

# Empowerment Strategy Of Rice Farmers In Banten Province

Asih Mulyaningsih, Suherna, Gugun Gunawan, Yoyon Haryanto

**Abstract:** Empowerment is one of the key factors in promoting farmers as the main actors in the management of rice farming. The objectives of the research were to: (1) analyze rice farmer's empowerment level; (2) analyze influencing factors rice farmer's empowerment level; and (3) design a rice farmer's empowerment strategy. The research results could be utilized in designing a rice farmer's empowerment strategy. Field data collection had been conducted for three months, during April and June 2019. Research sites were in Pandeglang and Lebak District, Banten Province because the two districts were production centers for rice. Research samples covered 216 rice farmers. Smart PLS was applied in data analysis. The research results showed that: (1) The empowerment of farmers in Pandeglang Regency, Lebak Regency is quite high; (2) the influencing factors of rice farmer's empowerment were participation, empowerment intensity, supports for physical and socio-economic environments, farmer's farmer's characteristics, division of labor patterns; and (3) strategy formulation for empowering rice farmers were to improve participation in farming activity planning, implementation, and evaluation. The rice farmer's empowerment strategies were divided into two strategies namely short-term strategies and long-term strategies. The farmers' empowerment in rice farming of Pandeglang and Lebak Districts could be improved by involving them in their farming activity planning, implementation, and evaluation.

**Index Terms:** Banten Province, Empowerment, Rice, Strategy

## 1. INTRODUCTION

The agricultural sector is a food producer that is needed by all Indonesian people. The main agricultural actors are farmers and farm laborers, most of whom live in rural areas. The number is very large and in general, the level of welfare of the farmers lags behind other groups in society. The number and percentage of smallholders during the 1993-2003 period increased from 9.6 million (45.3%) to 14.1 million (56.4%) with a constant average land area of 0.79 ha [1]. Therefore, although the relative contribution of the agricultural sector in the formation of Gross Domestic Product (GDP) is getting lower, the role of this sector is very strategic, both in achieving the Sustainable Development Goals (SDGs). Sustainable Development Goals is a document that will become a reference in the framework of development and negotiation of countries in the world. The SDGs concept continues the development concept of the Millennium Development Goals where the concept ended in 2015. The Sustainable Development Goals place society at the center of development. This means that society is the ultimate goal, as well as an active actor in development. One of the keys to the success of achieving the SDGs lies in the performance of the agricultural sector. This is a logical implication of the following conditions: 1) the majority of the poor live in developing countries whose main livelihood depends on the agricultural sector; 2) there is a very close relationship between poverty and food insecurity; while the food producer is the agricultural sector; 3) the agricultural sector is very vulnerable to climate change so that the future of food security is very much determined by the success of the agricultural sector in its adaptation and mitigation to climate change. Starting in 2016, the 2015–2030 Sustainable Development Goals officially replaced the 2000–2015 Millennium Development Goals.

Sustainable Development Goals contains 17 transformative goals that were agreed upon and applicable to all nations without exception. One of the goals is to eradicate hunger and achieve sustainable agriculture, in line with development priorities in Indonesia and following the 2015–2019 Medium Term Development Plan Program.

The Ministry of Agriculture has set 11 policy directions for agricultural development for 2015-2019, namely: 1) increasing food security (rice, corn, soybeans, sugar cane, cattle, chilies, and shallots that have an impact on the economy; 2) development export and import substitution commodities as well as bioenergy raw material supply commodities; 3) increasing the competitiveness of agricultural products through product and process standardization, increasing supply chains, quality and food safety; 4) developing infrastructure (land, water, facilities and infrastructure) and agro-industry in rural areas as the basis or foundation for sustainable bio industry development; 5) reorientation of producing one type of product into multi products (main products, bio-products, by-products, products from waste, zero waste and others; 6) cluster or area development in certain areas leveraging the achievement of rational targets; 7) seed systems/ nurseries, farmer protection, farmer institutions, innovation and dissemination technology, extension and agricultural quarantine system policies; 8) supporting thematic programs, such as gender mainstreaming, employment, acceleration of disadvantaged areas, special areas and border areas; 9) adaptation and mitigation of climate change as well as post-natural disaster management; 10) fertilizer subsidies by reducing single fertilizers and increasing compound fertilizer subsidies, subsidizing organic fertilizer development activities, subsidizing strengthening seed / seed breeders; and 11) continuing food security credit to encourage and increase production and productivity, allocating credit ceilings according to sub-sectors to ensure the allocation of credit for food, agricultural mechanization credit to solve labor scarcity and guarantee large-scale food management, and certification of agricultural land for creditworthiness. Agricultural extension, as a community empowerment process, has the main objective that is not limited to the creation of "better farming, better business, and better living, but also to facilitate the community

