

PARTICIPATORY DEVELOPMENT COMMUNICATION ON AGRICULTURAL RESOURCES MANAGEMENT IN YOGYAKARTA INDONESIA

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ABSTRACT

The implementation of participatory development communication is a process of communication among the rice farming actors in the agricultural resources management. It uses two-way communication approach by involving grassroots community directly in order to increase grassroots community involvement in the process of deliberation and decision-making related to their rice farming activity. The Objectives of this study were to describe the level of farmer groups' participation and analyze the essential factors that affect the implementation of participatory development communication. Involving 170 farmer groups as the uni analysis, this study was conducted by survey method in positivistic paradigm approach. Results are: (a) the rice farmer groups in general are less participative in the implementation of participatory development communication related to their farming activities; (b) the implementation of participatory development communication in rice farming activities is influenced by the farmer groups characteristics, the quality of information, the role of development agencies, the environmental support and the utilization of social capital.

Keywords: *Participatory development communication, social capital, sustainable agriculture, farmer groups, development agencies, farming activities.*

1. INTRODUCTION

Global Scientific Consensus estimates the world population will reach 9 billion people by 2050 (National Geographic Indonesia 2014). FAO (2009) published a report about the world financial turmoil that led to the economic slowdown. Each country is expected to remain able to cover the global food crisis that has shaken the international agricultural economy and weaken the global agricultural system. Therefore, the food security and the increase of food production to the world population are a serious problem that must be addressed soon. Sustainable agricultural development has been recognized globally is a crucial program to improve people's welfare, alleviate poverty and prevent food insecurity. Sustainable agricultural development is the solution of global food crisis problems. The agricultural sector have an important

role for economic development in terms of employment, source of income and capital as well as food and raw materials provider for industries (Kuznets 1964).

The rapid development followed by the changing global and dynamic environment, the development of agriculture will encounter many challenges in the future, namely sustainability issue, ecosystem and natural resource management (Leeuwis 2009). In addition, there are several factors that hamper the development of agriculture in Indonesia such as: lack of post-harvest handling, infrastructure, mental and attitude of farmers, the level of knowledge, skill, mastery of technology, access to capital and land ownership (Sukino 2013). Those factors are associated with human resource management capabilities as the

main driving force and natural resources management as the essential requirement for agricultural development.

Green Revolution launched by the Indonesian government since the post-independence era has reached the pinnacle of progress of agricultural development that is characterized by self-sufficiency achieved in 1984. However, after the era of self-sufficiency, agricultural development dropped back due to the world food crisis. The development of agriculture continued to struggle and try to overcome the problem of food security in the country through the revitalization of agriculture policy by putting back the strategic role of agriculture in the national economy (Tambunan 2010).

The Government continues to develop agricultural programs for the farmers through well planned mechanisms called SL-PTT 2013. The implementation of this program involved the entire farmer groups especially food crops farmers. Under this program, farmer groups participated in the communication process through participatory communication. There are some important elements related to the process, such as: extension as the executor of the program, the scope of communications and other supporting factors.

The Role of local community-based participatory communication development in agricultural resources management is expected to improve the welfare of farmers. Social capital in communication activities involves social energy at the community and individual level. Social capital has a positive influence to the farmer groups behavior in the participatory communication process. Lee (2012, 2015) stated that the social capital of parents affects the communication process between parent and child drug-related cases. Social capital as an essential element need to be effectively utilized by the farmer groups in order to increase the participation level of farmers in the implementation of participatory communication. The farmer group communication occurs on the agricultural resources management focused on farming activities. Rogers and Kincaid (1981) stated that the process of sharing information between one, two or more individuals occurs through the process of dialogue. The exchange of information on the physical reality will be interpreted by the individual in the psychological reality to achieve a common understanding. In this situation, trust among farmers will raise a common consensus towards collective action that creates new information. Mefalopulos (2003) argued that participatory communication is the horizontal exchange of

information, the dialogical communication between stakeholders in decision-making issues to obtain a solution. In this condition, communicators and communicant have an equal power and position. In addition, White et.al (2004) confirmed that community-based participatory communication process is a participation in the form of action to determine the direction of social change, such as: power, control, dialogue, awareness, share knowledge, oppressed class, empowerment and equality. These elements are the integral part of participation action as well as participatory communication. Finally, Mefalopulos (2008) stated that the participatory communication practice with a horizontal communication model has the potential to support community-based development, identify community needs and support the community empowerment.

