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COMMUNITY EMPOWERMENT IN STUNTING PREVENTION THROUGH THE INTRODUCTION OF ORGANIC FARMING SYSTEMS IN KOYA KOSO VILLAGE, ABEPURA DISTRICT, JAYAPURA CITY

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Abstract

Stunting still be one of necessary state problems completed. Government through Long Term Development Plan National Medium Term Development Plan (RPJMN) 2020-2024, also sets a national stunting target so that it can down reached 14%. This is refers to the *Sustainable Development Goals* (SDGs) agenda. Stunting is a condition Where children aged under five years or toddler experience failure growth caused by lack of intake nutrition received by the fetus / baby. Talking about the needs food and nutrition fulfilled always started with attention to type food consumed as well as source origin food consumed. For that, in increase food quality required by the relevant community with prevention of stunting then needed introduction in development system agriculture organic for avoid pattern consumption contaminated food with material chemicals contained in product cultivated agriculture farmers. For this reason, community empowerment activities in preventing stunting through the introduction and development of organic farming need to be carried out. The method used in implementing this community service activity uses the ABCD (Asset Based Community Development) approach to achieve the goal of preventing stunting that is right on target through counseling on the introduction and development of organic farming systems. The implication of this service activity is that there is an increase in community knowledge and understanding of stunting prevention. One way that is understood by the community to eradicate stunting is by consuming nutritious foods such as vegetables which are the result of implementing an organic farming system. Farmer groups also know and understand how to make liquid organic fertilizer from household waste.

Keywords: ABCD (Asset-Based Community Development), Stunting, Child Nutrition

INTRODUCTION

Stunting is still one of the country's problems that needs to be resolved. According to the Ministry of Health's Basic Health Research (Riskesdas) data, the national stunting rate has decreased from 37.2% in 2013 to 30.8% in 2018. According to the Indonesian Toddler

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Nutrition Status Survey (SSGBI) in 2019, this figure decreased to 27.7%. Reducing stunting rates has been declared a national priority program. Currently, the Government continues to move to organize the implementation of the acceleration of stunting prevention and prepare the National Strategy (Stranas) for the Acceleration of Stunting Prevention for 2018-2024. The Government, through the 2020-2024 National Medium-Term Development Plan (RPJMN), has also set a target for the national stunting rate to decrease to 14%. This refers to the Sustainable Development Goals (SDGs) agenda which consists of 17 goals agreed upon by UN members, where the problem of stunting is one of the targets being considered (Amalia & Yunginger, 2021).

Stunting is a condition in which children under the age of five or toddlers experience growth failure caused by a lack of nutritional intake received by the fetus/baby. The condition of children who experience stunting can be seen from their height which is below the standard height of children their age, their bone growth is below the standard height of children their age, their bone growth is delayed and their weight is low for children their age. In the 2016 Global Nutrition Report, it was recorded that Indonesia was ranked second in Southeast Asia in this stunting problem. Many factors cause stunting, including the socio-economic conditions of the family, lack of nutrition absorbed by the mother during pregnancy, illness in the baby, and lack of nutritional intake in the baby after birth. The impact of toddlers who are stunted is that they can experience physical and cognitive development disorders during their growth period (Amalia & Yunginger, 2021).

Stunting is a growth disorder in children due to lack of nutritional intake for a long time causing the child's height to be shorter than the standard height of children of the same age (Ministry of Health, 2018). The problem of stunting in Indonesia is a challenge that must be addressed properly. The prevalence of toddlers experiencing stunting according to the results of the Indonesian Nutritional Status Survey (2021) is 24.4% (Nurahadiyatika, 2022). Various problems will arise as a result of experiencing stunting, such as disorders in intelligence levels, high risk of chronic diseases, and decreased productivity in the future (Agustin and Rahmawati, 2021). Stunting is a problem that can be caused by various factors, one of which is economic factors and food factors.

