International Journal of Commerce and Economics
www.commercejournal.in
Online ISSN: 2664-7540
Received: 28-06-2026, Accepted: 29-07-2026, Published: 13-08-2026
Volume 8, Issue 3, 2026, Page No. 14-22

Impact of farmer producer organizations on farmers' income and marketing efficiency – A study in Telangana

Dr B Nageswar Rao
Associate Professor of Economics, Government Degree College, Yellandu, Bhadradri Kothagudem, Telangana, India
DOI: https://doi.org/10.66856/ijce.2026.8.3.8052

Abstract
Farmer Producer Organizations (FPOs) have emerged as an important institutional mechanism for improving the socio-economic conditions of small and marginal farmers through collective action, enhanced market access, and improved bargaining power. The present study examines the impact of the Nallabelli Farmers Producer Company Limited on farmers' income and marketing efficiency in Telangana. The study is based on both primary and secondary data. Primary data were collected from 60 randomly selected member farmers out of 350 active members of the FPO through a structured interview schedule. Secondary data were obtained from government reports, NABARD publications, SFAC reports, journals, and other relevant sources. The findings reveal that the majority of the respondents are small and marginal farmers with considerable farming experience. The FPO has significantly improved access to quality inputs, institutional credit, insurance, training, and market information. A large proportion of respondents reported improvements in yield, cropping intensity, gross income, net income, marketable surplus, and price realization after joining the FPO. However, the members continue to face challenges such as inadequate working capital, poor infrastructure, lack of storage facilities, price fluctuations, low awareness, and limited digital literacy. The study concludes that FPOs play a crucial role in enhancing farmers' income and marketing efficiency. Strengthening financial support, infrastructure facilities, technology adoption, and institutional linkages would further improve the effectiveness and sustainability of FPOs.

Keywords: Farmer producer organization, farmers' income, marketing efficiency, collective marketing, agricultural development, Telangana

Introduction
Agriculture remains a vital sector of the Indian economy, contributing significantly to food security, employment, and rural development. Despite structural changes in the economy, agriculture and allied sectors accounted for about 18.2 percent of India's Gross Value Added (GVA) in 2024–25 (Economic Survey, 2024–25). The sector continues to provide livelihood opportunities to nearly 46 percent of the country's workforce (PLFS, 2023–24). India is among the world's leading producers of rice, wheat, pulses, fruits, vegetables, milk, and spices, and produced approximately 332.3 million tonnes of food grains during 2023–24 (Ministry of Agriculture and Farmers Welfare, 2024) [3]. Agriculture also contributes substantially to export earnings, with agricultural exports valued at about US$ 48.8 billion in 2023–24 (APEDA, 2024). Furthermore, the sector supports numerous agro-based industries and plays a crucial role in rural income generation and poverty reduction.

Despite its importance, Indian agriculture faces several challenges that adversely affect farmers' livelihoods. Small and fragmented landholdings, rising input costs, inadequate access to institutional credit, climate-related uncertainties, and limited adoption of modern technologies constrain agricultural productivity and profitability. According to the Agriculture Census (2015–16), about 86 percent of operational holdings belong to small and marginal farmers, making them highly vulnerable to economic and environmental risks.

Among these challenges, marketing-related issues are particularly severe. Most farmers have limited marketable surplus and weak bargaining power, forcing them to depend on traders and intermediaries for the sale of their produce. Price fluctuations, inadequate storage and cold-chain facilities, poor transportation infrastructure, and lack of timely market information often result in distress sales and reduced farm incomes. The presence of multiple intermediaries widens the gap between farm-gate and consumer prices, while inadequate grading, processing, and value-addition facilities further limit farmers' earnings. These persistent marketing constraints highlight the need for stronger institutional mechanisms such as Farmer Producer Organizations (FPOs) to improve market access, enhance bargaining power, and ensure better price realization for farmers.

