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EMPOWERMENT OF CORN TANK GROUP IN WONOHARJO VILLAGE, SUB-DISTRIC KEMUSU, BOYOLALI DISTRICT

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Abstrak

Di Desa Wonoharjo komoditas jagung dapat menjanjikan keuntungan, hal ini karena permintaan terus meningkat dari waktu ke waktu. Namun, komoditas Jagung belum diolah menjadi pangan yang bernilai ekonomi tinggi. Hasil panen jagung hanya dikonsumsi dan dijual ke tengkulak dengan harga relatif rendah yaitu Rp 2.300 sampai dengan Rp 2.700 per kilogram. Tanaman jagung sebagai salah satu tanaman andalan bagi kelompok tani belum dikembangkan potensinya secara optimal. Kegiatan bertani berhenti saat musim kemarau karena kekurangan air. Para petani belum memanfaatkan Waduk Kedung Ombo sebagai sarana pengairan lahan, di samping itu penggunaan pupuk organik juga masih kurang, sehingga menjadikan lahan semakin buruk (sering gagal panen, karena serangan penyakit). Limbah pertanian dan kotoran ternak yang ada di Desa Wonoharjo juga belum dimanfaatkan. Tujuan dari kegiatan ini adalah: (1) untuk memanfaatkan lahan 'bero' yang tidak ditananami ketika musim kemarau dengan demplot budidaya tanaman jagung: (2) memanfaatkan limbah pertanian dan kotoran ternak menjadi pupuk organik (3) mengatasi gagal panen dengan aplikasi pupuk organik; (4) menggolah jagung menjadi tortila (5) meningkatkan manajemen kelompok. Metode yang digunakan adalah edukasi dan fasilitasi. Edukasi dilakukan dengan cara: (1) memberikan penyuluhan kepada kelompok tani cara budidaya jagung yang baik sehingga kualitas dan kuantitasnya meningkat; (2) membuat demplot tananaman jagung dengan introduksi alat mesin penyedot air, mesin pengiling pupuk organik; (3) pelatihan penggolahan jagung menjadi tortilla dan kemasannya; (4) pelatihan manajemen usaha.

Kata Kunci: Pemberdayaan, Kelompok Tani, Jagung

Introduction

Based on a survey conducted in Wonoharjo Village, Kemusu District, Boyolali District, the location of the Kedungombo Reservoir is on the southwest side with the population is 3,727 people. Wonoharjo Village consists of 11 hamlets namely: Sendang Nangka Village, Sumur Watu, Sumberan, Kedhokan, Ngubalan, Rejosari, Wonoharjo, Bulu, Parut, Blawong, and Ngeboran. Geographically, the village of Wonoharjo is very unfavorable because it is dominated by critical land which has an impact on the economic sector. The livelihoods of the majority of farmers and farm laborers with agricultural land in the form of moors that rely on rainwater or rain-fed rice fields, even though the village location is close to the reservoir (upstream area) but cannot enjoy irrigation from the reservoir, so farmers' income is not optimal. Corn is an alternative that is planted by the community because it does not need a lot of water. Corn as a mainstay crop for the community's source of income has not been optimally developed. Even though corn from Wonoharjo village has been marketed through middlemen in other regions such as: Grobogan market, Solo, Semarang, and Surabaya.

The "Sidomaju 3" farmer group and the "Puji Rahayu" farmer group in Wonoharjo village have been formed since 1997, but the conditions are very concerning. In fact until now, the existence of the group has not been able to carry out its role and function to increase the income of its members, it can even be said that "life is reluctant to die does not want to". While many things that should be done by farmer groups for example, related to the procurement of production facilities to the marketing.