Based on the above explanation, the research question of this paper are: 1) How is the level of participatory development communication of farmer groups in rice farming activities; and 2) What factors are affecting the implementation of participatory development communication? While the objectives of this study include: 1) to analyze the level of participatory development communication of farmer groups in rice farming activities; and 2) to analyze the factors that affect the implementation of participatory development communication

2. RESEARCH METHOD

The research is located in Kulon Progo and Sleman, Yogyakarta as rice farming areas for GP-PTT program (Integrated Crop Management Implementation Movement). The study involved 170 farmer groups, from 268 farmer groups in Kulon Progo and Sleman regency. The number of involved farmer groups were calculated and determined by Slovin formula (Kriyantono 2006).

$$n = N / 1 + Ne^2 \quad e = 1 \% \text{ until } 10 \%$$

N = population n = sample

This study used random sampling by choosing one board and two active members from each farmer group as the respondents. The data was collected by using questionnaire distributed to all respondents. The final score of the questionnaire was the sum of three farmers who represent farmers' groups. Cluster sampling was determined proportionally; Sleman District: $115/268 \times 170 = 73$ farmer groups and Kulon Progo: $153 / 268 \times 170 = 97$ farmer groups. Research carried out by the positivist paradigm and survey

methods. Descriptive method and SEM (Structural Equation Modeling) were selected to describe the level of participatory development communication.

3. RESULTS AND DISCUSSION

The implementation level of participatory development communication as the main aspects of this study is the community participation. These aspects include: the problems that arise during the ongoing process of communication among the actors, the solution to address the problems that occurred in the implementation process of rice farming through participatory communication, the self-awareness of the farmers to participate in the communication process for communicating problems, as well as the equality among the actors

Based on the results of the average of four indicators above, the level of implementation of participatory development communication is in low category. This means farmer groups less participate in the implementation of participatory development communication at the stage of problem solutions, self-awareness and equality. Farmer groups are less present their views, suggestions, rebuttals and arguments during the deliberation of tillage discussion, determination of seeds, planting system, balanced fertilization, irrigation and post-harvest. The level participation of farmer groups at the stage of identification of problem is in high category. This describes that most of the farmer groups present their views, suggestions, rebuttals and arguments during the deliberation to gain a consensus as presented in Table 1.

Table 1. The distribution of respondents by variable

<i>The variables of the implementation of participatory development communication</i>							
<i>Variables</i>		<i>Measurement</i>		<i>Percentage</i>		<i>Mean</i>	
<i>the implementation of participatory development communication</i>		<i>Very low</i>		0.00			
		<i>Low</i>		55.88		42.33	
		<i>Tinggi</i>		43.53			
		<i>Very high</i>		0.59			
<i>Indicators on problem identification stage</i>				<i>Indicators on the stage of problem solution</i>			
<i>Indicator</i>	<i>Measurement</i>	<i>Percentage</i>	<i>Mean</i>	<i>Indicator</i>	<i>Measurement</i>	<i>Percentage</i>	<i>Mean</i>
<i>problem identification</i>	<i>Very low</i>	1.76		<i>Solusi masalah</i>	<i>Very low</i>	2.35	
	<i>Low</i>	39.41			<i>Low</i>	62.35	47.32
	<i>Tinggi</i>	57.65	51.24		<i>Tinggi</i>	32.94	
	<i>Very high</i>	1.18			<i>Very high</i>	2.35	
<i>Indicators of self-awareness</i>				<i>Indicator on equality</i>			
<i>Indicator</i>	<i>Measurement</i>	<i>Percentage</i>	<i>Mean</i>	<i>Indicator</i>	<i>Measurement</i>	<i>Percentage</i>	<i>Mean</i>
<i>Kesadaran diri</i>	<i>Very low</i>	3.53		<i>kesetaraan</i>	<i>Very low</i>	1.18	
	<i>Low</i>	64.71	43.45		<i>Low</i>	51.76	47.81
	<i>Tinggi</i>	27.06			<i>Tinggi</i>	44.12	
	<i>Very high</i>	4.71			<i>Very high</i>	2.94	

Note:

n Kulon Progo = 97, Sleman = 73, Total = 170¹⁾ The mean score of the index; very low = 0 – 25, low = 26 – 50, high = 51- 75, very high = 76 – 100 ; ²⁾ * statistically significant on $p < 0.05$ dan ** statistically very significant on $p < 0.01$.

