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Empowerment Of Farming Communities Through Utilization of Corn Husk Waste (Zea Mays L) As Organic Fertilizer

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Abstract: This research identifies the use of Chemical Fertilizers will increase sharply during 2022 and create tension between supply and demand. This is not in line with the company's offer to buy community agricultural products. In the Lemoe sub-district, Parepare City, one of the reasons for the scarcity of fertilizer is the increasing amount of community agricultural land for corn production. Therefore, this research-based assistance aims to overcome community problems and assist the community through the farming community in solving the problem of scarcity of chemical fertilizers by utilizing corn husk waste in locations to become material for making organic fertilizer. The service method uses the Asset Based Community Development (ABCD) approach. The presence of this approach makes the community through the community as the agent of change itself. The results of the assistance are in the form of Organic Fertilizer products that are ready to be used by the community. In the future research-based assistance, assistance is needed to the farming community in the marketing process for organic corn products produced, so that they can reach Indonesia and abroad. This research based mentoring activity is important for public health. With market value which of course will be proportional to the level of health obtained by the buying community or consumers.

Keywords: Devotion, Organic Fertilizer, Community.

INTRODUCTION

Organic fertilizers are the result of the decomposition of organic materials. This organic material, of course, comes from plants, animal waste and the help of microorganisms that contain nutrients and nutrients. Organic fertilizers have roles and plant metabolic processes. In the fertilizer there is ammonia which has a role in maintaining turgor pressure properly so that it can expedite plant metabolic processes. Organic fertilizers derived from plant engineering are usually in liquid and solid form. Fertilizers, which of course come from organic materials, are used to improve the quality of the soil and the plants it produces. This is due to the improvement of soil biology. This

then becomes the focus of this assistance through the community in Lemoe Village, Bacukiki District, Parepare City.

The farming community in the Lemoe community consists of three communities, namely: the Sustainable Farmers Community, the Cinta Lestari Women Farmers Community and the Lestari Youth Farmers Community which are members of a farming group that cultivates agriculture by processing, planting, fertilizing, harvesting and marketing. The results of the transect conducted found that there are many assets in the Lemoe community who are corn farmers, one of the assets that is not managed properly is corn waste which can be used to make organic fertilizer.

In the Lemoe Village, the farming community developed corn agricultural production (Zea Mays L). This has been going on since the Covid-19 pandemic where the price of corn has increased due to the increased demand for animal feed at that time. Lemoe was originally a sub-district that had regional potential as a sub-district that provided cashew nuts as souvenirs typical of Parepare City. Every year, the community can harvest 1 time cashew nuts with an estimated income of IDR 20,000,000 / hectare of land. This is still felt to be lacking by the community, because the need is increasing in direct proportion to the price which continues to increase. Finally, the community through the Farmer Community is moved to change agricultural products.

Changes made by the Farming Community have had a positive effect on increasing the income of the Farming community, through corn production, Farmers can harvest 2 times a year with an estimated income of Rp. 35,000,000/ hectare at a price of IDR 3,500-IDR 4,000 per kilo. Farmers also have no difficulty selling agricultural products, because approximately 5 km from the agricultural location there is a JAPFA company that is ready to receive agricultural products from the farming community. The problem that then emerged occurred at the beginning of 2022, when the conditions of the covid pandemic had started to improve, the price of the chemical fertilizers that farmers used became more expensive with very limited or scarce quantities. This scarcity has a very bad effect on agriculture. Where in 1 hectare of land for 1 time of harvest, farming communities need 25 sacks of Chemical Fertilizers. The next problem felt by farmers is the declining price of corn due to the increasing amount of supply each harvest period.In the soil, organic fertilizers are broken down by microbes into humus or humus soil organic matter which is useful as a binder of primary soil granules into secondary (Wang et al., 2020)This condition plays an important role in maintaining porosity, storage and supply of water as well as aeration and temperature in the soil. Opportunities for the use of organic fertilizers in the future is quite large. This is due to various things, including: the price of chemical fertilizers is getting more expensive due to the reduction in fertilizer subsidy by the government, the level of soil fertility is decreasing, farmers' awareness of the dangers of chemical fertilizer residues is getting higher and there is an increasing trend of organic farming

Based on this roblem, the focus of this service is to facilitate the knowledge of the Lemoe Farmer Community, Bacukiki District, Parepare City through Assistance in Making Organic Fertilizer from Corn Shell Waste. The results of this assistance are expected to increase people's income, improve the condition of agricultural land and provide new understanding for the farming community.

