**Constraints faced by members of *Padasekhara Samithis* in collective farming: An analysis using Garrett Ranking technique in Palakkad, Kerala, India**

ABSTRACT

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| The study aimed to explore and rank the constraints experienced by members of *Padasekhara Samithis*, the collectives of paddy farmers in Kerala. The research focused on Palakkad district, which was chosen due to its high concentration of *Padasekhara Samithis*. From Palakkad district, Erimayur and Kizhakkanchery gram panchayats from Alathur block and Kuzhalmannam and Mathur gram panchayats from Kuzhalmannam block were selected for the study. Data was collected from 180 farmers selected from the study area during April-May 2024. Primary data were obtained through a pretested well-structured interview schedule which was validated by a pilot survey prior to the main study. To prioritize the constraints identified by the farmers, Garrett's ranking technique was employed. The findings revealed four major constraints: the simultaneous need for machinery and labour by the group members, a lack of coordination among members, inconsistency in cultivation and farming practices and issues related to poor leadership. These issues were associated with factors such as limited resource availability during peak agricultural seasons, the diverse interests of members and the incomplete adoption of group farming methods. By shedding light on these constraints, this study provides valuable insights for improving the effectiveness of *Padasekhara Samithis*. The findings are crucial for policymakers looking to enhance the sustainability and efficiency of group farming efforts in Kerala, ultimately helping farmers overcome constraints and improve their livelihoods. |

*Keywords: Constraints, Garrett ranking technique, Group farming, Padasekhara Samithis, Paddy cultivation*

**1. INTRODUCTION**

Smallholder farmers play a vital role in boosting agricultural growth, ensuring food security and supporting livelihoods in India [1]. These small and marginal farmers, who manage around 44 per cent of the country’s agricultural land contribute significantly to food production accounting for 60 per cent of the total food grains including nearly half of all rice and wheat. They also contribute to over half of India's fruit and vegetable production [2]. Research has shown that smaller farms tend to achieve higher yields per hectare and exhibit more intense cropping practices than larger operations [3].

Beyond their contribution to food production, small farms are key to rural development and poverty alleviation [4]. However, despite their importance, small farmers face numerous constraints—especially those with fragmented landholdings [5] [6]. Compared to larger commercial farms, they often lack access to adequate resources, modern technology, financial services and market information which hinders their ability to improve productivity and profitability [7].

Group farming emerged as a solution to these issues after World War II, helping small farmers in many developing countries overcome these constraints. [8]. This approach involves the collective management of agricultural activities which can yield better outcomes compared to farming individually [6]. The benefits of group farming include more efficient use of resources, increased farmer engagement, streamlined access to inputs and support services, enhanced utilization of farm equipment and improved marketing capabilities [9]. Additionally, farmer groups can play a role in assisting the government by providing agricultural services such as information dissemination, distribution of inputs like seeds and fertilizers etc [10].

The *Padasekhara Samithis* in Kerala ~~efforts~~ are a shining example of group farming initiatives. Established during the late 1980s under a government initiative, these collectives aim to promote the cultivation of paddy and allied crops within registered local farmer organizations [11,12]. This study seeks to explore the constraints faced by the members of these collectives, as addressing these issues is key to improving their overall efficiency and success. Despite their importance, little research has been done to specifically examine the constraints these groups face, highlighting the significance of this study.

2. material and methods

This study focuses on understanding the constraints faced by members of Padasekhara Samithis, the collective farming groups in Kerala, with a particular emphasis on the Palakkad district. Palakkad was specifically chosen as it has the highest number of Padasekhara Samithis in the state, according to data from the Department of Agriculture Development and Farmers' Welfare [13]. The research employed primary data collected through a pretested, well-structured interview schedule. Prior to conducting the main survey in April-May 2024, a pilot survey was undertaken to validate the questionnaire and to identify the key constraints faced by farmers. For sampling, the study selected Alathur and Kuzhalmannam block panchayats which had the highest number of *Padasekhara Samithis* in Palakkad. Within each block, two gram panchayats with the largest number of these collectives were chosen: Erimayur and Kizhakkanchery from Alathur and Kuzhalmannam and Mathur from Kuzhalmannam block. The selection was purposive to ensure representation from areas with a significant presence of *Padasekhara Samithis*. In order to select 90 farmers from each of the blocks, nine *Padasekhara* *Samithis* were selected from each grama panchayats through Probability Proportional to Size (PPS) sampling. From each selected Samithi, five farmers were then randomly chosen so that a total of 180 farmers were analysed for the study. Constraints faced by the members of *Padasekhara Samithis* were analyzed using Garrett ranking technique.

