

## THE PARTICIPATION OF MEMBER-FARMERS IN INCREASING THE ROLE OF GAPOKTAN ON THE PROGRAM OF POTATO'S FARMERS COMMUNITY EMPOWERMENT IN BATU CITY

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### Abstract

*Potato (Solanum Tuberosum L.) is one of the main staple foods for the people of East Java besides rice, wheat and corn. In addition, potatoes are also a high quality commodity of vegetable that have high-value and until now potatoes have the potential value to be developed as a source of carbohydrate in supporting food diversification program, increasing farmers' income, non-oil export commodities and raw materials of processed industries. After harvesting potatoes it is common happen the respiration and the transpiration process on the potato tubers, this is due to the high water content of potato, so that at one time the quality will experience a decline due to metabolic processes and cannot be stored a long time in fresh form. However, the development of potato commodities is still faced with several problems, some examples are on the low participation of farmers in the role of Gapoktan development and the empowerment of farmers in terms of mastery in potatoes products processing that require the varieties and also the special cultivation in order to produce potato tubers that available with special requirements.*

**Keywords:** *Potato, Production, Participation, Gapoktan and Empowerment of Farmers*

### 1. INTRODUCTION

Potato (*Solanum Tuberosum L.*) is one of the main staple foods for the people of East Java besides rice, wheat and corn. In addition, potatoes are also a high quality commodity of vegetable that have high-value and until now potatoes have the potential value to be developed as a source of carbohydrate in supporting food diversification program, increasing farmers' income, non-oil export commodities and raw materials of processed industries. After harvesting potatoes it is common happen the respiration and the transpiration process on the potato tubers, this is due to the high water content of potato, so that at one time the quality will experience a decline due to metabolic processes and cannot be stored a long time in fresh form. However, the development of potato commodities is still faced with several problems, some examples are on the low participation of farmers in the role of Gapoktan development and the empowerment of farmers in terms of mastery in potatoes products processing that require the varieties and also the special cultivation in order to produce potato tubers that available with special requirements.

Currently the potatoes are include in the top five of world's staple food commodities which consists of wheat, corn, rice, wheat and potatoes. Furthermore, the main composition of potato tuber is 80% water, starch and 2% protein. By consuming it, a person has fulfilled 1/3 part (33%) of the need of C vitamin and B vitamin and iron. The calory value of a medium-sized potatoes is 100 calories, it is equal to an apple or a medium-sized of banana or a large of orange. Potato tubers that widely consumed in Batu City today are the varieties of Granola and Atalantik.

Batu city is one of the high land area in East Java province which grows many potatoes. The topography of Batu City is located at an altitude of 450°1.510mdpl. The average of air temperature in Batu City ranges from 16.4°23.9°C, with range of air humidity in 2015 as high as 84.66° and 61.8°87.8°. Geographical condition of Batu City is very good for potato business development, but the activity of empowerment and diversification the potato as the staple food is still positioned that the potato as a vegetable crop type commodity. Therefore, if potatoes are to be used as the food of crops support, the priority should be considered, potato is no longer a complementary commodity of vegetables, but potato is one of the priority

commodities of non-rice (food) that must be seriously considered.

Yamaguchi (1998) stated that potato was a very useful plant for the wider community because it could be plant in various areas and also could produce the food per unit of land with high quantity and quality in a time that relatively short. In addition, potato commodities also have a pretty bright prospect, considering that potato production has a very important role that can increase nutrition for the wide community, provide the demand for hotel and restaurant consumption, and can increase income of farmers and give benefits in terms of the provision of Input / seal (Novary 1997).

## 2. METHODS

This research focused on determining the strategy in increasing the empowerment of farmers and their derivatives at the level of participation and functional strategy, which is related to share things about the development of Gapoktan in Potato commodity agribusiness. The objectives of this research are: (1) To identify and to analyze the opportunities and the threats faced by farmers and also the strengths, the weaknesses of farmers in carrying out potato commodity agribusiness, (2) To formulate farmers' strategy based on external and internal factors, and (3) To determine priority of appropriate strategy to empower farmers through the development of potato commodity agribusiness.

Types of data used consist of primary and secondary data. Primary data obtained through direct observation of spreading questionnaires and directly interview with the company management. Secondary data were obtained through literature books, magazines, journals, previous research reports, Institute of Information Sources, Institute of central statistics, agriculture service and internet sites.

Data and information of this research was obtained from member-farmers who processed quantitatively and analyzed qualitatively. Data processing is intended to design an alternative strategy of empowering potato's farmers with a strategic management concept approach. Qualitative descriptive analysis is used to analyze the environment of potato farming in order to know what are the opportunities, threats, strengths and weaknesses (SWOT) that faced by potato farmers. Quantitative analysis is used in

the EFE Matrix, IFE Matrix, IE Matrix and Quantitative Strategic Planning Matrix (QSPM).