LITERATURE REVIEW

In the last few decades, several researchers, including the authors of this article, have been increasingly engaged in addressing the urgent need for knowledge, innovations and actions in order to assist sustainable transitions (Aare et al., 2021). Research results (Galiè et al., 2017) present a study that analyzes changes in empowerment of farmers in the context of

processing agricultural waste. Improvement of agricultural management to increase food security. There are key opportunities and challenges to further scale the approach, ensure sustainability and maintain the quality required to ensure farmers are empowered in making decisions that improve their livelihoods in the face of climate variability and change(Clarkson et al., 2022).

According to the empowerment of farming communities include: Empowering farmers, namely changing the behavior of farmers from traditional subsistence farmers to modern farmers with agribusiness insight.

Empowering farmer institutions by developing farmer institutions from farmer groups to combined farmer groups (Gapoktan), associations, cooperatives and corporations (farmer-owned bodies), as well as Empowerment of farming businesses by fostering an entrepreneurial spirit and collaboration between farmers and other related parties to develop their farming businesses(Jongsuksomsakul & Roebl, 2022).

One of the farmers' problems is the weak bargaining position (bargaining power) of farmers towards traders/middlemen/contractors. Efforts that can be made to increase bargaining position are through consolidating farmers in one forum to identify economic movements from pre-production to marketing. This can be done by collecting all processes in the agricultural chain including collectivity capital, production collectivity to marketing. as follows: Collective capital is an effort to build capital collectively and independently. For example, there are productive savings and loans that are mandatory for members to save and lend as productive capital, not for consumptive use.

Collectification of production, namely a collective production plan to determine the pattern, type, quantity and production cycle collectively. Production collectivity needs to achieve production efficiency with large production scales from many producers. So that production factor costs can be saved and ease of production management such as pest management(Forney, 2021).

Marketing collectification is an effort to distribute agricultural commodities collectively which aims to achieve marketing cost efficiency with a large quantity scale and increase the bargaining position of producers in selling their commodities(Sjaf et al., 2022).This is done to reduce the dominance of middlemen who suppress the bargaining position of farmers in changing individual prices, change patterns of relationships that are detrimental to farmer producers, and create more efficient distribution patterns by cutting marketing chains that are less profitable.

Farmer Group Institutions and Their Relationship with Farming Business Existence is an existence, a presence that contains elements to survive According to the Regulation of the Ministry of Agriculture no 82 of 2013 a farmer group is a group of farmers/breeders/planters formed on the basis of the same interests, similar social, economic and resource conditions; commodity similarity; and familiarity to improve and develop member businesses. The importance of empowering farmer groups is very justified because the recent existence of farmer groups, especially since the era of regional autonomy, tends to give the government less attention to farmer group institutions, and even seems to be neglected so that farmer groups which are actually very valuable assets in supporting agricultural development have not yet functioned. optimally.

Farming is an activity in the agricultural sector, starting from production, cultivation, handling after harvest, commodity processing, production infrastructure, marketing of agricultural products, and/or supporting services (Morgans et al., 2021)

Reasons for the initiation of farming systems/participatory approaches in non-Green Revolution (i.e., in more heterogeneous and less favorable production environments) areas in low-income countries is followed by a discussion of their evolution(Norman, 2015).

The use of livestock manure as agricultural organic soil amendment has been proposed as a circular economy strategy. In this way, a potentially polluting waste is used to increase both plant growth and productivity. This strategy should allow a better management of the finite available resources for soil fertilization and food production. Manure from farms and sludge from wastewater treatment plants are amongst the most abundant types of organic wastes that are generated annually, making them the usual candidates for organic fertilization(Sanz et al., 2022).