Since Independence, the Government of India has implemented several measures to address marketing problems faced by farmers and to ensure remunerative prices for agricultural produce. During the 1950s and 1960s, regulated markets (Agricultural Produce Market Committees APMCs) were established to protect farmers from exploitation by traders and middlemen. The establishment of the Food Corporation of India in 1965 and the introduction of the Minimum Support Price (MSP) system helped assure farmers of stable prices and government procurement, particularly for food grains. To strengthen agricultural marketing infrastructure, the government promoted warehousing facilities through the Central Warehousing Corporation and state warehousing corporations. In the 1980s and 1990s, initiatives such as grading and standardization under AGMARK and rural market development programmes were expanded. Since 2000, efforts have focused on market reforms, including the

Model APMC Act (2003), direct marketing, contract farming, and private market yards. The launch of the National Agriculture Market (e-NAM) was launched in 2016 integrated agricultural markets across states through an online trading platform. The government has also promoted Farmer Producer Organizations (FPOs) under the Central Sector Scheme launched in 2020, targeting the formation of 10,000 FPOs to enhance collective marketing and bargaining power. Additional measures such as the Agriculture Infrastructure Fund (2020), cold storage facilities, value-chain development, and digital market information services have further improved market access. These initiatives have collectively contributed to reducing marketing inefficiencies, strengthening price realization, and improving farmers' incomes (Economic Survey 2024–25; Ministry of Agriculture and Farmers Welfare, 2025). Among the various schemes, programmes and projects the Farmer Producer Organizations (FPOs) is an effective and mass movement of farmers involvement programme in India like the Self Help Group.

Farmer Producer Organizations

The concept of Farmer Producer Organizations (FPOs) was introduced in India in 2003 based on the recommendations of the Y.K. Alagh Committee. Consequently, the Companies Act, 1956 was amended to provide legal recognition to Producer Companies, enabling farmers to organize themselves as business entities while retaining the principles of cooperation. Initially, the promotion of FPOs was supported by institutions such as the Small Farmers' Agribusiness Consortium (SFAC) and the National Bank for Agriculture and Rural Development (NABARD) with the objective of enhancing collective bargaining power, improving market access, and increasing the incomes of small and marginal farmers.

Recognizing the importance of FPOs in agricultural transformation, the Government of India launched the Central Sector Scheme, "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)," on 29 February 2020 with a budget allocation of ₹6,865 crore. The scheme aims to strengthen smallholder farmers through collective marketing, value addition, improved access to quality inputs, institutional credit, and better market linkages.

In the flagship programme, 10,000 FPOs have been registered across the country. The scheme has also promoted women's participation, with more than 21.96 lakh women farmers enrolled and over 1,175 women-led FPOs established. Uttar Pradesh leads with 1,275 FPOs, followed by Andhra Pradesh (714), Bihar (696), Madhya Pradesh (642), and Telangana (617). Since the introduction of the Producer Company concept, more than 44,000 FPOs have been registered in India. However, only about 27,000 are currently active, and nearly 57 percent regularly comply with statutory reporting requirements. These figures indicate both the rapid expansion and the operational challenges faced by FPOs in achieving financial sustainability and long-term growth.

Review of Earlier Studies

Trebbin and Hassler (2012) [16] examined the FPOs can strengthen farmers' bargaining power and reduce dependence on intermediaries. Narrod et al. (2013) [11] analyzed that organized farmers were better able to access high-value markets, adopt improved technologies, and receive higher returns from agricultural production. Singh (2014) [15] studied Farmer Producer Companies in Madhya Pradesh and observed that importance of collective marketing in improving farm incomes. NABARD (2015) reported that FPOs contributed significantly to strengthening small and marginal farmers by facilitating bulk procurement of inputs and collective sale of produce. Chandrashekhar (2016) [8] examined the performance of Farmer Producer Organizations in Karnataka and found that member farmers received better prices for their produce compared to non-members. The study also noted improvements in farmers' awareness of market opportunities. Mukherjee et al. (2018) [10] assessed the impact of FPOs on agricultural marketing and concluded that collective marketing increased farmers' bargaining power and reduced the role of middlemen and the study reported positive effects on income and market access. Kumar and Wankhade (2018) [9] investigated the functioning of FPOs in Maharashtra and observed that FPO members benefited from lower input costs, improved access to credit, and better marketing arrangements. Sarkar et al. (2020) [14] studied the economic benefits of FPO membership and found that farmers associated with FPOs achieved higher productivity and profitability than non-members. Verma and Singh (2022) [17] examined the impact of FPOs on smallholder farmers and reported significant improvements in market access, price realization, and income levels.

The existing literature reveals that most studies on Farmer Producer Organizations (FPOs) have primarily focused on their role in improving market access, collective marketing, input supply, and farmers' income. While these studies provide valuable insights but limited research has been conducted at the micro level to assess the socio-economic characteristics of FPO members and the actual benefits derived by farmers in specific empirical evidence on the performance and impact of FPOs particularly in Telnangana. Therefore, the present study attempts to fill this gap by examining the socio-economic profile of member farmers, benefits accrued through FPO membership, and the challenges faced by members.