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in adopting production and marketing techniques to increase their income [2]. Also, through counseling, the community is facilitated to have a better bargaining position in decision making and consistency in implementing policies that are in favor of farmers and other lower-class communities [3]. Thus, through extension, it will accelerate the occurrence of various changes in social, political, and economic conditions so that in the long term, they can improve the standard of living of individuals and communities. Empowerment of farming communities is a key factor that is needed so that people can play a role as the main actor in the management of rice cultivation as a staple food [4]. In the field of agriculture, the local community is currently considered the weakest in capacity, so it needs to be improved through empowerment efforts [5]. People who are empowered in this case are those who can set priorities and control over natural resources, in this case, rice which is very important for efforts to determine their destiny. Empowerment of farming communities, as the main actors in agricultural activities, is one of the objectives of regulating the extension system through Law no. 16 of 2006 concerning Agricultural, Fisheries, and Forestry Extension Systems.

Technology is needed by humans to help carry out their activities, including in agriculture [6]. The type of technology used can be as simple as sickle or more modern technology, such as tractors. In the implementation of rice farming, starting from the land processing stage, planting to harvesting the results, it allows the absorption of male and female labor [7]. The Green Revolution in Java introduced lower-growing superior rice types and the approach to harvesting with a cutting system using sickles and the inclusion of hullers caused a shift in the traditional role of women as rice pounders [8]. Therefore this research emphasizes the empowerment of rice farmers. The relationship between influencing variables will be examined, find a rice farmer's empowerment model. An appropriate approach to the empowerment of farming communities will be formulated and strategies for its implementation will be formulated as input for policymakers in agriculture. This research was conducted in an area that is the center of rice production in Banten Province, namely the Pandeglang Regency and Lebak Regency. Previous studies stated [9] develop a model for empowering rice farmers. Various previous studies have examined empowerment, among others [10, 11]. This study seeks to complement previous studies by examining the empowerment strategy of rice farmers. This study analyzes the empowerment of rice farmers in managing rice farming. This study aims to: 1) analyze the level of empowerment of rice farmers 2) analyze the factors that influence the level of empowerment of rice farmers; and 3) designing a strategy to empower rice farmers. The results of this study can be used to design strategies for rice farmers.

## 2 METHODS

### 2.1 Design

This study was designed with a quantitative research approach, supported by qualitative data. Social research using survey methods has developed in both quantitative and qualitative research in a community. The reason for choosing a research design that combines two kinds of data like this is because quantitative data through the survey method is strong in terms of generalization, but weak in the depth of issues,