The distribution of respondents based on several indicators of the variable implementation of participatory development communication presented in Table 1. The stage of problem identification on the implementation of participatory development communication show the most prominent result due to its high mean score (51.24) and high percentage (57.65). This indicates that most of the farmer groups are willing engage in dialogue or question and answer, which is different from the other three indicators. The Stage of identification of problems is an essential step in the process of participatory development

communication particularly on GP-PTT program. This program contains a number of agricultural innovations correlated with sustainable agriculture programs. Sustainable agriculture is a potential continuity of economic, social aspects of sustainability including equity, community participation and empowerment as well as environmental preservation. Through this program, farmers wish to learn about sustainable agriculture on rice cultivation include Jajar Legowo planting system, balanced fertilization, integrated pest management, as well as intermittent irrigation.

Farmers express their present their views, curiosity and arguments enthusiastically in order to understand the new technology for their farming. On the other hand, there are 40 percent with low communication engagement. Those farmers who show less interest argue that the program is a government program and farmers who receive the assistance must follow the rules of the program and use the new technologies. The other main reason is those farmers do not have the courage to express their opinions and objections because they feel lack of knowledge. The findings of the group of farmers who have high participation at in line with the following concepts: 1) the development communication is a two-way communication process and communication with the horizontal approach will encourage dialogue and centered on the problem analysis (Besette, 2004); 2) Participatory communication plays a significant role in development initiatives. Communications ensure that the public is part of the development process. The requirements and the implementation of development initiatives are open and driven by the community (Msibi, 2010); 3) Participation is the exchange of information between the two sides of people in organizations where people identify the problem and its solution (Kherejit, 2013); 4) The process of public dialogue on the identification of problems and problematization of community development (Figueroa, 2002).

The distribution of respondents on the stage of problem solutions in the implementation of participatory communication as much as 62.35 percent of farmer groups belong low category with the average score as much as 47.32; and the remaining 32 percent of group farmers are in the high category. This means that most of the farmer groups are less active in asking, convey their opinions and arguments related to tillage, seed quality, planting system, balanced fertilization and post-harvest. Lack of participation or lack of interest of farmer groups to participate because farmers assume that the program is regulated by the government so that they can only accept and implement the program without any further comment.

The self-awareness stage in participatory development communication has an average value of 43.45. As much as 64.71 percent of farmers show lack awareness of the farming problems of farming resulted in the low of participation in the implementation of participatory communication. On the othe hand, there are 27.06 percent of the farmer groups show their high awareness for dialogue in the discussion forum. Farmer groups are less active in delivering their opinion, response, arguments and dialogue during the

discussion due to lack of self-awareness as well as the lack awareness of their potential and less knowledge and skill to implement sustainable rice farming, such as: tillage, seed quality, planting system, balanced fertilization and post-harvest.

The findings about the level of awareness of farmers in line with the Freire's concept of self-awareness (White et al. 2004, Hemer 2005). Freire stated that every human being has the capacity of reflection, the capacity to think abstractly, the ability to make decisions, the ability to choose an alternative, and the ability to plan a social change. The result of the study shows that there are 27 percent of farmer groups have a high awareness. In line with Freire's concept, the farmers who have a high level of self-awareness would be easy to do dialogical communication and voice their interests in achieving the goals of participatory communication. This can be demonstrated in research where.