Profile of Nallabelli Farmers Producer Organization

Nallabelli Farmers Producer Organization (NFPO) is a farmer-owned and farmer-managed institution established to improve the socio-economic conditions of farmers in Nallabelly Mandal of Warangal District, Telangana. The organization was incorporated on 14 January 2019 under the Companies Act, 2013 with the primary objective of the NFPO is to strengthen farmers' bargaining power through collective action, improve market access, reduce marketing costs, and enhance farm profitability. At present, the organization has about 350 active farmer members, the majority of whom are small and marginal farmers. Members cultivate crops such as paddy, maize, groundnut, cotton, turmeric, vegetables, and fruits on both owned and leased lands. The organization is supported by 10 staff members who manage its day-to-day activities and coordinate various services for members. NFPO provides quality seeds, fertilizers, pesticides, farm machinery, and timely credit facilities at reasonable interest rates. It also facilitates crop insurance and farmer insurance schemes for all members. The organization follows a centralized marketing system whereby members aggregate their produce for collective sale in major markets such as the Enumamula Agricultural Market Yard and Kakatiya Vegetable Market, enabling better price realization and reducing the role of intermediaries. To strengthen members' knowledge and skills, NFPO conducts regular meetings on the 5th of every month, focusing on training, technological updates, market information, and social awareness activities. A unique feature of the organization is the operation of two cooperative fuel bunks that provide diesel and petrol to members at subsidized rates. Regular audits and transparent management practices ensure accountability and efficient functioning. Through these activities, NFPO has emerged as an important institution for promoting agricultural development and improving farmers' livelihoods in the region.

Methodology

The present study is based on both primary and secondary data sources. Primary data were collected from 60 member farmers of the Nallabelli Farmers Producer Organization (NFPO), selected through simple random sampling from a total membership of 350 farmers. The sampling ratio was approximately 1:5.8, implying that nearly every sixth member was selected as a respondent after conducting a preliminary survey with the assistance of NFPO staff. Data were collected during the agricultural year 2025–26 using a structured and pre-tested interview schedule. Information relating to socio-economic characteristics, benefits derived from FPO membership, impact on income and marketing efficiency, and problems faced by members was obtained directly from the respondents. Secondary data were collected from NFPO records, NABARD, SFAC, Ministry of Agriculture and Farmers Welfare publications, government reports, journals, books, and relevant websites. The data were analyzed using percentages, averages, and tabular analysis. The study aimed to analyze the socio-economic profile of members, assess the impact of FPO membership, and identify the constraints faced by farmers.

To justify the objectives the study has been formulated the 5 simple percentage and average tables with the help of primary data. The first table on the distribution of respondents on social aspect based. The second table on agricultural related information, third table on benefits received by the from the FPO, fourth table on impact of agricultural related aspects of the respondents and final fifth table on the problems of the respondents observed from the FPO are the core subjects for the study.

Table 1: Distribution of the Respondents according to Social Aspects

Particulars	Indicators	No. Respondents	Percentage
Social category of the Respondent	SC	7	11.7
	ST	15	25.0
	BC	27	45.0
	OC	11	18.3
	Total	60	100
Range of Ages of the Respondents	18 - 25	6	10.0
	26 – 35	13	21.7
	36 – 45	22	36.7
	46 – 55	15	25.0
	56 – 65	4	6.7
	Total	60	100.0
Educational status of the Respondents	Illiterates	10	16.7
	Primary	31	51.7
	Secondary	15	25.0
	Higher	4	6.7
Experience of the Respondent as A Farmer	0-10	3	5.0
	10 to 20	25	41.7
	21-30	20	33.3
	30 Above	12	20.0
	Total	60	100.0

Source: Field Survey

Table–1 presents the distribution of respondents according to their social category, age, educational status, and farming experience among the members of the selected FPO. The social category-wise distribution indicates that a majority of the respondents belong to the Backward Classes (BC) category. Out of the total 60 respondents, 27 respondents accounting for 45.0 percent belong to the BC category. This is followed by Scheduled Tribes (ST) with 15 respondents representing as 25.0 percent. The Open Category (OC) comprises 11 respondents constituting as 18.3 percent, while the Scheduled Castes (SC) account for 7 respondents representing for 11.7 percent. The distribution reflects the predominance of BC and ST farmers among the FPO members.