while the support of qualitative data for analysis is strong in the depth of issues. The positions of the two types of data in this study are equivalent and are used to complement each other. The agricultural sector has a strategic position in national economic development. Agricultural conditions in Indonesia have not been utilized optimally, so it is necessary to carry out agricultural development aimed at exploiting natural resources, to achieve food self-sufficiency. The research problems formulated in this study are: 1) what is the level of empowerment of rice farmers, 2) what factors affect the level of empowerment of rice farmers; and 3) what is the strategy for the empowerment of rice farmers. Furthermore, the tested model is used as a model used as a strategy for empowering farmers. Strategy formulation in research on farmer empowerment in rice farming, in terms of aspects: Variabel  $X_1$  (farmer characteristics) has three measured variables, namely  $X_{1.1}$  age,  $X_{1.2}$  education,  $X_{1.3}$  cosmopolitan. Variable  $X_2$  (labor division patterns) has four measured variables, namely  $X_{2.1}$  the spirit of hard work,  $X_{2.2}$  confidence,  $X_{2.3}$  risk courage,  $X_{2.4}$  creativity. Variable  $X_3$  (a division of labor patterns) has three measured variables, namely  $X_{3.1}$  productive,  $X_{3.2}$  reproductive,  $X_{3.3}$  social. Variable  $X_4$  (Quality of extension services) has four measured variables, namely  $X_{4.1}$  suitability of material,  $X_{4.2}$  accuracy of the method,  $X_{4.3}$  extension competence,  $X_{4.4}$  farmer involvement. Variable  $X_5$  (empowerment intensity) has five measured variables, namely  $X_{5.1}$  technical skills,  $X_{5.2}$  innovative behavior,  $X_{5.3}$  farmer involvement,  $X_{5.4}$  strengthening resource income,  $X_{5.5}$  ability to work together. Variable  $X_6$  (availability of agricultural information) has three measured variables, namely  $X_{6.1}$  meaning of information,  $X_{6.2}$  amount of information,  $X_{6.3}$  quality of information. Variable  $X_7$  (support for the physical and socio-economic environment) has five measured variables, namely  $X_{7.1}$  support for government policies,  $X_{7.2}$  support from farmer leaders,  $X_{7.3}$  availability of infrastructure,  $X_{7.4}$  institutional support,  $X_{7.5}$  support from experts. Variable  $Y_1$  (level of participation) has three measured variables, namely  $Y_{1.1}$  planning,  $Y_{1.2}$  implementation,  $Y_{1.3}$  evaluation. Variable  $Y_2$  (level of empowerment) has six measured variables, namely  $Y_{2.1}$  ability to obtain information,  $Y_{2.2}$  ability to make decisions,  $Y_{2.3}$  ability to access market,  $Y_{2.4}$  ability to manage finances,  $Y_{2.5}$  ability to partner,  $Y_{2.6}$  adaptability. Empowerment of rice farmers is designed to increase farmers' access to empowerment that involves farmers as decision-makers in agricultural development. For the strategy to be implemented, various supporting factors are needed in empowering farmers. Farmers' empowerment is one of the most important factors and determines the success of rice farming. Farming carried out in this era of globalization should be directed at increasing empowerment so that farmers are empowered and can help themselves in solving rice farming problems. Empowered farmers are farmers who can solve their farming problems. The research hypothesis is that farmer characteristics, farmer's personality traits, division of labor patterns, Quality of extension services, empowerment intensity, availability of agricultural information, support for the physical and socio-economic environment, and level of participation are variables affecting the empowerment of rice farmers.

### 2.2 Data Collection

The method in this research is a survey method by distributing questionnaires. Field research was carried out over eight months, namely April to June 2019. The research was

conducted in Pandeglang Regency and Lebak Regency, Banten Province. The research location was chosen deliberately with the consideration that the research location is a rice production center in Banten Province. From each district, three rice centers were selected. The selected districts for Pandeglang Regency are Munjul, Sobang, and Panimbang districts. The selected districts from Lebak Regency are Cipanas District, Gunung Kencana District, and Leuwidamar District. The population in this study were members of farmer groups in rice farming, amounting to 600 farmer households spread across Pandeglang and Lebak Districts. With a sample size of 216 farmer households. This study uses a probability sample design, meaning that sampling is based on the idea that the entire population unit has the same opportunity to be sampled.

### 2.3 Data Analysis

The data that has been collected is then processed using the Smart PLS nonparametric statistics which are used to see the effect between variables. The Smart PLS parametric statistical test requires a transformation so that all collected data becomes an interval scale so that it meets the requirements for the Smart PLS parametric statistical test. Guidelines for transformation can be done by determining the smallest index value given for the lowest total score and the largest index value given for the highest total score of each indicator. The number of minimum and maximum scores that can be expected from each indicator will be different or not the same as one another. This is because there are differences in the number of question items for each of these indicators. The index value range is 0-100 obtained by transforming. The smallest index value of 0 will be equivalent to the total minimum score and the largest index value of 100 will be equivalent to the maximum total score of each indicator.