During this time, the harvest is only sold to collecting traders who come to farmer's houses at relatively cheap prices. Per kilo of dry corn is sold at prices ranging from Rp 2,400 to Rp 2,900. Meanwhile, in the market the selling price of corn is between Rp 3,500 to Rp 4,500. Although the farmers know the price of the corn market, they still sell in the middlemen because they cannot sell themselves to the market or to the animal feed factory in Grobongan because the transportation is difficult, even though it is not far from the village (about 30 km). This condition was used by traders from outside the area to buy corn in the village of Wonoharjo at a very cheap price. The selling price is often unable to cover production costs, but farmers still sell it because there is no choice.

The corn cultivation system is still simple, meaning that it has not been managed properly and correctly (using excessive inorganic fertilizers to damage soil nutrients). Whereas with a cultivation system like this greatly affects the quality and quantity of corn. Meanwhile, a lot of manure and corn waste are not yet utilized. Usually they plant only in the rainy season. Even so, the amount of production at harvest can reach an average of 3.80 tons/ha, because the soil nutrients are suitable for corn. Production facilities (seeds, fertilizers, and pesticides) people buy individually in markets or stores that are relatively expensive because they buy at retail prices. Likewise, post-harvest

handlers are very inefficient, they flake corn with their hands so that time and energy are not efficient.

In Wonoharjo village there are still many people with a productive age of 15-55 years who do not have permanent jobs (unemployment). This is also an issue that must be resolved in the development of a region. What can be done in this condition is to integrate the corn processing business with the tourism sector. Processed corn can be used as food that has a high economic value such as corn snacks with various flavors, as souvenirs of tourists who visit the Kedungombo reservoir tourism objects.Based on the problems found in Wonoharjo village, the PKM Team from the Faculty of Agriculture of the March Eleven University of Surakarta intends to empower the community through Science and Technology for the Community.

Literature Review

Community empowerment, especially corn farmer groups that are mostly in rural areas, is very important to do. Communities (farmer groups) in Wonoharjo Village, have a very important role in supporting the success of village development. Thus, empowerment needs to be done, so that those who are powerless become independent and can improve their economic welfare (powerful).

Empowerment is a multidimensional social process that helps people gain control over their own lives. The concept of empowerment is closely related to how to change, divide, obtain, issue, reduce, and eliminate power, (Czuba and Page, 1999). With this definition, empowerment is seen as a process that fosters power in individuals to be used in the lives of individuals themselves, communities or groups or in society. Further explained that empowerment is a process where individuals or groups gain power and access to resources and have control of themselves. To realize this, individuals and groups must improve their ability to achieve goals.

Empowerment which is a translation of the original word "empowerment" is an effort to build power by encouraging, motivating, and raising awareness to develop it (Kartasasmita, 1996). Ife (2008) stated that "empowerment means providing people with the resources, opportunities, knoledge, and skills to increase their capacity to determine their own future, and participate in and affect the life of their community". To achieve this empowerment, various strategies can be carried out, namely: policy and planning, social action, counseling, training, awareness (Ife, 2008).

In the psychological approach, Spreitzer (1995) examines the psychological approach by questioning what and for what someone is empowered. Empowerment is something that is sustainable so it is not limited to answering empowered questions or not. According to Conger and Kanungo (1988) defines empowerment as a process of increasing self efficacy among organizational members through the introduction of conditions that create and maintain powerlessness and efforts to eliminate all these conditions. Conger and Kanungo (1988) also initiated a psychological approach to understanding empowerment.

Further development was carried out by Thomas and Velthouse (1990) which defined empowerment as an intrinsic task motivation. Further explained that the concept of empowerment shows a person's ability to behave independently and full of responsibility for his work. However, empowerment needs to pay attention to one's ability to be effective. A person's ability is indicated by the self efficacy of each individual.

