

# The Role of Farmer Groups in Increasing the Productivity of Salak Pondoh in Turi District, Sleman Regency, Indonesia

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**Abstract**—The research on the Role of Farmer Groups in raising the Productivity of Salak Pondoh Farming in the District of Turi, Regency of Sleman, to expose the role of farmer groups in increasing the productivity of Salak Pondoh farming and the correlation between the role of farmer groups with the productivity of Salak Pondoh. The research data are primary for 54 respondents, and secondary data are gathered using observation techniques, interviews, questionnaires, and documentation. The data is processed using the Likert scale method and Spearman Rank correlation. The research results show that the role of farmer groups in raising Salak Pondoh's productivity is involved in the excellent category. The only role of the farmer group that has a significant correlation with the productivity of the Salak Pondoh is the role of the farmer group as a learning class with a moderate positive relationship.

**Index Terms**— Cooperation, learning classes, nature fruit, production units.

## I. INTRODUCTION

Farmer groups are non-formal associations consisting of a collection of farmers/breeders/planters (Simamora et al., 2023), which were formed based on shared interests (Baker et al., 2020), ecological conditions (socio-economic-resources) and familiarity to increase production and income and develop members' businesses (Arsyad et al., 2018). Farmer groups have an essential role in exploring the potential of human resources (Budiman et al., 2022). The role of farmer groups is grouped into three, namely, learning classes, farming production units, and collaboration vehicles (Putra et al., 2023). The aim of forming farmer groups is a group approach to improve and develop farmers' abilities as subjects of agricultural development (Haryanto et al., 2021). Developing farmer groups' performance can realize agricultural development's success (Chaudhuri et al., 2021). Therefore, cultivating plants that have the prospective to be developed commercially and are agribusiness-oriented (Adhikari et al., 2021), such as Salak Pondoh, is one way to develop the performance of farmer groups.

Salak Pondoh fruit is famous not only domestically but also internationally. Salak Pondoh (*Salacca malacca* Gaertner Voss) is a variety of salak fruit native to Indonesia (Warnita et al., 2019) which has high value and is much sought after by the public because of its sweet flavor and economic value (Alwi et al., 2023). Salak Pondoh was first developed in Merdikareja Hamlet and Candi Hamlet, Bangunkerto Kapanewon Turi Village, Sleman Regency, and was designated as a superior commodity in Sleman Regency (Winarno et al., 2020).

However, agricultural development is not easy because there are many challenges, including fluctuations in production and the area of Salak Pondoh land, which impact farmers' income (Lata & Kumar, 2022a; Hariyani et al., 2021). Farmer groups must contribute to increase production and productivity (Khatri-Chhetri et al., 2020) in the Salak Pondoh cultivation business.

Bangunkerto Village, Kapanewon Turi, Regency of Sleman, is one of the Salak Pondoh supplying areas. Most farmers in Bangunkerto Village cultivate Salak Pondoh plants and use them as their primary income. Every Salak Pondoh farmer in Bangunkerto Village is also part of a farmer group that helps Salak Pondoh farmers make their Salak Pondoh farming business valuable. The problems in this research are (1) What is the role of farmer groups in increasing the productivity of Salak Pondoh farming businesses and (2) What is the relationship between the role of farmer groups and the productivity of Salak Pondoh farming businesses in Bangunkerto Village, Kapanewon Turi, Sleman Regency. The study proposes (1) To decide the function of farmer groups in rising the productivity of Salak Pondoh farming businesses and (2) To decide the connection between the function of farmer groups and the productivity of Salak Pondoh farming businesses in Bangunkerto Village, Kapanewon Turi, Sleman Regency

## II. RESEARCH METHOD

The fundamental research method used in this study is the descriptive method. The study location was selected using a purposive method or deliberately considering that Bangunkerto Village has a Salak Pondoh farmer group known to be superior and active in export activities. There are four farmer groups in Bangunkerto Village, and in this research, two farmer groups were taken, namely the Sido Makmur and Si Cantik farmer groups. The number of members in each group was 27, so 54 people from the two groups were taken as study respondents. The data used in this research contains primary and secondary data. Data collection uses observation techniques and interviews guided by questionnaires and documentation (Lata & Kumar, 2022b).

