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# Constraints Faced by Members of Rice Group Farming: An Analysis Using Garrett Ranking Technique in Palakkad, Kerala, India

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

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,

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Erimayur and Kizhakkanchery grama panchayats from Alathur block and Kuzhalmannam and Mathur grama 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 prioritise the constraints identified by the farmers, Garrett's ranking technique was employed. The findings revealed four major constraints: the shortage of labour, 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 shifting of labourers from agricultural to non-agricultural jobs, the diverse interests of members and the incomplete adoption of group farming methods. By shedding light on these constraints, this study provided 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 (Altieri et al., 2012). 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 (Anonymous, 2015-16). Research has shown that smaller farms tend to achieve higher yields per hectare and exhibit more intense cropping practices than larger operations (Chand et al., 2011).

Beyond their contribution to food production, small farms are key to rural development and poverty alleviation (Lipton et al., 2016). However, despite their importance, small farmers face numerous constraints—especially those with fragmented landholdings (Arun et al., 2022; Engindeniz et al., 2002). 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 (Kruijssen et al., 2009).

Group farming emerged as a solution to these issues after World War II, helping small farmers in many developing countries overcome these constraints (Sherief et al., 1991). This approach involves the collective management of agricultural activities which can yield better outcomes compared to farming individually (Engindeniz et al., 2002). The benefits of group farming include more efficient use of resources, increased farmer engagement, streamlined access to inputs and support services, enhanced utilisation of farm equipment and improved marketing capabilities (Atkins et al., 1995). 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 (Nguyet et al., 2002).

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 organisations (Thomas et al., 2011; GoK, 2008). 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. MATERIALS 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 (2022). 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 grama 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 analysed using Garrett ranking technique.

## 2.1 Garrett's Ranking Technique

In this study, we used Garrett's ranking technique to understand and prioritise 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:

$$\text{Percent position} = \frac{100 \times (R_{ij} - 0.5)}{N_j}$$

Where,

$R_{ij}$ = Rank given for $i^{th}$ factor by $j^{th}$ individual
$N_j$ = Number of factors ranked by $j^{th}$ individual

The percentage positions were then mapped to scores using a table developed by Garrett and Woodworth (1969). 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 shortage of labour, a lack of coordination among the members, not following uniform cultivation and farming practices by the members of the group and poor leadership. These constraints were ranked based on Garrett's scores as presented in Table 1.

The most significant challenge identified was the shortage of labour faced by the members of the group with a garrett score of 57.59. Members faced challenges in the study area in obtaining labour for critical tasks like weeding and drying. For transplanting operations, they frequently depended on migrant workers from other states. The labour shortage could be attributed to a shift of workers from agricultural to non-agricultural employment, motivated by the absence of consistent year round work in agriculture and the perception that non-agricultural jobs offer greater security and social status. This issue reflected the constraints encountered by rice farmers in Guntur as noted by Sanghamitra and Kumar (2023) where limited labour availability impeded the effectiveness of FPO activities (Sanghamitra et al., 2023). 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 Organisations (Chowdary et al., 2022). 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 (Singha et al., 2024). 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 (Thomas et al., 2011), 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 aligned with the findings of Singh and Saini [(2022) where restricted sharing of financial information in Dairy

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

| Sl. No. | Constraint | Garrett's score | Garrett's Ranking |
|---|---|---|---|
| 1 | Shortage of labourers | 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 |

Cooperative Societies in Rajasthan led to issues with transparency (Singh et al., 2022). This constraint of poor leadership was also reported by Soniya who ranked it 13th among the primary constraints faced by Farmer Producer Organisations (FPOs) in her study (Soniya et al.,).

## 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 Garrett ranking analysis revealed that the most critical issue was the labour shortage. Farmers faced challenges in securing labour at the necessary times, as many workers were reluctant to take on field jobs. 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. To improve the performance and sustainability of *Padasekhara Samithis*, it was crucial to address these constraints. The study suggested that *Padasekhara Samithis* take advantage of government schemes like the Sub-Mission on Agricultural Mechanisation (SMAM) to set up custom hiring centers. By integrating machinery as a support to labour, this initiative can effectively mitigate the labour shortage faced by members. Additionally, the study recommended organising training and capacity-building programs to enhance teamwork among members. The study highlighted the need to better understand the specific constraints faced by members of 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 realised.

## DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc have been used during writing or editing of this manuscript. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology.

**Details of the AI usage are given below:**

1. AI tool, ChatGPT is only used for paraphrasing.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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