The formulation of the strategy was done through three stages: EFE Matrix, IFE Matrix, IE Matrix and SWOT Matrix, while to determine the priority of strategy that generated using Quantitative Strategic Planning Matrix (QSPM). The identification of external factors have resulted a formulation of the opportunities and threats faced by the company. The opportunities in the external environment include the government policies that support the development of potato commodity agribusiness, make the growth of potato commodity business get better, the number of consumers increase, the emergence of cafes or vegetarian restaurants that specifically provide vegetable dishes of potatoes-based, increased the knowledge and public education about the importance of nutritional value, technological progress that increase rapidly but the bargaining power of potato's farmers was too weak. The threats faced in doing potato agribusiness include the competition and free trade between countries, the number of similar business that use potato material in Batu city, the existence of substitution products with the same function, the farmers bargaining position on the provision of potatoes raw materials and bargaining power of supplier on agricultural production facilities was relatively high.

Based on the calculation using EFE Matrix, then obtained the biggest opportunities and threats faced by farmers was the policy of government area that supports the development of agribusiness and many similar companies in the city of Batu. The identification of internal factors has result a formula about the strengths and the weaknesses faced by potato growers.

The strengths of the farmers are the quality potatoes will be marketed with excellent prices and the continuity of goods is guaranteed, the farmer has a regular customer, has a wide and good relations with the suppliers, short marketing channels, the existence of direct payment system with appropriate Time, have a skilled workforce, has harm atmosphere of kinship and the nature of cooperation between farm workers and farm owners. While the weaknesses faced by farmers include land use and production capacity is not optimal, financial data input has not been using a good accounting system, natural conditions that less supportive with the requirement of growing potatoes,

research and development activities have not done intensively, lack of product promotion, there was no regularly farm training to new farmers. The main strengths and weaknesses faced by farmers based on calculations with the IFE Matrix were the quality of potatoes produced very well and the continuity of the goods was very secure, the land use and production capacity were not yet optimal.

Based on the calculation of EFE Matrix and IFE Matrix, the total score of both was 2.525 and 3,113. Based on the merging results of the total score generated on the IE matrix, it can be seen that the company's current position was in quadrant IV which means the farmers in growing and developing stages (Grow and Build) with intensive and integrative strategies. SWOT analysis performed yielded 8 strategies of formulation. The 8 strategies generated were the result of matching strengths, weaknesses, Opportunities and threats that exist in the SWOT Matrix.

After obtained several alternatives then continued with Quantitative Strategic Planning Matrix (QSPM) analysis. Based on the analysis of QSPM matrix, from the total value of attractiveness average obtained, the sequence of the best strategy implementation was to conduct intensive and aggressive marketing activities for the consumers' company, competitors and prospective customers with a TAS value of 6.255. Based on the results of this study it can be put forward some suggestions that (1) farmers should be more focused on the preparation stage towards the development of effectiveness potato agribusiness. This is because the new farmers are engaged in the cultivation and marketing of potatoes, so that the strategies used by the farmers was the basic strategies that determine the future of the farmer; (2) on the production aspect, the farmer must be able to utilize and maximize the amount of land for the production (3) farmers should immediately execute the best strategy effectively based on QSPM matrix analysis results, do intensive and more aggressive marketing activities to the consumers, competitors and prospective consumers because the strategy has a high power of attractive that should be implement base on internal and external condition (4) the familial atmosphere and the nature of mutual cooperation must be maintained in order to face the existing competition and problems, good cooperation

was required, therefore the problem can be solve wisely.

In addition, in response to the changes of global environment marked by food price movements, world oil price increases, climate changing and global warming, as well as the impact of the global financial crisis that affected the purchasing power of poor consumers, and increasing insecurity food especially in developing countries.

Empowerment activities of potato farmers which was incorporated in Gapoktan organization become has important position in the activities of Institutional Strengthening because the farmers involve actively and the cooperation done with related institutions that exist and fellow members are expected to increase the participation of farmers in potency of potato commodity agribusiness. In relation to the development of Gapoktan, each member is motivated to participate actively if: (1) such participation is carried out through a container of organization or group already known or existing in the middle of the farmer's life; (2) participation will give benefit for concerned farmers; (3) the benefits gained through such participation can fulfill the interests of the peasant; and (4) in the process of improvement involving various stakeholders.

