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Sustainability of farmer producer companies in West Bengal: An analysis of challenges and imperative extension interventions in Cooch Behar district

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Abstract

Farmer Producer Companies (FPCs) have emerged as an important institutional mechanism to address the challenges of small and marginal farmers by promoting collective action, market integration, and value addition. However, the sustainability and effective functioning of FPCs continue to be constrained by multiple technical, economic, marketing, organizational, and governance-related factors. The present study analyzes the challenges faced by member farmers and Boards of Directors (BoDs) of FPCs in Cooch Behar district of West Bengal and suggests appropriate extension interventions for strengthening these farmer collectives. An ex-post facto research design was adopted, and the study was conducted among 22 FPCs that had been operational for at least five years. A total of 110 member farmers and 44 BoD members were selected using random sampling techniques. Data were collected through structured interview schedules, and the perceived severity of constraints was analyzed using the Rank Based Quotient (RBQ) method. The findings reveal that member farmers primarily face severe post-harvest and marketing-related constraints. Limited processing facilities, undeveloped storage infrastructure, unidentified effective marketing channels, delayed payments, and high transportation costs emerged as the most critical challenges. Inadequate skills in packaging, limited knowledge of ICT tools, and low literacy regarding credit facilities further constrained farmers' ability to benefit fully from FPC membership. From the perspective of BoDs, major challenges included non-availability of critical inputs on time, high maintenance and repair costs of machinery, inadequate technology and skilled labour, insufficient storage space, weak marketing management capacity, and governance-related issues such as ineffective performance monitoring and limited transparency. Heavy dependence on government capital, low member participation, and weak internal communication also posed serious threats to organizational sustainability. The study underscores that the challenges faced by FPCs are multidimensional and interconnected, spanning infrastructure, governance, human resources, and market systems. To address these issues, the study proposes targeted extension interventions focusing on capacity building, market-led extension, infrastructure development through convergence with government schemes, financial and digital literacy, leadership and governance training, and strengthening backward and forward linkages. A holistic and integrated extension strategy is essential to enhance the sustainability of FPCs and to ensure inclusive growth and improved livelihoods for smallholder farmers in the region.

Keywords: Farmer producer companies, sustainability, constraints, extension interventions, market-led extension

Introduction

Agriculture remains central to rural livelihoods in India, though its contribution to national income has declined over time. By the triennium ending (TE) 2022, agriculture accounted for 44.8 per cent of employment but only 19.2 per cent of GDP, highlighting a widening income–employment gap (MoSPI, 2023). Structural changes such as declining cultivable land—from 66.7 per cent in 1950–51 to 58.7 per cent in 2022–23—and shrinking operational holdings, which fell from 2.28 ha in 1970–71 to 1.08 ha in 2015–16, have intensified land fragmentation and constrained farm profitability, particularly for small and marginal farmers (Ministry of Agriculture & Farmers Welfare, 2022–23; Agriculture Census, 2015–16) ^[6].

Globalization has further exposed farmers to market volatility, erosion of crop diversity, and income inequality (Das, 2023) ^[3], while climate change has increased production risks and threatened food security (Rao *et al.*, 2016) ^[9]. These challenges are compounded by inefficiencies in post-harvest management, leading to substantial losses due to inadequate storage, processing, and marketing infrastructure (NABCONS, 2022). Limitations in the agricultural extension system, especially the high extension worker–farmer ratio (1:1162), also restrict effective technology dissemination and advisory services (Gulati *et al.*, 2018) ^[4]. In this context, market-led extension and farmer collectivization have emerged as important institutional responses. Farmers' Organizations (FOs)

enhance collective bargaining power, reduce transaction costs, and improve access to markets and services (Trebbin, 2014) ^[11]. Among these, Farmer Producer Companies (FPCs), introduced under the Companies Act, 2002, represent a hybrid institutional model combining cooperative principles with a corporate structure to facilitate collective marketing, value addition, and access to finance. Their rapid expansion across Indian states reflects their growing role in integrating smallholders into agricultural value chains.

Despite their potential, FPCs face significant financial, managerial, and marketing challenges. Studies report inadequate storage and processing infrastructure, poor transportation facilities, weak leadership, delayed payments, limited market exposure, ineffective fund utilization, and lack of trust among members as key challenges affecting FPC performance (Bishnoi & Kumari, 2020; Verma *et al.*, 2020; Renuka Rani, 2021; Chandrashekar Reddy, 2021) ^[1, 12, 10, 2]. NABARD's recent assessments emphasize that while financial support and technical handholding improve FPC sustainability, targeted and graded interventions remain essential for strengthening weak and emerging collectives (NABARD, 2023–24) ^[8].