**2.1 Garrett’s Ranking Technique**

In this study, we used Garrett's ranking technique to understand and prioritize the various constraints faced by members of the Padasekhara Samithi. Farmers were asked to rank the key issues they encountered, and these rankings were then converted into mean scores using Garrett's method. This approach helped us identify the most pressing concerns in the study area. To quantify the rankings provided by the participants, we first transformed them into percentage positions using the following formula:

Percent position =

Where,

Rij = Rank given for ith factor by jth individual

Nj = Number of factors ranked by jth individual

The percentage positions were then mapped to scores using a table developed by Garrett and Woodworth (1969) [14]. To determine the mean score for each constraint, the scores from all respondents were aggregated and divided by the total number of participants. Finally, the constraints were ranked in descending order based on their mean scores to identify the most pressing issues.

**3. results and discussion**

The primary constraints encountered by the members of *Padasekhara Samithi* included a lack of coordination among the members, poor leadership, not following uniform cultivation and farming practices by the members of the group and requirement of machinery and labourers at a time by the members of the group. These constraints were ranked based on Garrett’s scores as presented in Table 1.

**Table 1. Constraints faced by members of** ***Padasekhara Samithi***

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| --- | --- | --- | --- |
| **Sl. No.** | **Constraint** | **Garrett’s score** | **Garrett’s Ranking** |
| 1 | Requirement of machinery and labourers at a time by the members of the group | 57.59 | I |
| 2 | Lack of coordination among the members | 55.98 | II |
| 3 | Not following uniform cultivation and farming practices by the members of the group | 53.38 | III |
| 4 | Poor leadership | 35.05 | IV |

The most significant challenge identified was the requirement of machinery and labourers at the same time by the members of the group with a garrett score of 57.59. As all members cultivated their crops simultaneously, securing machinery like tractors for ploughing and finding labour especially during peak times proved difficult. Some farmers noted that the scarcity of female labourers during transplanting necessitated hiring workers from other states. This issue reflected the constraints encountered by rice farmers in Guntur as noted by Sanghamitra and Kumar (2023) where limited labour availability and capital constraints impeded the effectiveness of FPO activities [15]. Similar constraint related to resources were also identified by Jayashree *et al.* (2023) who found that FPO members in Tamil Nadu encountered significant constraints such as insufficient processing facilities and a lack of timely access to affordable, high-quality inputs [16]. The second major issue was the lack of coordination among the members with a garrett score of 55.98. This challenge likely arose from the varied interests and cultural backgrounds of the members which hampered effective decision making. This challenge aligned with the findings of Chowdary *et al.* (2022) in Prakasam District, Andhra Pradesh, where inadequate cooperation obstructed group activities within Farmer Producer Organizations [17]. The findings were also in consistent with the study conducted by Singha *et al.* (2024), who noted that coordination issues regarding various group activities was a significant challenge affecting the functionality of FPOs in Assam [18]. The lack of uniformity in cultivation and farming practices among the group members was the third major constraint with a garrett score of 53.38. Although the *Padasekhara Samithis* were as part of the group farming initiative of Kerala [11], a complete group farming was not fully implemented. Farmers who participated in the collective mainly discussed seed varieties and time of sowing as they believed that cultivating together was essential to prevent problems during harvest or with neighbouring farmers regarding machinery use when crops were not uniformly ready for harvest. The fourth ranked issue with a Garrett score of 35.05 was poor leadership within the *Samithis*. This problem was linked to the partiality or insufficient leadership skills of some executive members who might have shown favouritism resulting in quicker access to information for a few members. This aligned with the findings of Singh and Saini (2022) where restricted sharing of financial information in Dairy Cooperative Societies in Rajasthan led to issues with transparency [19]. Additionally, some leaders struggled to manage *Samithi* related responsibilities effectively such as organizing meetings or communicating information from Krishi Bhavan. This constraint of poor leadership was also reported by Soniya (2021) who ranked it 13th among the primary constraints faced by Farmer Producer Organizations (FPOs) in her study [20].

**4. Conclusion**

The study explored the key constraints faced by members of *Padasekhara Samithis*, group farming collectives in Kerala, that hinder their overall effectiveness. The most significant issue identified through the Garrett ranking analysis was the simultaneous demand for machinery and labour during peak cultivation periods. This challenge arose due to the concurrent nature of cultivation activities making it challenging for farmers to secure necessary resources during peak agricultural periods. Furthermore, a lack of coordination among the members emerged as a major obstacle likely driven by differing interests and cultural variations that impeded effective collective decision making. A further issue was the variation in cultivation practices within the group. Even though the *Padasekhara Samithis* were initially established to promote group farming complete adherence to collective farming principles had not been achieved raising concerns about timing of harvest and access to machinery. Lastly, poor leadership characterized by favouritism and inadequate management capabilities complicated the functioning of the *Samithis* making it difficult to address members’ needs effectively. To improve the performance and sustainability of *Padasekhara Samithis*, it was crucial to address these constraints. The present study highlighted the need for enhanced resource planning, better mechanisms for coordination and the adoption of uniform farming practices. The study also highlighted the need of better understanding the specific constraints faced by collective farming models and to formulate targeted strategies for their resolution. By resolving these issues, the benefits of group farming such as increased productivity and improved farmer livelihoods could be more effectively realized.

