ASHOKA UNIVERSITY

CENTRE FOR A
People-centric
Energy Transition

Farmer Producer Organizations (FPOs): A Post-Mine Closure Transition Strategy



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PREFACE

The Ashoka Centre for a People-centric Energy Transition (ACPET) launched the Trans-Mine project to address the livelihood and environmental challenges faced by communities impacted by coal mine closures in India. With over 100,000 hectares of abandoned mining land and millions affected by job losses, ACPET aims to develop people-centric solutions that promote economic resilience and land rehabilitation. In Rajhara, Jharkhand, ACPET piloted three on-ground interventions—solar-based lift irrigation, Farmer Producer Organizations, and clean cooking practices—to support sustainable livelihoods and catalyze a just transition for coal-dependent communities. This case elaborates on the Farmer Producer Organization initiative.

1. INTRODUCTION

Communities across India's coal-dependent regions are experiencing socioeconomic upheaval, marked by unemployment and distress migration to urban centers. Coal mining has been a key driver of employment in India, providing direct and indirect jobs to millions, particularly in coal-rich states like Jharkhand, Odisha, Chhattisgarh, and West Bengal (Khanna, 2013). However, mine closures create an economic void, leading to loss of livelihoods, forced migration, and socio-economic distress in these regions (Pillalamarry & Pathak, 2014; Rao & Pathak, 2009).

In the coal belt of Jharkhand, the gradual downsizing of coal operations has disrupted thousands of lives. The closure of projects like the Rajmahal mine—operated by Eastern Coalfields Limited—have been linked to significant social and economic upheaval, including the displacement of families and the erosion of traditional livelihoods (Land Conflict Watch, n.d.). Over 50% of coal mines in the state have already closed, leading to widespread job insecurity and growing fears about inadequate social protection. (Mongabay India, 2022). These closures come amid India's larger shift toward clean energy, institutionalized through the Ministry of *Coal's* (MoC, 2025). The scarcity of local employment has driven many youth to migrate to distant cities in search of livelihood (Scroll.in, 2023).

Land degradation, deforestation, and groundwater depletion further complicate post-mining recovery (Pandey & Mishra, 2022; Jinger et al., 2024). Recent guidelines from the MoC emphasize land reclamation and socioeconomic restoration, yet execution remains challenging due to fragmented policy implementation and inadequate alternative employment frameworks (Chakraborty & Bag, 2025). Globally, case studies of post-mining economic transitions across the USA, Canada, Australia, and Germany have demonstrated the importance of structured socio-economic rehabilitation to mitigate long-term economic instability (Sheldon, Junankar, & White, 2018; Aristizabal-H. et al., 2023; Demajorovic & Xavier, 2022). These challenges underscore the urgent need for alternative, community- based livelihood strategies to ensure a just and sustainable transition.

Farmer Producer Organizations (FPOs) have emerged as a scalable and promising model for economic rehabilitation in rural transformation. . By enhancing income stability, market access, and resilience for smallholder farmers, FPOs offer a practical pathway to rural revitalization (Agriculture Journal, 2025). Integrating FPOs into mine closure plans—with direct support from coal companies—can serve as a vital tool for long-term socioeconomic stability.

"Just Transition" refers to greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind. It involves maximizing the social and economic opportunities of climate action, while minimizing and carefully managing any challenges—particularly for workers, communities, and countries that are dependent on fossil fuels or carbon-intensive industries (ILO, 2015).

For example, in Jharkhand's coal belt, a *just transition* would not simply mean shutting down unprofitable coal mines to meet climate goals. Instead, it would involve ensuring that the thousands of miners and their families who rely on the mines for survival are provided with new, dignified employment—such as through training for clean energy jobs or support for forming Farmer Producer Organizations (FPOs). This approach ensures that environmental progress does not come at the cost of economic displacement or social injustice.

1.1. Why FPOs? The Case for an Agriculture-Based Transition

FPOs offer a viable, scalable, and community-driven approach to transitioning mining-dependent populations toward agriculture-based livelihoods. FPOs are collectively owned enterprises that empower smallholder farmers by facilitating better market access, input supply, credit availability, and value chain integration (Pingali et al., 2019; Saxena, 2023; Hadley, 2023).

Key Advantages of FPOs in Mine Closure Strategies

- Collective Bargaining & Market Access: Farmer Producer Organizations (FPOs) enable small and marginal farmers to aggregate their produce, inputs, and services, thereby leveraging collective scale for better bargaining power. They enhance the bargaining power of farmers, improving pricing and reducing dependence on exploitative middlemen (Kanitkar & Dutta, 2023). Such collectives enable farmers to achieve economies of scale that individual farming operations often cannot, making them a powerful tool for community empowerment in post-mining rural economies (Agriculture Journal, 2025).
- Reclaiming Degraded Land through Sustainable Use: Many abandoned mine sites can be reclaimed for agriculture, horticulture, or agroforestry (Das et al., 2022; Hadley, 2023). Organized as FPOs, communities can jointly undertake land rehabilitation and adopt sustainable farming techniques to restore ecological balance and derive livelihood value from previously unusable terrain.
- Facilitate Financial Inclusion & Credit Access: FPOs facilitate access to institutional credit and government subsidies, especially under NABARD's[i] FPO Promotion Scheme (Singh, 2022; Pingali et al., 2019: NABARD, 2019). By lowering the risk for financial institutions and pooling collateral, FPOs help farmers secure investment for land development, agri-inputs, and processing infrastructure—critical for building viable post-coal economies.
- Long-Term Income Stability: Unlike skill-training programs that often offer short-term or uncertain employment, FPOs provide sustainable income through collective ownership, agri-processing, and direct marketing (Saxena, 2023). This long-term model supports economic resilience and self-reliance among mine-affected populations transitioning away from coal-based employment (Agriculture Journal, 2025).

Why Not Other Village-Level Organizations?
While village-level organizations such as Village-Level Organizations (VLOs) and Cluster-Level Organizations (CLOs) exist, their scope and structure limit their ability to drive economic transformation at scale. VLOs focus on micro-finance and self-help groups (SHGs) but lack the commercial-scale operational model of FPOs (Pingali et al., 2019). CLOs are administrative entities with governance roles but lack market integration and business-oriented frameworks (Kanitkar & Dutta, 2023).

Unlike these groups, FPOs operate as business enterprises with legal backing under India's Companies Act (2013), financial incentives under the NABARD FPO Promotion Scheme (2019), and direct market linkages (Hadley, 2023; NABARD, 2019).