The mean score of equality aspect in participatory development communication as much as 47.81. The lowest category, as much as 51.76 per cent, belongs to farmer groups who have the lack of equality to present their views, suggestions, and arguments during the deliberation process due to the inequality of social status. However, the inequalities in society actually began to decrease as a result of the democratization process in Indonesia. This is consistent with research that states that there are 44.12 per cent of farmers have a high degree of equality in the dialogue process during the deliberation. These farmers believe that they have opportunity to express their aspirations during the deliberation without distinction of their social status. This medium number is a sign that equality of power in society continue to grow in the democracy era. Thomas (2004) argued that the determining factors of participatory development communication is a political activity; which means that people have equal power to voice their interests in communication process. However,

Chitnis (2005) stated that low aspect of equality is closely related to of power. It means that the practice of domination by the people who have power will always exist even in condition that looks equal. In contrary, Mefalopolus (2003) argued that it can be stated as participatory communication if communicator and communicant have an equal position and power power to convey the aspirations to all stakeholders.

The Implementation of Participatory Development Communication in Rice Farming Management

The main purpose of participatory development communication model is to establish both effective and efficient rice farming management. This formula analyzes the factors that influence the behavior of the farmer groups in the implementation of participatory development communication. The

collected data were analyzed by SEM (Structural Equation Modeling) method and LISREL 8.70 software (Vitello 2008). Goodness of fit model revealed that hybrid model is the most appropriate for data analysis as presented in Table 2.

Table 2. Test of goodness of fit model

Goodness-of-Fit	Cutt-off-Value	Result	Conclusion
RMSEA	≤ 0.08	0.07	good fit
GFI	≥ 0.90	0.91	good fit
CFI	≥ 0.90	0.91	good fit
IFI	≥ 0.90	0.91	good fit

The model generated by the research applied to the population farmer groups. SEM analysis generates a structural diagram as shown in Figure 1.

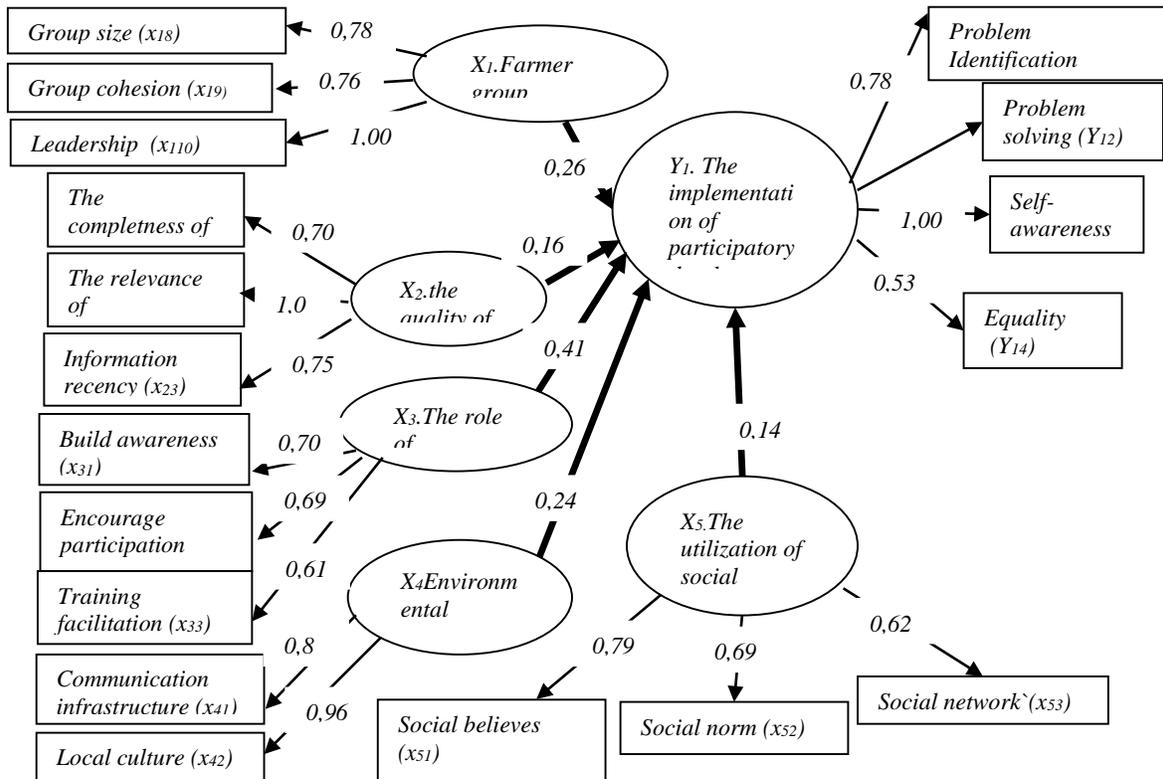


Figure 1. Structural Model parameter estimation and the factors that influence implementation of participatory development communication