The age-wise distribution reveals that most respondents belong to the economically productive age groups. The highest proportion of respondents, 22 farmers accounting for 36.7 percent, falls within the 36–45 years age group. This is followed by 15 respondents representing for 25.0 percent in the 46–55 years category and 13 respondents constituted as 21.7 percent in the 26–35 years age group. Young farmers aged 18–25 years account for 10.0 percent, while only 6.7 percent belong to the 56–65 years category. This indicates that the majority of FPO members are middle-aged farmers actively engaged in agricultural operations.

The educational profile shows that 31 respondents constituting 51.7 percent have completed primary education, making it the largest educational category. Secondary education was attained by 15 respondents representing for 25.0 percent, while 10 respondents accounting for 16.7 percent are illiterates. Only 4 respondents with 6.7 percent have completed higher education. This suggests that basic literacy levels are relatively high among the members, although higher educational attainment remains limited.

Regarding farming experience, the largest group comprises farmers with 10–20 years of experience, accounting for 41.7 percent of the respondents. Farmers with 21–30 years of experience constituted as 33.3 percent, while 20.0 percent possess more than 30 years of farming experience. Only 5.0 percent have less than 10 years of experience. Overall, the findings indicate that the FPO is largely composed of experienced, middle-aged farmers with basic educational backgrounds, providing a strong foundation for collective agricultural activities and adoption of improved farming practices.

Table–2 presents the agricultural characteristics of the respondents, including landholding size, irrigation facilities, land ownership pattern, cropping pattern, and the source through which farmers became members of the Farmer Producer Organization of Nallabelli (FPO).

The distribution of respondents according to landholding size reveals that marginal farmers constitute the largest category among the FPO members. Out of the total 60 respondents, 28 farmers accounting for 46.7 percent belong to the marginal farmer category. Small farmers constituted the second largest group with 15 respondents representing for 25.0 percent. Medium farmers account for 11 respondents constituted as 18.3 percent, while only 6 respondents, representing for 10.0 percent, belong to the large farmer category. The findings indicate that the FPO primarily serves small and marginal farmers, who together accounted for about 72.0 percent of the total membership.

The irrigation profile of the respondents shows that bore-well irrigation is the predominant source of irrigation in the study area. Nearly 29 respondents accounting for 48.3 percent depend on bore-wells for crop cultivation. Open wells provide irrigation to 12 respondents representing for 20.0 percent, while tank irrigation supports to 11.7 percent of the respondents. Canal irrigation and rain-fed agriculture each account for 10.0 percent of the sample. The findings suggest a heavy reliance on groundwater resources for agricultural production.

Table 2: Particulars of Agriculture Related Information of the Respondents

Main Indicator	Sub Indicators	Respondents	Percentage
Land Holding Categories of the Respondents	Marginal	28	46.7
	Small	15	25.0
	Medium	11	18.3
	Large	6	10.0
	Total	60	100.0
Irrigation Facilities of the Respondents	Rain -fed	6	10.0
	Bore-well	29	48.3
	Open-well	12	20.0
	Tank	7	11.7
	Canal	6	10.0
	Total	60	100.0
Land Ownership Position of the Respondents	Own	46	76.7
	Leased	14	23.3
	Own and Leased	18	30.0
	Total	60	100.0
Cropping Pattern of the Respondents	Paddy	34	56.7
	Maize	41	68.3
	Cotton	19	31.7
	Groundnut	22	36.7
	Vegetables	15	25.0
	More than one	27	45.0
	Total	60	100.0
Introducer as a Member into FPO of the Respondents	Government Officials	12	20.0
	CBBO	15	25.0
	NGOs	6	10.0
	Farmers	8	13.3
	KVK	6	10.0
	SHG	10	16.7
	Friends/Relatives	3	5.0
	Total	60	100.0

Source: Field Survey

With regard to land ownership, a majority of the respondents cultivate their own land. Out of the total respondents, 46 farmers representing for 76.7 percent own agricultural land. About 14 respondents constituted as 23.3 percent cultivate leased-in land. In addition, 18 respondents accounting for 30.0 percent cultivate both owned and leased land to expand their farming operations. This indicates that leasing of land is also an important practice among FPO members.