1.1.1. Alignment with India's Mine Closure Guidelines & Global Best Practices

The MoC 2025 Mine Closure Guidelines mandate that coal companies allocate funds for socio-economic rehabilitation in mine closure plans. The framework emphasizes:

- Land rehabilitation & soil restoration – enabling agriculture-based livelihoods.
- Economic rehabilitation funds – encouraging skill development and entrepreneurship.
- Stakeholder collaboration – involving corporate social responsibility (CSR) investments from coal companies (Saxena, 2023; Pingali et al., 2019).

To ensure practical feasibility and long-term sustainability, the guidelines increasingly align with local livelihood realities. In mining regions such as Jharkhand, Chhattisgarh, and Odisha, community-based enterprises in dairy, poultry, goat-rearing, floriculture, and seasonal horticulture have emerged as viable alternatives. For instance, the Godhan Nyay Yojana in Chhattisgarh promotes organic farming and provides financial benefits to cattle producers by purchasing cow dung for vermicompost production (Government of India, n.d.).

These livelihood models not only offer economic security but also reposition former mine workers as "*agripreneurs*" and cooperative leaders, creating a transformative shift from wage laborers to community enterprise owners.

Lessons from global post-mining transitions indicate that community-driven economic models such as cooperatives, agricultural collectives, and renewable energy-based entrepreneurship yield sustainable employment outcomes. Germany's Ruhr Valley transition emphasized skill diversification, fostering agriculture, eco-tourism, and industrial parks. Australia's Hunter Valley model integrated FPO-like agribusiness cooperatives for economic stability post-mining (Sheldon, Junankar, & White, 2018; Das et al., 2022).

Comparative Summary of Global Post-Mining Transition Models

Country/Region	Key Strategy	Outcome
Germany (Ruhr Valley)	Skill diversification, eco-tourism, agriculture, industrial repurposing	Created diversified employment; revitalized post-industrial landscapes
Australia (Hunter Valley)	Agribusiness cooperatives, land rehabilitation, community farming	Ensured rural income stability and employment post-mining
India (Proposed)	FPO-based models, CSR funding, govt. support, land repurposing	Potential to replicate inclusive and sustainable rural economic transitions

By leveraging coal companies' CSR funds, government support, and community- driven FPO models, India's mine closure strategy can create a sustainable rural economy in coal-mining regions.

2. PROBLEM STATEMENT

As discussed above, the closure of coal mines presents significant challenges for the socio-economic transition of mining-dependent communities. The shift away from mining- based livelihoods often leaves large sections of the population vulnerable to unemployment, poverty, and socio-economic displacement (Oskarsson, Krishnan, & Lahiri-Dutt, 2024; Das, 2015). While India's Mine Closure Guidelines emphasize post-mining land reclamation and economic rehabilitation, practical execution remains a challenge due to limited policy enforcement, fragmented implementation strategies, and the absence of structured livelihood alternatives (Ministry of Coal [MoC], 2025; Mukhopadhyay, 2015).

Farmer Producer Organizations (FPOs) have emerged as a viable model for transitioning mining-dependent populations toward agriculture-based livelihoods, offering collective bargaining power, financial access, and market integration. However, key structural barriers exist, preventing a smooth transition in land repurposing, people's economic reintegration, and infrastructure utilization. This section examines these three critical dimensions of the problem: land, people, and infrastructure.



2.1. Land: Repurposing Post-Mining Landscapes for Agriculture

One of the most significant barriers to integrating FPOs into mine closure plans is the availability and quality of land post-mining. Coal mines leave behind degraded landscapes with disrupted soil structures, contamination risks, and water table depletion, making agricultural repurposing a complex task (Ramachandra et al., 2014).

- Availability of Land for Agriculture: Under the Mine Closure Guidelines (MoC, 2025), coal companies are mandated to restore mined-out land; however, in practice, large tracts remain underutilized or improperly reclaimed (Mukhopadhyay, 2020). In several coal-mining regions of Jharkhand, Chhattisgarh, and Odisha, abandoned mines remain unfit for cultivation due to topsoil degradation, acid mine drainage, and land subsidence (Mukhopadhyay, 2020; Vikram, 2024).
- Soil Fertility & Quality Concerns: Studies indicate that coal mining significantly reduces organic carbon content in soil, affecting its ability to support crop cultivation (Ramachandra et al., 2014). Remediation techniques such as topsoil restoration, agroforestry, and bio-fertilization are required, yet are not widely implemented due to a lack of funding and policy enforcement (Mukhopadhyay, 2015; Holcombe & Keenan, 2020). Therefore, land rehabilitation could also be a relevant and necessary pathway, as mining activities often degrade soil quality, disrupt ecosystems, and render land temporarily unfit for agriculture.
- Water Scarcity & Groundwater Contamination: Open-cast mining alters natural drainage patterns, leading to long-term water shortages and groundwater contamination from heavy metals (Mukhopadhyay, 2020; Vikram, 2024). FPO-led agriculture needs assured irrigation, but water scarcity in post-mining zones makes this transition difficult (Ramachandra et al., 2014).
- Capacity Building for Ex-Miners: Transitioning to agriculture requires that ex-miners receive training in modern farming techniques, including soil management, irrigation practices, and crop diversification. Capacity-building programs are essential to equip these individuals with the necessary skills for successful integration into FPOs.
- Financial Support Mechanisms: Initial seed funding or grants are crucial for ex-miners to invest in agricultural activities. Government schemes like the Startup India Seed Fund Scheme (SISFS) offer a promising model to support early-stage FPO development (Startup India, n.d.).
- Market Development Strategies: Establishing buyer networks and cooperatives is vital for the sustainability of FPOs. By creating strong market linkages, FPOs can ensure fair pricing and consistent demand for their produce, thereby enhancing income stability for ex-miners turned farmers (Agriculture Journal, 2025).

While some international examples—such as Germany's Ruhr Valley transformation (Sheldon, Junankar, & White, 2018) —have successfully converted mined-out lands into agricultural hubs through topsoil remediation and water management, India's post-mining land policies lack structured execution mechanisms. Without proactive land restoration, FPO-led agriculture cannot be effectively scaled in mining-affected areas.

2.2. People: Economic Reintegration of Mining-Dependent Communities

Coal-dependent regions face severe socio-economic challenges post-mine closure, given the limited availability of alternative employment opportunities. Agriculture often becomes the default fallback, yet most former miners lack experience, capital, and institutional support (Das, 2015).