The function of farmer groups was analyzed using a Likert scale, which includes the function of farmer groups as learning classes, vehicles for cooperation, and farming production Elements. The farmer group function level consists of 5 scores, namely scores 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). Calculation of Respondent Achievement Level (RAL) uses the following formula:

$$RAL = \frac{Average \times 100}{Maksimum Score} \quad . (1)$$

The Respondent Achievement Level (RAL) classification can be seen in Table 1.

TABLE I. CLASSIFICATION OF RESPONDENTS' ACHIEVEMENT LEVELS

| No | Respondent Achievement Level | Percentage of Achievement (%) |
|----|------------------------------|-------------------------------|
| 1  | Very good                    | 85 – 100                      |
| 2  | Good                         | 66 – 84                       |
| 3  | Enough                       | 51 – 65                       |
| 4  | Bad                          | 36 – 50                       |
| 5  | Very bad                     | 0 – 35                        |

The Spearman rank correlation coefficient was used to determine the association between the role of farmer groups and Salak Pondoh's productivity.

$$\rho = 1 - \frac{6 \sum di^2}{n(n^2-1)} \quad (2)$$

Where  $\rho$  is the Spearman Rank correlation rate,  $d$  is the sum of the squares of the differences in the rankings of variables  $x$  and  $y$ , and  $n$  is the number of samples. In general, the Spearman Rank correlation coefficient interpretation can follow the rubrics as in Table 2.

TABLE II. INTERPRETATION OF CORRELATION COEFFICIENT VALUES

| No | Category    | Intervals    |
|----|-------------|--------------|
| 1  | Very low    | 0.00 – 0.199 |
| 2  | Low         | 0.20 – 0.399 |
| 3  | Currently   | 0.30 – 0.599 |
| 4  | Strong      | 0.60 – 0.799 |
| 5  | Very Strong | 0.80 – 1.000 |

### III. RESULT AND DISCUSSION

#### *A. The Function of Farmer Groups*

Farmer groups are a form of organization or association consisting of a group of farmers or individuals who have a common goal of achieving progress in agricultural activities, increasing crop yields, and improving the welfare of their members. Farmer groups have an essential role in the farming sector because farmer groups are an effective instrument for increasing productivity, welfare and sustainability in agriculture. The presence of farmer groups can create greater power in the market to help farmers get a fairer and more stable selling price for Salak Pondoh. The concept of farmer groups emerged as a response to various challenges farmers face, such as climate change, fluctuations in commodity prices, limited access to resources, and problems in marketing. The role of farmer groups in this research includes farmer groups as learning classes, vehicles for cooperation, and farming production Elements.

#### *B. The Function of Farmer Groups as Education Classes*

The function of farmer groups as learning classes is a concept that combines educational principles with farmer group activities to increase farmers' knowledge, skills, and abilities in functioning Salak Pondoh farming actions. Constructed on Table 1, the level of achievement of the function of farmer groups as a learning class is as follows.

- The function of the farmer group is to explore and formulate the learning needs of the Salak Pondoh farmer group members. The group obtained a Respondent Achievement Level (RAL) value of 85.2% (very good). The farmer group deliberates to identify what learning materials its members need at each routine meeting, such as handling fruit fly pests on Salak Pondoh plants and routine cleaning of Salak Pondoh gardens.
- The farmer group works a function in planning and preparing the learning needs of the Salak Pondoh farmer group, obtaining an RAL score of 77.4% (good). Farmer groups have scheduled regular meetings, which are usually held 1 to 2 times every month, with a planned agenda or other issues deemed important.
- Farmer groups increase the discipline and motivation of the Salak Pondoh farmer group members, obtaining a RAL score of 78.9% (good). Farmer groups play a function in forming members' disciplinary attitudes. Most members have attended regular meetings, reported the obstacles faced in farming Salak Pondoh, and cleaned the Salak Pondoh land according to the planned time. Farmer group members have also collected production data, which is then offered to the farmer group. Every member of the Salak Pondoh farmer group is expected to be disciplined in caring for Salak Pondoh plants so that they can encourage increased production. This discipline motivates farmers to pay more attention to their Salak Pondoh farming business.
- The Salak Pondoh farmer group plays a function in holding regular meetings and learning for members to obtain a RAL score of 80.0% (good). The farmer group has held regular meetings according to the agreed days, unless there is an important problem then the meeting will also be informed to all members of the farmer group.
- The farmer group organises various courses or training to rise the understanding and abilities of the Salak Pondoh farmer group members, obtaining a RAL score of 80.7% (good). In carrying out this training activity, the Salak Pondoh farmer group received full support from the Sleman Regency Agricultural Service and assistance from Field Extension Officers. The training the Salak Pondoh farmer group has received includes handling fruit fly pests on Salak Pondoh plants by installing traps, keeping the land clean and watering efficiently.