The high rate of stunting is a separate problem for local governments at the federal level. Lack of intake absorbed by the body from when the child is in the womb until after birth, lack of access to health services, and lack of access to clean water and sanitation facilities are some of the causes of stunting (Bulletin of the Situation of Stunting in Indonesia, 2020). If this is not handled properly, it will affect a person's health throughout their life. Therefore, it is important to stop stunting by making improvements to food, parenting, and hygiene (Rosha et al., 2020). Various problems will arise as a result of experiencing stunting, such as disorders in intelligence levels, high risk of chronic diseases, and decreased productivity in the future (Agustin and Rahmawati, 2021). Stunting is a problem that can be caused by various factors, one of which is economic factors and food factors.

With the rise and fall of stunting cases in Indonesia, of course this problem requires immediate action to prevent stunting. This is because stunting has a bad impact on children. According to Yadika, et al. (2019), stunting can have an impact on cognitive, motoric and verbal development in children. So this will make learning capacity and performance less than optimal during school. For this reason, based on the intake of community nutritional needs, the

first and most important thing to be fulfilled regarding food processing is to start from the introduction and development of an organic farming system for farming families in Koya Koso Village which is known as an exemplary village in the implementation of regional government bureaucracy and is also a modern agricultural base where in cultivating crops farmers use chemical fertilizers to increase soil and plant fertility.

Household food security is a condition where household food needs are met, which is reflected in the availability of sufficient food in terms of quality, nutrition, safety, and affordability (Ministry of Environment, 2022). Food security conditions are positively correlated with stunting. Households that cannot meet food needs both in quantity and quality can have a direct impact on the nutritional needs of toddlers (Sihite et al, 2021). Families with *food insecurity* can potentially have 2.9 times greater chances of having toddlers with stunting compared to families that are food secure (Purnaningsih, et al. 2023). Implementation of interventions to reduce stunting rates needs to be carried out. Reducing stunting rates needs to be done through collaboration in various sectors. Stunting prevention is carried out with the aim that toddlers have optimal growth and development. The purpose of this community service activity is to introduce the organic farming system as a form of community food security in the convergence of reducing stunting rates.

Talking about fulfilling food and nutritional needs always begins with attention to the types of food consumed and the sources of food consumed. Therefore, in improving the quality of food needed by the community related to preventing stunting, an introduction is needed in the development of an organic farming system to avoid food consumption patterns contaminated with chemicals contained in agricultural products cultivated by farmers. For this reason, community empowerment activities in preventing stunting through the introduction and development of organic farming need to be carried out.

METHOD

The method used in implementing this community service activity uses the ABCD (Asset Based Community Development) approach to achieve the right target for preventing stunting through outreach on the introduction and development of organic farming systems.

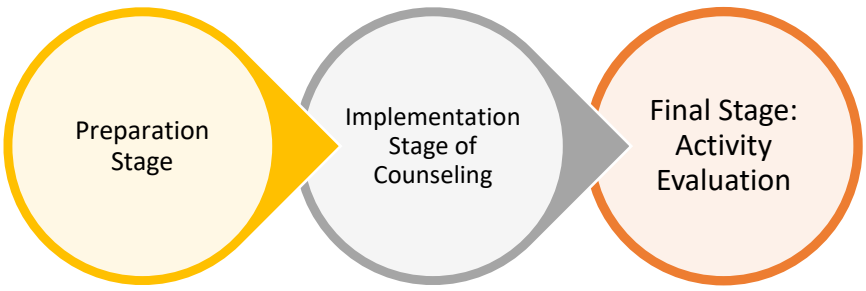

Figure 1. Stages of Activity Implementation

The implementation of this community service activity will take place during July 2024. Furthermore, it will be continued with several ways to implement the targeted actions, namely:

1) Preparation Stage, namely the problem identification stage through problem mapping such as the number of stunting and the causes of stunting using a questionnaire for families who have children suffering from stunting.
2) Stage of analyzing questionnaire data
3) Determination of community service activities for the prevention and eradication of stunting and the last one
4) Implementation of counseling and training, namely the core stages of community service activities.