- Lack of Structured Alternatives to Mining-Based Livelihoods: Mining accounts for a major share of employment in India's coal belt—around 3 million people directly or indirectly depend on coal mining for their livelihoods (Oskarsson et al., 2024). Alternative job opportunities in manufacturing or services are limited in remote mining districts, making agriculture the most viable option despite skill gaps (Mukhopadhyay, 2020).
- FPOs as a Transition Mechanism for Smallholder Farmers: FPOs enable smallholders to access better markets, negotiate fair prices, and bypass exploitative middlemen (Holcombe & Keenan, 2020). Many former mining workers lack capital to invest in agriculture; FPOs provide a credit-linked framework for inputs and mechanization (Jose et al., 2024). Further, since most former miners lack farming experience, targeted training in agriculture, horticulture, and allied activities (e.g., poultry, dairy, agroforestry) is essential (Mukhopadhyay, 2015).
- Barriers to Implementing FPOs in Mining Communities: Many displaced workers perceive agriculture as a step-down from industrial employment (Das, 2015). Secondly, state governments and coal companies often prioritize temporary relief measures (such as cash compensation) over structured economic reintegration (Mukhopadhyay, 2020). Additionally, mining districts have weak agricultural supply chains, limiting FPO scalability (Holcombe & Keenan, 2020).

2.3. Infrastructure: Unlocking Mining Assets for Agricultural Development

Mining companies possess significant infrastructure assets, including warehouses, transportation networks, roads, electricity infrastructure, and administrative facilities, which remain underutilized post-mine closure. These assets could be repurposed for FPO operations, reducing setup costs and enhancing efficiency (Pavloudakis et al., 2024).

- Warehousing & Storage: Many coal companies have abandoned warehouses and logistics hubs that could be converted into grain storage centers or food processing units for FPOs (Vikram, 2024).
- Transportation & Supply Chain Networks: Railway sidings, roads, and coal transport networks could be re-purposed for agricultural supply chains, facilitating FPO-to-market linkages (Holcombe & Keenan, 2020).
- Electricity & Irrigation Infrastructure: Coal companies control large electricity grids, which could be redirected for agricultural processing units and cold storage facilities (Mukhopadhyay, 2020).

Barriers to Coal Company Engagement in Long-Term Livelihood Initiatives

- Most coal company interventions remain short-term, focusing on temporary relief, training programs, or one-time compensations rather than long-term investments in alternative economic ecosystems (Mukhopadhyay, 2015).
- State ownership of mined-out lands often complicates private sector involvement in agricultural rehabilitation (Das, 2015).
- India lacks a structured mechanism for integrating mining assets into post-mining economic plans (Pavloudakis et al., 2024).

The transition of mining-dependent communities to sustainable agriculture is hindered by land degradation, economic dislocation, and underutilization of mining infrastructure. While FPOs offer a scalable transition model, significant policy interventions, infrastructure reallocation, and financial incentives are necessary for their success. Unless coal companies, government agencies, and financial institutions align their efforts, the socio-economic void left by mine closures will continue to deepen.



Multiple crop cultivation

3. EXISTING STATUS OF FPOS IN INDIA: SUCCESS & FAILURE FACTORS

3.1. Current FPO Landscape in India

The number of registered FPOs in India varies significantly depending on the source of data and methodology used for estimation. Under the Central Sector Scheme for the Formation and Promotion of 10,000 FPOs, the Ministry of Agriculture & Farmers Welfare (2024) reported that 8,875 FPOs have been registered as of June 30, 2024, with a total paid-up capital of ₹630.3 crore and ₹210.1 crore disbursed as matching equity grants. Additionally, the Small Farmers' Agri-Business Consortium (SFAC) and NABARDhave played a key role in facilitating FPO formation, further expanding the number of these organizations across the country.

A more comprehensive analysis conducted by the Tata Cornell Institute (TCI) provides a broader estimate, identifying 44,460 producer companies registered from 2003 to 2024 (Abraham et al., 2024). However, this figure includes producer companies that may not be directly involved in agricultural production. After removing non-agricultural entities, the study found that 15,455 FPOs were actively operational, based on financial filings and corporate status verification through the Ministry of Corporate Affairs (MCA) database (Abraham et al., 2024).

Legal Framework for FPOs

Forming an FPO entails meeting specific regulatory requirements. Most FPOs in India are registered as producer companies under the Companies Act, combining the benefits of cooperative societies with the regulatory framework of companies. This structure allows them to operate as collective business entities while ensuring compliance with corporate governance standards. While some FPOs may register under state cooperative laws, the producer company model under the Companies Act is predominant, especially for organizations aiming to scale operations and access formal credit and investment channels.

3.2. Key Success Factors for FPOs

As stated above, there are about 44,460 registered Farmer Producer Organizations (FPOs) in India as of September 2024, formed under the Companies Act of 1956. However, being registered doesn't necessarily mean they're successful or active. Around 26,938 of these FPOs are considered active and compliant, meaning they meet regulatory requirements and continue operations. But when looking at more concrete measures of success, such as financial compliance, only about 15,455 FPOs submitted financials in 2023. This suggests a considerable portion of registered FPOs are struggling or inactive.

Among the 23,030 FPOs formed before 2021, about 50% filed their financial statements in 2023, suggesting that many struggle after initial support ends. Looking specifically at older FPOs, of the 9,201 formed before 2019, only 4,021 (44%) submitted financial filings in 2023, indicating that a significant portion may no longer be operational (TCI, 2024). Additionally, 2,334 FPOs had loans from banks or CBBOs in 2024, reflecting some level of financial trust and performance, but this is a small fraction of total registered FPOs. The declining rate of compliance among older FPOs suggests that many may fail without sustained financial and institutional backing.

3.3. Successful Indian Case Studies of FPOs

The following case studies among hundreds delves into the success stories of FPOs in different states, showcasing how it has played a pivotal role in empowering farmers and enhancing their bargaining power.

3.3.1. Papad making by Kashi Vishwanath Potato Farmer Producer Company Limited, Varanasi, UP

The Kashi Vishwanath Farmer Producer Company Limited (KVFPCL) has demonstrated tangible success through value addition in agricultural produce, particularly in its venture into potato papad making. In its initial phase in early 2017, the FPO identified a local demand of 200 kg per week and proceeded with production using 20 quintals of potatoes. The cost of production was ₹108.5 per kg, while the company sold the papad at ₹150 per kg, ensuring a profit margin even after accounting for a ₹5 per kg marketing cost. The engagement of women-led Farmer Interest Groups (FIGs) in the production process not only boosted local employment but also generated an additional ₹7,000 in profits for the FIG's future business activities (SFAC, n.d.). This model provided a replicable framework for sustainable revenue generation and economic empowerment in rural agribusiness.