## 3 RESULT AND DISCUSSION

### 3.1 Research Overview

Rice is one of the staple foods of most Indonesians. In 1984, Indonesia was able to achieve rice self-sufficiency, after which the domestic rice supply could not be fulfilled, so imports were carried out. Seeing this reality, rice has become a fundamental and strategic commodity. Several activities must be done in rice farming. The series of activities started from seeding, land processing, planting, fertilizing, weeding and replanting, and final harvesting activities. The level of empowerment is the ability of farmers with individual personal abilities in the form of perceptions of their abilities and environment, actions and collective abilities to achieve goals and the ability to survive their problems in carrying out agricultural resource management activities to meet their daily needs [12]. The level of empowerment is measured using six indicators, namely: the ability to obtain information, the ability to make decisions, the ability to market information, the ability to manage finances, the ability to partner, and the ability to adapt.

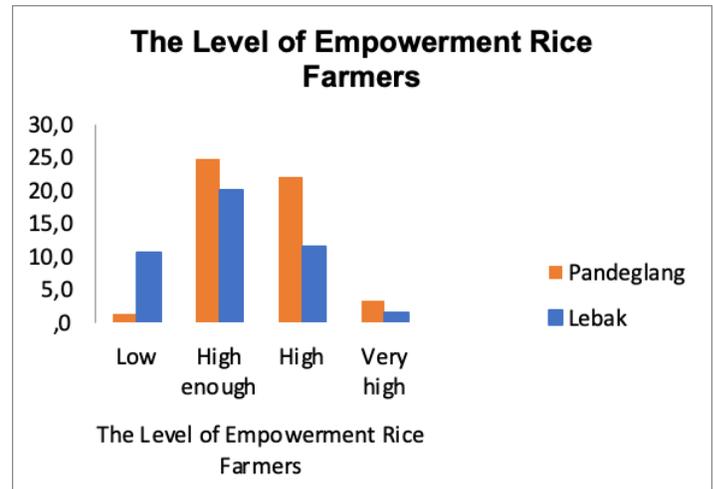


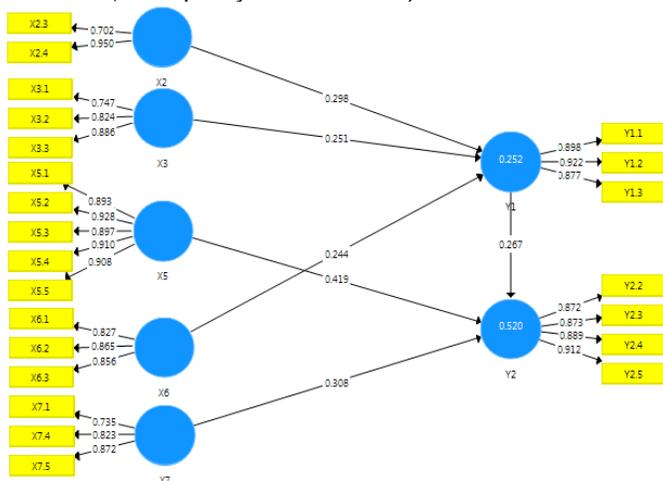
Fig 1. The Level of Empowerment Rice Farmers

The results showed that the farmer empowerment in Pandeglang Regency, Lebak Regency was quite high. Based on Figure 1, the empowerment of farmers in the Pandeglang Regency is higher than the empowerment of farmers in the Lebak Regency. This is supported by the location of the Pandeglang Regency which is close to the capital of Banten Province so that generally farmers receive information about government programs first. However, farmers in Pandeglang and Lebak districts need to increase their empowerment by providing appropriate counseling according to farmers' needs and support from the government. The results of this study contribute to policymakers to increase the empowerment of rice farmers in Pandeglang and Lebak districts. For this reason, an appropriate strategy is needed to increase the empowerment of rice farmers in the Pandeglang and Lebak districts. Community empowerment is the elements that enable people to survive and in a dynamic sense develop themselves and achieve progress. Empowering the community is an effort to increase the dignity of the layers of society who are currently unable to escape the traps of poverty and underdevelopment. In other words, empowering is enabling and empowering the community [13].