The core method of implementing this community service program is by conducting outreach to the community, making organic plant products for the prevention and alleviation of stunting. Thus, the indicator of the achievement of this service is the realization of community service activity programs for the prevention of stunting through the implementation of an organic farming system through the manufacture of liquid organic fertilizers made from household waste. The number of partners involved in this community service is a farmer group from one of the RTs in the scope of RW 03 in Koya Koso Village. The implementers of this community service activity are 39 students and 5 lecturers.

DISCUSSION

Community service cooperation between the team began with community service and RT to obtain permission and explanation from the team regarding the mechanism of the activity later. Then, the community service team conducted observations assisted by a number of students to see the situation in the target group. At the implementation stage, the activity began with an introduction by the community service team as well as conveying the intent and purpose of the activity to the Koya Koso Village government (Figure 1). The next step is education through counseling by the community service team which is provided to farmer groups at the Village Hall, with a focus on reducing stunting rates by increasing understanding of the application of organic farming systems such as making organic fertilizers to support sustainable farming and food systems. Specifically, the presentation will highlight the conversion of household waste into liquid organic fertilizer, the ingredients needed and the procedure for making it, as well as its advantages over chemical fertilizers.

Figure 2. Handover KKN Students – Community Empowerment STIPER Petra Baliem Wamena Academic Year 2024/2025 by the Head of Koya Koso Village and Staff Local Village Devices

When activity counseling, participants own chance For ask interrelationship of agricultural systems with stunting problem that becomes attention society that becomes an area of confusion for they. Stunting has an impact on the decline in the quality of human resources, productivity and competitiveness. The long-term and short-term impacts of stunting itself are:

1. Short term impact
    a. Disruption of brain development
    b. Decreased intelligence
    c. Physical growth disorders
    d. Metabolic disorders in the body
2. Long term impact
    a. Decreased cognitive abilities and learning achievement
    b. Decreased immunity makes it easy to get sick
    c. Increased risk of having diabetes, obesity, heart disease, blood vessels, cancer, stroke and disability in old age.

In addition to having an impact on the growth of children, stunting also has an impact on families, the environment, and the country itself (Kadim & Suhada, 2022).

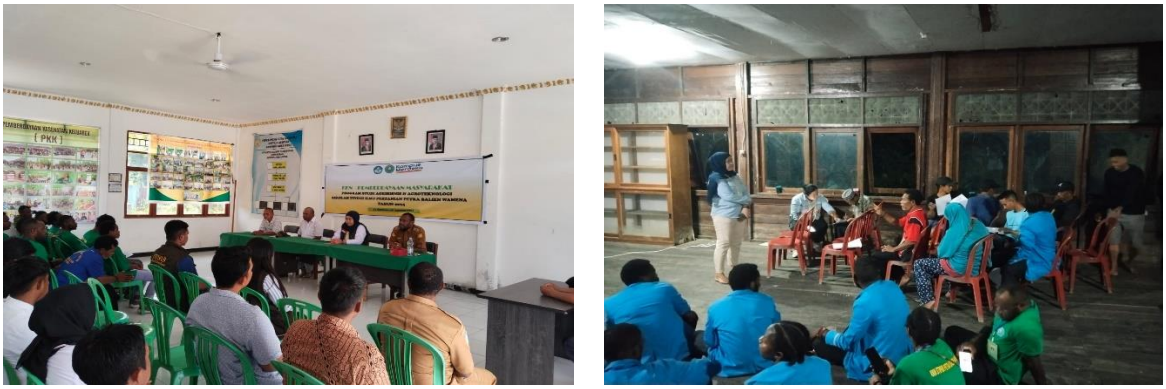

Figure 3. When Doing Counseling

Based on results discussion moment counseling ongoing and after counseling ongoing, obtained that there is difference results knowledge public before and after he did counseling. It looks like all over public own good knowledge related edit covering definition, factors risk, impact, effort fulfillment nutrition For avoid stunting and management. Stunting is problem lack nutrition chronic caused by deficiency long -term nutrition from giving eat something that is not exactly what is not fulfil need nutrition. Stunting can begin when the fetus is still in the womb and is not visible until the child is two years old (Ministry of Health of the Republic of Indonesia, 2018).

