

## **OPTIMIZING THE UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY TO INCREASE FARMERS BARGAINING POWER IN CIASMARA VILLAGE**

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### **Abstract**

It is commonly known that farmers are having bargaining position power problems especially related to post-harvest product. The rapid growth of Information and Communication Technology (ICT) can be seen as solution for farmers bargaining power. The purpose of Community Service Program (PKM) is to improve access information for farmers. The method used is a lecture - a discussion conducted in three meetings. All the materials have been given to Gapoktan Asmara Jaya in Ciasmara Village. Not all materials be accessed by farmers members of Asmara Jaya gapoktan due to several reasons, such as: (1) Majority of farmers members Gapoktan Asmara Jaya and not exposed to Information Technology, (2) Not all farmers have smartphone. This condition becomes difficult in practicing the utilization of Information and Communication Technology for farmers in Ciasmara. Some farmers already practiced the use of the Internet to seek market information but for chili commodities



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**Keywords:** ICT, Bargaining Power, Farmers, Community Service.

## **I. INTRODUCTION**

### **Situation Analysis**

In on-farm conditions, rice farming in Indonesia has experienced a leveling-off condition, a condition in which the increase in agricultural input is no longer significantly increased rice production in a single area[1]. The productivity of paddy farming in Indonesia is relatively high and can compete with other rice producing countries. The main problem faced by rice farming in Indonesia is welfare of rice farmers, even as the largest contributor, but welfare condition of farmers is still far from worthy.

Bogor Regency is one of the buffer zones of the state capital. Bogor has a big responsibility in providing rice for the needs of Jakarta. Ciasmara Village is one of the rice granaries located in Bogor Regency. The main problem faced by rice farmers in Ciasmara Village is pest-disease management and low price in post-harvest. Both of these problems became the biggest factor causing decreased productivity and farmers welfare.

### **Partner Problems**

Main problem faced by farmers in farmers association is the powerlessness in facing post-harvest value offered by middlemen. Farmers do not have bargaining power because price of grain has been determined from the beginning by the middleman. This

condition is not good for farmers because the price of grain determined by the middleman is very low that in the end make farmers unable to accumulate profits. Basically this condition can be avoided if the farmers are able to utilize information and communication technology.

Utilization of Information and Communication Technology is expected to overcome the constraints related to space and distance [2]. Through communication technology and information constraints such as Knowledge Sharing between farmers, farmers - extension workers can be overcome. In addition through Information and Communication Technology is also expected bargaining position farmers can also be increased [3].

### **Targets**

Target of this Community Service Program is farmers who are members of the Farmers Association (Gapoktan) Asmara Jaya, located in Ciasmara Village, Pamijahan Sub-district, established in 2000.

Ciasmara Village is located in District Pamijahan, Bogor regency, West Java with an area of 473,501 square kilometers. Ciasmara village is the main village before the split into three villages: Ciasihan, Ciasmara, and Purwabakti Village. According to local community stories, the name Ciasmara comes from the word *cai* and *asmara* which

means water that brings peace and loving among others. Ciasmara village has three sub-villages, 11 neighborhood associates and 29 neighborhood associations. The location of this village is between 600 up to 900 meters above sea level with temperatures between 28 degrees Celsius to 34 degrees Celsius.

**Outputs**

The optimization of information and communication technology can be seen from two sides of not only from negative impacts but also the positive impact given to its users. Today's information and communication technology can be accessed in rural areal.

Community Service Program is expected to increase farmers ability in utilizing information and communication technology in order to share knowlege and search for price and market product for their post harvest product [4].