**Competing interests**

The authors declare that there is no competing interest.

**Disclaimer (Artificial intelligence)**

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Details of the AI usage are given below:

1. AI tool, ChatGPT has been used for paraphrasing.

2.

3.

**References**

1. Altieri MA, Funes-Monzote FR, Petersen P. Agroecologically efficient agricultural systems for smallholder farmers: contributions to food sovereignty. Agron. Sustain. Dev. 2012; 32(1):1-3.
2. Anonymous. Agriculture Census (2015-16). Department of Economics and Statistics. 2015-16; Accessed 1 March 2024.

Available: <https://ecostat.kerala.gov.in/page/agriculture-census>.

1. Chand R, Prasanna PL, Singh A. Farm size and productivity: Understanding the strengths of smallholders and improving their livelihoods. Econ. Polit. Wkly. 2011; 25:5-11.
2. Lipton M. Can small farmers survive, prosper or be the key channel to cut mass poverty?. eJ. Agric. Dev. Econ. 2006;3(1):58-85.
3. Arun DP, Malik JS, Kumar R, Kumari N. A Measurement tool for impact assessment of group farming on its members. Indian Res. J. Ext. Edu. 2022;22(4):32-7.
4. Engindeniz S, Yercan M. An approach for Turkish agriculture: Group farming. Bodenkultur-Wien and Munchen. 2002;53(4):227-233.
5. Kruijssen F, Keizer M, Giuliani A. Collective action for small-scale producers of agricultural biodiversity products. Food policy. 2009;34(1):46-52.
6. Sherief AK. Kerala, India: group farming. How farmer production groups have made possible the use of productivity increasing technology and opened the way to more effective extension. Cabi digital library. 1991;32:14–17. Accessed 1 Oct 2024.

Available: <https://www.cabidigitallibrary.org/doi/full/10.5555/19931802572>.

1. Atkins J, Thirtle C. The productivity of communal agriculture in Zimbabwe, 1975–90. Oxf. Agrar. Stud. 1995;23(2):99-115.
2. Nguyet NT. Establishment and maintenance of farmers’ groups (FGs). Agric. Ext. Netw. Updates. 2002;5(1):1-7.
3. Thomas JJ. Paddy cultivation in Kerala. Rev. Agrar. Stud. 2011;1:215-226.
4. GoK [Government of Kerala]. The Kerala Conservation of Paddy Land and Wetland Act. 2008. Accessed 25 May 2023..

Available: <https://ildm.kerala.gov.in/wpcontent/uploads/2017/01/PADDY-ACT-2008015.pdf>.

1. Department of Agriculture Development and Farmers' Welfare. 2022. Accessed 25 May 2023.

Available: <https://keralaagriculture.gov.in/en/home/>.

1. Garrett HE, Woodsworth RS. Statistics in Psychology and Education, Vaklis, Feffer and Simons Pvt. Ltd., Bombay. 1969;329.
2. Sanghamitra G, Kumar K. Analysis of Technical Efficiency of Rice Farmers under Farmer Producer Organisation (FPO) in Guntur District of Andhra Pradesh. Asian J. Agric. Ext. Econ. Soc. 2023;41(5):127-134.
3. Jayashree V, Rani AJ, Karthikeyan C, Malarkodi M, Selvi RG. Sustainability of Farmer Producer Organisation’s–Major constraints in functioning of FPO in Tamil Nadu, India. Asian J. Agric. Ext. Econ. Soc. 2023;41(9):861-868.
4. Chowdary CM, Shanthasheela M, Rajasekharan R, Vasanthi R. Assessing the Performance of Farmer Producer Organizations: A Study in Prakasam District of Andhra Pradesh, India. Asian J. Agric. Ext. Econ. Soc. 2022;40(10):351-357.
5. Singha A, Sharma JK, Singha AK. Demographic Characteristics of Members of Farmer Producer Organisations (FPOs) in Effectiveness of Group Dynamics and their Perceived Constraints in Lower Brahmaputra Valley Zone of Assam, India. Asian J. Agric. Ext. Econ. Soc. 2024;42(5):192-202.
6. Singh V, Saini GR. Constraints Perceived by Dairy Cooperative Society Members in Dungarpur, Rajasthan. Asian J. Agric. Ext. Econ. Soc. 2022;40(12):379-382.
7. Soniya G. Economic analysis of impact of Farmer producer Organisations in Kurnool district of Andhra Pradesh. Doctoral dissertation, Acharya NG Ranga Agricultural University, Guntur.