Against this backdrop, the present study aims to identify and analyze the challenges faced by member farmers and Board of Directors of Farmer Producer Companies and to suggest appropriate extension interventions for strengthening farmer collectives.

Materials and Methods

Study Area

The study was conducted in Cooch Behar district of West Bengal, a region dominated by small and marginal farmers with diversified cropping systems and increasing adoption of farmer-led collective institutions.

Research Design and Sampling

An ex-post facto research design was adopted. Twenty-two (22) Farmer Producer Companies that had been operational for a minimum of five years were selected purposively to ensure organizational maturity, using structured interview schedule.

From each selected FPC

- Five member farmers were selected randomly ($22 \times 5 = 110$)
- Two BoD members were selected randomly ($22 \times 2 = 44$)

Measurement and Data analysis

The perceived severity of challenges was quantified using the Rank Based Quotient (RBQ) technique.

• Formula
$RBQ = \sum \frac{(Fi) \times (n+1-i)}{N \times n} \times 100$
• Fi = Frequency of the farmers for the i^{th} rank of the attribute
• N = Number of farmers contacted for factor identification
• n = The maximum number of ranks given for various factors.
• i = Rank of the attributes
• The factors with highest RBQ score will be ranked first and hence considered the most important factor by the farmers.

Higher RBQ values indicated greater severity of challenges. Descriptive statistics were used for interpretation.

Results and Discussion

1. Challenges faced by the member farmers, working with the FPCs

Technical Constraints

Sl. No.	Statements	RBQ Score	Rank
1	Less availability of timely good quality inputs	70.31	V
2	Inadequate infrastructures (implements, irrigation facilities, power and electricity)	66.84	VI
3	Undeveloped storage facilities	87.64	II
4	Limited processing facilities	88.12	I
5	Lack of knowledge about ICT tools	81.60	IV
6	Lack of proper skill/training in packaging	83.73	III
7	Recommended/Scientific packages of practices not followed	64.83	VII

Economic constraints

Sl. No.	Statements	RBQ Score	Rank
1	Inadequate facilities for crop insurance	62.50	VI
2	Inadequate finance from financial institutions	78.60	II
3	Inadequate literacy of credit facilities	81.71	I
4	Limited government pricing policies	73.19	III
5	Apprehensive about receiving remunerative price	69.25	IV
6	Timely information about future prices not available	64.47	V

Marketing constraints

Sl. No.	Statements	RBQ Score	Rank
1	Fluctuation of price in every year	73.67	VIII
2	Lack of proper market information	80.16	VI
3	Low price of produce	77.47	VII
4	High cost of transportation	84.47	III
5	Involvement of middlemen	84.25	IV
6	Nature of products (perishability)	80.26	V
7	Delayed payment	87.20	II
8	Unidentified effective marketing channel	87.63	I

Organizational constraints

Sl. No.	Statements	RBQ Score	Rank
1	Poor linkage with financial organizations	71.16	III
2	Inadequate infrastructural facilities	81.48	I
3	Poor decision making ability/skill	78.95	II

Overall Challenges faced by the member farmers, working with the FPCs

Sl. No.	Challenges	RBQ Score	Rank
1.	Limited processing facilities	88.12	I
2.	Undeveloped storage facilities	87.64	II
3.	Unidentified effective marketing channel	87.63	III
4.	Delayed payment	87.20	IV
5.	High cost of transportation	84.47	V
6.	Involvement of middlemen	84.25	VI
7.	Lack of proper skill/training in packaging	83.73	VII
8.	Inadequate literacy of credit facilities	81.71	VIII
9.	Lack of knowledge about ICT tools	81.60	IX
10.	Inadequate infrastructural facilities	81.48	X

2. Challenges faced by the FPCs (BoDs) in working with the farmers

2.1 Administrative problems perceived by Board of Directors

2.1.1 Administrative problems related with Board meetings

Sl. No.	Statements	RBQ Score	Rank
1	Board meetings are not conducted regularly	40.29	IV
2	Notice of board meetings were not received in time	36.16	VI
3	Agenda for the board meetings not intimated in advance	46.69	II
4	Documents/information for deliberations in board meetings are not circulated in advance	42.56	III
5	Board meetings usually resorted to ad hoc decisions	31.84	VII
6	Board meetings were suspended due to insufficient quorum	17.84	X
7	Board meetings were conducted even without quorum in exceptional cases	20.12	IX
8	Board meetings were inconclusive of agenda of meetings	27.08	VIII
9	Rare involvement in day-to-day managerial issues of the company	39.88	V
10	Seldom monitor the implementation of decisions of board meeting	16.56	XI
11	Proceeding of the last meeting not communicated in time	50.83	I