Community empowerment can be seen as a bridge for macro and micro development concepts. Thus, various inputs such as funds, facilities and infrastructure, which are allocated to the community through various development programs must be placed as incentives to spur the acceleration of community socio-economic activities. This process is directed to increase the capacity of the community (capacity building) through the accumulation of capital that can create community income, with five principles, namely: (1) easily accepted and utilized by the community (acceptable), (2) managed openly and responsibly (accountable), (3) profitable economically, (4) the results can be conserved by the community so as to create capital accumulation in a sustainable socio-economic environment, and (5) fund management and yield preservation are easily rolled out (replicable) (Kartosasmita and Sumodiningkrat, 1996).

Community empowerment application is not as easy as imagined. In this case it is necessary to commit all parties involved in achieving empowerment goals. This empowerment is an effort to increase community initiatives, responsibilities and capabilities in the implementation of development. Some things related to the concept of empowerment, including: (1) empowerment is trust in the community and their ability, meaning empowerment is an effort or commitment to encourage the community to do their best; (2) empowerment is a process whereby the government enables its people in a work team to produce something by providing the necessary environment; (3) empowerment is increasing the authority and freedom of the people to make decisions; and (4) empowerment is a current management practice with regard to granting greater responsibility, resources and authority to the community.

Women's empowerment has more to do with improving the quality of their involvement and participation in the field of work they pursue. One policy approach that relates to women's position in development is the empowerment approach. The approach emphasizes the importance of women to improve their empowerment and place empowerment in the sense of women's ability or ability to increase self-reliance and internal strength.

Women's empowerment pragmatically can be achieved by increasing skills (which are more expertise in economic activities) that are directly related to daily activities.

However, to maintain the continuity of its sustainability it is not possible to rely solely on skills training. Therefore, in addition to improving skills needs to be accompanied by an increase in self-actualization (through a process of awareness of the role of women in the household economy and social environment). For this reason, there needs to be a comprehensive training plan that combines elements of skill improvement, cognition, and awareness of dignity in a systematic, practical, measurable and operational formulation.

Empowerment is a process that essentially aims to realize "change". Therefore, starting from the point where we see that individuals are moved to do an independent attitude and behavior, are motivated, and have the skills needed to carry out work in the values/norms that give them a sense of justice and peace in achieving common goals for welfare.

In this case how to change the behavior of corn farmers so that they have the will to minimize the use of an-organic fertilizer by using organic fertilizer. Besides, how to change the mainset of corn farmers to be able to use the land to be productive during the dry season. The way to cultivate corn has not been done properly (using excessive inorganic fertilizer, which is per ha using as much as 10 quintal of fertilizer, so that the condition is very influential on soil nutrients (damaged). Currently they only plant during the rainy season due to water difficulties in the dry season, even though the land is suitable for corn plants Seeing the potential of the soil corn production can be increased through the cultivation of corn in the dry season.To convince farmers to want to plant corn in the dry season is not easy, so we devoted team to make demonstration plots of maize cultivation dry season, with the introduction of a water suction machine and a 450 meter hose for the demonstration plot so that the group can be managed, so the group becomes active.

Agricultural waste and livestock manure have not been utilized by farmers, they only rely on fertilizers and pesticides and organic ones purchased from the production shops, so the farm is not efficient and often loses money. While there is a lot of agricultural waste and is only burned on the ground, besides that, every farmer also has cattle, cattle and sheep (as savings). For this reason, training is needed to make organic fertilizer and the results are then sold to members of the farmer groups and farmers who are nearby. There is still a lot of unemployment in the productive age in Wonoharjo Village that has not been handled, while the village location is close to the object of the Kedungombo Reservoir tour.

The potential of corn commodities, has never been processed into foods of high economic value (various snacks from corn), for typical souvenirs for tourists visiting the Kedungombo Reservoir. Seeing such conditions, inviting corn farmer groups to be more critical in looking at and assessing the problems around them is an urgent step to take. Through the process of self-awareness the farmer group is expected to be able to be critical of situations that develop in their environment and be able to formulate what should be done.

Women's empowerment pragmatically can be achieved by increasing skills (which are more expertise in economic activities) that are directly related to daily activities. In relation to dynamic community life, empowerment is more an effort to provide the ability and opportunity for the community to play an active role in the development process.