The contribution of farmer group members in farmer capacity-building real exercise actions is encouraged by farmer action in farmer groups and farmer entree to agricultural addition facilities. This rise in practical support and practical positively affects farmers' implementation strength (Zakaria et al., 2020). It overpowers understanding gaps at the farmer level to encourage improved production and farmer income (Sultana et al., 2020). Farmers' motivation for actualization is their importance in cultivation (Lantarsih et al., 2022); apart from that, raising the adaptive capability of farmers can also be done through an entrepreneurial approach, association in farmer organizations, and strengthening associations between farmers and buyers (Kangogo et al., 2020)

TABLE III. FUNCTION OF FARMER GROUPS AS EDUCATION CLASSES

| No.     | The Function of Farmer Groups as Learning Classes                                                                                           | RAL (%) | Category  |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|
| 1       | The function of the farmer group is to explore and formulate the learning needs of the Salak Pondoh farmer group members.                   | 85.2    | Very good |
| 2       | The farmer group works a function in planning and preparing for the learning needs of the Salak Pondoh farmer group members.                | 77.4    | Good      |
| 3       | Farmer groups works a function in increasing the discipline and motivation of the Salak Pondoh farmer group members.                        | 78.9    | Good      |
| 4       | Farmer groups play a function in holding regular meetings and learning for Salak Pondoh farmer group members.                               | 80.0    | Good      |
| 5       | Farmer groups organise various courses or training to increase the understanding and abilities of members of the Salak Pondoh farmer group. | 80.7    | Good      |
| Average |                                                                                                                                             | 80.4    | Good      |

Source: Primary Data (2023)

### C. The Function of Farmer Groups as Farming Business Production Elements

The function of farmer groups as agricultural production elements, refers to the approach that farmer groups not only function as social forums or agricultural organizations but also as active economic institutions in agricultural production. In this context, farmer groups are elements that produce agricultural products and manage agricultural businesses together. Table 4. illustrates the level of achievement of the function of farmer groups (RAL) as a farming production element.

- Farmer groups play a function in making decisions to develop the production of the Salak Pondoh farming business, which received a RAL value of 80.4% (Good). The farmer group assigned each member to report the obstacles faced while farming Salak Pondoh so that the farmer group could make appropriate decisions regarding these problems, but not all farmers reported their agricultural products.
- Farmer groups works a function in providing facilities or assistance with agricultural production facilities (production equipment, labor, fertilizer) that support the Salak Pondoh farming business with a value (RAL) of 77.4% (Good). Farmer groups as production elements are not yet fully able to help their members because farmer groups are still limited to facilitating aid for production facilities from the Sleman Regency Agricultural Service, which is limited in number.
- The farmer group works a function in planning and encouraging the implementation of profitable farming patterns for members of the Salak Pondoh farmer group, with an RAL value of 76.7%. Farmer groups always look for the latest information from various sources regarding suitable methods of farming Salak Pondoh, such as efficient management of fruit fly pests and proper care of Salak Pondoh plants and land so that they can benefit farmers. The farmer group invites each of its members to implement appropriate farming patterns in the hope of helping each member increase their production. However, not all members implement proper Salak Pondoh cultivation because each farmer has diverse methods and thought patterns for cultivating Salak Pondoh.
- The farmer group works a function in helping access the harvest of memberships of the Salak Pondoh farmer group with a RAL value of 79.6% (Good). The farmer group has helped its members to sell Salak Pondoh production to farmers' markets and other places.
- Farmer groups managed farming business administration for their members well and obtained a RAL score of 79.6% (Good). The farmer group guides and directs each member to manage all forms of administration in farming, although some members still do not understand it, so they need guidance—the Function of Farmer

Groups as Farming Business Production Unit. To determine farmer groups' function as farming production elements, see Table 4.

