



The Latest Trend in Utilization of Organic Fertilizer for Improving Group Productivity Farming

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Abstract

The Pejuang Muda or Young Fighters Program was a new program initiated by the Ministry of Social Affairs in 2021 in collaboration with the Free Learning Program of the Ministry of Education, Culture, Research, and Technology, as well as the Ministry of Religion. This program, involving active students as participants from various universities, aims to help update the Social Welfare Integrated Data (SWID), in addition to mapping and designing social programs based on social empowerment in all provinces in Indonesia. Starting from the eight forms of learning activities accommodated by the Merdeka Campus Program, Pejuang Muda Program took the form of learning activities. The focus of the program was the formation of social and economic growth in various locations in Indonesia through community empowerment. Such program can be used to solve social problems that were often encounter in Nagari Kinari were cow dung not processed or utilized properly by local farmers. Such as finding cow dung scattered on roads, residential areas, which resulted in environmental pollution and improves soil physical, chemical, and biological properties. The purpose of this study was to focus on the use of organic fertilizers with the aim of increasing production of environmentally friendly and cost-effective agricultural products aided by the Pejuang Muda Program. This type of research is qualitative descriptive in nature and the researcher also involves the community in Nagari Kinari to obtain data through observation and interviews. In carrying out this research, farmer groups in Nagari Kinari and the people of Nagari Kinari gain insight into new knowledge and understanding about the processing and benefits of organic fertilizers directly and through the practice carried out during training, the community was able to apply it directly in the field. Hence it aided to solve social and economic problems simultaneously.

Keywords: Organic Fertilizer, Pejuang Muda Program, Nagari Kinari, Farmer Groups, Empowerment.

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1. Introduction

Pejuang Muda or Young Fighters Program is a new program initiated by the Ministry of Social Affairs in 2021 in collaboration with the Free Learning Program of the Ministry of Education, Culture, Research, and Technology, as well as the Ministry of Religion. This program, by cooperating with thousands of active students as participants from various universities, aims to help update the Social Welfare Integrated Data, in addition to mapping and designing social programs based on social empowerment in all provinces in Indonesia. One of the materials that was given in this Pejuang Muda Program is how we can propose solutions to social problems encountered in the communities where they work. The solution takes the form of social change that is concrete, focused, measurable, and involves various parties. This social change project was one of the assessments in the Pejuang Muda Program. In the development of this team based project, the focus of the program is the formation of social entrepreneurship (economic heroes) in various locations in Indonesia in the context of alleviating poverty and solving social problems through the

concept of social empowerment for the poor and the elderly. It is hoped that with the growth of social entrepreneurship in various regions in Indonesia, the poverty rate will decrease and the Indonesian people was able to live better.

Based on the 2020 agricultural extension program, the population of Nagari Kinari who is engaged in agriculture is around 2793 people. Where some of these farmers have joined into 17 farmer groups in Nagari Kinari. The indigenous people of Nagari Kinari Solok work as farmers working on rice fields. The proof is that until now there is still a Rumah Gadang that has a special storage in front of it as a place to store crops in Nagari Kinari. The people of Nagari Kinari mostly work as farmers. because in Nagari Kinari the existing natural resources support agricultural land. Until now, the people of Nagari Kinari still using chemical fertilizers.

There are many kinds of social problems that we often encounter and raise in team based projects, namely the many hobbies of the pre-elderly community. We also found in Nagari Kinari a lot of cow dung scattered on the road, residential areas. Even cow dung can be used to reduce environmental pollution, and improve the

physical, chemical, and biological properties of the soil [1], the cow dung is not processed or utilized properly by local farmers. The last problem is that the pre-elderly community in Nagari Kinari is mostly silent in the village. home with few activities and lack of productive activities both inside and outside the home. From several previous studies, personal characteristics and cognition, farmers age, education and income level have significant effects on farmers organic fertilizer application behaviour [2], [3], [4]. Whereas the continuous use of chemical fertilizers can cause environmental damage, especially for the soil, which results in reduced soil fertility or land degradation [5]. The right solution to overcome this problem is to replace it with organic fertilizer [6].