Corn, starting from stems, leaves that are not finished can be processed into compost. The trick, corn plant waste that has been harveste crushed by means of chopped with a machine and added with various mixed fertilizer type. To make compost we have to pulverize it from the corn crop. Coupled with manure and mixed 14 with Em4 spray which functions as a weathering agent. From the results of the mill, will later be poured out in one place and covered with a deflated or tarpaulin for about a month. After that, Fertilizer can be used for various plants. The function of the compost this is as a basic fertilizer or hoe that has been formed by farmer.

Compost can add organic matter to the soil the soil will be able to hold sufficient amounts of water and be able to enrich it beneficial microbes in breaking down soil organic matter, because the material organic matter is available to be processed into a material that is ready for absorption, and existence Microbes are expected to provide the availability of adsorbed elements in soil colloids into nutrients for plant growth. Not infrequently apart from compost, additional chemical fertilizers remain needed to nourish plants and neutralize disease. so to offset from For plant growth, farmers are not spared from chemical fertilizers.

While the purpose of using compost is to reduce the use of chemical fertilizers. And anyway fertilizer compost as a neutralizer or soil fertilizer. Of course environmental pollution with the types of chemicals that exist in this area reduced. Farmers certainly really need a variety of subsidized fertilizers as a support from the high price of various types of fertilizer at this time. However, the types of subsidized fertilizers in Parepare Municipality are not in accordance with the expected by the farmers(Sanz et al., 2022). Spatially-explicit data describing commercial nitrogen (N) fertilizer and animal manure inputs are needed to inform modeling and life cycle analysis of agricultural impacts associated with corn production(Sanz et al., 2022). Making corn stalks into compost is not like that popular in mobile corn farmers. Even though with this simple step, farmers can get compost from wasted corn stalks, which results can overflow. Imagine if one hectare of corn field is processed, then it can produce about 10 to 15 tons of corn stalks, then how many tons of compost produced and chemical fertilizers that can be saved by farmers. Lack of infrastructure can be an obstacle in making stems this abundance of corn. It takes hard work to process the stem the corn, when compared to burning it. It takes tenacity in see the results to be obtained, when compared to pollution and that would be obtained if it was still burned.

Initiating empowerment is an activity carried out by researchers to start carrying out empowerment activities. In the transect activity, the researcher made initial observations by interviewing the community and local government to find out various problems that have arisen in the community so far. The results of initial observations found a lot of problems. These various problems are then summarized into a list that will be resolved according to the most important priorities.

The results of this initial observation are the most important priority for assistance which is the pilot of community empowerment in this assistance process. In accordance with the results of initial observations, the most important priority in the implementation of this program is Assistance in the completeness of the administration of requests for assistance to the City Government of Parepare such as community logos made by the community and accompanied by facilitators, Assistance in making solid and liquid organic fertilizers as

substitutes for chemical fertilizers, alternative land clearing, procurement of drilled wells with the help of the parepare city government.

The program is considered quite important as an effort to protect and monitor agricultural land in the Lemoe sub-district, Parepare. The entry of the Japfa company in taking agricultural products from the kelurahan community has added to the enthusiasm of the farmers in farming. Although of course, the larger the land that is managed without improving the quality of the soil in the location will threaten agriculture in the future. On the other hand, the community still has a strong attachment to PHONSKA NPK Fertilizer. Several studies have provided information that Ponska Fertilizer used for a long time will cause changes in soil PH, the soil will become acidic so that the texture tends to be harder and less friable. As a result, the activity of earthworms and microorganisms in the soil is disrupted. In fact, earthworms can help fertilize the soil so it is good for agricultural products.

Agricultural land is the source of livelihood for the Lemoe village community. At first the agricultural produce of the Lemoe sub-district was in the form of cashews, but farmers converting cashews into corn crops will fundamentally change the topography and ecosystem within it. In addition, the loss of agricultural land will lead to social changes that cause shock-culture for the residents of Lemoe Village. The loss of agricultural land for the people of Lemoe Village has lost their source of livelihood.

