, Simdega, West Singhbhum, and Ramgarh is a constructive development from both gender inclusion and aggregation sustainability standpoints. Women's SHG networks, where they are well-established through JEEViKA and JOHAR mobilisation, provide pre-existing social capital and institutional familiarity that reduce the organisation cost of FPO formation and maintenance. Samunnati Agro Solutions' Mahila Kisan FPOs in Simdega and West Singhbhum, and ShamayitaMath's women FPOs in the Singhbhum belt, represent an emerging model of gender-intentional product aggregation. The JOHAR project's foundational work in establishing ICT-enabled market channels, aggregation and storage infrastructure at the community level, and private sector backward and forward linkages⁸ has created www.theresearchers.asia

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conditions within which FPO-based aggregation can grow more readily in its target districts than in un-intervened areas.

On infrastructure, the cold storage deficit is the single most acute structural constraint on FPO-mediated aggregation in perishable commodities. A coverage ratio of approximately 4.2% means that the large majority of vegetable and fruit production in Jharkhand is exposed to distress sale conditions at harvest. For non-perishable commodities — rice, pulses, and oilseeds — the 7.22 lakh MT warehouse capacity is more adequate in gross terms, but its distribution heavily favours urban-fringe and commercial districts rather than tribal interior blocks where FPO activity is growing. A warehouse-to-FPO mapping exercise — absent from current secondary data — would be a valuable research and planning tool.

The PMFME scheme's spread across 15 ODOP clusters in Jharkhand represents a ready-made institutional framework for FPO-to-processing pipeline development. Linking FPO aggregation volumes explicitly to PMFME cluster processing enterprises — for instance, routing FPO-aggregated mango from Pakur and Sahibganj to PMFME-supported mango processing micro-enterprises in the same districts — would create closed, short value chains that reduce intermediary margins, minimise logistics costs, and improve producer price realisation. This institutional convergence is not currently formalised in state or national policy guidance, and its absence means the two programmes operate in parallel rather than in an integrated fashion.

Policy Recommendations

Based on the evidence presented, the following policy interventions are recommended:

Geographic Redistribution of FPO Formation. Districts including Chatra, Dhanbad, Godda, and Bokaro show extremely thin CSS-registered FPO coverage relative to their agricultural output and population. Targeted CBBO assignment and fast-tracked registration for the remaining CSS FPO allocation for Jharkhand should prioritise aspirational and tribal-interior districts.

Mandatory ODOP-Commodity Alignment for New FPOs. New FPO registrations under CSS should align with the 15 PMFME cluster commodities and the 15 One District One Product designations already mapped for Jharkhand, reducing multi-crop diffuseness and creating FPOs with clearer aggregation purpose and market linkages.

Dedicated NTFP-FPO Sub-Scheme. A coordinated sub-scheme between TRIFED, the Ministry of Tribal Affairs, and the Jharkhand government — leveraging the existing MSP for MFP infrastructure

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— could create NTFP-specific FPOs in districts such as Khunti, Latehar, West Singhbhum, and Simdega, where forest cover and ST population density are highest.

Cold Chain Investment in Tribal Aggregation Zones. The Jharkhand Industrial and Investment Promotion Scheme (2021) provides capital grants of 50–75% for Primary Processing Centres and Collection Centres in rural areas with a ceiling of ₹2.5 crore.¹⁰ Directing these incentives specifically to districts where active CSS-registered FPOs lack cold chain access — Simdega, Latehar, Pakur, Gumla, and West Singhbhum — would directly address the spatial mismatch between production and storage infrastructure.

e-NAM Expansion and Digital Aggregation Tools. Expanding e-NAM connectivity to all 26 regulated mandis, and leveraging the existing network of CSC centres (CSC e-Governance being the second largest CBBO in Jharkhand) for FPO digital onboarding and price discovery, would reduce intermediary margins and improve market transparency for FPO-aggregated produce.

State-Level FPO Coordination Mechanism. With 14 CBBOs operating independently across Jharkhand, a state-level FPO coordination committee — drawing representation from SFAC, NABARD, NABCONS, JEEViKA, JOHAR, and the Jharkhand Agriculture Department — would reduce institutional duplication, enable commodity mapping across CBBOs, and facilitate convergence between FPO aggregation and PMFME cluster processing.

Conclusion

This study has established, through systematic secondary data analysis of government-authenticated sources, that Jharkhand's FPO ecosystem — meaningfully expanded since 2020 — remains structurally insufficient to realise the state's rural product aggregation potential. Ninety-three CSS-registered FPOs covering 17 of 24 districts, set against agricultural production generating over 56 lakh MT of vegetables and fruits annually, a cold storage capacity of barely 2.36 lakh MT, and a mandi network of only 26 regulated markets for nearly 80,000 square kilometres, represents a fundamental infrastructure-policy misalignment. The state's comparative strengths in pulses productivity, Tasar silk, minor forest produce, and horticulture diversity remain substantially outside the organised FPO aggregation framework.

At the same time, several structural assets exist upon which a more effective FPO aggregation system can be built: the JOHAR project's SHG mobilisation base in 17 districts, the PMFME scheme's 15 commodity clusters providing a ready aggregation-to-processing template, a growing women-led FPO cohort with embedded social capital, and an expanding ICAR-supported rice cluster model.

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Translating these assets into sustained aggregation impact requires three simultaneous policy shifts: geographic redistribution of FPO formation toward lagging and aspirational districts, commodity specialisation aligned with ODOP and PMFME cluster principles, and public investment in rural cold chain and storage infrastructure specifically targeted at tribal block aggregation zones.

Jharkhand's experience provides broader lessons for eastern and tribal India: FPO formation is necessary but not sufficient for rural product aggregation; it must be embedded within complementary infrastructure of markets, cold storage, digital connectivity, and commodity-specific value chains to deliver meaningful income gains to the smallholder and tribal producer households it is designed to serve.

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