**II. METHODS**

**Community Service Method**

In order to provide solutions to problems that have been identified and mentoring can be done. As an extension activity this community service use some approach or method, such as:

1. **Lecturing – Discussion Method.** This method is chosen to convey concepts that are important to be understood by farmers. The reason of choosing this method is because there is a consideration that the lecture method combined with pictures, animations and displays can be more communicative [5]. The materials provided include: The development of information and communication technology and the importance of optimizing the use of information and communication technology in agriculture, Utilization of Whatsapp and internet in mobile phones in order to search agricultural information.
2. **Direct Implementation.** This method is used to assign farmers in practicing the utilization of information and communication technologies in the search for agricultural information [6]

This Community Service Program has been held in three meetings, 90 minutes per meeting. The first meeting explained the development of information and communication technology and the importance of optimizing the use of information and communication technology in agriculture and rural areas [7]. The second meeting explained on utilization of Whatsapp and the Internet on mobile phones in order to search for agricultural information [8]. The third meeting or the last meeting was the practice of how farmers were able to use whatsapp to discuss with farmers or the internet to find information on agricultural cultivation,

especially agriculture and seek information on prices from the official government website. The training scheme described in Table 1 below:

Table 1. Training Scheme

	<b>Materials</b>	<b>Tools</b>
1	Development of information and communication technology and the importance of optimizing the use of information and communication technology in agriculture and rural areas.	Projector, laptop, marker, wifi and white board,
2	Utilization of Whatsapp and the Internet on mobile phones in order to search for agricultural information	Cell Phone, Procjector, wifii and laptop
3	the practice of how farmers were able to use whatsapp to discuss with farmers or the internet to find information on agricultural cultivation, especially agriculture and seek information on prices from the official government website	Wifii, cell phone.

Basically this community service activity will not bring the impact directly, because the process of seeking information and information exchange through communication and information technology must be through routine activities and frequently practiced [9]. This activity needs to be trained regularly and continuously. Therefore, it is necessary to evaluate or control after the service of this community. The assessment form will be described in the following format

Table 2. Evaluation Method

<b>No</b>	<b>Variabel</b>	<b>Indicator</b>
1	Cognitive	a. Understanding of the application of Communication and Information Technology. b. Understanding of the use of Communication and Information Technology in the search of agricultural information
2	Afective	a. Farmers' Attitudes towards Communication and Information Technology. b. Farmers' attitudes towards the Use of Communication and Information Technology in Search of agricultural information.
3	Conative	a. Farmers' in Using Communication and Information Technology. b. Farmers' Skills in Use of Communication and Information Technology related to Agricultural Information Finding

**University Audience**

Competence of resource persons is very relevant in the service of dedication to this society. There are two person involved in this Community Sevice, first Yogaprasta A Nugraha is a researcher in rural communications who has specifications in communication anthropology and sociology of communication especially in rural research. The second speaker is Mariana R.A Siregar, who has competence in the field of human resource management (HR), Media Journalism, and Public Relations.

Their expertise in rural information searching is urgently needed to provide about rural information.

Table 3. Expert Team

No.	Expert	Responsibility
1.	Yogaprasta Adi Nugraha	1. Explain what is information and communication technology. 2. Explain the condition of the upstream - downstream rural system. 3. Explain the use of the Whatsapp group to coordinate agricultural issues
2.	Mariana R.A Siregar	1. Explain the importance of credibility of agricultural information. 2. Describe the most appropriate agricultural resource sites. 3. Explain how to use whatsapp group to coordinate agricultural issues.

**Audience**

The Audience of this Community Service Program is farmers in Ciasmara village, Pamijahan Sub-district, Bogor Regency. This community service program took place in Meeting Hall Ciasmara Village Office with 18 participants at the first meeting and 20 people at the second meeting. There is also a source of the extension activities are Mariana RA Siregar, MIKOM (Lecturer of Communication Studies Program FISIB Pakuan University) and Yogaprasta Adi Nugraha, M. Si (Lecturer of Communication Studies Program FISIB Pakuan University) which has a focus of study in media and rural development.