Beyond the immediate success of potato papad production, KVFPCL has taken steps toward expanding its operations. Encouraged by the initial market response, the FPO decided to engage 10-15 more FIGs in the production process, leveraging its established marketing channels (SFAC, n.d.). This scaling strategy aims to increase overall revenue while ensuring that participating farmers benefit from economies of scale. Moreover, the company has diversified its value addition initiatives by planning to produce pickles, tomato ketchup, and other processed vegetable products. This forward integration is expected to enhance farmers' income stability, reducing their reliance on direct produce sales, which are often subject to price volatility in local markets.

3.3.2. The Tylli Deimaia Joint Farming Cooperative Society Ltd., Laskein, Meghalaya

Located in Laskein, this FPO supports 104 shareholder farmers and many others by providing training in organic farming techniques such as lactic acid bacteria usage, indigenous micro-organisms, and rechargeable trench methods. By linking farmers to government schemes like the Piggery Mission and Mission Lakadong (focused on turmeric), the FPO has enabled them to cultivate crops such as turmeric, ginger, maize, rice, potatoes, and tomatoes more effectively (SwitchON Foundation, 2024). Institutional support from the Department of Horticulture, Government of Meghalaya, and Bethany Society Shillong has further strengthened the FPO by facilitating the procurement of a turmeric washer, dryer, and polyhouse, helping farmers transition from traditional practices to modern, climate-resilient techniques (SwitchON Foundation, 2024).

Beyond production, the FPO has focused on entrepreneurship development, government networking, and market integration. By partnering with block and district-level agencies, it has helped farmers gain better access to institutional support and funding. The FPO's efforts in post-harvest value addition have positioned farmers for higher profitability by reducing dependency on raw commodity sales. Future plans include establishing direct links with registered buyers, eliminating middlemen, and securing better price realization (SwitchON Foundation, 2024).

3.3.3. Dattapurna Krishi Farmer Producer Company Ltd., Chandurbazar, Maharashtra

This SwitchON Foundation FPO established a purchasing centre in April 2022, supported by the National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED). This centre allows farmers to sell their produce at 5,230 INR per quintal, a considerable increase from the market rate of 4,500 INR per quintal, directly enhancing farmers' profits by 800 INR per quintal. By June 2022, this initiative enabled 141 farmers to sell 2,500 quintals of agricultural produce, resulting in a total turnover of 35 lakhs INR. The farmers received 20 lakhs INR in profit, and the FPO itself generated a profit of 4 lakhs INR, which includes transportation and manpower charges.

The FPO has facilitated better market access by enabling online registration for farmers to sell their produce, and ensures that farmers receive payment within one month, avoiding the delays and complexities previously experienced in traditional markets. Additionally, 144 farmers within this FPO have received benefits from state scheme linkages (SwitchON Foundation, 2024).

3.3.4. Krishikabandhu Farmer Producer Company Ltd, Kinnisultan, Karnataka

The Gulbarga District in northern Karnataka, known as the "tur bowl" of the state, is famous for its large-scale tur (red gram) cultivation, spanning approximately 330,000 hectares annually. Despite the vast land under cultivation, the district's yield has historically been low due to outdated agricultural practices, which expose crops to drought, erratic rainfall, and pest attacks. The traditional farming method used by farmers involved "dibbling," where seeds were sown haphazardly without proper spacing, leading to inefficient growth, increased pest susceptibility, and inconsistent yield. These factors have resulted in suboptimal returns for farmers, making the crop financially unsustainable in the face of climate uncertainties.

In response to these challenges, a new transplanting method was introduced, which significantly improved the yield and overall productivity. Farmers now grow red gram saplings in a nursery before transplanting them onto the field with precise spacing—5 feet between rows and 2 feet between individual saplings. This method not only reduces pest risk and optimizes space but also allows for intercropping with maize or marigold. The transition to this new technique, supported by the Vrutti Livelihood Resource Centre, Krishi Vigyan Kendra (KVK), and financial backing from SFAC, has resulted in a noticeable increase in both crop yield and farmer income. For instance, a farmer reported a yield of 7 quintals per acre, earning Rs. 28,000 from red gram alone, alongside an additional Rs. 4,000 from the maize intercrop. This resulted in a net profit of Rs. 21,240 per acre, more than double the income from traditional farming methods, with a similar input cost of Rs. 10,260 per acre (SFAC, n.d.).

3.4. General Challenges Leading to FPO Failures

According to Singh et al. (2023), for FPOs, the major constraints can be broadly categorized into managerial, marketing, technical, and social factors. Some key challenges include heavy competition in the market, high transportation costs, lack of storage and processing facilities, and diverse needs of individual members.

Operational Failures

For functional FPOs, the primary challenges are related to market competition, high transportation costs, and inadequate technical infrastructure like storage and processing. Moreover, issues such as the lack of trained manpower, insufficient ICT skills, and exploitation by middlemen also contribute to difficulties in their functioning (Singh et al., 2023).

Further challenges across both types of FPOs include inadequate market options, lack of awareness among members regarding the FPO's governance and role, and issues with democratic participation, where a few individuals dominate decision-making. These problems are compounded by the lack of business understanding among members and an overreliance on government support. Additionally, the representation of women groups in FPOs remains a critical issue that requires attention. The absence of proper managerial expertise, limited access to operating cash, and ineffective marketing options have prevented FPOs from achieving their full potential (Suresh & Sreejith, 2024).

Structural Failures

On the other hand, non-functional FPOs face challenges rooted more in internal cohesion, such as lack of cooperation, trust issues, ineffective leadership, and doubts about the proper allocation of grants by promoting institutes. These internal problems, coupled with issues like mismanagement of accounts, non-transparency, and difficulties in accessing credit, have contributed to the failure of several FPOs (Singh et al., 2023).

4. FARMER PRODUCER ORGANIZATIONS (FPOS) IN *RAJHARA*: INSIGHTS FROM THE FIELD[1]

4.1. Current Agricultural Practices and Farming Challenges

In *Rajhara*, agricultural activity is structured around a tri-seasonal cropping calendar. The predominant crops include paddy during the Kharif season and wheat and mustard in the Rabi season. Farming is primarily rainfed, with cultivation undertaken by both men and women for household consumption and occasional local market sales. However, the lack of reliable water sources and the presence of wild animals pose significant challenges to crop yield and farming sustainability.