Farmer groups performance as contributors of production conveniences, making it calmer for farmers to approach production facilities and rising production (Arsyad et al., 2018), offering a widespread scope of services and contributing to productivity, yield superiority, rising air quality, and quantity, as well as small farmers' income. The availability of market access through information, logistical support, and infrastructure increases the function of farmer groups as production elements. The guarantee of a safe market for farmers provides opportunities for farmers to get fair prices (Sultana et al., 2020). Meanwhile, farmers with low education and social status and limited access to land and markets need more significant support to increase their capacity by increasing skills and access to resources (Bizikova et al., 2020).

TABLE IV. THE FUNCTION OF FARMER GROUPS AS FARMING PRODUCTION ELEMENTS

| No.     | The Function of Farmer Groups as Farming Production Elements                                                                                                                                          | RAL (%) | Category |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| 1       | Farmer groups works a function in creating findings in developing the production of the Salak Pondoh farming business.                                                                                | 80.4    | Good     |
| 2       | Farmer groups works a function in offering conveniences or assistance with agricultural production facilities (production equipment, employment, fertilizer, land) that supports Salak Pondoh farming | 77.4    | Good     |
| 3       | Farmer groups works a function in planning and encouraging the implementation of profitable farming patterns members of the Salak Pondoh Farmer Group                                                 | 76.7    | Good     |
| 4       | Farmer groups play a function in helping the market access to market the harvests of members of the Salak Pondoh farmer group.                                                                        | 79.6    | Good     |
| 5       | Farmer groups have a function in managing farming business administration properly and correctly for Salak Pondoh farmer group members.                                                               | 79.6    | Good     |
| Average |                                                                                                                                                                                                       | 78.7    | Good     |

Source: Primary Data (2023)

#### *D. The Function of Farmer Groups as Farming Business Production Elements*

Farmer groups as a vehicle for collaboration refer to the function and function of farmer groups as a forum for farmers or individuals in the group to collaborate with parties outside the group to achieve larger agricultural goals, especially in farming Salak Pondoh. Table 5 shows the achievements of the function of farmer groups as a vehicle for collaboration.

- The farmer group creates an atmosphere of cooperation between Salak Pondoh farmer group members, with a RAL value of 78.9% (Good). Farmer groups hold deliberations, work together to make decisions, and face challenges in farming Salak Pondoh.
- Farmer groups works a function in implementing collaboration and partnerships with other parties, such as providers of production facilities, capital providers, and market information providers, with a RAL value of 78.5% (Good). The farmer group collaborates with the Sleman Regency Agricultural Service to provide production facilities with Field Extension Officers and joins the Turindo Mitra Association in exporting Salak Pondoh production to China, Cambodia, and Vietnam.
- The Salak Pondoh farmer group works a function in collaborating with other Salak Pondoh farmer groups, obtaining an RAL score of 78.9% (Good). The Si Cantik Farmers Group and the Sido Makmur Farmers Group are members of the Paguyuban Mitra Turindo, which acts as a marketing facilitator for Salak Pondoh overseas. Members of Paguyuban Mitra Turindo also work together to collaborate and share experiences.
- The farmer group's function in carrying out the division of tasks between group members obtained a RAL score of 79.3% (Good). The group leader arranges the distribution of tasks according to their respective positions. The farmer group leader plays the function of coordinating and being responsible for all group activities. The farmer group secretary is responsible for recording all important decisions at each meeting and conveying the meeting results. The farmer group treasurer handles all group financial administration activities, such as the farmer group cash. Farmer group members have the right and obligation to express opinions, elect and be elected as farmer group administrators, comply with rules or agreements within the group, attend and be active at every regular meeting, and pay dues such as cash dues.
- The Salak Pondoh farmer group conducted comparative studies between Salak Pondoh farmer groups, which the group facilitated with a RAL value of 79.3% (Good). Farmer groups exchange ideas, knowledge, and experiences during meetings.

To find out the function of farmer groups as a vehicle for Collaboration, see Table 5.

Joint performance among farmers can occur through collaboration, often helped by third parties, or as direct teamwork between farmers. Social capital (connectedness, trust, norms) as a critical element of collaboration differs in each case, principal to the starting point for forming groups. The resulting cooperation in the agricultural sector, too, varies depending on pre-existing linkages (Prager, 2022).