The cropping pattern of the respondents reflects considerable crop diversification. Maize is the most widely cultivated crop, grown by 41 respondents representing for

68.3 percent, followed by paddy cultivated by 34 respondents accounting for 56.7 percent. Groundnut and cotton are grown by 36.7 percent and 31.7 percent of the respondents respectively, while vegetables are cultivated by 25.0 percent. Furthermore, 45.0 percent of the respondents practice multiple cropping, indicating efforts to diversify farm income and reduce production risks.

Regarding membership induction into the FPO, Community-Based Business Organizations (CBBOs) played a major role by introducing as 25.0 percent of the respondents, followed by government officials with 20.0 percent. Self-Help Groups (SHGs) facilitated the enrollment of 16.7 percent of members, while fellow farmers, NGOs, and Krishi Vigyan Kendras (KVKs) also contributed to membership mobilization. The results highlight the significant role of institutional agencies in promoting awareness and strengthening farmer participation in the FPO.

Table 3: Particulars of Benefits Received by the Respondents from the FPO

Main Indicators	Sub Indicators	Responses	Percentage
Input-related Benefits	Quality Seeds	46	76.7
	Quality Fertilizers and Pesticides	32	53.3
	Machinery	24	40.0
	Input Subsidy	18	30.0
	On time availability	16	26.7
	Total	60	100.0
Financial Benefits	Access to Institutional credit	48	80.0
	Lower Rate of Interest	19	31.7
	Access to Government Schemes	36	60.0
	Insurance	60	100.0
	Total	60	100.0
Knowledge	Training	46	76.7
	Technology	12	20.0
	Guidance	32	53.3
	Moral Support	41	68.3
	Total	60	100.0
Marketing Benefits	Proper Information	37	61.7
	Collective Marketing	24	40.0
	Reduction of Transport Cost	20	33.3
	Collective Bargaining	10	16.7
	Better Prices	36	60.0
	No Wastage	12	20.0
	Total	60	100.0

Source: Field Survey

Table–3 presents the various benefits received by the respondent farmers through their membership in the Farmer Producer Organization (FPO). The benefits have been classified into four major categories, namely input-related benefits, financial benefits, knowledge-related benefits, and marketing benefits.

Among the input-related benefits, quality seeds emerged as the most important benefit received by the members. Out of the 60 respondents, 46 farmers accounting for 76.7 percent reported that the FPO facilitated access to quality seeds. Quality fertilizers and pesticides were received by 32 respondents representing for 53.3 percent, while 24 respondents with 40.0 percent benefited from access to farm machinery. Input subsidies were received by 30.0 percent of the respondents, and 26.7 percent reported timely availability of agricultural inputs through the FPO.

With regarding to financial benefits, insurance coverage was reported by all the respondents, accounting for 100.0 percent. Access to institutional credit was received by 48 respondents representing for 80.0 percent, indicating the important role of the FPO in improving farmers' access to formal financial institutions. Further, 36 respondents considered as 60.0 percent benefited from access to various government schemes, while 19 respondents equals to 31.7 percent reported obtaining loans at relatively lower rates of interest.

The knowledge-related benefits reveal that training programmes were received by 46 respondents constituted as 76.7 percent. Moral support and confidence-building activities were acknowledged by 41 respondents accounting for 68.3 percent, while guidance on farming practices was received by 53.3 percent of the respondents. However, only 20.0 percent reported direct access to modern agricultural technologies through the FPO.

Marketing benefits constitute another important area of support provided by the FPO. Proper market information was received by 61.7 percent of the respondents, while 60.0 percent reported obtaining better prices for their produce. Collective marketing was practiced by 40.0 percent of the respondents, and 33.3 percent benefited from reduced transportation costs. A smaller proportion reported benefits from collective bargaining with 16.7 percent and reduction in wastage equals to 20.0 percent.

The findings indicate that the FPO has significantly contributed to improving farmers' access to quality inputs, institutional finance, training, insurance, and market information. The high percentage of respondents benefiting from credit access, insurance coverage, quality seeds, and better prices suggests that the FPO has played a vital role in enhancing agricultural productivity, reducing production risks, and improving the economic well-being of member farmers. However, greater emphasis on technology dissemination, collective bargaining, and post-harvest management could further strengthen the effectiveness of the organization.