RESEARCH

The subject of this community service activity is the community that is included in the Farmer Community in Lemoe Village, Bacukiki District, Parepare City. This activity involves Active Students of IAIN Parepare and Lecturers of IAIN Parepare as facilitators in mentoring. The approach or method used and applied in community service and empowerment is to look for every asset owned by Lemoe Village, Bacukiki, Parepare City. to be used as a program to increase people's income, improve agricultural land and increase the understanding of farming communities through an approach known as the approachAsset Based Community-driven Development (abbreviated as ABCD)

The ABCD approach is approach development

Asset-based society. The presence of this approach makes the community through the community as the agent of change itself. Their awareness is needed to become a driving force for themselves. This approach encourages various forms of development where the main driving force is the community itself (community driven development)). Of course, this approach departs from the strength of the Community's Assets and Potential

The ABCD approach is one of several community empowerment approaches based on the strength of community assets and potential to encourage social changeThis approach encourages various forms of development where the main driving force is the community itself (community driven development)

The ABCD method has five key steps to carry out the mentoring research process which can be described:

1. Discovery (Find)

This process seeks to identify success through the interview process. In this stage, finding a key person becomes important in order to become a personal discovery of an activity or business that has been carried out by the community in the assisted area.

At stagediscovery, we begin to shift responsibility for change to individuals who have an interest in change, these who then become local entities. This activity requires an in-depth interview process about community health activities. The interviews conducted also sought to find out about how the farming process was carried out. In addition, interviews are expected

to be led to find out the assets owned and the potential that can be developed in the community

2. Dreams

At stagedream, people seek to explain and explore their hopes and dreams. Both their own dreams and the dreams of the organization/ community. After conducting interviews with the farming community, the assistants began to know the dreams of the Lemoe sub-district community, the next step was to design an activity to fulfill the community's dreams.

3. Design (designing)

At stageDesign, The community is directly involved in the process of learning how to build the strengths/assets they have. This activity requires collaborative action to achieve common aspirations and goals.

This design process is a process of knowing the assets that exist in society. This activity usesmappings.So that the position of the assets will be seen in the Lemoe Village area.

4. Define (Determine)

At the define stage, the leader group, namely the village head, will determine the choice of activities to be carried out. This activity involves the community in the form of a Focus Group Discussion (FGD). The focus of the discussion that will be discussed is positive. The FGD process can run smoothly if it has been agreed upon a discussion that will be discussed in a discussion between the facilitator/assistant and the Farming Community.

5. Destiny (Do)

At the Destiny stage, it is the final phase/step in activities whose purpose is to take collaborative action to build and unite the movement of the Community for a better change in the future. This activity is a real performance in fulfilling people's dreams by utilizing existing assets. The theory that has been built, is then realized in real action. Theory is used as a basic framework for thinking to solve problems / problems in society.

This assistance uses a theoretical approach to Asset Based Community Development (ABCD), this method emphasizes the use of assets and potential to be used as material in empowering the community. Based on this approach, what needs to be done in Lemoe Village, Bacukiki, Parepare Municipality by compiling some basic questions with the theme of the potential of Lemoe Kelurahan from a point of view is to compile some basic questions on economic, physical, social, financial and individual themes. After the interview guidelines were compiled, the companion made observations at the assisted location and then conducted interviews with the village head, the head of the RW, the head of the farming community and the farming community to listen to every aspiration and potential (owned assets).

RESULT AND DISCUSSION

The services carried out in Lemoe Village, Bacukiki District prioritize the utilization of assets and potential in the assisted areas. Where the community and farming community are valuable assets. The total population in 2022 is 2,969 people, including 890 heads of households, the majority of whom work as farmers. This assistance uses 5 steps in the process, namely:

1. Discovery

The mentoring process starts from the initial mapping stage with direct observation and interviews with several community leaders who are key person. This initial mapping activity took place in early April 2022. This activity received a positive response from the

community, this made it easy for researchers to analyze the problems faced by the people of Lemoe Village, Parepare.