2.1.2 Administrative problems related with Annual General Body meetings

Sl. No.	Statements	RBQ Score	Rank
1	GB meetings are not conducted regularly	46.44	III
2	Failed to circulate GB notice in time	52.96	II
3	Agenda for the GB meetings not intimated in advance	34.50	VI
4	Documents/information for deliberations in GB meetings are not circulated in advance	62.25	I
5	Occasional attendance in the GB meetings	40.12	IV
6	Rare involvement of members in the discussions in the GB meetings	29.12	VII
7	GB meetings were conducted even without quorum in exceptional cases	15.38	X
8	GB meetings were inconclusive of agenda of meetings	19.25	IX
9	Delay in implementing decisions of GB	34.78	V
10	GB meetings usually resorted ad hoc decisions	17.62	VIII
11	GB meetings were suspended due to insufficient quorum	16.50	XI

2.1.3 Administrative problems related with audit

Sl. No.	Statements	RBQ Score	Rank
1	Conducting annual audits after due time	25.57	II
2	Delay in rectification of audit query	13.07	IV
3	Inquiry was ordered based on the audit report	18.18	III
4	Balance sheet/ Income-expenditure statement are not regularly published	40.91	I

2.2 Structural problems perceived by Board of Directors

Sl. No.	Statements	RBQ Score	Rank
1	Unethical and poor management practices	37.66	III
2	Heavy dependency on government capital rather than shareholder's contribution	64.61	I
3	Low progress (application) of new technologies	42.53	II
4	Predominance of vested interest of a particular group	35.71	IV
5	Over politicization and excess government control	26.62	VII
6	Absence of regular performance appraisal of employees	31.82	VI
7	Accountability judgement is limited	33.77	V

2.3 Human resource related problems perceived by Board of Directors

Sl. No.	Statements	RBQ Score	Rank
1	Not taken care of the grievances raised by the members	42.80	III
2	Motivation for member participation in business is lacking	62.88	I
3	Low interest to evaluate performance of employees regularly	41.67	IV
4	Employee participation in both business and management is low	52.65	II
5	Employees' meetings not convened in situations of emergency	9.09	VI
6	Accountability of employees is limited and not done regularly	21.21	V

2.4 Functional problems perceived by Board of Directors

2.4.1 Problems in board

Sl. No.	Statements	RBQ Score	Rank
1	Board is not responsible for formulating, supervising and monitoring the performance of FPC	73.68	I
2	Board act on the areas reserved for General Body	68.25	III
3	Board exercise executive powers	55.95	IV
4	Board has no role in determination of the dividend payable	42.86	VII
5	Transparency in all activities is questionable	69.84	II
6	Do not ensure that proper books are maintained	49.35	V
7	Do not place the annual accounts before AGM with auditors' report	46.94	VI

2.4.2 Problems in input supply

Sl. No.	Statements	RBQ Score	Rank
1	Non-availability of sufficient equipments	71.43	II
2	Non-availability of critical inputs on time	95.59	I

2.4.3 Problems in procurement

Sl. No.	Statements	RBQ Score	Rank
1	Non-availability of sufficient transportation facility for procurement of materials	68.10	II
2	Increased transportation cost is a hurdle for the company	55.56	V
3	Non-availability of labourers for procurement	67.71	III
4	Insufficient space for the storage of procured materials	82.43	I
5	No facility for judgment of quality	60.90	IV
6	No information about right price	43.75	VI

3. Problems in processing

Sl. No.	Statements	RBQ Score	Rank
1	Lack of proper storage facilities	72.37	VI
2	Unhygienic plants	66.67	VII
3	Improper management in plants	38.89	IX
4	High maintenance cost of the machineries	83.51	I
5	Inadequate technology & skilled labour	82.72	III
6	Modern machinery not available in near market	73.56	V
7	Repairing of machinery is a problem	83.17	II
8	Quality maintenance is a huge task	67.36	VIII
9	Demand creation of processed items is lacking	74.08	IV

4. Problems in marketing

Sl. No.	Statements	RBQ Score	Rank
1	Advertisement cost is high	66.67	III
2	Existence of competitors	50.00	VII
3	Delay in fund allocation by supporting agencies	69.57	II
4	Price fluctuations in the market	61.11	V
5	Creating new market is a challenge and costly	67.65	IV
6	Knowledge in marketing management is not adequate	74.54	I