Departing from these conditions, the participation of farmers in the development of Gapoktan for the empowerment of potato farmers is needed in determining the success of potato commodity agribusiness activities. Participation will be effective if it is implemented collectively in a group, so that it will be able to generate synergies which is it will generate economic benefits that can be enjoyed by all parties. The form of participation that can be given by potato farmers in an activity are: ideas, skills, energy, property, and money. The farmers who participate actively in Gapoktan activities will contribute differently as revealed by Daniel et al (2016) that the level of peasant participation as a member of the community is not the same, it is depending on the extent of the farmer's involvement in solving the problem.

Mardikanto (2013) argued that farmers' participation is a form of engagement and participation actively in (intrinsically) and outside (extrinsic) in the whole process of activities which include: decision in making plan, implementation, monitoring and

evaluation, and utilization of the results of various activities on previous research studies found that internal factors that influence the participation of Gapoktan members in an activity are age, income, and motivation, while external factors or factors outside found that things that affected participation of Gapoktan members on an activity include: the role of extension and the intensity as expressed by Steers (2012).

The effectiveness of Gapoktan services in empowering was basically determined from the accumulation of effectiveness by member-farmers. In other words, if every member of Gapoktan coordinates to perform their duties and work properly, then the effectiveness of Gapoktan as a whole will emerge. Nevertheless the achievement of a farmer as the member of Gapoktan cannot be said to be successful or the effectiveness of Gapoktan organization as a whole cannot said to be effective. To assess whether a Gapoktan said to be effective or not, then the whole can determine by the achievement or absence of Gapoktan goal itself according to the collectivity of its members and the satisfaction of its members.

Based on the above conditions, the issues that also be the focus of attention in the development of this Gapoktan role, namely (1) how is the effort to increase the rate of farmer participation as a member of Gapoktan in strengthening Activity ?; (2) What are the factors that influence the farmers to participate as Gapoktan members ?; (3) How is the relationship between the various factors that influence the participation of farmers as members of Gapoktan viewed from the side of the level of satisfaction ?; (4) how are the farmers participate in Gapoktan effectiveness and the process of achieving the Gapoktan objectives, covering: (1) the process of channeling funds for the construction of Gapoktan warehouse, (2) the process of increasing the movement of basic food purchasing activities by Gapoktan from farmers, and (3) The availability of food reserves to meet the needs of its members ?; And (5) How is the effectiveness of Gapoktan seen from the development aspect of Gapoktan Institution?

Using mixed methods as the basic method, where quantitative methods are supported by qualitative methods and used both simultaneously. The qualitative method in this study serves to explain the quantitative findings (Tashakkori and Teddlie, 2013).

This study took a sample of 31 respondents and 11 informants in Gapoktan "Purnama" in Sumber Brantas Village Bumiaji Sub-district, Batu City. Determination of sample respondents using proportionate stratified random sampling technique, while the determination of informants is determined purposively in accordance with the criteria of informants who know and understand about activities of Gapoktan Institutional Strengthening.

Data collection techniques conducted in this study are: using the questionnaire, direct observation, in-depth interviews, documentation, and literature study. As for analyzing the data there are 5 (five) ways used. First, the analysis of class intervals to test the hypothesis about the participation rate of Gapoktan members. Determination of class intervals using the yield formula between range (maximum value - minimum value) with the desired number of class intervals in this case; low, medium, and high (Nazir, 2013). Second, multiple linear regression analysis to test the hypotheses about influencing participation factors of Gapoktan members in Strengthening Gapoktan Activity.

The model hypothesis developed is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where:

Y: Farmers' participation in Gapoktan Reinforcement Activities

$\beta_0$ : Intercept

$\beta_1 - \beta_7$ : Regression coefficient of variable X1-X7

X1: Age

X2: Motivation

X3: Revenue

X4: The role of extensions

X5: Intensity socialization accepts of extension activities

X6: Gapoktan Leadership

X7: Leadership of farmer groups

$\epsilon$ : error

Third, As the development of multiple linear regression model and to know the magnitude of direct and indirect effect of influence between variables, hence used path analysis (path analysis). Fourth, simple linear regression analysis is used to test the hypothesis

about the influence of Gapoktan members' participation on the effectiveness of Gapoktan on Gapoktan Strengthening Activities. Fifth, an interactive model used to analyze the effectiveness of Gapoktan institutions in terms of institutional development qualitatively. According to Miles and Huberman the components of data analysis performed include data collection, data reduction, data presentation, and interactive during conclusions interconnected and after collection

### 3. RESULTS AND DISCUSSION

The rate of farmers' participation on activity of empowering the role of Gapoktan

Participation of member farmers in strengthening the role of Gapoktan in the planning, implementation, monitoring and evaluation phase, and the utilization of existing results, both in the form of ideas, personnel, and material are high. This understanding adopts the concept disclosed by Margono, 2009 which divides participation in four levels of development activities including: planning, implementation, monitoring and evaluation of utilization of the results.