Based on data obtained from the sub-district, the number of poor people in the Lemoe sub-district for 2022 is around 200 poor people out of the 2,969 total population. The community has income as farmers, where in 2020 the community will start to change agricultural production from cashew nut rees to corn plants. This activity will continue until 2022.

Further information was obtained from the results of interviews with Mrs. Masriana, Head of the RW who is also known as the head of the village. Where Lemoe used to be a kelurahan producing cashews as a souvenir typical of the City of Parepare, sales of cashews have crossed the archipelago.

Based on the results of the interviews, information was obtained that the majority of the population in the Lemoe sub-district were natives from the town of Parepare, the Lemoe people had occupied this area since 60 years ago. The father of Mrs. Masriana (RW head or village head) is now the first village head in Lemoe sub-district. From his information, Mr. Usman Mansiri led for 30 years. this kelurahan used to be a corn and peanut producing area. However, the low price of peanuts makes people no longer make peanuts as a source of income. After that, for decades, people put their destiny in the production of cashew nuts. However, 2 years ago, during the Covid-19 pandemic, the price of cashew nuts decreased, while the demand for corn for the JAPFA company increased. The JAPFA company itself is around 5 Km from the Assistance location. The difference in the number of harvest times and the amount of income generated from cashew nut trees and corn has made the community still carry out logging in assisted locations.

2. Dreams

At this stage, the researcher conducted interviews with the farming community by going directly to the location of the community's agriculture during breaks. At this stage everyone explores their hopes and dreams

Collectively, these companions know the possible future that can be realized from knowing what is then most needed by the farming community. From the conversations obtained, the farming community has a fear of the quality of the soil, which is used more and more for years, drier due to the use of chemical fertilizers. In addition, the longer the price of corn, the lower it is due to the increasing number of people's corn fields. Especially at this time, corn production is the only income for the majority of the people in that location.

However, apart from fear, the farming community hopes that in the future there will be various alternatives in land management and improving the quality of agricultural products, so that the Lemoe community will continue to develop their economy with a focus on developing village potential.

3. Design(designing)

At this stage, the assistant conducts a transect with the community, in order to find out the position map of the assets of the assisted area. The active involvement of the community is needed in this process.

Based on the picture above, the community has mapped the potential of the village by drawing a village map. Where the Lemoe Village area has 60 percent of the productive land used for planting corn.

4. Define (Determine)

At this stage, Ms. Masriana, the head of the Village with the community and the youth, conveyed a number of activities that should be carried out with the farming community. Based on the results of the joint discussion, it was agreed that an activity program focused on processing agricultural waste, namely corn husks, was to solve the problem of the fear of farming communities about the declining quality of the soil with the use of chemical fertilizers with ever-increasing doses due to decreasing nutrients. Furthermore, it is hoped that with the existence of chemical fertilizer substitute products, farming operational costs can be reduced which of course has an effect on increasing farmer income.

5. Destiny (Do)

At this stage, the service is carried out in the form of assisting young farmers in the Lemoe community, beginning with determining the focus of the service by facilitating the Lemoe Farming Community in processing corn waste into organic fertilizer. There are several activities carried out, namely:

a. Material Giving

This activity begins with an introduction to the community about the basics and benefits of Organic Fertilizers. This activity presents a resource person, the chairman of the Organic Farming Community, namely Mr. Darmin. This activity is to equip the community with knowledge. This activity took place at the Village Head's house, in October 2022.

The activity, which took place on October 9, 2022, involved a farming community consisting of women and young farmers. Apart from that, the companion involved IAIN Parepare students as activity participants.

b. Making organic fertilizer from corn husk waste

Participants in the activity received training in processing corn waste into organic fertilizer which in the future is expected to replace the role of chemical fertilizers in corn plants in the area.The materials used in the manufacture of organic fertilizers are taken by utilizing existing assets in the assisted locus, such as corn husks, Gamal leaves (can be replaced with other green leaves, but the protein content contained in Gamal leaves is higher), livestock manure that has decomposed almost into soil , liquid microorganisms, and water (you can use well water, it is not recommended to use PDAM water), other than that you need plastic sheeting, wire mesh.