Overall Challenges faced by the FPCs (BoDs) in working with the farmers

Sl. No.	Statements	RBQ Score	Rank
1	Non-availability of critical inputs on time	95.59	I
2	High maintenance cost of the machineries	83.51	II
3	Repairing of machinery is a problem	83.17	III
4	Inadequate technology & skilled labour	82.72	IV
5	Insufficient space for the storage of procured materials	82.43	V
6	Knowledge in marketing management is not adequate	74.54	VI
7	Demand creation of processed items is lacking	74.08	VII
8	Board is not responsible for formulating, supervising and monitoring the performance of FPC	73.68	VIII
9	Modern machinery not available in near market	73.56	IX
10	Lack of proper storage facilities	72.37	X

Challenges Faced by Member Farmers

The study reveals that member farmers associated with FPCs face severe technical, economic, marketing, and organizational constraints, as reflected by high RBQ scores. Among technical constraints, limited processing facilities ranked first (RBQ Score: 88.12), followed by undeveloped storage facilities (RBQ Score: 87.64). This clearly indicates that inadequate post-harvest infrastructure is the most critical technical bottleneck restricting value addition and income enhancement. Lack of skill/training in packaging (RBQ Score: 83.73) and poor knowledge of ICT tools (RBQ Score: 81.60) further highlight gaps in capacity building and technology adoption.

With respect to economic constraints, inadequate literacy of credit facilities emerged as the most severe issue (RBQ Score: 81.71), followed by inadequate finance from financial institutions (RBQ Score: 78.60). These findings suggest that despite institutional support, farmers continue to face difficulties in accessing and effectively utilizing formal credit systems.

In the case of marketing constraints, unidentified effective marketing channels ranked first (RBQ Score: 63), closely followed by delayed payment (RBQ Score: 87.20). High transportation cost (RBQ Score: 84.47) and involvement of middlemen (RBQ Score: 84.25) indicate persistent inefficiencies in the marketing system, adversely affecting farmers' net returns.

Among organizational constraints, inadequate infrastructural facilities within FPCs was ranked highest (RBQ Score: 81.48), followed by poor decision-making ability of leadership (RBQ Score: 78.95), reflecting governance and management limitations.

Overall, the pooled analysis shows that limited processing facilities (RBQ Score: 88.12), undeveloped storage (RBQ Score: 87.64), and weak market linkage (RBQ Score: 87.63) are the top three constraints. This indicates that FPCs in the study area are constrained mainly by post-harvest infrastructure and marketing inefficiencies rather than production-related issues, underscoring the need for focused

interventions on processing, storage, and market integration.

Challenges Faced by Boards of Directors

Administrative problems – Board meetings: The most severe issue was non-communication of proceedings of the last meeting in time (RBQ Score: 50.83), followed by non-intimation of agenda in advance and non-circulation of documents before meetings. These indicate weak internal communication and poor meeting preparedness. Issues like quorum-related suspensions and ad hoc decisions were perceived as relatively less severe.

Administrative problems – General Body (GB) meetings: The non-circulation of documents/information in advance emerged as the major constraint (RBQ Score: 62.25), followed by delay/failure in issuing GB notices. Limited member participation and irregular conduct of GB meetings further reflect weak participatory governance.

Administrative problems – Audit: The key audit-related concern was that balance sheets and income–expenditure statements are not regularly published (RBQ Score: 40.91), indicating transparency and compliance gaps. Delays in audit and rectification of audit queries were perceived as comparatively less critical.

Structural problems: BoDs perceived heavy dependency on government capital instead of shareholders' contribution as the most serious structural issue (RBQ Score: 64.61), followed by low adoption of new technologies. This reflects sustainability concerns and limited internal capital formation within FPCs.

Human resource-related problems: The foremost problem was lack of motivation for member participation in business activities (RBQ Score: 62.88), followed by low employee participation in management. This suggests weak member engagement and limited human capital utilization.

Functional problems – Board functioning: The most critical issue was that the Board is not effectively formulating, supervising, and monitoring FPC performance (RBQ Score: 73.68). This highlights governance inefficiencies at the leadership level.

Functional problems – Input supply: Non-availability of critical inputs on time was the most severe constraint (RBQ Score: 95.59), indicating operational inefficiencies affecting farmer services.

Functional problems – Procurement: The major constraint was insufficient storage space for procured materials (RBQ Score: 82.43), followed by transportation-related issues, which hinder efficient aggregation and procurement operations.