Based on the results of research as summarized in Table 1 shows that the rate of participation of farmers members overall from the planning stage to the utilization of results is still relatively low at 24.63 percent. The condition is caused by the following: (1) lack of socialization given by the chairman and management of Gapoktan and extension as the farmer's assistant, (2) the number of farmers as Gapoktan members who rarely or even do not attend the meetings held in each activity at each stage, and (3) the contribution given by farmers as members of Gapoktan either in the form of ideas, energy, or material as a whole was also low.

Table 1.

The Rate of Farmer Participation on Strengthening Gapoktan Institutional Activity on Phase Activities in Batu City

N O	Stages	Participatio n Rate		rate-2 / Max x100 %
		Ave rage	Max	
1	Planning	12,8	47	27,33
2	implementation	8,2	34	24,18

3	monitoring and evaluation	13,5 9	54	25,17
4	Utilization of harvest	3,03	18	16,85
5	Overall Participation	37,6 9	153	24,63

The stage of utilization of the results and the implementation stage needs special attention considering that the stage is below the overall average, especially the participation of Gapoktan members at the stage of utilization of results that only reached 16.85 percent. The reason is the low number of farmers Gapoktan members to contribute ideas, energy, and materials, especially from the contribution of ideas or ideas. Peasant members are generally reluctant to disseminate information on the benefits of Gapoktan Strengthening to passive members or farmers who have not joined Gapoktan due to the lack of socialization at this stage given by the chairman of Gapoktan or extension either formally or informally.

The lack of socialization is also accompanied by low material participation. Even though Gapoktan members have benefited from potato sales activities to Gapoktan, but do not want to fill cash money to Gapoktan. The reluctance is due to knowing other fellow members do not fill the money Gapoktan plus the absence of sanctions from Gapoktan itself. Besides, profits obtained Gapoktan from the business of selling / buying potato members are not informed to its members. Lack of socialize of the Chairman and Management of Gapoktan in informing the advantages of the Gapoktan business as part of the benefits that members can gain the argument of participation of Gapoktan members at this stage becomes low.

At the implementation stage, farmers' participation in Gapoktan in Institutional Strengthening activities is low because the socialization of the activities given is limited to the people who are close only in terms of proximity relationship and residence close to the board. The low level of socialization on the implementation of the activity then has an impact on the low contribution given by Gapoktan members, such as (1) providing cement, brick, wood, asbestos / tile, nails, wire, iron for Gapoktan warehouse, (2) buy food and drink during the construction of warehouses, and (3) sell potatoes to Gapoktan. This condition is due to the monthly income of Gapoktan members (62.64 percent) which only ranges

from Rp400.000,00 to Rp1,299,999,00. Gapoktan members reluctant to contribute because it focuses more on the fulfillment for the daily needs of their family.

The form of participation that mostly given by farmers members of Gapoktan in the implementation phase in the form of personnel include: (1) invite fellow Gapoktan members to cooperate in the construction of warehouse Gapoktan, (2) participate in building Gapoktan warehouse, and (3) help Gapoktan collect potatoes Purchased from members. Gapoktan members will be the volunteer and mobilize more of their strengths that rely on physical strength rather than contribute to material thinking along with the results of studies conducted by (Tanjung Sari, 2010).

At the planning stage, although the highest percentage above all stages is 27, 33 percent, but the participation of Gapoktan members at this stage is still relatively low. Some of the Gapoktan members participation of this stage include: (1) attending the planning meeting, (2) informing the number of poor members, (3) informing the estimated cost of building the warehouse, (4) giving the idea in designing the form of Gapoktan warehouse building, And (5) provide information on average yields. The cause of the low level of participation at this stage is the attitude of decision makers that is the chairman of Gapoktan and management of the activity plan that often does not accommodate the aspirations of the members. These conditions then make members of Gapoktan rarely provide information about the plan of Institutional Strengthening activities because it will not be noticed by the chairman and the board of Gapoktan also members of Gapoktan assume that it can be done by the chairman and board of Gapoktan. The results of this study are in line with a study conducted by Arifah (2002) that although farmers have equal opportunity in giving opinions when drafting a plan, but not all are motivated to contribute.

Farmers' involvement level at the monitoring and evaluation stage only reached 25.17 percent. The low level of participation because the farmer minimally contribute in terms of (1) assessing or giving input to the performance of chairman and management of Gapoktan and extension facilitator of GAPOKTAN strengthening activities so that Gapoktan business can develop, (2) helping Gapoktan to remind to fellow members not to

sell grain / rice to middlemen, and (3) attend the annual meeting of Gapoktan members.