SEM test result indicates there are five factors that influence the behavior of the farmer groups in the implementation of participatory development communication, namely: 1) the characteristics of

farmer groups, 2) the quality of information, and 3) the role of development agent, 4) the environmental support and 5) utilization of social capital. The test result shows that the high score of those direct and

positive influences will increase the participation level in the implementation of participatory development communication and vice versa. The value of simultaneous effect of those five variables is 0.58. It indicates that the diversity of the data described by the

model as much as 58 percent, while the rest is influenced by other variables that have not been included in the model as shown in Table 3.

Table 3. Estimation Result of SEM Model

Variable influence	Standardized loading factor	R ²	t-count > 1.96	Conclusion
X1 → Y1	0.26	0,58	7.02	Significant
X2 → Y1	0.16		5.17	Significant
X3 → Y1	0.41		8.30	Significant
X4 → Y1	0.24		6.10	Significant
X5 → Y1	0.14		2.75	Significant

Description: The significant if the value |t-hit| > 1.96

The research hypothesis was “the characteristics of farmer groups, the quality of information, the role of development agents, the environmental support and the utilization of social asset affected the implementation of participatory development communication”. The hypothesis test of the analytical results of SEM (Structural Equation Modeling) found that the value of $t > t$ table (1.96) of all variables in the hypothesis, therefore the research hypothesis was accepted. The influence of various

factors on the implementation of participatory development communication was described as follows:

Characteristic of Farmer Groups

The results of the respondent distribution of the variable characteristic of the farmer groups, the quality of information, the role of development agents, the environmental support and the utilization of social asset was shown in Table 4.

Table 4. Respondent distribution of several indicators of independent variables

Group size indicator				Group cohesion indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Group size	15-25 people	38.24	30.55	Group cohesion	Lowest	2.94	
	26-36 people	32.35			Low	14.71	
	> 36 people	29.41			High	75.88	64.99
			Highest		6.47		
Group leadership indicator				Information completeness indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Leadership	Lowest	2.35		Information completeness	Lowest	3.53	
	Low	28.82			Low	51.18	45.97
	High	67.06	57.39		High	42.35	
	Highest	1.76			Highest	2.94	
Information relevancy indicator				Information novelty indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Information relevancy	Lowest	2.35		Information novelty	Lowest	29.41	
	Low	11.18			Low	47.06	37.90
	High	83.53	63.46		High	22.35	
	Highest	2.94			Highest	1.18	
Building awareness group indicator				Encouraging participation of farmer group indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Building awareness	Lowest	3.53		Encouraging participation	Lowest	5.29	
	Low	24.71			Low	19.41	
	High	67.65	61.23		High	71.76	62.46

	Highest	4.12		on	Highest	3.53	
Facilitating training indicator				Communications infrastructure indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Facilitating training	Lowest	5.29		Communications infrastructure	Lowest	3.53	
	Low	55.29	43.30		Low	41.76	
	High	35.88			High	52.35	58.21
	Highest	3.53			Highest	2.35	
Local culture indicator				Social trust indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Local culture	Lowest	2.35		Social trust	Lowest	4.71	
	Low	63.53	41.91		Low	17.06	
	High	29.41			High	70.59	62.57
	Highest	4.71			Highest	7.65	
Social norm indicator				Social network indicator			
Indicator	Measurement	percentage	average	Indicator	measurement	percentage	average
Social norm	Lowest	4.71		Social network	Lowest	4.71	
	Low	42.35			Low	54.71	44.64
	High	50.59	51.09		High	34.12	
	Highest	2.35			Highest	6.47	

Characteristics of farmer groups reflected the size of the group, cohesion and leadership. All three characteristics indicators of the farmer groups influenced the implementation of participatory development communication positively. It meant the more quality the characteristics of the groups the participation in the implementation of participatory development communication would increase. Characteristics of the farmer groups described the characteristics behavior of the groups in conducting participatory communication activities on the management of agricultural resources, especially rice farming. Wiyati (2014) stated that the group characteristics affected its communication. Aminah (2013) also informed that the farmer characteristics had a low effect to the implementation of development communication. Furthermore, Nurhayati (2011) stated that the characteristics correlated with the participation of farmer communication on SL-PTT program (Integrated Crop Management Field School). In contrary, Wibowo (2012) stated that leadership of the group had no effect on dialogic communication patterns of entrepreneurial vegetable farmers.