Assistance in making organic fertilizer is important to provide benefits for corn farmers in Lemoe, some of the expected benefits include: reducing the volume of waste, having a selling value that can increase farmers' income, reducing air pollution due to waste burning, reducing the need for land for stockpiling, increasing soil fertility , improve soil structure and characteristics, increase soil microbial activity, increase water absorption capacity, improve crop quality (taste, nutritional value and amount of harvest), provide hormones and vitamins for the soil, suppress growth/ disease attack, increase retention/availability of nutrients in land. Assistance in making organic fertilizer has several stages which are carried out starting with preparing tarpaulin and rang as a container and then assembling it to become a container for penetration of chemical fertilizers, then putting in dry corn leaves, after that green leaves then manure, then water which has been mixed with liquid microorganisms.

It is hoped that the involvement of the students above who are the millennial generation can become agents in future economic development. The importance of the presence of millennials in every sector of human life, including the agricultural sector. Millennials is a term for today's young generation who are synonymous with the present, like technology and modernity. The Ministry of Agriculture determines the characteristics

of millennial farmers, among others, aged 19-32 years, have a millennial spirit, are adaptive to digital technology and have a network of business cooperation. The millennial generation will continue to be the main target for increasing Human Resources in the agricultural sector, the goal is to develop young entrepreneurship, so that they can implement modern agricultural business practices from upstream to downstream.

c. Fermentation

This stage is important before the organic fertilizer is ready for use, where the minimum fermentation process is carried out for 27 days of activity. This fermentation has an important function, so that the organic fertilizer produced has good quality to revive dead soil or soil that lacks nutrients.

d. Assistance Results

Results The assistance program for making chemical fertilizers is carried out to reduce the operational costs of farmer production, especially in the use and purchase of chemical fertilizers that have been used so far. This activity was considered a success because by using the materials found at the assisted locus it can produce organic fertilizer that can be used for a one hectare corn farming area. After assisting in the manufacture of chemical fertilizers, corn farmers in Lemoe began to let go of dependence on chemical fertilizers, slowly affiliated with the use of chemical fertilizers and chemical fertilizers. The results of monitoring this assistance were that farmers were already using a 50:50 ratio of chemical fertilizers and organic fertilizers.The result of organic fertilizer after mixing 1:3 of the soil and it is ready to be used for 1 hectare of land in 1 time of making fertilizer at the same rate as during the training. This means that you can save money on fertilizer, which usually requires 25 sacks of chemical fertilizers for IDR 120,000/sack with the cost of making organic fertilizer for 1 hectare of land IDR 200,000. The companion hopes that in the future, through food security, Indonesia can become a strong and healthy country through the consumption of organic farming products.

CONCLUSION

Assistance through the processing of corn husk waste is expected to reduce the burden on the community, especially in terms of capital to finance corn production in Lemoe Village, Bacukiki District, Parepare City. This activity received support from the community, the farming community, the women farming community, the youth farmer community, students, lecturers and experts in their fields. Participants were very enthusiastic about participating in each mentoring process. Changes that occurred in the location, among others; the community does not burn corn husks which are considered waste by the farming community, but uses them as organic fertilizer as a substitute for chemical fertilizers. It is not easy to convert chemical fertilizers into organic fertilizers, so this process is carried out in stages, starting with reducing the dose of chemical fertilizers by adding organic fertilizers as a complement. As for the suggestions and recommendations in this community service, there is a wider collaboration to campaign for the importance of using organic fertilizers for public health. With market value which of course will be proportional to the level of health obtained by the buying community or consumers. We thank the Municipality of Parepare, Sub-District Government, Farmers' Community, Youth Farmers' Community, Head of RW, Head of RT, Lemoe Community, Lecturers, Experts and Students of IAIN Parepare who have collaborated in providing community service.

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