### 3.2 Factors Affecting the Level of Empowerment of Rice Farmers

Based on the results of the smart PLS analysis, it shows that the factors that influence the empowerment of lowland rice farmers are the intensity of empowerment (technical skills, innovative behavior, farmer involvement, and strengthening of getting resources), physical and socio-economic environmental support (government policy support, institutional support, and support from experts), and farmer participation (planning, implementation, and evaluation). Figure 2 shows the factors that directly and indirectly play a role in shaping farmer empowerment to manage lowland rice farming. Mathematically, the structural model equation of these factors is  $Y_2 = 0.267 Y_1 + 0.419 X_5 + 0.308 X_7$ ,  $R_2 = 52\%$ , meaning that these three variables simultaneously affect the empowerment of rice farmers by 0.52. In other words, the model can explain 52% of data diversity, while the rest (48%) is formed by unknown variables (not included in the model) and errors. The level of farmer empowerment in rice farming management is influenced by direct and indirect variables [14]. Empowerment of human resources is a process of business activities to further empower "human resources" through

human change and development, in the form of abilities, trust, authority, and responsibility in the context of implementing organizational activities to improve performance as expected. The empowerment of agricultural extension agents is important because in facing the era of competition and service, every organization needs workers who are responsive and independent so that the organization has an advantage through its human resources [15]. Some of the principles of empowerment are: 1) placing the community (farmers) as competent actors or subjects who can reach resources and opportunities, 2) the community (farmers) must see themselves as important agents who can influence change, 3) the level of awareness is the key to empowerment because knowledge can mobilize action for change, 4) empowerment involves access to resources and the ability to use these resources effectively, and 5) the empowerment process is dynamic, synergistic, and keep changing, where the problem always has various solutions. What is more important is that farmers themselves must participate in empowerment and maintain togetherness and cooperation in groups [16]. The factors that directly influence the empowerment of rice farmers are participation (planning, implementation, and evaluation), the intensity of empowerment (technical skills, innovative behavior, farmer involvement, strengthening of resource acquisition, and cooperation ability), and support for the physical and socio-economic environment (support government policies, institutional support, and experts). Indirectly, the empowerment of rice farmers is influenced by the personality traits of farmers (courage to take risks and creativity), the pattern of division of labor (production, reproduction, and social), and the availability of agricultural information (the meaning of information, amount of information, and quality of information).



**Fig 2.** The standardized value of the estimated parameter of the structural model for rice farmers

Regression Model

$$Y_2 = 0.267 Y_1 + 0.419 X_5 + 0.308 X_7, R_2 = 52\%$$

Factors that indirectly affect the empowerment of rice farmers are farmer personality traits (X2), namely: risk courage and farmer creativity, division of labor (X3), namely: production, reproduction, and social. The empowerment of rice farmers in the two research location districts has no direct effect but must participate in farmer groups in planning, implementing, and

evaluating rice farming. Farmers who are empowered are if they can plan their farming, carry out their farming, and evaluate their farming activities so that they can improve their farming activities in the next planting season. For this reason, the role of extension workers is very important to motivate farmers to continue to improve their farming, especially rice.