> Last year, *bhindi* was sold for only ₹2–10 per kg. Cauliflower didn't go beyond ₹5. We stopped plucking tomatoes because they were selling at ₹5 per kg—the transport cost was more than the money we earned.
>
> — FGD Respondent, *Rajhara*

Key Challenges Faced by Farmers in *Rajhara*

- Water Scarcity: The lack of reliable irrigation infrastructure is the most significant barrier, with many farmers dependent on the monsoon.
- Crop Damage from Animals: Incidents of crop depredation by blue bulls (nilgai) are frequent, causing substantial losses.
- Poor Access to Quality Inputs: Farmers face difficulties in accessing quality seeds and fertilizers, often traveling 18–20 km to procure these at high costs.
- Pests and Crop Losses: Pest infestations, particularly during the monsoon, lead to significant crop damage, exacerbated by the high cost and ineffectiveness of available pesticides.
- Lack of Post-Harvest Storage Facilities: Absence of cold storage leads to quick spoilage of perishables, forcing farmers to sell produce at low prices.



Ripened wheat field

[1] *Methodology: These findings are based on a census survey involving semi-structured interviews with all 42 households directly associated with the project in Rajhara—24 current beneficiaries and 18 neighboring households likely to benefit soon. Key informant interviews were also conducted with a Panchayat Raj Institution (PRI) member and the implementation partner from ACPET.*

About Rajhara's FPO: Rajhara Coal Mine Rehabilitated FPO (Jharkhand)

Formed in December 2024 by a group of agriculturists from Palamau, Jharkhand, this FPO brings together rehabilitated farmers from coal mine-affected areas to collectively pursue sustainable livelihoods. Registered under the Companies Act as a Producer Company, it emphasizes mutual assistance, democratic governance, and equitable benefit-sharing. With a strong base of primary producers as shareholders, the FPO ensures one-member-one-vote, reinvests profits into member welfare and operations, and is positioned to access formal finance, training, and agri-value chain opportunities to uplift its community.

4.2. Awareness, Perception, and Readiness to Join FPO

Awareness of the FPO initiative is low, with only 23.8% of respondents aware of its formation. Misunderstandings are common, with some confusing the FPO with other community initiatives. Despite this, there is a conditional willingness to join the FPO, dependent on clear communication of benefits and demonstrable support in addressing irrigation and input access.

> I sold *arhar dal* at ₹100 per kg, but by the time I reached the *mandi*, I had to settle for ₹10 per kilo. Same with *til*. We sold 15 kg for ₹150 per kg, but that money just went into basic household needs. Earlier we would sell dal and use the money for vegetables—now we're just sitting in deprivation.
>
> — FGD Respondent, *Rajhara*

4.3. Infrastructural and Operational Challenges in Establishing the FPO

The establishment of the FPO is hampered by infrastructural and operational issues such as:

- Infrastructure Bottlenecks: The inconsistent performance of the solar-based lift irrigation system affected confidence in the FPO's ability to support effective water management.
- Lack of Institutional Clarity: There is little communication about the FPO's roles or operational processes by the implementing partner, causing confusion and disinterest among potential members.
- Absence of Follow-Through: A lack of ongoing engagement and visible field presence from implementing agencies has led to skepticism about the FPO's viability.

> Yes, if FPO is made and we get training and facilities—people will definitely join. But awareness must come first. Train us, make us understand, and we will participate. Once we see the benefits, people will support it fully.
>
> — FGD Respondent, *Rajhara*

4.4. Stakeholder Engagement and Support for FPOs

Engagement with market stakeholders and financial institutions is minimal, and there are no effective mechanisms for collective marketing or financial support. The farmers' plight is exacerbated by the environmental impacts of nearby mining activities, which have not been mitigated by corporate social responsibility efforts from the mining companies.

The concept of Farmer Producer Organizations (FPOs) holds transformative potential for the agricultural sector in Rajhara, offering pathways to enhance productivity, stabilize farm incomes, and improve rural livelihoods. Field insights, however, reveal that the success and sustainability of FPOs depend on addressing significant infrastructural, operational, and social challenges.

While the local farming community has shown readiness to embrace FPOs, this willingness is closely tied to the delivery of tangible benefits—such as improved irrigation, access to quality inputs, and effective collective marketing. Persistent issues like the unreliable solar lift irrigation system and inadequate

engagement from implementing agencies continue to erode farmer confidence and hinder meaningful participation.

Addressing these challenges requires a multifaceted approach: enhancing infrastructure to support consistent water supply, ensuring transparent and continual communication about the roles and benefits of FPO, and establishing robust governance structures that reflect and respond to the needs of the farming community. Moreover, fostering partnerships with market stakeholders, financial institutions, and corporate entities will be crucial to providing the necessary support systems for FPO.

Ultimately, the success of FPO in *Rajhara* will depend on a collaborative effort among all stakeholders to create a supportive ecosystem that can sustain and expand the benefits of organized agricultural practices. Only with a concerted and transparent effort to address these foundational issues can FPO truly realize their potential as catalysts for agricultural innovation and economic development in the region.



Multiple crop cultivation

4.5. Data Insights and Projections

4.5.1. Economic Benefits of Integrating FPOs

Several studies indicate that membership in Farmer Producer Organizations (FPOs) significantly enhances farmer incomes and profitability. Evidence from field surveys in India shows that FPO members reported Rs. 7,254– Rs. 8,133 higher annual net returns, 4.6–4.8% higher Return on Investment (ROI), and 8–8.4% higher profit margins compared to non-members (Gurung, Choubey, & Rai, 2023).

In *Rajhara*, assuming similar conditions and gradual improvements through irrigation support, input supply, and market access, a 15–20% increase in net agricultural income can be reasonably projected over a 5-year horizon for FPO members.

	Average Amount (one household)	Total Amount (all the surveyed household)
Farmer Household Income as per Baseline (Current)	₹15,644	₹11,655,050
Farmer Household Income Post-FPO (15% Increase)	₹17,991	₹13,403,308
Farmer Household Income Post-FPO (20% Increase)	₹18,773	₹13,986,060

Source: Ekgaon baseline database

4.5.2. Sustainability and Land Reclamation Advantages

FPOs acting as sustainability intermediaries have been effective in promoting organic farming, agroforestry, and soil rehabilitation, key for restoring degraded mined lands (Pallavi et al., 2024).

Given that mining-affected areas in *Rajhara* suffer from soil degradation and water scarcity, integrating FPO-led sustainable agriculture could result in topsoil recovery over 3–5 years through agroforestry and organic farming practices, and 30–40% improvement in soil organic carbon content with structured reclamation efforts (Pallavi et al., 2024).