The most powerful farmer group characteristics of the leadership aspect reflected the impact on the implementation of participatory development communication. The next aspect is the size and the cohesion of the group with each coefficient $\lambda = 1.00, 0.78, 0.76$. Research results on the

cohesion and leadership was included in high category (Table 2). It meant that there was a good unity and cooperation among farmer groups. The farmer groups used to coordinate and maintain the good cohesiveness due to their democratic, nurturing and participative leadership. The existence of group leadership and cohesion aspects within the farmer groups could potentially increase the participation of the groups in the implementation of participatory development communication. The low categorized group could lead to the low participation of the farmer groups in the implementation of participatory development communication. The members number of a group linked to the effectiveness and opportunity gained by farmer groups to speak in the communication process. The greater the number of members caused a lack of opportunities to speak in the discussion forum, but the smaller group was also less effective in the communication process.

The Quality of Information

The quality of information affected the implementation of participatory development communication directly and positively, interpreted that the higher the quality of information the participation in the implementation of participatory development communication would increase. The quality of information received by the farmer groups would

become a message delivered in the implementation of participatory communication during deliberations. This information was related to the tillage techniques, determination of seeds, planting system, balanced fertilization, pest eradication and post-harvest management. Such information was qualified as complete and detailed, in line with the needs of farmers, and contained new and interesting things for the benefit of farmers. This was in compliance with the findings of Actin and Race (2013) that gave an idea about the quality of information to be presented in the communication process of the development with the convergence model of communication. In this case, the quality of information was determined as complete, simple, clear and easy to understand. Meyer (2005) also stated that the information would be sought and utilized if it had quality as needed.

The communication process based on participation of farmer groups in farm management during deliberations should be supported by the availability of information to be submitted to the process. The existence of information about rice farming would most determine the communication process, especially for the participatory one. Agricultural information about farm management that was submitted must have a meaning related to the information quality in order to be accepted in the communication process. Therefore, the quality of farming information must exist in the participatory communication process and this was in line with the Communication Convergence theory (Rogers and Kincaid 1981).

The most powerful aspect of the information relevancy reflected the quality of information, the novelty of information and the completeness of information with the respective coefficient $\lambda = 1.00, 0.75, 0.70$. The results on the aspects of the relevance of agricultural information was categorized as high (Table 2). It meant that information on farming land preparation, planting system, balanced fertilization, intermittent irrigation, pest control and post-harvest management were relevant to the needs and concerns of the farming groups. The information in compliance with the needs of farmers had the potency to increase the participation of the farmer groups in the implementation of participatory development communication during deliberations. Purwatiningsih (2013) in her research results also stated that the information provided by the forest officer was relevant to the problems faced by the community related to the forest utilization and conservation.

Aspects of novelty and completeness of information that included in the low category caused

the low participation of farmer groups in participatory development communication. This showed that the agricultural information on soil processing techniques, selection of seeds, planting system, balanced fertilization, intermittent irrigation, pest management and post-harvest management obtained by the farmer groups are less complete, detailed and interesting so that the farmers did not pay attention more in such information. If this aspect was graded, it would potentially increase the participation of farmer groups in the implementation of participatory communication.

Contribution of Development Agents

The contribution of development became the most dominant factor that affected the implementation of participatory communication directly and positively. This meant that the more the contribution the more farmer groups would participate in the implementation of participatory development communication. The role of development agents to the behavior of the farmer groups included building awareness of farmers by providing an explanation of the problem tillage, the determination of seeds and planting system, intermittent irrigation, balanced fertilization, pest management and post-harvest management. The role of subsequent development agents was encouraging farmer groups to participate in the implementation of participatory development communication in the current deliberations. The development agents provided a motivation to the farmer groups about the importance of every farm aspect to be presented in the discussion forum. The next agents would facilitate the training related to the further development of farm in the form of counseling on how to process the tillage, planting system, balanced fertilization, intermittent irrigation, pest eradication and post-harvest management.