Development, Population and Family Planning (Bangga Kencana) and Acceleration of Stunting Reduction are still the main focus in the Regional Working Meeting (Rakerda) of the Papua Province BKKBN Representative together with OPD-KB from 29 districts/cities in 4 provinces. The results of the Indonesian health survey show that Papua is still above the national average because Central Papua is around 37%, Papua itself is in 28% position, South Papua is in 25% position which shows that it is still high. So it still requires efforts and hard work from all parties to accelerate the reduction of stunting (Adriana, 2024).

The relationship between agriculture and stunting lies in the fulfillment of nutrition, where the factor causing stunting is the fulfillment of nutrition during pregnancy, where pregnant women can consume foods and drinks that contain various vitamins to fulfill the nutrition of the child in the womb such as vegetables and fruits. In addition, environmental factors are also one of the causes of stunting so it is advisable to pay attention to the cleanliness of the environment where they live and make a yard so that having a yard in the yard can prevent stunting (Mutmainnah, 2022). So if connected, the application of an organic farming system in the cultivation applied by farmers is the main foundation for obtaining healthy food.

The role of agriculture in preventing stunting, namely the results of agricultural products can be used as an alternative to prevent stunting such as making pudding from moringa leaves to be used as complementary food for breast milk (MPASI) for consumption by children over 8 months old, besides moringa leaves, corn can also be used as complementary food for breast milk mixed with tofu and eggs, where this MPASI can be consumed by children over 6 months old. Green beans mixed with pumpkin can be used as pudding for consumption by children over 8 months. As for nutritional supplements derived from agriculture, it is good to be consumed by pregnant women and children over 1 year old, namely avocado mixed with banana, honey, and milk. It can be seen that the results have benefits for preventing stunting in

toddlers. To get healthy food is through the implementation of an organic farming system or eliminating the use of chemicals in farming.

Based on the results of the previous planting media creation, the team carried out further community service activities, namely socialization of family food security by making organic fertilizer from household waste and its use. This activity was carried out in direct collaboration with the village government and farmer groups in Koya Koso Village. The purpose of this activity is to strengthen community food security (Hengkeng, et al. 2024).

Various human activities produce waste that has a negative impact on both the environment and human health. One way to reduce this problem is to group it based on its nature, waste so that it is easier to identify the most appropriate procedure for further processing. But in reality, efforts to prevent and reduce waste have not been carried out properly. Therefore, it is beneficial to the environment. After the participants of that knowledge, it is very important to promote education about this initiative to increase environmental awareness and foster a hygienic and sustainable way of life for the community (Isni & Mustanginah, 2023).

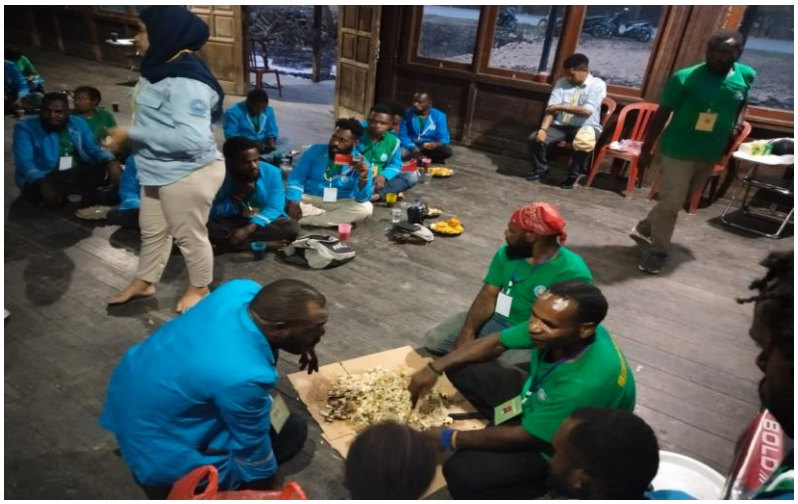

Figure 4. Manufacturing Process Fertilizer Organic Liquid

In line with a number of study previously explained that education health through counseling relate close with improvement about knowledge management waste (Alhanifa et al., 2020). Waste management is expected to increase public awareness and encourage behavioral improvements in dealing with waste problems. Likewise, by increasing public awareness through outreach efforts, it is hoped that each individual will gain the ability to handle waste effectively and collaboratively build a waste-free area (Sukiman et al., 2021).