TABLE V. THE FUNCTION OF FARMER GROUPS AS A VEHICLE FOR COLLABORATION

| No. | The Function of Farmer Groups as a vehicle for Collaboration                                                                                                                                                  | RAL (%) | Category |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| 1   | The farmer works a function a function in creating an atmosphere of cooperation between the Salak Pondoh farmer group members.                                                                                | 78.9    | Good     |
| 2   | The Salak Pondoh farmer group works a function in carrying out cooperation and partnerships with other parties, such as facility contributors production, capital providers, and market information providers | 78.5    | Good     |
| 3   | The Salak Pondoh farmer group collaborates with other Salak Pondoh farmer groups.                                                                                                                             | 78.9    | Good     |
| 4   | The function of the farmer group is to divide tasks among members of the Salak Pondoh farmer group.                                                                                                           | 79.3    | Good     |
| 5   | The Salak Pondoh farmer group plays a function in conducting comparative studies between Salak Pondoh farmer groups, which the group facilitates                                                              | 79.3    | Good     |
|     | Average                                                                                                                                                                                                       | 78.9    | Good     |

Source: Primary Data (2023)

#### E. Average level of achievement of the function of farmer groups as a whole

Table 6 shows that the average level of achievement of farmer group function s is in the good category (79.3%). Farmer groups in Turi District, Sleman Regency have participated as learning classes, farming production elements, and a vehicle for good cooperation. They can become partners for CSR (Corporate Social Responsibility) to empower Salak Pondoh farmers. The development of Salak Pondoh productivity in Turi District can support community-based Salak Agrotourism with a strategy focusing on the Unique Selling Proposition (Indrayanti et al., 2020).

TABLE VI. AVERAGE LEVEL OF ACHIEVEMENT OF THE FUNCTION OF FARMER GROUPS

| No. | The Function of Farmer Groups                                         | RAL (%) | Category |
|-----|-----------------------------------------------------------------------|---------|----------|
| 1   | The Function of Farmer Groups as Learning Classes                     | 80.4    | Good     |
| 2   | The Function of Farmer Groups as Farming Business Production Elements | 78.7    | Good     |
| 3   | The Function of Farmer Groups as a Vehicle for Cooperation            | 78.9    | Good     |
|     | Rata-rata                                                             | 79.3    | Baik     |

Source: Primary Data (2023)

#### F. The Association between the Function of Farmer Groups and the Productivity of Salak Pondoh

The association between the function of farmer groups on farming productivity was measured using the Spearman Rank correlation coefficient with a  $\alpha$  value of 5%. To find out the association between the function of farmer groups and the productivity of Salak Pondoh, see Table 7.

TABLE VII. RESULTS OF ANALYSIS OF THE ASSOCIATION BETWEEN THE FUNCTION OF FARMER GROUPS AND THE PRODUCTIVITY OF SALAK PONDOKH

| Indicator                     | Sig. (2-tailed) | Correlation Coefficient | Correlation |
|-------------------------------|-----------------|-------------------------|-------------|
| Study Class (X1)              | .025            | .305                    | moderate    |
| Farming Production Unit (X2)  | .072            | .246                    | -           |
| Cooperation Rides (X3)        | .477            | .099                    | -           |
| Function of Farmer Groups (X) | .055            | .262                    | -           |

Source: Primary Data (2023)

Table 7 shows the value between the function of farmer groups as an education class and productivity of 0.305, with the closeness of the association being in the moderate positive category. The significant value is 0.025 (less than 0.05), meaning a substantial relationship exists between study class and productivity. If the farmer group carries out its function as an education class well, the productivity of the Salak Pondoh farm will also increase. Meanwhile, the function of farmer groups as farming production elements and vehicles for collaboration shows a small relationship with the productivity of Salak Pondoh farming.

#### IV. CONCLUSION

The results of a study on the function of farmer groups in raising the productivity of the Salak Pondoh farming business in Turi District, Sleman Regency, show that the function of farmer groups in raising the productivity of the Salak Pondoh farming business in District of Turi, Regency of Sleman is in a good category. The function of farmer groups as an education class has a moderate positive relationship with the productivity of the Salak Pondoh farming business.

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