This finding was consistent with the research results conducted by Hermann (2011) stated that the donor project staff had positive attitude and behavior towards the implementation of participatory development communication. Chitnis (2005) informed that the development agent helped the relationship between CRHP (*Comprehensive Rural Health Project*) and community in disseminating the information, seeking the training and woman empowerment as well as providing awareness to health. Kesemsuk (2012) said that the community leader was a stimulator for creating participatory communication process in society by using members of the public meeting to provide an opportunity for everyone to express their opinion. Wiyati (2014) stated the role of chaperone

affected the group communication activities. In contrast to the findings of Amina (2013), the chaperon role intensity was low and therefore contributed to the low level of implementation of participatory communication. Another difference could be found in the findings of Muchlis (2009) which stated that the participatory communication process was not ideal in the deliberations of the PNPM (National Program for Community Empowerment) due to a poor rural facilitator role in implementing participatory communication.

In the case of farm management, there was a communication activity within the farmer groups. This activity was done by the perpetrators of farming including the development agents in an effort to increase productivity. This process would run if the development agents participated in building awareness and encouraging the participation of the farmer groups as well as providing training and counseling for these groups. This also meant that an agent of development had a crucial role in increasing the participation of farmer groups in the implementation of participatory development communication.

Building awareness of the farmer groups was the most powerful aspect that reflected the role of development agents, encouraged participation and facilitated the training with each coefficient $\lambda = 0.70, 0.69, 0.61$. The research results on the aspect of building awareness and encouraging participation was placed at the high category (Table 2). It meant that the farmer groups used to gain a guidance from the development agents in case of rice farming. The groups realized the importance of farming issues namely tillage management, selection of seeds, planting system, balanced fertilization, intermittent irrigation and post-harvest management to be communicated properly with the other party as during deliberations. High awareness and participation of the groups would have potentially increase participation in the implementation of participatory development communication. Aspects of facilitating training for farmer groups related to farming was categorized in lower group. It could cause the low participation of farmer groups in the implementation of participatory development communication. The low aspect showed that less development agents provided training on planting system, balanced fertilization, intermittent irrigation and pest eradication. If the training was graded, the participation of the farmer groups would also increase in the implementation of participatory development communication.

Environmental Support

Environmental support to farming actors was able to influence the implementation of participatory development communication directly and positively. It was interpreted that the higher the environmental support the participation of the farmer groups would increase in the implementation of participatory development communication. Environmental support could be as the availability of communication infrastructure by the groups in the implementation of participatory development communication. The communication infrastructure of the farmer group could be television, radio, newspapers, magazines, brochures, interpersonal and group communication tools. The other environmental supports were utilizing local culture such as conducting mutual cooperation and courtesy, doing *wiwitan* during the rice harvest and *labuhan* during the rice cultivation.

In accordance with the findings of Styne and Nunes (2001), the social form of popular symbolic culture and ethnicity became the basic of community dialogue in the communication process. Schiller and Wet (2016) stated that the socio-cultural context of the foster family became the main obstacle and decisive role in the free and open communication within their placement-related decision-making. Joste and Vyver (2014) informed that the communication process on the faculty currently considered the cultural diversity. In contrary, Wibowo (2012) expressed that the environment did not affect the dialogic communication patterns on the entrepreneurship of vegetable farmers in Bogor.

In the process of farm implementation, there was certain parts before the implementation of paddy cultivation where the communication activity occurred within the farmer groups, i.e. when deliberation discussed farming issues. Communication activity happened in the real space in physical reality and social reality meant that the farmer groups interacted with their environment where the communication process occurred. Therefore, the existence of environment was an important element in the event of communication between farmer groups during deliberations. This concept was consistent with the concept brought up by Rogers and Kincaid (1981) that the communication process of convergence occurred between two or more people in physical and social reality as the environment where the communication activity happened.