The involvement of member farmers at the monitoring and evaluation stage only reached 25.17 percent. The low level of participation is due to the very minimal contribution of farmers in terms of (1) assessing or giving input to the performance of the chairman and management of Gapoktan as a facilitator of institutional strengthening activities so that Gapoktan efforts can grow, (2) assisting Gapoktan to remind others Members not to sell their crops to middlemen or other pedagens, and (3) attend the annual meeting of members held by Gapoktan. Another thing that causes the low participation of farmers at this stage they reluctant in assisting the chairman of Gapoktan in preparing monthly reports of institutional strengthening activities. Farmers as Gapoktan members assume that the more interested parties in this phase is the chairman and board of Gapoktan, as well as extension worker who serves as a companion of activities, and Gapoktan Technical Team in Batu City.

### **3.1. The Factors that Affect Potato's Farmers Participation on Gapoktan Institutional Strengthening**

The factors influencing the participation of potato farmers in Gapoktan strengthening activities are age factor, motivation, income, extension function, intensity of socialization, leadership of Gapoktan chairman, and leadership of farmer group. By using the Statistical Package for the Social Sciences (SPSS) program through backward circumference method. The principle of data processing with this method is to include all the independent variables that are expected to affect overall, then automatically SPSS program will eliminate one by one independent variable that does not significantly affect the variable Y. Of 7 (seven) variables that allegedly affect the level of participation of farmers in the activities of Reinforcement Gapoktan, the role of extension, leadership of Gapoktan, and the leadership of the farmer group did not have any real effect, thus leaving the model. The results of the analysis that affect the level of participation of farmers members in Gapoktan Strengthening activities is presented as shown in Table 2

Table 2.

The Results of Multiple Linear Regression Analysis Concerning Factors That Affecting

## Farmers' Participation in Gapoktan Strengthening-Institutional Activity.

No	Variable	Regression Coefficient	count	Sign
	Constant	1,937	0,229	0,819
1	Age (X1)	-0,325	3,480	0,001
2	Motivation (X2)	0,123	2,064	0,042
3	Revenue (X3)	0,00004506	17,137	0,000
4	Intensity received activity socialization (X5)	0,313	3,027	0,003

## Information:

N: 91

R: 0.99

R Square: 0.979

Adjusted R Square: 0.979

F-count: 1,027,201

F-table = 0.05: 2.49

t-table = 0,05 : 1,99

sign: 0,000

equal model:  $Y = -0,426X_1$ 

Based on the results of regression analysis as listed in Table 2, the R Square value of 0.979 indicates that the independent variables such as age, income, motivation, and intensity receive socialization of activities can explain the dependent variable that is the participation rate of farmers members in Strengthening Gapoktan Activity of 97.9 percent, While the remaining 2.1 percent described other factors outside the model. The result of analysis also shows the age factor have negative effect, while the motivation factor, income, and intensity receive socialization of activity have positive effect to farmer participation in Strengthening of Gapoktan. The coefficient value of age regression of farmer equal to -0,325 indicated that the younger age of farmer, there is an increase of participation equal to 0,325 unit. Farmers have a strong motivation to increase their participation in strengthening Gapoktan activities to meet the needs of food (existence), related to social factors (relatedness), and develop the ability of self (growth) The motivation of the most powerful member of farmers is to participate in strengthening Gapoktan in order to meet Needs related to social needs (relatedness), including the desire to: (1) increase cooperation with among farmers, note

at the meeting of farmers with Gapoktan; (2) relating to farmers and management of Gapoktan; (3) always in contact with the chairman of Gapoktan to obtain the latest information on the activities of Strengthening Gapoktan; And (4) cooperation with extension workers as a companion for Strengthening Gapoktan. On the other hand, strong desire and encouragement as well as administrators in the desire to become a useful person for society, especially the farmers in his village; Apply the knowledge provided by counselors; Add insight and knowledge from extension workers; And training to improve skills and abilities are some of the motivations of member farmers to participate in institutional strengthening due to the fulfillment of the need for self-development (growth). The strong desire and encouragement of member farmers to participate in Gapoktan Strengthening activities in meeting the need for existence include: the desire to meet the needs of clothing, food, boards, crops, obtain certainty of the selling price of potatoes and free from the fear of harvest failure.

Revenue of member farmers ranges from Rp 2,500,000.00 to Rp 4.000.000,00 per month has an impact on the active role of member farmers in strengthening Gapoktan activities. The increasing income of member farmers will affect the participation of the members themselves in the activities of Strengthening Gapoktan. Similarly, the increased intensity of receiving socialization activities, the more often farmers receive socialization of Strengthening Gapoktan from the chairman and management of Gapoktan and extension agents either at each stage, it will be followed by increasing their participation in Gapoktan Strengthening activities.

