**Analysing constraints in group farming: A study of *Padasekhara Samithis* in Kerala**

ABSTRACT

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| The study aimed to ~~identify~~ explore and rank the constraints experienced by members of *Padasekhara Samithis*, the collectives of paddy farmers in Kerala. ~~Palakkad district was purposively chosen for the research as the district was having the highest number of~~ *~~Padasekhara Samithis~~* ~~in the state.~~ 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. Garrett ranking technique was used to rank the identified constraints. To prioritize the constraints identified by the farmers, Garrett's ranking technique was employed. ~~The findings indicated that the most critical challenges included the requirement of machinery and labourers at a time by the members of the group, lack of coordination among the members, not following uniform cultivation and farming practices by the members of the group and poor leadership.~~ The findings revealed four major challenges: 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. ~~The results provided a thorough understanding of the obstacles hindering the efficiency of~~ *~~Padasekhara Samithis~~* ~~offering important insights for policymakers to improve the effectiveness and sustainability of group farming initiatives in the region.~~ By shedding light on these barriers, 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 challenges and improve their livelihoods. |

*Keywords: Group farming, Padasekhara Samithis, Constraints, Garrett ranking technique, 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 work on about 44 per cent of agricultural land play a crucial role in the food production of the country. They contribute around 60 per cent of the total food grains including 49 per cent of rice, 40 per cent of wheat, 29 per cent of coarse cereals and 27 per cent of pulses.~~ and marginal farmers, who manage around 44% of the country’s agricultural land, contribute significantly to food production, accounting for 60% 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]. ~~Therefore, the future of sustainable agricultural development and food security in India largely depends on the success of small-scale farmers [5]. Despite their significance, these farmers face numerous challenges especially those with fragmented plots [6].~~ However, despite their importance, small farmers face numerous challenges—especially those with fragmented landholdings.[5] [6] Compared to larger commercial farms ~~smallholders~~ they often lack access to adequate resources, modern technology, financial services and market information which hinders their ability to improve productivity and ~~add value to their crops~~ profitability. [7].

Group farming emerged ~~after World War II as a strategy to alleviate the difficulties faced by small farmers in many developing countries~~ as a solution to these issues after World War II, helping small farmers in many developing countries overcome these challenges. [8]. This collective 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 ~~exemplify such group farming 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 focuses on understanding the challenges faced by the members of~~ *~~Padasekhara Samithi~~* ~~as resolving these issues are crucial for enhancing the operational effectiveness of the collectives. Currently, there is a significant gap in research addressing the specific constraints encountered by these groups highlighting the need for this study.~~ This study seeks to explore the challenges 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

~~The study was conducted in the Palakkad district of Kerala which was deliberately chosen because it has the highest number of~~ *~~Padasekhara Samithis~~* ~~in the state according to the data of Department of Agriculture Development and Farmers' Welfare~~ This study focuses on understanding the challenges 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 ~~The~~ study, ~~employed the Garrett ranking technique to prioritize the different constraints experienced by the members of~~ *~~Padasekhara Samithi~~*~~.~~ we used Garrett's ranking technique to understand and prioritize the various challenges faced by members of the Padasekhara Samithi~~. Participants were asked to rank the identified challenges which were then converted into mean scores using the Garrett method to highlight the most significant issues in the study area. The rankings provided by the respondents were transformed into percentage positions using the following formula:~~ 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 = $\frac{100×(R\_{ij}-0.5)}{N\_{j}}$

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. 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. 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. These top three constraints aligned with the findings of Jothika and Rajasekaran (2021) who identified similar issues in a study on collective farming challenges in Tirunelveli district [15]. 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. 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 challenges faced by Farmer Producer Organizations (FPOs) in her study [16].

**4. Conclusion**

The study ~~identified several critical constraints experienced by members of~~ *~~Padasekhara Samithis~~* ~~which influenced the overall effectiveness of group farming efforts in Kerala.~~ explored the key challenges faced by members of Padasekhara Samithis, group farming collectives in Kerala, that hinder their overall effectiveness. The most significant issue ~~was the simultaneous demand for machinery and labourers which ranked highest in the Garrett analysis.~~ identified through the Garrett ranking analysis was the simultaneous demand for machinery and labor 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 challenges 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.

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