The most powerful aspect of local culture reflected the support of the environment, following the communication infrastructure aspects with each

coefficient $\lambda = 0.96, 0.80$. The results showed that the aspects of the communication infrastructure were listed in the high category (Table 2). It meant that the communication tools such as printed and electronic media and interpersonal and group communication were sufficient. Availability of communication infrastructure would facilitate access to information for improving the knowledge and skills of the farmer groups and this would potentially increase participation in the implementation of participatory communication. The low category of local culture aspects could lead to low participation of the farmer groups in the implementation of participatory development communication. The low utilization of local culture showed that the farmer group underutilized the local culture in the process of participatory development communication. The farmer groups were less in mutual cooperation, courtesy, *wiwitan* and *labuhan* related to the implementation of rice farming. If the utilization of the local cultural aspects was improved, the participation of the farmer groups potentially increased in the implementation of participatory communication.

The local culture such *wiwitan* was a meeting activity between farmer groups and other communities in the form of a celebration welcoming the harvest. In this activity, the dialogue process between the farmer groups occurred to discuss about the harvest and the implementation of the next planting. The cooperative process can be created with good cooperation through dialogue between different groups that worked together in an effort to achieve the goal of mutual success related to rice farming. The aspect of manners in a farmer group activity reflected the ethic of the group in delivering the aspirations and valuing the opinions and aspirations of other groups in the process of participatory communication during deliberations. The principle of the local culture in society today could increase the participation of the farmer groups in the implementation of participatory development communication for sustainable agricultural resource management.

Utilization of Social Asset

The utilization of social asset by a group of farmers would influence their participation in the implementation of participatory development communication resource management in agriculture focuses on rice farming. This process meant that higher utilization of social asset would increase the participation of the farmer groups in the implementation of participatory development

communication. Social asset in the community was as a mutual trust between the farmer groups at the time of rice farming. A group of farmers believed the other farmer groups so that farming activities including participatory communication process during deliberation could take place properly. Implementation of the farm by the farmer groups was going well because the farmer groups obeyed the prevailing social norms such as norms of courtesy, solidarity between groups, mutual cooperative and *wiwitan*.

These findings were in line with those of Lee (2012, 2015) stated that the influence of parents' social asset linked to antidrug affected the target process of parent-child communication about drugs. Hermann (2011) confirmed that the implementation of donor participatory development communication projects in Papua New Guinea was influenced by trust between agency project with local communities. Naido (2010) stated that the participatory communication process by the Government of Communication and Information service on the African community at the stage of development considered the socio-cultural aspects. Purwatiningsih (2013) informed that the local society trust was very beneficial for a forestry officer in conveying messages about the forest use and conservation.

The most powerful aspect of social trust reflected social capital, following the social norms and networks with each coefficient $\lambda = 0.79, 0.69, 0.62$. The results of the study of social trust and social norms were listed in high category (Table 2), which meant that the farmer groups conducted a mutual trust between different actors in the activities of participatory communication farming, the groups used to adhere to social norms that existed in the communication process. The farmer groups would be convenient in communication and transactions related to farming by improving the sense of trust among diverse groups. Moreover, the farmer groups strongly maintained and complied with social norms prevailing in communications activities such as courtesy to communicate and respect the opinions of others. Social networking aspects were placed in the low category and could lead to low participation of the farmer groups in the implementation of participatory development communication. The low utilization of social networks showed that the interaction between the farmer groups and the successful farmer groups and researchers was limited in working together to improve productivity. If the utilization of the social network was increased, the participation of the farmer groups in the implementation of participatory development communication would also increase in

the management of agricultural resources focused on rice farming.

4. CONCLUSIONS

1. Overall the farmer groups less participated in the implementation of participatory development communication in the management of agricultural resources focused on rice farming. The farmer groups less participated in at the stage of solution of farming problems. The groups were also less aware of the importance of farming issues to be communicated at the time of deliberation. The groups less uphold equality and freedom during the dialogue as a basic principle of participatory development communication. On the other hand, the participation of farmer groups was high during the process of deliberation on the stage of identification of farming problems.
2. The level of implementation of participatory development communication in the management of agricultural resources focused on rice farming was influenced by several factors such as characteristics of farmer groups, the quality of information, the role of development agent, environmental support and utilization of social asset.

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