Table–4 presents the opinions of the respondents regarding the impact of the Farmer Producer Organization (FPO) on various farming-related aspects after joining the organization. Among the productive indicators, out of, 46 respondents constituted as 76.7 percent reported an improvement in yield per acre, whereas 12 respondents accounting for 20.0 percent observed that no significant change (stable) and 10 respondents representing for 16.7 percent reported a decline. Agricultural output improved for 35 respondents accounting for 58.3 percent**,** remained stable for 19 respondents with 31.7 percent and decreased for 6 respondents equals to 10.0 percent. Similarly, cropping intensity increased for 42 respondents constituted as 70.0 percent, remained unchanged for 10 respondents accounting for 16.7 percent and decreased for 8 respondents representing for 13.3 percent. Notably, all the 60 respondents with 100.0 percent reported improvement in the adoption of High Yielding Varieties (HYVs).

Table 4: Impact of FPO on the Farming related Aspects of the Respondents

Main Indicators	Sub Indicators	Improved	%	Stable	%	Decreased	%
Opinions of the Respondents on Productive Indicators After Joining FPO	Yield per acre	46	76.7	12	20.0	10	16.7
	Agricultural Output	35	58.3	19	31.7	6	10.0
	Cropping intensity	42	70.0	10	16.7	8	13.3
	Adoption of HYV	60	100.0	0	0.0	0	0.0
	Total	60	100.0	60	100.0	60	100.0
Opinions of the Respondents on Income Indicators After Joining FPO	Cost of Cultivation	60	100.0	0	0.0	0	0.0
	Gross income	54	90.0	4	6.7	2	3.3
	Net income per acre	50	83.3	6	10.0	4	6.7
	Benefit-Cost Ratio	48	80.0	10	16.7	2	3.3
	Annual farm income	47	78.3	8	13.3	5	8.3
	Total	60	100.0	60	100.0	60	100.0
Opinions of the Respondents on Marketing Efficiency Indicators	Marketable Surplus	56	93.3	4	6.7	0	0.0
	Marketed Surplus	41	68.3	3	5.0	16	26.7
	Price	60	100.0	0	0.0	0	0.0
	Marketing cost	30	50.0	10	16.7	20	33.3
	Transportation cost	15	25.0	12	20.0	33	55.0
	Mediators involvement	12	20.0	13	21.7	35	58.3
	Satisfaction	52	86.7	8	13.3	0	0.0
	Total	60	100.0	60	100.0	60	100.0
Opinions of the Respondents on Impact of FPOs	Land Utilization	60	100.0	0	0.0	0	0.0
	Land Rent	60	100.0	0	0.0	0	0.0
	Crop intensity	47	78.3	13	21.7	0	0.0
	Access of seeds	49	81.7	11	18.3	0	0.0
	Access of Credit	46	76.7	12	20.0	2	3.3
	Access to fertilizers and Pesticides	52	86.7	5	8.3	3	5.0
	Mechanization	32	53.3	24	40.0	4	6.7
	Technology	12	20.0	10	16.7	38	63.3
	Usage of Manure	15	25.0	12	20.0	27	45.0
	Labour Cost	60	100.0	0	0.0	0	0.0
	Total	60	100.0	60	100.0	60	100.0

Source: Field Survey

With respect to income indicators, all the 60 respondents with 100.0 percent stated that the cost of cultivation was better managed after joining the FPO. Gross income improved by 54 respondents accounting for 90.0 percent, remained stable by 4 respondents constituted as 6.7 percent, and decreased by 2 respondents with 3.3 percent. Net income per acre increased by 50 respondents equals to 83.3 percent**,** remained unchanged by 6 respondents with 10.0 percent**,** and declined for 4 respondents considered as 6.7 percent. The benefit-cost ratio improved by 48 respondents accounting for 80.0 percent, remained stable for 10 respondents constituted as 16.7 percent, and decreased for 2 respondents representing for 3.3 percent. Likewise, annual farm income improved for 47 respondents with 78.3 percent, remained stable for 8 respondents equals to 13.3 percent, and decreased for 5 respondents with 8.3 percent.

The marketing efficiency indicators reveal that marketable surplus increased for 56 respondents constituted as 93.3 percent, while 4 respondents accounting for 6.7 percent reported no change. Marketed surplus improved by 41 respondents with 68.3 percent remained, stable opinion by 3 respondents with 5.0 percent, and declined opinion by the 16 respondents equals to 26.7 percent. Importantly, all the 60 respondents representing 100.0 percent reported better price realization after joining the FPO. Marketing costs were reduced for 30 respondents constituted as 50.0 percent, remained unchanged for 10 respondents accounting for 16.7 percent, and increased by the 20 respondents representing for 33.3 percent. Transportation costs declined by the 33 respondents considered as 55.0 percent, remained stable opinion by the 12 respondents with 20.0 percent, while 15 respondents constituted as 25.0 percent perceived only marginal improvement. The involvement of intermediaries was reduced according to 35 respondents accounting for 58.3 percent, remained unchanged by the 13 respondents constituted as 21.7 percent, and improved by the 12 respondents representing for 20.0 percent. Further, 52 respondents accounting for 86.7 percent expressed higher levels of satisfaction with marketing services, while 8 respondents constituted as 13.3 percent reported no major change.