The role of agricultural extension workers who have no significant effect on the participation of farmers members due to the lack of frequency of assistance To all member farmers on Gapoktan Strengthening activities which on average only 3-4 times in the last year. The condition occurs because the extension worker should build up the work area up to 3-4 villages, whereas according to the provisions of Regulation of the Minister of Agriculture number 273 / Kpts / OT. 160/4/2007 on the guidance of institutional development of farmers, the extension agent should only build one village as a working area. The effectiveness of Gapoktan leadership is characterized by



matters relating to the leadership style of the chairman and management in managing Gapoktan in accordance with the situation and the level of greedy members with the style of delegating (giving assistance and direction) when the members who know and want to follow the activities of Strengthening Gapoktan. This happens because norms such as giving appreciation and sanctions applicable to Gapoktan members have a significant effect on the participation of member farmers in Gapoktan Strengthening Activity, in addition to the high excuse norms prevailing in farmer groups is also due to the lack of supporting activities in institutional strengthening activities that involve all member-farmers.

### **3.2. The Relationship Factors that Influence the Member to Participate in Strengthening Gapoktan Activity**

As the development of multiple linear regression analysis, it can be used path analysis as proposed by Muller (Hariadi, 2011) to know the relationship between various factors (age, income, motivation, and intensity of socialization of activities affecting member participation in Activity Reinforcement-Gapoktan)

Based on the results of the path analysis as summarized in Figure 1, the age factor appears to affect income (-0.739), the intensity of socialization activities (-0.822), and participation of Gapoktan members in Gapoktan-strengthening activities (-0.150). District technical teams, extension officers, Gapoktan / Farmer group leaders and managers should consider factors affecting the participation of Gapoktan members in Gapoktan-strengthening activities, especially the intensity factor of accepting socialization activities (0.09) in addition to the age factor which has the greatest influence on the intensity Receive socialization activities in inverse. This means that the socialization of activities can run effectively in addition to the intensity of the meeting reproduced, it would be more effective if more attention to the age of Gapoktan members who are younger than members of aged Gapoktan. The results of this study are in line with that proposed by Soedijanto (1996) that the ability to learn someone in following an activity will be reduced gradually and feels very real after the age of 55 or 60 years. Lionberger (Mardikanto, 1993) himself said that the older a

person over 50 years old, usually slower to adopt innovation and tend to only implement activities that are usually carried out by the local community.

The income of Gapoktan members has the greatest direct effect on the participation of Gapoktan members in the Gapoktan Strengthening Activities. Although the majority of the members' revenues ranged from Rp 400,000 to Rp 1,299,999.00 (63 percent) should continue to be increased so as to influence the increasing participation of Gapoktan members in the Gapoktan Strengthening Activity as a whole. Chairperson of Gapoktan / Farmer Group and its staff and extension agents should make innovation and increase member's income by accelerating the turnover of grain / rice sales to marketing partners and developing Gapoktan business by maximizing the profit gained by involving all its members through a clear division of work or task. The income of Gapoktan members does not affect the motivation to participate in the Gapoktan-Strengthening activities caused by the need for self-existence, social relation, and self-development. This happens because the socialization activities are very minimal and not all members know about these activities make income does not affect the motivation. Similarly, with age that does not affect the motivation, with the lack of socialization activities either members of Gapoktan young or old will not be motivated to participate in Gapoktan-Strengthening activities to meet the needs of self-existence, social relationships, and self-development.

The motivation of farmers as members of farmers who still have a relatively low influence (0.032) on the Institutional Strengthening Activity should not escape the attention of the chairman of Gapoktan / group of farmers along with the board and extension officers who contact each other directly with the members of the farmer group. Motivation of farmers to participate in activities Gapoktan Strengthening in meeting the needs of existence, relatedness, and growth should be facilitated by the chairman Gapoktan / Farmer Group and the board and extension. The form of facilitation can be: searching for joint marketing network between farmers, management of Gapoktan / group of farmers, and companion; Develop and apply new knowledge or innovations gained from training



to improve rice productivity such as field schools conducted by Extension Workers.