**III. RESULTS AND DISCUSSION**

**Implementation Of Community Service Program**

**Communication Service**

This Community Service Program has been implemented with face-to-face method. Some obstacles encountered. Community service activities are divided into three meetings. The first community service was held on Thursday, February 22nd, 2018 at the Ciasmara Village Office Hall. This activity lasts from

13.00 to 16.00. The meeting discussed: The development of information and communication technology and the importance of optimizing the use of information and communication technology in agriculture and rural areas. Participants at this meeting amounted to about 17 people consisting of farmers - farmers who are members of the Association of Farmers Group (Gapoktan) Asmara Jaya in Ciasmara Village. This meeting was started by the Head of Village and then followed up by village secretary to have a preliminary discussion with farmers farmers in order to seek information on agriculture. At this meeting, the first resource persons tried to explain the challenges and weaknesses if they only rely on face-to-face communication with their peers, the discussion was quite tough because among the participants there were also farmers who became middlemen so that the discussion became difficult to develop because the middleman continually assured that in the village of Ciasmara The form of communication between human beings is still good and fixed, but after trying to explain the advantages of using Communication and Information Technology then farmers began to see that the use of Information and Communication Technology becomes very important, but constraints also arise because farmers do not all use HP who are able to access the Internet. After getting an explanation about the advantages of using Communications and Information Technology, farmers in Ciasmara village are becoming interested in using Communication and Information Technology but not directly done by them, but through their children who have smartphones. Activities at the first meeting can be seen in Figures 1 and 2.



Figure 1. Speakers in the first Community Service Program.



Figure 2. The audience of Community Service Program.

Second meeting of Community Service Program was held in March 15 2018 at the Ciasmara village office hall. This meeting was dicusing about the utilization of Whatsapp and internet in term of agricultural information seeking. Participants at this meeting amounted to approximately 17 people consisting of farmers - farmers who are members of the Association of Farmers Group (Gapoktan) Asmara Jaya in Ciasmara Village. This meeting began by asking about the outcomes of the first meeting, some farmers can generally named the advantages of using Communication and Information Technology even though most farmers still largely forget the advantages of using communication and information technology. At the second meeting, the resource person focused on introducing whatsapp and Internet utilization in finding agriculture information

Most participants admitted that they already have whatsapp applications on their mobile phones, but farmers have not been able to optimize the use of whatsapp in order to find agricultural information. Only a few farmers have been able to utilize whatsapp in the search for information such as: village head, pest-disease observer and group leader. These three have an agricultural coordination group with extension workers at the sub-district and regency levels. They use whatsapp to inquire agricultural problems they face, but in the discussion it appears that the information does not spread evenly to all farmers only to certain farmers, this in the long run can cause imbalance of agricultural information. Seeing this, we (the sources) suggested that farmers and gapoktan chairmen are active in discussing the agricultural problems faced, if related to the disease or pests, the farmers can photograph and distribute to Gapoktan in order to find problems solutions.

Meanwhile, for internet utilization, only a small percentage of farmers access the internet, while most farmers never accessed the internet, this condition requires resource persons to provide material introduction about internet function and how to use internet. Farmers are more exposed to the utilization of Facebook, because of this fact then the expert also explained on how to use Facebook for agriculture (Figure 3 and 4).



Figure 3. Discussion on Optimizing Whatsapp and the Internet in Search of Agricultural Information



Figure 4. Discussion on Use of Whatsapp and the Internet in Search of Agricultural Information

Third meeting was held at the same time with the second meeting, after the expert explained about the use of information about whatsapp and internet and then the participants who have smartphone asked to look for agricultural information through the internet. Not all participants have an Internet-enabled Internet capable of accessing the internet so that in this training process only farmers who have Internet-enabled Internet can access the internet that can participate, but the farmers who have HP surfing is expected to be able to train other peasant friends who do not have an Internet phone.

On the next day, March 16, 2018 at around 10:00 am, this Community Service followed up by discussions with village elites such as gapoktans' chairman, village head and village secretary (Figure 5). The purpose of this discussion was to discuss the follow up plans and identify village development priorities. From the results of the discussion we obtained information that the development of rice farming in the Village Ciasmara not only limited to the consumption needs of villagers Ciasmara and Bogor district but also for the development of tourism village Ciasmara because since 2007 Ciasmara village began proclaimed as Tourism Village in Bogor regency.