4.5.3. Financial Inclusion and Infrastructure Utilization

FPOs facilitate credit access and are eligible for subsidies under schemes such as NABARD's FPO Promotion Scheme (Chandrakar, Chandrakar, & Das, 2023). Repurposing coal mining assets like warehouses, transport networks, and electricity connections can significantly reduce the setup costs for new agricultural ventures by 20–30% (Harikrishna, Hansdah, & Sharma, 2022).

In *Rajhara*, using abandoned mining infrastructure could catalyze the development of:

- Cold storage units and agri-processing centers.
- Supply chain hubs leveraging old rail sidings and transport networks.

Gender-Disaggregated Participation

Despite the potential of FPOs, women's participation remains disproportionately low. As of July 2024, out of 19.8 lakh farmers registered in FPOs under the "Formation and Promotion of 10,000 Farmer Producer Organizations" scheme, only 6.86 lakh (approximately 34.6%) are women. Furthermore, only 810 FPOs have been registered as 100% women-member organizations under the same scheme (Press Information Bureau, 2024).

This underrepresentation is significant, considering that women constitute about 65% of the agricultural workforce in India but own only 13.9% of agricultural land (World Bank, 2018). The lack of land ownership restricts women's access to institutional credit and limits their participation in FPO governance structures.

4.5.4. Social Equity and Inclusiveness

Studies show that gender-inclusive FPOs have better sustainability outcomes, with higher participation rates and stronger local ownership (Harrington et al., 2023). Targeting women's inclusion in *Rajhara's* FPO model can yield greater resilience to socio-economic shocks through diversified livelihoods.

Key Roles & Responsibilities for Inclusive FPOs

Stakeholder	Role & Responsibility
FPO Leadership	Ensure women's representation on boards and in decision-making processes
Government Departments	Mandate gender targets in FPO formation; provide incentives for women-led enterprises
CSOs/NGOs	Provide gender-sensitization training, leadership coaching, and awareness-building
Self-Help Groups (SHGs)	Serve as feeder groups to mobilize women for FPO membership and governance
Financial Institutions	Design inclusive credit products and reduce collateral barriers for women-led operations
Community Leaders	Champion local cultural acceptance of women's roles in economic leadership

4.5.5. Extrapolations Table

Indicator	Insight	Projected Impact in *Rajhara*	Source
Net Annual Income	₹7,254–8,133 higher for FPO members	15–20% income increase for *Rajhara* farmers	(Gurung et al., 2023)
Soil Quality (Organic Carbon Content)	30–40% improvement with sustainable practices	Topsoil recovery in 3–5 years	(Pallavi et al., 2024)
Setup Cost Savings	20–30% by using mining infrastructure	Reduced initial capex for FPOs	(Harikrishna et al., 2022)
Women's Participation	Higher resilience and success with inclusive FPOs	10–15% higher participation rates projected	(Harrington et al., 2023)

Leveraging Post-Mining Water Assets for Irrigation – The *Rajhara* Example

In *Rajhara*, the installation of a solar lift irrigation (SLI) pump has demonstrated how abandoned mining water bodies can be effectively repurposed to support agricultural livelihoods. This initiative taps into one of the reservoirs formed due to mining excavation, converting a legacy of environmental degradation into a functional community resource.

Critically, the water from this reservoir has been found to be of high quality, as confirmed by recent laboratory testing: the sample met all key chemical and microbiological safety benchmarks under IS 10500:2012 standards. The absence of harmful heavy metals, low total dissolved solids (TDS of 174 mg/l), and neutral pH (7.49) make it well-suited for agricultural irrigation.

While the project is still in its nascent stage and yet to complete a harvest cycle, it has sparked community interest, with over 90% of surveyed farmers expressing a willingness to adopt diversified cropping if this leads to reliable irrigation. This case highlights the untapped potential of mining water assets in strengthening FPO-led agricultural transitions in post-mining regions.

Overall, the readiness of a newly established Farmer Producer Organization (FPO) in a post-mining context can be assessed through a set of foundational indicators validated by key institutional guidelines. These include the extent of community ownership and participation in governance (NABARD, 2018), the presence of a functional governance structure with clearly defined roles (NABARD, n.d.-a), and progress toward a market-linked business plan that includes aggregation, value addition, and access to buyers (SFAC, n.d.-a). Equally important is the FPO's access to cultivable land and essential infrastructure, such as storage and transport facilities (NABARD, 2019), along with the initiation of capacity-building programs for board members and operational staff (NABARD, n.d.-b). Effective financial systems, including bookkeeping and budget tracking, are vital for accountability and scaling (NABARD, n.d.-c). Moreover, robust stakeholder engagement—with SHGs, local governments, banks, and private partners—helps embed the FPO within broader value chains (SFAC, n.d.-b). Finally, preliminary risk mitigation planning, covering market, climatic, and operational risks, is essential to ensure the FPO's resilience and sustainability (NABARD, n.d.-d). Together, these indicators provide a holistic, field-tested framework to evaluate the operational maturity of FPOs emerging in post-mining economies.

5. THE ROLE OF COAL COMPANIES IN STRENGTHENING FPOS: INFRASTRUCTURE & FINANCIAL INCLUSION

The following section explores how coal companies—with their extensive resources, financial networks, and logistical capabilities—can facilitate the growth of FPOs in mining-affected areas. The repurposing of mining infrastructure, facilitation of financial inclusion, and institutional integration of FPOs into mine closure plans are examined as critical pathways to success.



Crop cultivation in fertile land

5.1. Repurposing Mining Infrastructure for FPO Growth

Mining companies have significant infrastructure assets, including warehouses, transport networks, and water reservoirs, which remain underutilized post-mine closure. These resources could be strategically repurposed to enhance FPO efficiency, reduce operational costs, and facilitate market linkages (Bodh & Yadav, 2020; Sailaja & Manohari, 2021).

Converting Abandoned Warehouses into Grain Storage & Food Processing Centers

Post-mining landscapes are often left with unused industrial infrastructure, such as warehouses, administrative offices, and transport yards. Coal companies can convert these abandoned spaces into agricultural storage and processing centers to support FPO activities.

- Challenges in Rural Agricultural Storage
  - Lack of proper cold storage and warehousing leads to post-harvest losses of up to 40% in perishable crops (Jose et al., 2024).
  - Smallholder farmers cannot afford private warehousing, leading to distress sales at lower prices.

- Solution: Coal Companies' Warehouse Repurposing Model
  - Existing mining warehouses can be converted into grain storage and food processing centers for FPO-managed bulk storage.
  - Infrastructure can be upgraded using CSR funds or District Mineral Fund (DMF) allocations (Pavloudakis et al., 2024).