Various obstacles in Gapoktan institutional development for potato commodity business can be overcome if supported by policy of development of potato variety / varieties that can accommodate innovative varieties and dissemination strategies / diffusion. Superior potato seed resistance policy should be considered Gapoktan in enacting various rules and regulations such as varieties release procedures, intellectual property rights, certification programs, and standardization in proportion to the formal and informal systems. According the policy on research and development of potato seed systems needs to emphasize (a) harmonizing the distribution of seeds and varieties to avoid the marginalization of the contribution of the informal system to the national potato seed system, and (b) the identification of points of interrelationship between formal and informal systems in order to synergize, so each system can offer its own strengths to achieve mutual benefits. The demand for increased production of potato commodities in Batu City to support food security in East Java may cause higher pressure on highland ecosystems. If mainstream research approaches are maintained, it will be difficult to avoid greater environmental damage as a result of erosion, landslides, deforestation, and extinction of habitat, genetic diversity and local wisdom. Therefore, it is necessary to change the paradigm of research and development that can bring out the production of potatoes, ecosystems and human health from the syndrome of unsustainability (un-sustainable syndrome)

Referring to the conditions stated in Table 3, there are at least 4 (four) things that have not been effective Gapoktan performance which ultimately affects the low participation of members in the activities of institutional strengthening Gapoktan. First, Chairman Gapoktan and management has not maximized human resources, especially in terms of assisting in expanding Network marketing Gapoktan in order to increase capital and business and also cooperation with other Gapoktan.

Performance Gapoktan has been more done personally that is the role of figure chairman Gapoktan and has not been implemented collectively. Secondly, the Chairman of Gapoktan is less intensive in disseminating activities so that information on activities not all

members receive. Gapoktan formed should be as an institutional container for farmers to accommodate the aspirations and desires of its members but has not run properly, so it can lead to low participation of members in various activities in Gapoktan. The condition is reinforced by Syahyuti (2003) which revealed that although the institute has been established, but the coaching and socialization that run tend to be individual, that is only to the board only. Third, the participation of members in Gapoktan strengthening activities is still relatively low. This is reflected in the minimal attendance of members in every meeting which is the impact of the lack of socialization of the activity itself. Fourth, the lack of human resources managing Gapoktan, in fact the age of Chairman Gapoktan already aged over 60 years and has more than 3 (three) period of leading Gapoktan. Desired regeneration of the desired management directly from the chairman of Gapoktan has not responded positively by some members due to the absence of widespread socialization, but also the concerns of the Chairman of Gapoktan to his successor, especially the problem of fund management.

#### **4. CONCLUSION**

The strengthening of Gapoktan institutional in Batu City has not been fully implemented optimally. This is indicated by the low level of participation of Gapoktan members in the planning, implementation, monitoring and evaluation phase, and the utilization of the results. Factors of income most directly influence directly to the participation of members of Gapoktan in Gapoktan-strengthening activities than motivation and intensity factor received socialization of activities that also equally positively affect directly to the participation of members of Gapoktan on the strengthening-institutional activities Gapoktan. The factors influencing the participation of potato farmers in Gapoktan strengthening activities are age factor, motivation, income, extension function, intensity of socialization, leadership of Gapoktan chairman, and leadership of farmer group.

On the other hand, age negatively affects directly the participation of members in Strengthening Gapoktan. The factors that do not significantly affect the participation of farmers in Activity Strengthening Gapoktan are as

follows: the role of extension, leadership Gapoktan, and leadership of farmer groups. The empirical study also proves that age negatively affects the income of Gapoktan members and the intensity of receiving socialization activities, as well as the intensity of receiving socialization activities have a positive effect on member's income. Socialization activities will be more effective if more given to members who are under 50 years old who will then have an impact on income increase with the active participation of members of Gapoktan on Gapoktan Strengthening activities. For peasant members who are over 50 years of age are advised to follow programs that are suitable for them.

There are at least 4 (four) things that have not been effective Gapoktan performance which ultimately affects the low participation of members in the activities of institutional strengthening Gapoktan. First, Chairman Gapoktan and management has not maximized human resources, especially in terms of assisting in expanding Network marketing Gapoktan in order to increase capital and business and also cooperation with other Gapoktan. Performance Gapoktan has been more done personally that is the role of figure chairman Gapoktan and has not been implemented collectively. Secondly, the chairman of Gapoktan is less intensive in disseminating activities so that information on activities not all members receive. Gapoktan formed should be as an institutional container for farmers to accommodate the aspirations and desires of its members but has not run properly, so it can lead to low participation of members in various activities in Gapoktan. Third, the participation of members in Gapoktan strengthening activities is still relatively low. This is reflected in the minimal attendance of members in every meeting which is the impact of the lack of socialization of the activity itself. Fourth, the lack of human resources managing Gapoktan, in fact the age of Chairman Gapoktan already aged over 60 years and has more than 3 (three) period of leading Gapoktan.