The use of organic fertilizers in addition to preserving the environment, it also has a good impact on farmers because the use of organic fertilizers which are relatively cheap can reduce the cost of processing agricultural land [7]. Black soldier fly larva was used as a compost evident have high quality organic fertilizer [8]. In soil properties, growth physiology, and yield of citrus, organic fertilizer has the potential to substitute partial chemical fertilizer [9]. The greatest impact on the soil properties and bacterial community of the grape rhizosphere soil had been proved by application of organic fertilizer [10].

Organic fertilizers, namely fertilizers derived from plant, animal [1] or human residues such as manure, green manure and compost (humus) in the form of liquid or solid which, among other things, can improve the physical and structural properties of the soil, can increase water holding capacity, soil chemistry, soil biology. In addition to adding macro and micro nutrients in the soil, this organic fertilizer has also proven to be a good alternative in improving the structure of agricultural soil [11], [12]. Organic fertilizers are nothing but materials produced from weathering the remains of plants, animals, and humans. There are several advantages of this organic fertilizer so that it is very popular with farmers, including the following:

- a. Improve soil structure [13]
- b. Increase the absorption of soil to water [14]
- c. Improve living conditions in the soil. This is mainly due to organisms in the soil that utilize organic matter as food [15]
- d. As a source of nutrients for plants [16]

Organic fertilizers contain complete nutrients for plants of kangkong, red spinach and chili even though the levels are not as high as inorganic fertilizers [17].

The application of the quality analysis method has not been carried out in Nagari Kinari. The purpose of this research is to implement quality analysis in order to find out how to increase the productivity of farmer groups on the use of organic fertilizers through training held in Nagari Kinari, Bukit Sundi District, Solok Regency.

2. Research Methodology

Groups of farmers were formed on the basis of common interests, common environmental conditions (social, economic, resources) and familiarity to improve and develop members' businesses. There are three functions of farmer groups, namely as a learning class, farmer groups are a place for teaching and learning for their members to improve knowledge, skills and attitudes as well as grow and develop independence in farming, so that productivity increases, income increases and a more prosperous life then as a vehicle for cooperation. Farmer groups are a place to strengthen cooperation among fellow farmers in farmer groups and between farmer groups as well as with other parties and finally as a production unit, farming carried out by each member of the farmer group, as a whole must be seen as a single business unit. that can be developed to achieve economies of scale, both in terms of quantity, quality and continuity [18].

The agricultural sector plays an important role in supporting sustainable development. With the dependence on agro-industrial activities and primary commodities of agricultural products that are used as raw materials, it has implications for the linkage of human resources with natural and environmental resources. The agricultural sector that is managed properly and optimally will increase the productivity of farmer groups. Indonesian products that have competitiveness was able to compete in the global market. And these activities was sustainable with the development of agricultural sector activities that pay attention to long-term aspects [19]. Theoretically the notion of productivity has been put forward by several experts. One of them, according to that productivity basically includes a mental attitude that always has the view that today's life must be better than yesterday and tomorrow must be better than today [20]. Such an attitude will encourage a person not to feel satisfied quickly, but must develop themselves and improve work abilities by always looking for improvements and improvements.

2.1. Factors Affecting Productivity

All farmer groups must have the desire that all workers are able to increase high productivity. For this reason, there are several factors that can affect productivity both related to the workforce and the worker's environment according to experts. Productivity can be influenced by several factors, which can be described as follows [21].

- a. Management, is a commitment to the success of the organization, upholding and carrying out the vision and mission, and designing strategies to achieve.
- b. Motivation, reasons and drives that make people act. Repeated human actions become habits. Motivation can lead to good actions and behavior from every human being or workforce. Furthermore, these good behaviors and actions can support work productivity, and ultimately benefit the progress of the organization.

- c. Discipline, behavior and actions of a person in accordance with the demands and responsibilities. Discipline must always be fostered by leaders and all workers
- d. Skills, a person's ability to complete a job according to the time and/or energy he has.
- e. Income, the form of giving given by the organization to the workforce in accordance with the responsibilities carried out, achievements during a certain time, and the organization's ability to provide these gifts.
- f. Health and Work Environment, including physical working conditions (comfort, lighting, air circulation) and the relationship between workers (humorous, mutual cooperation, and mutual support)

2.2. Efforts to Increase Productivity

To increase productivity can be seen as a behavioral problem, but it can also contain technical aspects. To overcome this, it is necessary to have a proper understanding of the factors that determine the success of increasing productivity. This include the following.