Regarding the overall impact of FPO membership, all the 60 respondents with 100.0 percent reported improvements in land utilization and land rental opportunities. Crop intensity improved by the 47 respondents accounting for 78.3 percent, while 13 respondents constituted as 21.7 percent observed no change. Better access to seeds was reported by the 49 respondents representing for 81.7 percent, whereas 11 respondents accounting for 18.3 percent reported stability. Access to credit improved for the 46 respondents constituted as 76.7 percent, remained unchanged by the 12 respondents accounting for 20.0 percent, and declined for the 2 respondents representing for 3.3 percent. Access to fertilizers and pesticides improved by the 52 respondents with 86.7 percent, remained stable for the 5 respondents equals to 8.3 percent, and decreased for 3 respondents with 5.0 percent. Mechanization improved for 32 respondents constituting for 53.3 percent, remained stable for 24 respondents accounting for 40.0 percent, and decreased for 4 respondents representing 6.7 percent. Technology adoption improved for 12 respondents with 20.0 percent, remained stable for 10 respondents equals to 16.7 percent, and decreased for 38 respondents equals 63.3 percent. Usage of manure improved for 15 respondents accounting for 25.0 percent, remained unchanged for 12 respondents constituting for 20.0 percent, and declined for 27 respondents representing 45.0 percent. Finally, all the 60 respondents constituted as 100.0 percent reported improvement in labour cost management.

The analysis indicates that the FPO has positively influenced agricultural productivity, income generation, market access, price realization, and input availability. The most significant improvements were observed in HYV adoption, gross income, marketable surplus, access to inputs, and price realization, highlighting the crucial role of the FPO in enhancing the economic and marketing performance of member farmers.

Table 5: Opinions of the Respondents on FPO Problems faced by them

Main Indicators	Sub Indicators	Responses	Percentage
Institutional Problems	Lack of professional management	42	70.0
	Poor governance	36	60.0
	Lack of member participation	45	75.0
	Inadequate training	39	65.0
	Total	60	100.0
Financial Problems	Insufficient working capital	51	85.0
	Difficulty in obtaining loans	43	71.7
	Delayed payments	32	53.3
	Total	60	100.0
Marketing Problems	Limited market access	12	20.0
	Price fluctuations	48	80.0
	Lack of storage facilities	52	86.7
	Transportation constraints	45	75.0
	Total	60	100.0
Operational Problems	Low awareness among members	55	91.7
	Poor infrastructure	53	88.3
	Inadequate digital literacy	51	85.0
	Weak linkage with government agencies	52	86.7
	Total	60	100.0
Other Problems	Political involvement	42	70.0
	Miss use	39	65.0
	Only Large Farmers get benefit	34	56.7
	Highly Capital requirement	56	93.3
	Unable to access technology	42	70.0
	Total	60	100.0

Source: Field Survey

Table–5 presents the opinions of the respondents regarding the various problems faced by them in the functioning and utilization of the Farmer Producer Organization (FPO). The problems have been broadly categorized into institutional, financial, marketing, operational, and other related issues. Among the institutional problems, lack of member participation emerged as the most significant issue. Out of the total 60 respondents, 45 respondents constituted as 75.0 percent reported that inadequate participation of members affects the effective functioning of the FPO. Lack of professional management was identified by 42 respondents accounting for 70.0 percent, indicating the need for trained managerial personnel to handle organizational activities. Inadequate training was reported by 39 respondents representing for 65.0 percent, suggesting that members require more capacity-building programmes to improve their understanding of FPO operations. Poor governance was reported by 36 respondents constituted as 60.0 percent, reflecting concerns regarding decision-making processes and organizational transparency.