Farmers' participation in institutional strengthening activities has a significant positive effect on the effectiveness of Gapoktan. However, from the development aspect of Gapoktan institution is not yet fully optimal, it is caused by the lack of socialization of activity so that information of activity not all members can accept, The lack of socialization is also accompanied by low material participation. Even though Gapoktan members have benefited

from potato sales activities to Gapoktan, but do not want to fill cash money to Gapoktan. The reluctance is due to knowing other fellow members do not fill the money Gapoktan plus the absence of sanctions from Gapoktan itself. Besides, profits obtained Gapoktan from the business of selling / buying potato members are not informed to its members. Lack of socialize of the Chairman and Management of Gapoktan in informing the advantages of the Gapoktan business as part of the benefits that members can gain the argument of participation of Gapoktan members at this stage becomes low. Gapoktan performance is more implemented and managed based on Chairman of Gapoktan not based on collective cooperation built on the basis of the involvement of all members, and The lack of human resources who want to manage Gapoktan seen from the leadership of Gapoktan chairman has more than 3 (three) period of lead Gapoktan.

There are several suggestions that need special attention for district technical teams, extension workers and Gapoktan Board. First, the low level of participation of Gapoktan members in Gapoktan-strengthening activities can be increased by increasing the socialization of activities both in quality and quantity with the target of Gapoktan young members. Second, the performance of Gapoktan that has been more because the figure of Gapoktan chairman is not based on collectivity, it is necessary of group consciousness raised by both Gapoktan board / farmer groups and extension workers as well as from members themselves. The presence of Gapoktan is positioned as a place to accommodate the aspirations and needs required by its members, so that members can be fully involved in activities in Gapoktan because there is a need to be achieved. Third, the leadership of Gapoktan that has more than 3 periods should be necessary to improve the AD / ART Gapoktan about the management of Gapoktan to be limited so as not too long and the rejuvenation of management. Selected boards are people who can be free of interest, can generate awareness in groups, and can unite and be able to manage Gapoktan as a farmer organization that can benefit its members.

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**Table 3 MATRIX SWOT**

<b>Strength (S)</b>		<b>Weaknesses (W)</b>
<b>Internal analysis</b>		
<ul style="list-style-type: none"> <li>• Batu City is a highland that suitable for potato cultivation</li> <li>• Potato is a strategic and excellent commodity in Batu City</li> <li>• The availability of extension workers to help overcome agricultural problems in Batu City</li> <li>• The promotion of Batu City agricultural products to business actors</li> </ul>		<ul style="list-style-type: none"> <li>• Natural disasters that make it difficult for farmers to cultivate potatoes</li> <li>• Conventional potato cultivation process due to the limited ability of farmers in the application of agricultural technology</li> <li>• Institutions still not optimal</li> <li>• Farmers' disbelief on the quality of subsidized fertilizers from the government</li> </ul>
<b>External analysis</b>		
<b>Opportunity (O)</b>	<b>S-O Strategy</b>	<b>W-O Strategy</b>
<ul style="list-style-type: none"> <li>• The high interest of business actors from abroad and domestic to potato commodity of Batu City</li> <li>• The existence of central government policy to develop superior seed potatoes</li> <li>• The existence of central government support through the reduction of funds for rural agribusiness development (PUAP) and fertilizer subsidies</li> <li>• The high ability of farmers to process tubers into seed potatoes</li> <li>• The existence of a financial institution with low credit payment</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing the production of potato commodities (S1, S2, and O1) to Increase production amount (S1, S2, and O1)</li> <li>• Increase efforts to develop potato seeds by involving farmers (S3, O4, and O2)</li> <li>• Improving the institutional capacity of farmer groups in establishing cooperation with business partners (S4 and O1)</li> <li>• Improve the quality of potato commodity fertilizer with the help of central government (S2, S3 and O3)</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing the socialization of the quality of subsidized fertilizers and their benefits in minimizing production costs (W4 and O4)</li> <li>• Utilization of PUAP aid and low interest loans from financial institutions in Kota Batu to increase pet capital in adopting agricultural technology (W2, O3, and O4)</li> <li>• Increase the prevention of plant diseases through the operation of agricultural clinics (W2 and O2)</li> </ul>
<b>Challenge (T)</b>	<b>S-T Strategy</b>	<b>W-T Strategy</b>
<ul style="list-style-type: none"> <li>• Limited funding, facilities, and infrastructure for potato cultivation from the central government</li> <li>• AEC free trade agreement Which causes a large selection of products for consumers, Including potato commodities</li> <li>• potato prices Fluctuations</li> </ul>	<ul style="list-style-type: none"> <li>• Improving the quality of potato commodities in the face of competition through training of farmers' capacity building and the use of qualified resources (S1, S2, S3, and T2)</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing the development of agricultural support infrastructure to address problems caused by natural disasters in Batu City (W1 &amp; T1)</li> <li>• Improve the quality of post-harvest handling and agricultural processing (W2 &amp; T1)</li> <li>• Increased farmer training to improve farmers' capacity, independence and welfare (W3 &amp; T2)</li> </ul>