Functional problems – Processing: High maintenance cost of processing units (RBQ Score: 83.51) and inadequate

technology and skilled labour were the dominant problems, reflecting technical and financial bottlenecks in value addition.

Functional problems – Marketing: The most serious marketing constraint was inadequate knowledge of marketing management (RBQ 74.54; Rank I), followed by delays in fund allocation and high costs of market creation, limiting the competitive performance of FPCs.

The findings reveal that FPCs face interconnected governance, structural, human resource, and functional challenges, with communication gaps, weak participation, dependency on external support, and operational inefficiencies emerging as major impediments to effective functioning.

Extension Interventions for Addressing challenges faced by the member farmers, working with the FPCs

Sl. No.	Challenges	Extension Interventions
1	Limited processing facilities	Facilitate establishment of community-level primary processing units through convergence with government schemes (PMFME, SFAC). Conduct exposure visits to successful FPC-managed processing units.
2	Undeveloped storage facilities	Promote scientific storage structures (godowns, cold storage) through capacity building and subsidy linkage (AIF). Organize training programmes on post-harvest management. Encourage collective storage models under FPC ownership.
3	Unidentified effective marketing channel	Implement market-led extension approaches. Support direct marketing models (Sufal Bangla outlets, e-NAM, e-commerce platforms).
4	Delayed payment	Promote formal contract agreements between FPCs and buyers. Train FPC members on financial literacy and digital transactions. Facilitate access to working capital and revolving funds.
5	High cost of transportation	Promote collective transportation systems through aggregation. Facilitate convergence with schemes supporting logistics and transport subsidy. Encourage cluster-based procurement and marketing.
6	Involvement of middlemen	Strengthen collective marketing and bargaining power of FPCs. Promote direct farmer-to-consumer and farmer-to-buyer models.
7	Lack of proper skill/training in packaging	Conduct hands-on skill-oriented training programmes on packaging and grading. Demonstrate cost-effective and eco-friendly packaging technologies. Link FPCs with technical institutions and packaging experts.
8	Inadequate literacy of credit facilities	Organize financial literacy and credit awareness campaigns. Facilitate linkage with banks, NABARD, and microfinance institutions. Train FPC leaders on loan documentation and credit management.
9	Lack of knowledge about ICT tools	Conduct ICT-based capacity building programmes (mobile apps, e-marketing platforms). Promote use of digital advisory services and MIS tools.
10	Inadequate infrastructural facilities	Facilitate convergence with government infrastructure development schemes. Advocate for custom hiring centres and shared infrastructure. Support preparation of project proposals for infrastructure creation.

Extension Interventions for Addressing Challenges faced by the FPCs (BODs) in working with the farmers

Sl. No.	Challenges	Extension Interventions
1	Non-availability of critical inputs on time	Advance input planning through participatory need assessment, preparation of seasonal input calendars, and strengthening linkages with KVKs and certified suppliers.
2	High maintenance cost of the machineries	Capacity building on preventive maintenance, promotion of collective machinery use, and establishment of Custom Hiring Centres through extension facilitation.
3	Repairing of machinery is a problem	Skill-oriented training of rural youth as local para-mechanics and facilitation of service linkages with authorized repair centres.
4	Inadequate technology & skilled labour	Regular technical trainings, on-farm demonstrations, exposure visits, and ICT-based advisory services for FPC members.
5	Insufficient space for the storage of procured materials	Extension support for scientific storage practices, low-cost storage demonstrations, and awareness on warehouse receipt systems.

6	Knowledge in marketing management is not adequate	Managerial extension through training on market intelligence, price forecasting, branding, packaging, and value chain development.
7	Demand creation of processed items is lacking	Consumer-focused extension including product awareness campaigns, participation in exhibitions, and promotion of market-led production.
8	Board is not responsible for formulating, supervising and monitoring the performance of FPC	Institutional extension through leadership development, governance training, and sensitization on roles and responsibilities of BODs.
9	Modern machinery not available in near market	Facilitation of technology exposure, manufacturer linkages, and cluster-based extension for collective procurement.
10	Lack of proper storage facilities	Convergence-based extension strategies for infrastructure development, including linkages with government schemes and financial institutions.

Conclusion

The study concludes that Farmer Producer Companies in Cooch Behar district face multifaceted challenges at both farmer and managerial levels, which significantly hinder their effective functioning and sustainability. Addressing these challenges requires a holistic extension strategy integrating capacity building, infrastructure support, market orientation, and institutional strengthening. Well-designed extension interventions and supportive policy frameworks can substantially enhance the performance of FPCs, thereby contributing to inclusive rural development and improved farmer livelihoods.

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