Financial problems were also reported by a considerable number of respondents. Insufficient working capital was identified as a major constraint by 51 respondents accounting for 85.0 percent. This indicates that the FPO faces difficulties in mobilizing adequate financial resources to support its business operations and member services. Difficulty in obtaining loans from financial institutions was reported by 43 respondents constituted as 71.7 percent, highlighting the challenges faced in accessing institutional credit. Delayed payments for produce supplied through the FPO were reported by 32 respondents accounting for 53.3 percent, which adversely affects farmers' cash flow and financial stability.

Marketing-related problems continue to affect the members despite the advantages offered by the FPO. Lack of storage facilities was identified as the most serious marketing constraint by 52 respondents constituted as 86.7 percent. The absence of adequate storage infrastructure often forces farmers to sell their produce immediately after harvest. Transportation constraints were reported by 45 respondents accounting for 75.0 percent, indicating that high transportation costs and inadequate transport facilities remain important challenges. Price fluctuations were reported by 48 respondents representing for 80.0 percent, demonstrating the instability of agricultural markets and its adverse impact on farmers' income. Limited market access was reported by 12 respondents constituted as 20.0 percent, suggesting that although the FPO has improved market linkages, some members still face difficulties in reaching profitable markets.

Operational problems were perceived to be among the most serious constraints. Low awareness among members regarding the objectives, benefits, and functioning of the FPO was reported by 55 respondents accounting for 91.7 percent, making it one of the most prominent issues. Poor infrastructure was reported by 53 respondents constituted as 88.3 percent, indicating deficiencies in storage, processing, transportation, and office facilities. Weak linkage with government agencies was identified by 52 respondents accounting for 86.7 percent, reflecting the need for stronger institutional coordination and support. Inadequate digital literacy was reported by 51 respondents constituting for 85.0 percent, highlighting the difficulties faced by members in utilizing digital platforms, online marketing systems, and information technologies.

The respondents also identified several other problems affecting the performance of the FPO. Highly capital-intensive requirements were reported by 56 respondents accounting for 93.3 percent, making it the most significant constraint among all the problems identified. Low access to modern technologies was reported by 42 respondents constituting as 70.0 percent, indicating the need for greater technological support and extension services. Political involvement in the functioning of the FPO was reported by 42 respondents accounting for 70.0 percent, while misuse of organizational resources was identified by 39 respondents constituting 65.0 percent. Furthermore, 34 respondents representing for 56.7 percent felt that large farmers derive greater benefits from the FPO compared to small and marginal farmers.

The analysis reveals that operational and financial constraints are the most critical challenges faced by the respondents. Low awareness among members, inadequate capital availability, poor infrastructure, weak institutional linkages, lack of storage facilities, and market price fluctuations emerged as the major problems affecting the effectiveness of the FPO. Addressing these issues through improved financial support, infrastructure development, member training, digital literacy programmes, and stronger governance mechanisms would significantly enhance the performance and sustainability of the Farmer Producer Organization.

Summary and Conclusion

The study found that the majority of the respondents belonged to the BC community and were in the economically active age group of 36–55 years. Most members were small and marginal farmers dependent on bore-well irrigation. The FPO significantly improved farmers' access to quality seeds, fertilizers, institutional credit, insurance, training, and market information. A majority of respondents reported improvements in crop productivity, cropping intensity, gross income, net income, annual farm income, and price realization. Collective marketing helped reduce the role of intermediaries and improve market access. However, members faced constraints such as inadequate working capital, poor infrastructure, lack of storage facilities, price fluctuations, low awareness, and limited digital literacy. The FPO should strengthen its financial base by improving access to institutional credit and working capital support. Adequate storage, warehousing, and transportation facilities need to be developed to reduce post-harvest losses and improve market efficiency. Regular training programmes should be organized to enhance managerial skills, digital literacy, and awareness among members. Government agencies and financial institutions should provide greater technical and financial assistance to strengthen FPO operations. Efforts should also be made to promote value addition, processing activities, and direct market linkages to ensure better price realization and higher income for member farmers.

The study concludes that Nallabelli Farmers Producer Company Limited has played a significant role in improving the economic and marketing conditions of its member farmers. Through collective procurement, access to institutional services, and collective marketing, the FPO has enhanced productivity, income, and bargaining power. The organization has also contributed to better access to quality inputs, credit, insurance, and market information. Despite these achievements, challenges related to finance, infrastructure, storage, technology adoption, and member awareness continue to affect its performance. Strengthening institutional support and capacity-building measures will be essential for ensuring the long-term sustainability and effectiveness of the FPO.

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