This activity aims to: (1) Improve the quality and quantity of corn commodity production; (2) Reorganization of the functions of farmer groups so that they can function and act as business units providing production facilities and infrastructure, production units, processing and marketing units, and other supporting service units, by conducting training in making organic fertilizers; (3) Collaborating with the BISI corn seed factory to partner with farmer groups; (4) Increasing the economic value of corn commodities through processing corn into tortillas. The activities carried out with this corn farmer group are also expected to have the following output targets: (1) The training on making organic fertilizers is carried out by introducing fertilizer grinder and its packaging; (2) Implementing demonstration plots of corn cultivation in the dry season by reducing the use of inorganic fertilizers and using organic fertilizers, with the introduction of 250 meters of water suction and shelling machines; (3) There is a change in the farmers' mainset to minimize the use of inorganic fertilizers; (4) Implementation of training in processing corn into tortillas, and packaging; (5) Group management training for farmer groups in Wonoharjo Village; (6) Facilitating the collaboration between farmer groups and the BISI corn seed factory.

Method

Based on the problems faced by the "Sidomaju 3" and "Puji Rahayu" Farmers' Groups in Wonoharjo Village, the following methods of activities can be explained. This empowerment activity uses educational methods, science and technology facilitation, and mentoring, which has been preceded by observation and focus group discussion (FGD) with the target audience. 40 FGDs were attended by 40 people consisting of 30 people from the "Sidomaju 3" and "Puji Rahayu" Corn Farmers groups, 15 Head of the Hamlet, Chairperson of the Wonoharjo Village PKK, and 3 dedication teams from Sebelas Maret University. The target audience in this empowerment is the corn farmer group "Sidomaju 3" and "Puji Rahayu" in Wonoharjo Village. Site selection was determined purposively, namely the center of corn so that it was expected to have opportunities to develop. This activity was carried out for 8 months to facilitate the target so that it was able to become an

independent group in corn farming and processing, starting from February to October 2018.

The application of educational methods, science and technology facilitation, and assistance in detail can be explained as follows: (1) Take care of the permission to implement PKM activities, both at the sub-district level and at the village level; (2) Coordination with relevant stakeholders, related to the planned implementation of PKM activities, visiting the Wonoharjo Village Head and the head of the farmer group, and prospective farmers partners, namely the BISI corn seed factory; (3) Dissemination to farmer groups and the village of Wonoharjo regarding the PKM Program that was run; (4) The implementation of training in making organic fertilizer for corn cultivation to improve the quality and quantity of corn production, by reducing the dosage of inorganic fertilizer and using organic fertilizer which is packaged in the form of a one hectare plot of corn; (5) Reorganization (reviving) farmer groups through group management training. The training was attended by members of the Sidomaju 3 farmer group and the Puji Rahayu farmer group as many as 30 people, a place at the house of the father of the Chief Hamlet; (6) Addressing the large number of unemployed productive age in Wonoharjo village, by pr
oviding training in corn processing into tortillas that have a high economic value of 10 people, who are interested in doing business both from women farmers and from teenagers (women farmers); (7) Providing assistance to independent communities, especially to make and apply organic fertilizer in farming; (8) Collaborating with BISI corn seed producers.

Results and Discussions

Preparation for Activity Implementation

The dedication team held a coordination meeting before the Community Partnership Program devoted to the corn farmer group "Sidomaju 3" and "Puji Rahayu" in the Ngeboran Hamlet in Wonoharjo Village, Kemusu Subdistrict, Boyolali District. The coordination meeting was held on Monday, April 9, 2018 in the PKP meeting room which was attended by 3 service team lecturers and 2 students. The results of the meeting included: the agenda for the implementation of activities, division of tasks and work, and ordering appropriate technology tools for the implementation of activities. Next, the management of the implementation of activities at the sub-district and village level is carried out. Social preparation is carried out to disseminate activities to corn farmer groups. The dedication team prepares material for training and counseling, and designs activities with counseling, training, discussion, and practice methods. Training activities are divided into two activities, namely the delivery of material and field practice.