Figure 5. Follow up discussion with village elites.

### **Evaluation Results**

This Community Service Program (PKM) are focused on some components such as:

- a. The number of participants in three meetings.

- b. Achieving the goal of community service.
- c. Achieving planned material targets.
- d. The ability of participants in understanding the materials.

The target audience of this meeting as previously planned least 15 farmers. In the implementation this activity was attended by 17 participants. Thus it can be said that the target participants are achieved. This number indicates that this activity is interesting for farmers. Through interviews with the chairman of Gapoktan and some participants of this PKM activity, they acknowledged that they are interested to participate in this activity because of agriculture issues, especially about pests - diseases, middlemen problems so they followed this event. However, they also acknowledged that the utilization of Information and Communication Technology to farmers in Ciasmara Village is difficult because there are some major obstacles, among others: (1) The majority of farmers in Ciasmara Village are old farmers who have limited use of communication and information devices (2). Not all farmers in Ciasmara Village have Communication and Information Technology devices to access the Internet.

Overall target of this community service has been implemented: (1) The development of information and communication technology and the importance of optimizing the use of information and communication technology in agriculture and rural areas, and (2) Utilization of Whatsapp and Internet in mobile phones in order to search agricultural information. There is one material that is not delivered optimally is the practice of utilization of whatsapp and Internet it is because most farmers do not have HP surf. This is a major obstacle faced by informants in practicing the use of Information and Communication Technology to farmers, but the practice of using information communication technology is still implemented but only focus on some farmers who already have communication and information technology.

Evaluation result shows that farmers still facing difficulties in utilizing ICT especially in searching of agricultural information due to: (1) short time in the delivery of material, (2) Participants' different ability in the context of communication and information technology usage (3) Limited number of farmers who have communication and information technology impacts expert in providing understanding and practice.

#### **Follow Up Plan**

There are several follow-up plans to be undertaken. Ciasmara Village is one of the villages proclaimed as rice granary in Bogor Regency, but not only as rice granary, the beauty of panorama of rice field, the number of waterfall locations and hot springs make Ciasmara village as Tourism Village. Departing from the reality, the future of community service

activities that can be done in the village of Ciasmara is the utilization of Communication and Information Technology for the development of Tourism Village in Ciasmara Village. The target of Community Service to the future is the tourism manager in Ciasmara Village and the youth group (Karang Taruna).

Further community service activities will focus on developing Ciasmara village as a tourism village. Utilization of Communication and Information Technology is needed in order to increase promotion of tourism area in Ciasmara village. But the future plan is not only limited to the use of Communication and Information Technology, but also about development of tourism concepts in the village. Material related to the utilization of Communication and Information Technology, as well as material about the development of tourism concept is expected to increase the number of local tourist visits so as to improve the economy of the surrounding community.

#### **IV. CONCLUSION**

Community Service Program (PKM) with the theme of Optimization of Communication and Information Technology Used by Farmers in Ciasmara Village, Pamijahan Sub-district, Bogor Regency has been implemented, the materials have been delivered to farmers of Gapoktan Asmara Jaya members in Ciasmara Village, but not all materials can be conveyed to farmers for several things, namely: (1) The majority of farmers members not exposed with Information and Communications Technology, (2) Not all farmers have Smartphone. This condition becomes a difficulty in practicing the utilization of Communication and Information Technology to farmers in Ciasmara Village.

#### **Recommendations**

Dari evaluasi yang sudah dilakukan, diperoleh beberapa saran, antara lain:

1. Material implementation of communication technology and information in such a way simplified and not too fixated on the use of the Internet to search information but also turn on discussion groups in Gapoktan.
2. The Program of Optimizing the Use of Communication and Information Technology should focus on young farmers no longer old farmers because young farmers are more exposed to communication and information technology.

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