a. Continuous Improvement

In an effort to increase work productivity, one of the implications is that all components of the organization must make continuous improvements. as farmers are the microcosmic subjects involved in agricultural production and stakeholders, it is necessary to study their motivation for applying organic fertilizers [22], [23].

b. Improving the Quality of Work Results

Closely related to efforts to make continuous improvement is improving the quality of work by all people and all components of the organization. Quality is not only related to the products produced and marketed, both goods and services, but also to all types of activities carried out by all work units, the awareness of consequences and ascription of responsibility [24] have both the implementation of main tasks and the implementation of supporting tasks within the organization.

c. Human Resources Empowerment

Human Resources is the most strategic element in the organization. Therefore, empowering human resources is a very basic work ethic that must be held by a management position in the organizational hierarchy.

2.3. Types of Research

In the process of implementing the Pre-Elderly Empowerment Program through the Potential and Resource-Based Integrated Workshop which focuses on the use of organic fertilizers with the aim of increasing the production of environmentally friendly and cost-effective agricultural products. -elderly who are in

Nagari Kinari to obtain data through observation and interviews

2.4. Data and Data Sources

There are two kinds of data sources, namely primary data sources and secondary data sources. Primary data sources are data sources obtained directly by researchers. While secondary data sources are data sources that are not obtained directly by researchers. In conducting SWID verification, researchers use SWID from the Ministry of Social Affairs and when conducting training researchers also need farmer group data from Nagari Kinari. Collecting data sources in the form of primary and secondary data

Primary data is direct data that gives directly to data collectors. The primary data collection technique carried out by the researcher is through the first party, be it individuals or groups, so the data is obtained directly. Primary data collection was carried out in the SWID Verification and Validation activity in Nagari Kinari, Bukit Sundi District, Solok Regency using survey methods and observation methods. The survey method is a method of collecting primary data using oral or written questions, the researchers conducted direct interviews with the Nagari Kinari people who have cattle but the cow dung is not properly processed. The observation method is a primary data collection method by observing certain activities or events that occur. Here the researchers made direct observations in the Nagari Kinari area, there were some cow dung scattered on the streets, in residents' housing and not used properly by the community. This observation method with the aim of obtaining data or information in accordance with what is seen and in accordance with the reality in Nagari Kinari. Secondary data is a data source that does not directly provide data to data collectors. In the form of integrated social welfare data from Pusdatin Ministry of Social Affairs for Nagari Kinari area, and also obtained secondary data from Nagari Kinari regarding data on existing and active farmer groups in Nagari Kinari.

2.5. Data Gathering Techniques

The data gathering technique in this study was based on the implementation of the Team Based Project that we carried out in Nagari Kinari, Bukit Sundi District, Solok Regency. In the project implementation of the Utilization of Organic Fertilizers to Increase the Productivity of Farmer Groups in Nagari Kinari, it is divided into several data processing items with the following details:

a. Increase Farmer Group Productivity

The initial step that taken in the implementation of training on the use of organic fertilizers was to classify or divide farmer groups that are still productive and continue by collecting data and recording farmer groups who are still active in Nagari Kinari, Bukit Sundi District, Solok Regency.

b. Analyzing and knowing opportunities to increase the productivity of farmer groups

At this stage, the analysis stage was carried out, the goal is to find out opportunities that can be used to increase the productivity of farmer groups, by conducting training on the use of organic fertilizers in Nagari Kinari, Bukit Sundi District, and Solok District.

2.6. Data Collection and Processing

Pejuang Muda who have arrived in the area would coordinate with related parties such as the Social Service, technical assistance from the Ministry of Social Affairs, and local government officials. To carry out activities in the field, the Young Warriors would receive Integrated Social Welfare Data (SWID) from the Social Welfare Data and Information Center of the Ministry of Social Affairs. The Integrated Social Welfare Data (SWID) for the Social Protection Program was an electronic data system containing social, economic and demographic information from approximately 99 million individuals with the lowest welfare status in Indonesia. SWID was used to improve the quality of targeting of social protection programs. SWID assisted with program planning, improves the use of budgets and social protection program resources. By using data from SWID, the number and target beneficiaries of the program could be analyzed from the start of program planning.