### 3.3. Rice Farmers Empowerment Strategy

The strategy is often defined as certain steps or actions that are carried out to achieve a desired goal or target. Conceptually, a strategy is often interpreted by a variety of approaches. Strategies are systematic steps taken in carrying out activities to get the maximum expected results. Some translate strategy as ways, techniques, tactics to achieve certain goals. The strategy is a way of doing something to achieve goals. Similar to the nature of the model, the strategy is dynamic and its actualization is largely determined by time and place factors [17]. The strategy is a process as well as an important product related to the implementation and control of activities carried out to win the competition for the achievement of goals. The strategy is a tool to achieve goals. The concept of strategy continues to evolve and can differ from one another according to the goals to be achieved. The community empowerment strategy has three directions, firstly community alignment and empowerment, secondly strengthening the autonomy and delegating authority in development management that develops community participation. Third, modernization through sharpening the direction of changes in socio-economic structures (including health), culture, and politics that are rooted in community participation. Farmers' empowerment strategies in rice farming management are formulated based on an empowerment model designed with input, process, output, and outcome approaches [18]. The strategy built is guided by a structural model that has been tested through Smart PLS analysis. The test results show that the estimation of model parameters can be reduced to a strategy with a flow of thinking strategies for empowering rice farmers as follows:

**The results of testing the parameter estimation of the model can be derived into a strategy with a strategy for empowering rice farmers as follows:**

#### 1. Input

The inputs referred to in the paddy farmer empowerment strategy are farmer personality traits, work distribution patterns, empowerment intensity, availability of agricultural information, and support for the physical and socio-economic environment.

#### 2. Process

Empowerment of farmers to improve farmer personality traits, the pattern of division of labor, intensity of empowerment, availability of agricultural information, and support for the physical and socio-economic environment.

#### 3. Output

Increased farmer participation in farm planning, carrying out farming activities and evaluating rice farming activities.

#### 4. Outcome

Increased empowerment of rice farmers so that they can get market access, the ability to manage finances, and have the ability to partner with other farmers, the government, and the private sector.

The strategies formulated to increase the empowerment of rice farmers in their farming management are 1) short-term

strategy: encourage increased participation of rice farmers (planning, implementing, and evaluating) by increasing personality traits (courage to take risks and creativity), patterns of division of labor (production, reproduction, and social), and availability of agricultural information (the meaning of information, amount of information, and quality of information); and 2) long-term strategy: increasing the empowerment of rice farmers by increasing farmer participation (planning, implementing, and evaluating), empowerment intensity (technical capability, innovative behavior, farmer involvement, strengthening resource acquisition, and cooperation ability) and environmental support. physical and socio-economic (government policy support, institutional support, and experts).

#### 4 CONCLUSION

1. The empowerment of farmers in the Pandeglang Regency, Lebak Regency is quite high.
2. Factors that directly influence the empowerment of rice farmers are participation (planning, implementation, and evaluation), the intensity of empowerment (technical ability, innovative behavior, farmer involvement, strengthening of resource acquisition, and cooperation ability), and support for the physical and socio-economic environment. (government policy support, institutional support, and experts). Indirectly, the empowerment of rice farmers is influenced by the personality traits of farmers (courage to take risks and creativity), the pattern of division of labor (production, reproduction, and social), and the availability of agricultural information (the meaning of information, amount of information, and quality of information).
3. The formulation of a rice farmer empowerment strategy is to increase participation in planning, implementation, and evaluation of farming activities, namely: 1) short-term strategy: encourage increased participation of rice farmers (planning, implementing, and evaluating) by increasing personality traits (courage to take risks and creativity), the pattern of division of labor (production, reproduction, and social), and availability of agricultural information (the meaning of information, amount of information, and quality of information); and 2) long-term strategy: increasing the empowerment of rice farmers by increasing farmer participation (planning, implementation, and evaluation), empowerment intensity (technical capability, innovative behavior, farmer involvement, strengthening resource acquisition, and cooperation ability) and environmental support. physical and socio-economic (government policy support, institutional support, and experts).

#### ACKNOWLEDGMENT

This research is financially supported by the IsDB Research Grant Program, Sultan Ageng Tirtayasa University in 2019 (Contract No. B / 60 / UN 43.9 / PT.01.03 / 2019) of the Islamic Development Bank. We thank for Indonesia Center of Excellence for Food Security Sultan Ageng Tirtayasa University, Indonesia

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