Utilizing Mining Transport Networks for Agricultural Logistics

Coal mining requires robust transport infrastructure, including railway sidings, road networks, and mechanized loading facilities, which remain underutilized after mine closures (MoC, 2025; Mukhopadhyay, 2020). These networks can be repurposed to link FPOs with urban markets, reducing supply chain bottlenecks and improving market access.

- Challenges in Agricultural Logistics
  - High transportation costs reduce small farmers' ability to access urban markets.
  - Lack of cold-chain infrastructure prevents perishable goods from reaching consumers efficiently.

- Solution: Coal Companies' Role in Logistics Integration
  - Coal rail and truck networks can facilitate bulk movement of agricultural produce from FPOs to major *mandis* and processing centers (Holcombe & Keenan, 2020).

Leveraging Mining Water Reservoirs for Irrigation

One of the major constraints in post-mining agricultural activities is water scarcity, especially in open-cast coal mining areas where groundwater tables are depleted. However, abandoned mine pits and reservoirs could serve as low-cost irrigation sources for FPO-led agriculture.

- Challenges in Irrigation:
  - Dependence on diesel-based irrigation pumps increases farming costs.
  - Coal mining regions face severe groundwater depletion, limiting large-scale agricultural productivity (MoC, 2025).

- Solution: Coal Companies' Role in Irrigation Solutions
  - Repurpose abandoned mine reservoirs for irrigation through solar-powered pump installations (Sailaja & Manohari, 2021).

Financial Support through Bank Tie-Ups and CSR Credit Guarantees

To facilitate the financial viability of these initiatives, several mechanisms are in place:

- Credit Guarantee Scheme for FPOs:
  - The Government of India, through the Ministry of Agriculture & Farmers Welfare, has established a ₹1,000 crore Credit Guarantee Fund Trust for FPOs (CGFTFPO) under the trusteeship of NABSanrakshan Trustee Private Limited, a wholly-owned subsidiary of NABARD. This scheme provides credit guarantees to FPOs, enhancing their creditworthiness and facilitating access to institutional credit without the need for collateral (NABARD, 2021). Mining companies can assist FPOs in accessing collateral-free credit by facilitating linkages with the Government Department through one on one meetings/ gram melas etc.

- Bank Tie-Ups:
  - NABARD has facilitated partnerships between FPOs and various banks, including Scheduled Commercial Banks, Regional Rural Banks, and Small Finance Banks. These tie-ups enable FPOs to access credit facilities up to ₹2 crore without collateral, under the Credit Guarantee Scheme for FPO Financing (NABSanrakshan, 2022). Through strategic CSR interventions, mining companies can enable partnerships between FPOs and banking institutions—such as Scheduled Commercial Banks, Regional Rural Banks, and Small Finance Banks—helping FPOs secure loans up to ₹2 crore under NABARD-supported credit guarantee schemes.

- CSR Credit Guarantees:
  - Corporate entities, particularly those in the mining sector, can allocate CSR funds to support FPOs by providing credit guarantees or funding infrastructure development projects. This not only aids in the socio-economic development of mining-affected areas but also aligns with companies' CSR objectives (Kumar & Rathore, 2023).

5.2. Facilitating Market & Financial Inclusion

Coal companies have long-standing financial relationships with major banks, insurance firms, and investment agencies, which can be leveraged to facilitate FPO access to credit, insurance, and bulk procurement markets (NABARD, 2019; Vaishnavi & Shree, 2022).

Bridging FPOs with Financial Institutions

FPOs struggle to secure loans due to lack of collateral and low credit ratings (Satyasai & Mehrotra, 2016). High borrowing costs discourage investment in agri-processing and storage infrastructure (NABARD, 2019). It is important for coal mine companies to facilitate partnerships between FPOs and large banks (e.g., State Bank of India, NABARD, SIDBI) (Singh et al., 2023). Additionally, provide interest- free working capital loans through CSR or DMF funds (Singh et al., 2023).

Bulk Procurement Models for Corporate Supply Chains

Coal companies already procure large volumes of goods for operational needs (e.g., food supplies for worker canteens, uniforms, safety gear, and biomass-based fuel). By structuring bulk procurement agreements with FPOs, coal companies can provide a guaranteed market for FPO products.

Dedicated Financing Mechanisms via DMF & CSR Funds

Coal companies are mandated under the District Mineral Foundation (DMF) Act, 2015 and Corporate Social Responsibility (CSR) guidelines to allocate funds for livelihood generation. However, these funds remain underutilized in most states (MoC, 2025; Singh et al., 2023). The Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) guidelines mandate that at least 60% of District Mineral Foundation (DMF) funds be allocated to high-priority areas, including livelihood, education, health, and skill development. This allocation directly supports the integration of Farmer Producer Organizations (FPOs) into post-mining economies (Ministry of Mines, 2023).

Case Snippet: Paddy Procurement by FPOs in West Bengal

In West Bengal, several Farmer Producer Organizations (FPOs) have successfully engaged in paddy procurement under the state's Minimum Support Price (MSP) scheme. Facilitated by the Small Farmers' Agribusiness Consortium (SFAC) and BASIX Krishi Samruddhi Limited (BKSL), these FPOs entered into tripartite agreements with the West Bengal Essential Commodities Supply Corporation (WBECSC) and authorized rice mills. This arrangement enabled FPOs to procure paddy directly from member farmers at MSP, ensuring better prices and timely payments. For instance, within eight days of receiving work orders, five FPOs procured 4,109 quintals of paddy worth ₹74.58 lakh, providing farmers an additional benefit of ₹240 per quintal over prevailing market prices. The FPOs also earned a facilitation fee of ₹31.25 per quintal, enhancing their financial sustainability (Small Farmers' Agribusiness Consortium [SFAC], 2022).

5.3. Institutional Integration into Mine Closure Plans

Indian mine closure efforts focus heavily on technical, environmental, and safety issues, such as slope stabilization, infrastructure removal, and hydrology management. Despite the recognition of socio-economic impacts of mine closures, livelihood generation activities remain secondary considerations in current mine closure plans (Tripathy, 2012).

Potential Solutions include incorporating FPO-led agriculture as a core component of Mine Rehabilitation plans. Coal companies must submit a structured FPO transition roadmap before mine closure approvals, and state governments should collaborate with coal companies to create dedicated post-mining agricultural zones.

Coal companies have the financial, infrastructural, and institutional capacity to drive FPO success in post-mining economies. By repurposing infrastructure, enhancing financial access, and embedding FPO models into mine closure policies, coal companies can ensure a just transition for mining-dependent communities.