Based on the educational activities that have been carried out, it can be seen that participants showed high enthusiasm for the material provided because they can create organic fertilizer independently with ingredients that are easy to find and without spending too much money which is important for plants and human health, especially in reducing stunting rates. In addition, there was an increase in participants' understanding of the importance of implementing a sustainable agricultural system by utilizing household waste. This shows the efficacy of educational initiatives in increasing participants' awareness and understanding of

the relationship between organic farming systems in producing healthy food for preventing stunting.

After the participants received the extension materials, the next stage carried out was training through direct practice of producing liquid organic fertilizer from household waste that had been collected in several households. To ensure the smooth implementation of the activity, the tools were prepared by the community service team. The steps for producing this fertilizer are:

1. Preparing the ingredients
   In this training, organic materials are provided by participants consisting of leftover food, vegetables and fruits, and banana stems. All of this waste is mixed and then added with leftover rice washing water and granulated sugar/brown sugar which is used as a source of energy or carbohydrates for microbes.
2. After the fertilizer has been mixed, it is continued with the next stage, namely storing it in a used jerry can or a tightly closed bucket for the fermentation process. Furthermore, the fertilizer can be filtered to produce liquid organic fertilizer. The solid residue obtained after filtering can be used as a source of organic fertilizer.

Liquid organic fertilizer is a type of organic fertilizer produced through a fermentation process by microorganisms, using organic resources or waste, and in liquid form. Applying liquid organic fertilizer is easier than solid organic fertilizer because it is easy to spray or water directly onto the soil (Rachman et al., 2021).

The importance of training in making liquid organic fertilizer from household waste lies in its benefits for environmental sanitation and improving human health around it. Long-term training in the production of liquid organic fertilizer can make a significant contribution to preserving environmental cleanliness and ecosystem balance as well as the basis for reducing stunting rates in Papua Province. Maintenance The effectiveness of the education program is largely determined by the support of partners who respond positively to this activity.

This activity received a positive response from the Koya Koso Village community, which can be seen from their enthusiasm in attending the socialization and training conducted by the farmer group together with village officials involved in the food security program. Thus, the community is increasingly aware of the importance of preventing and eradicating the problem of stunting. The community, especially families who have children with stunting, are increasingly aware and understand the importance of providing nutrition for children in the family. In addition, meeting nutritional needs does not always require expensive costs. The use of Liquid Organic Fertilizer (POC) from household waste can also help the family economy and reduce the use of chemical fertilizers that have an impact on health (Hengkeng, 2024).

CONCLUSION

The results of the observation showed that stunting was caused by non-ideal parenting patterns such as fulfilling children's nutritional intake, especially those related to food for children. Therefore, the community service activities carried out were to conduct socialization on stunting prevention, socialization of family food security by making liquid organic fertilizer from household waste. The implication of this community service activity is that there is an

increase in community knowledge and understanding of stunting prevention. One way that is understood by the community to eradicate stunting is by consuming nutritious foods such as vegetables which are the result of implementing an organic farming system. Farmer groups also know and understand how to make liquid organic fertilizer from household waste. Based on the problem, community empowerment activities for stunting prevention need to be carried out sustainably. Therefore, it is necessary to monitor and evaluate the results of the community service that has been carried out in Koya Koso Village whether it has been followed up by the community or has stopped after this service period has been carried out.

Thank-You Note

We would like to express our gratitude to the Head of Koya Koso Village and his village apparatus, and the farmer groups in RT 03 Koya Koso Village for their participation, presence and cooperation during the community service activities.

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