Implementation of Organic Fertilizer Manufacturing Activities

Empowerment of corn farmer groups in Wonoharjo Village, Kemusu District, Boyolali District was carried out by 3 PKM teams from the Agricultural Extension and Communication Study Program of the Agriculture Faculty of Sebelas Maret University and 2 students. Empowerment program implementation begins with FGD (Focus Group Dissussion) with stakeholders (village officials, farmer groups, and partners of international bisi seed factories). Based on the discussion it was agreed that the international BISI corn seed factory would supply BISI corn seeds for the demonstration plot, and then corn farmers could buy corn seeds directly from the factory with prices not as expensive as on the market, this could overcome complaints of corn farmers who often get fake seeds.

From the results of coordination with the village apparatus and the farmer group "Sidomaju 3" and "Puji Rahayu" it was agreed to train in the manufacture of organic fertilizers made from local manure and corn waste by introducing multipurpose machines for material counter and organic fertilizer grinders. The hope is that the fertilizer produced by the farmer group is applied to plant corn. Corn is the main commodity that is planted on land by farmers in the rainy season or when the water source is sufficient. Meanwhile in the dry season the land is not planted (called "bero"). There is potential for land to be used for growing corn in the dry season. Therefore, it is necessary to do the "Corn Cultivation Demonstration Plots" during the Dry Season, so that the farming community can understand and be able to cultivate corn even during the dry season. In this activity, the dedication team facilitated a water pump and a 250 meter hose that was used to siphon water sourced from the Kedung Ombo Reservoir puddle.

Training on making organic fertilizer was carried out on May 10, 2018 at the home of the father of the Head of the Ngeboran Hamlet, Wonoharjo Village, Kemusu District, Boyolali District. The training on organic fertilizer production was attended by 20 members of the Sidomaju farmer group and the Puji Rahayu farmer group. The event starts at 09.00 until 15.00. The composition of the program began with a speech from the Head of the Hamlet, Mr. Darwadi, then followed by a speech by the head of the dedication team by Ibu Suminah, and an explanation of how to make organic fertilizer, the benefits and content of organic fertilizer by resource persons, Dr. Mujiya. After indoor training then continued with the practice of making organic fertilizers, all of which were supplied by the dedication team, except animal manure. A series of training programs for the manufacture of organic fertilizers with the introduction of fertilizer grinding machines. During the training, livestock manure which was processed into organic fertilizer was approximately 2 tons.

Fig 1. Enumeration of Materials for Organic Fertilizers

Fig 2. Organic Fertilizer that has been packed

All trainees enthusiastically participated in the training in making organic fertilizer, this can be seen from the spirit of the group to produce fertilizer. After training almost every day the farmer group produces organic fertilizer, even now the farmer group has collaborated to supply organic fertilizer to the Ministry of Agriculture (Kementerian Pertanian/Kementan) project in the use of social forestry land. The finished organic fertilizer is then packed with 25 kg and 50 kg packaging sacks. During the training on making this organic fertilizer, the dedication team gave 1 unit of multipurpose machine at the same time it could be used for fertilizer grinders, 2 tarps, and 500 sacks for packing organic fertilizer.

Implementation of Corn Processing Training to Become Tortillas

Furthermore, the partner service team agreed to conduct corn processing training into tortillas, which was held on May 29, 2018. The training was conducted at the home of the Head of the Hamlet Head which was attended by 10 people, both mothers and young women. The training starts at 09.00 WIB until 15.00. The facilitator in the training in making tortillas was delivered from Klaten, namely Mr. Wiyono, who has been proven to have a tortilla-making business.