In developing this project proposal, the focus of the program was the formation of social entrepreneurship in various locations in Indonesia in the context of alleviating poverty and solving social problems through the concept of social empowerment for the poor and the elderly. It was hoped that with the growth of social entrepreneurship in various regions in Indonesia, the poverty rate will be decreased and the Indonesian people will be able to live better. In training on the use of organic fertilizers to increase the productivity of farmer groups. there are several steps taken by the Pejuang Muda to support the smooth running of the program, such as the following.

a. Farmer Group Classification

The initial step that taken in the implementation of this project is to notify the Nagari Kinari government regarding the plan to procure a resource-based program for the empowerment of pre-elderly in Nagari Kinari and continue with the delivery of the program that was carried out as well as asking the government's willingness to help classify farmer groups that is in Nagari to work together on the Team Based Project that is being carried out.

b. Analyzing and knowing opportunities to increase the productivity of farmer groups.

At this stage, direct socialization was carried out to the people of Nagari Kinari regarding the details of the program in the form of a combination of a cultural program and an agricultural program with the aim of empowering the pre-elderly related to the socio-economic conditions of the pre-elderly in Nagari Kinari. This socialization activity was carried out in accordance

with health protocols, to prevent the spread of the Covid-19 virus. In addition, it was explained directly to the people in Nagari Kinari about the advantages of this program which cannot be separated from what was the basis for procuring this program which will later work in cultural and agricultural aspects.

Groups that have been divided based on potential and resources was placed in the program that has been provided. In the program, training was carried out starting from basic technical training to the results of community activities that can generate economic value which will have a huge impact on the economic development of pre-elderly entrepreneurship in Nagari Kinari. Not only that, the implementation of the program project is not only engaged in the field of culture, but is also engaged in agriculture by creating an agricultural program which will also hold training for the pre-elderly on how to make organic fertilizer by utilizing livestock manure and how to process livestock manure until it is processed. to be used as a basic material for making organic fertilizers which will later make agricultural products more productive. Through this integrated program, the public was given education regarding online sales using various social media which will involve NGOs and youth youth organizations in Nagari Kinari.

3. Result and Discussion

After the Pejuang Muda Program ended on December 20, 2021, and at the same time as the completion of the organic fertilizer processing training program, of course, program continuity was needed to ensure the existence and sustainability of the training program that had been formed. Farmer groups who have received training by providing material by resource persons and are fostered and trained by practicing the process of making fertilizer which will produce organic fertilizer.

Now, after the completion of our program, Pejuang Muda as the organizer, there is a feeling of concern that there was a loss of productivity due to the absence of assistance and facilitation for this farmer group, as the community felt during previous programs. Currently, the Pejuang Muda are being endeavored to encourage continued assistance and facilitation to ensure the sustainability of the program through the organic fertilizer processing training program. Where the candidates who were called the "Farmers Group" was be recruited to apply the fertilizer to agricultural land which was then be gradually and quickly the agents of this Farmer Group was trained with direct trainers.

It was planned that the Sustainability of the Organic Fertilizer Making Training Program was continued by the Young Warriors of Solok Regency if there are donors who are willing to participate for the sustainability of this program. Of course, the farmer groups in Nagari Kinari have high hopes that this program can continue so that it can have a real impact on the farmer groups.

The Team Based Project was carried out in Nagari Kinari to improve the welfare and economic productivity of Farmer Groups in Nagari Kinari, Bukit Sundi District, Solok Regency has an overview of project sustainability that leads to the development of human resource potential through programs engaged in agriculture. It was hoped that in the future the community in Nagari Kinari can manage and use organic fertilizer regularly so that the local community can make it a new source of income for the people in Nagari Kinari, Bukit Sundi District, Solok Regency, especially the Farmer Groups in order to get a more prosperous life than before.

4. Conclusion

The training program for the use of organic fertilizers was carried out by the Young Warriors of Solok Regency who practice directly making Organic Fertilizers and was guided by resource persons who are experienced in their fields at the time of implementation. In the implementation of this community empowerment activity, it can improve the quality of farmer groups towards the production and management of organic fertilizers. Furthermore it can provide information on the quality of farmer group resources in Nagari Kinari, Bukit Sundi District, Solok Regency.

The people of Nagari Kinari had gain insight into new knowledge and understanding regarding the processing and benefits of organic fertilizers directly and through the practices carried out during the training, the community was able to apply it directly in the field. Hence it aided to solve social and economic problems simultaneously.

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