Vegetable cultivation

6. ROADMAP FOR IMPLEMENTATION & POLICY RECOMMENDATIONS

Given the socio-economic disruptions caused by mine closures, leveraging coal companies to support FPOs can provide a structured pathway for economic diversification, agricultural sustainability, and community resilience. This section outlines a phased roadmap for implementing FPO-based mine closure strategies and provides policy recommendations to institutionalize this approach.

6.1. Program/Project Level Recommendations

These recommendations focus on on-ground, implementable actions that can be piloted, scaled, and monitored across mining-affected regions. They offer a phased implementation plan to build operational FPOs using the support of coal companies, financial institutions, and community structures.

Phase 1: Pilot Initiatives and Capacity Building (Short-Term Actions)

- Pilot Implementation in a Mining-Affected Region: Identify mining- affected communities where agriculture-based livelihood transitions can be piloted. Select a coal company-backed FPO pilot to demonstrate the model's feasibility and impact (Harikrishna et al., 2022). Engage local self-help groups (SHGs), panchayats, and cooperative societies to ensure community participation (Saxena et al., 2024).
- Assessment of Underutilized Mining Infrastructure for Repurposing: Conduct an inventory assessment of assets such as warehouses, irrigation systems, power lines, and roads left behind post-mining. Create infrastructure repurposing strategies where these assets can support agriculture-based enterprises, cold storage facilities, and logistics hubs (Venkattakumar, 2022).
- Financial Partnerships with Microfinance Institutions & Loan Guarantee Models: Establish partnerships with regional rural banks (RRBs), NABARD, microfinance institutions (MFIs), and cooperatives to offer FPOs access to credit (Kumar et al., 2023). Pilot loan guarantee models backed by coal companies to de-risk lending to newly formed FPOs. Additionally, ensure women-led FPOs receive priority access to funding, ensuring gender-inclusive economic transitions (Gurung et al., 2023).
- Capacity Building & Training for FPO Members: Establish state-run training centers for FPO leadership and skill-building programs tailored for former mining communities. This will equip FPO members with the necessary skills to manage and expand their operations effectively, enhancing their overall impact and sustainability.
- Convergence with Flagship Rural Development Schemes: To enhance viability and scale, the initiative could be meaningfully linked with rural flagship schemes like the 10,000 FPOs Scheme (through SFAC and NABARD) and PM-KUSUM (for integrating solar irrigation support). Formal convergence with these schemes would not only provide institutional support and technical assistance but also unlock targeted financial resources to accelerate FPO service delivery and long-term sustainability.

Phase 2: Expansion and Institutional Strengthening (Medium-Term Actions)

- Development of Cooperative-Based Cold Storage and Logistics Networks: Establish cold storage and processing units in previously mined areas to support perishable goods storage and reduce post-harvest losses. Encourage public-private partnerships (PPPs) for building logistics networks that connect FPOs to urban and export markets.
- Incentivizing Agricultural-Based Industrial Units in Mining Regions: Implement tax incentives for agribusiness companies to set up processing units in post-mining regions. Provide tax holidays and subsidies for companies investing in post-mining agricultural processing industries. Additionally, promote sustainable agriculture models that utilize mine spoil lands for afforestation, floriculture, or medicinal plant cultivation. Establish value-chain linkages with food processing industries, ensuring a stable demand for FPO-produced crops (Prabhavathi et al., 2023).

6.2. Policy Level Recommendations

These recommendations aim to institutionalize the FPO integration model into national and state policy frameworks, ensuring that FPO-based mine closure plans are not treated as ad-hoc CSR efforts but as mandatory components of post-mining economic rehabilitation.

Phase 1: Integration into Legal and Planning Frameworks

- Integration of FPOs into Mine Closure Policies and CSR Priorities: Advocate for state and national-level policy recognition of FPOs as a core aspect of mine closure plans. Ensure coal companies allocate CSR funds to build long-term supply chain linkages between FPOs and larger agribusinesses. Leverage Corporate Social Responsibility (CSR) guidelines under Section 135 of the Companies Act, 2013, ensuring at least 10–15% of mining-related CSR budgets support FPO-led initiatives (Padaliya et al., 2022).
- Creation of a Dedicated 'Mining-Affected Agriculture Transition Fund': Advocate for a government-backed funding mechanism that directs a portion of mining royalties and CSR contributions into an Agriculture Transition Fund supporting FPOs. Ensure funding flows through NABARD to maintain transparency and targeted support.
- Integration of FPO Models into State and National Rural Livelihood Missions: Align FPO-based mine closure policies with existing rural livelihood programs such as:
  - DAY-NRLM (Deendayal Antyodaya Yojana – National Rural Livelihoods Mission)
  - PM-KISAN (Pradhan Mantri Kisan Samman Nidhi)
  - PM-FME (Pradhan Mantri Formalization of Micro Food Processing Enterprises) Scheme
- Facilitate cross-ministerial coordination between the Ministry of Coal, Ministry of Agriculture, and Ministry of Rural Development to ensure policy coherence.

Phase 2: Asset Transfer Regulations and Infrastructure Safeguards

- Safeguards on Transferred Infrastructure: When transferring mining infrastructure to community groups, clear usage guidelines and ownership structures must be laid out. Often, communities end up selling the infrastructure in the absence of checks. Thus, policies should explicitly include infrastructure transition strategies in mine closure plans with monitoring mechanisms and co-ownership models between FPOs and local authorities.
- Effective transfer of mining infrastructure to FPOs requires a structured, transparent process to ensure assets are sustainably managed and aligned with community development goals. The checklist below outlines key steps for a responsible and accountable handover.

Indicative Checklist Topics: Infrastructure Handover Process for FPOs

Step	Description
1. Asset Inventory Documentation	Complete inventory of all transferable assets with valuation and usage reports.
2. Legal Agreement Drafting	MoU/contract detailing asset use, maintenance, and ownership rights.
3. Beneficiary Identification	Register FPOs and/or SHGs as legal custodians or co-owners.
4. Capacity Assessment	Ensure FPOs have basic operational capacity to manage the asset.
5. Training & Orientation	Provide technical training to FPOs on asset use and compliance obligations.
6. Monitoring Plan Setup	Define KPIs, inspection timelines, and audit mechanisms.
7. Conditional Handover	Link asset use to performance and sustainability indicators.
8. Public Disclosure	Ensure transparency via village/ward-level public notification.

By implementing a phased programmatic roadmap and robust policy-level reforms, coal companies and governments can ensure socially responsible mine closures that contribute to rural economic growth, environmental sustainability, and institutional resilience.

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