All trainees are enthusiastic to take part in the training process to completion. The process is first soaked with corn, then steamed and ground with a mixture of garlic and salt. After pounding the material that is already smooth then thinly milled and cut into boxes with a size of about 2 cm x 2 cm, then fried, and drained. Before the cold tortillas are still warm given various flavors according to taste, there is a taste of cheese, taste of rendang, roasted corn and so on. After the cold tortilla is ready to be packaged, packing tortillas from the dedication team buys a variety of packages, in the form of jars of various sizes, 0.8 ml of plastic with various sizes, and aluminum foil of various sizes.

During training, it can be a good product as exemplified by the trainer, but after the group tries itself the ingredients do not want to be smooth so they cannot be ground. This is understandable because for time efficient, during training, the trainer carries 5 kg of milled material from home. From the material carried by the trainer then steamed and pounded for a while, it has become a mixture that is ready to be ground thin and cut. After being consulted with the trainer, it turns out that in the process of pounding from corn seeds to coarse collisions, a special grinding machine or pounder is needed which costs approximately Rp. 18,000,000. Finally, the corn processing business into tortillas can only sell tortillas from training results, which are sold for around Rp. 2,000 up to Rp. 7,000.

Fig 3. Training of Tortilla Making Processes

The Making of the Tananam Corn Demonstration Plan in the Dry Season with the Intervention of the Use of Organic Fertilizers

The next activity in the implementation of the PKM of the corn farmer group was the implementation of the demonstration plot of the corn crop planted in the dry season and minimizing the use of an-organic fertilizer. The corn plant demonstration plot is planned with planting of 1 ha, but only starts on 2500 square meters of land, while others follow, corn seeds and fertilizer are available. Before the implementation in the field, the dedication team conducted a coordination meeting first to discuss the planned implementation of the demonstration plot. On June 25, 2018 a meeting was held in the PKP courtroom of the Faculty of Agriculture of the Universe of the Sebelas Maret State University of Surakarta (UNS).

From the results of the meeting and coordination of various parties agreed to make demonstration plots starting on June 28, 2018. Before planting in the fields the farmer groups were given counseling in advance about the techniques of planting, fertilizing and irrigation. The results of the counseling were agreed to make several blocks to see their effectiveness.

Implementation of demonstration plots in the field, starting from making planting holes using hand tractor, then fertilizing and planting. To make a demonstration plot of the corn crop in the dry season, the dedication team provided 1 unit of water suction machine and a 250 meter hose, while the seeds were obtained free of charge from an international BISI seed factory covering an area of 1 ha.

The use of inorganic fertilizers is only given one third of the usual by farmers, namely every 1 kilogram of seeds usually uses 1 quintal of fertilizer during planting. The fertilizer used by farmers in the demonstration plot is only 33 kilograms/1 kg of seeds. In addition to 1 unit of water suction machine and hose, farmer groups are also given funds for plant maintenance costs.

Fig 4. Demonstration plot of corn plants aged 2 months

Conclusion and Recommendations

Nearly 70% of the farmer groups in Wonoharjo village use organic fertilizer in corn cultivation. To improve to become a central village of healthy corn in the empowerment of corn farmers' groups is in desperate need of support from the local government of Boyolali District. PKM activities that have been carried out are only as stimulants and examples of activities that can be developed by the village community themselves, due to budget constraints. The benefits of this activity can awaken farmers who have been too much in using inorganic fertilizers to reduce by around 70%, which is replaced by using organic fertilizer. In addition, the corn farmer group in Wonoharjo Village, Kemusu Subdistrict, Boyolali District after this dedication activity can plant corn in the dry season.

In connection with processing corn into tortillas, it is necessary to introduce appropriate tools to grind corn into dull, which can be done by various parties who have interests in the field such as the Ministry of Industry, trade and competition (deperindagkop), agricultural services, and universities.

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Gambar 1.

Gambar 2.

Gambar 3.

Gambar 4.