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**METHOD ANALYSIS AND AGRICULTURE EXTENSION MEDIA IN THE FARMER GROUP OF HARAPAN SEJAHTERA AT THE SUBDISTRICT OF EAST TARAKAN, INDONESIA**

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**ABSTRACT**

Agriculture extension is an effort to change the farmers' behaviors as well as their families in order to solve their problems in farming, so that they will be able to increase production and their welfares. Success in Agriculture extension process is determined by appropriate method and media application. Objectives of the research were to study the extent of method and media application in extension and to formulate strategy of method and media application in extension on the Farmer Group of Harapan Sejahtera at the Subdistrict of East Tarakan. Respondents of the research were members Group of Women Farmers of Harapan Sejahtera, 23 women and 2 Informants of Agriculture extension agents. Data analysis used Likert's scale and SWOT analysis. Results of the research showed that the extent of extension media and method application on the Farmer Group of Harapan Sejahtera are in medium categories, which have scores 11 and 12, respectively. Strategies of the application of method and media on extension toward the Farmer Group of Harapan Sejahtera include; (1) implementation of group method in giving the extension, (2) establishing the Meeting Hall as supporting means to perform extension activities, (3) utilizing online media (cyber extension) to transfer the extension.

**KEY WORDS**

Agro-extension, extension method, extension media, farmers group.

Agriculture sector plays important role in national economy, not only its contribution in increasing income of the Indonesian people, but also its interest in utilizing the national natural resources optimally, so that it is appropriate to establish the agriculture sector as national economic development motor. One of development approaches is improving human resources quality as the main actors of agriculture development that include farmers, gardener, breeder, and their families. Such improvement of human resources quality has been done through extension activity (Kementan, 2011).

Extension activity in agriculture development may become an effective means of policy to encourage agriculture development under situation whereas the farmers are not able to reach their goals due to limited knowledge and perception. It will become means of extension policy if it is in compliance with the interests of the government or organization, which finance the extension in order to reach the farmers' goals (Mardikunto, 2010).

Success of the extension activity may be supported by appropriate method and media application. Mardikanto and Arip (2005) suggested that method is the way how the extension agents try to close themselves to the targeted society. In general, media is used as mediator on learning process. Objective of the media is intended to clarify the transferred information, so that it will stimulate thought, feeling, attention, and ability of the targets. The extension agents are demanded to master method, media, and strategy of the extension, so that information given by the extension agents will be able to be accepted by the targets.

Extension at the East Tarakan Subdistrict, particularly on the Farmer Group of Harapan Sejahtera, mostly applies *anjangsana* (visits) method, in which the extension agents will come to the target's house or the farm location individually. The extension rarely applies in group and mass, particularly using audio visual media due to limited means and infrastructures, as well as costs.

In general, the targeted farmers have limited knowledge and ability in comprehending an innovation; therefore media and strategy of extension are important in extension process on the Farmer Group of Harapan Sejahtera. All this time, power point and brochures are used in extension process on the Farmer Group of Harapan Sejahtera, so that the extension process has not optimal yet. Based on the problem above, it should be found out the extent of method and media application in delivering extension and the strategy in applying method and media in delivering extension on the Farmer Group of Harapan Sejahtera at the East Tarakan Subdistrict in order to reach the goal of the extension.

## LITERATURE REVIEW

Comprehensive approach against development will support the importance of education roles that include: (1) as basic requirements of the humans themselves; (2) as tool to fulfill other basic requirements; (3) as activity that maintain continuity and accelerate the development as a whole (Marzuki, 2009). The education process in extension activity is a learning process of adults, Suprijanto (2012), suggested learning characteristics of adults are as follow: (1) self-motivated to learn, (2) adults will learn if their opinions are respected; (3) real life-centered; (4) in general, adults have different ideas, intelligences, and the ways to learn; (5) it may create reciprocal communication and exchange ideas.

Agriculture extension is an informal education process to empower farmers and their families, as well as societies who are considered as agribusiness agents through informal education in agriculture sector in order to assist themselves economically, socially, and politically, so that they will be able to increase their incomes and welfares (Salim, 2005). Agriculture extension is a part of agricultural development system, which is considered as external education system (informal education) for farmers and their families, as well as the societies who get involved in agriculture development, therefore, Agriculture extension is an effort to create conducive climate that will assist the farmers and their families to grow dynamically and improve their lives and livelihoods by their own strength, which will finally lead to self-supporting (Soeharto, 2005).

Agriculture extension method is the way how to delivering material of Agriculture extension to the main actors and businessmen in order to encourage them to be able to assist and organize themselves in accessing information that concern with market, technology, capitalization, and other resources in order to increase their productivities, efficiencies, earnings, and welfares, as well as their awareness to conserve the living space (milieu) function (Aritonang, 2013).

Agriculture extension method closely relates to learning method of adults (andragogy). The extension agents who serve as educator, teacher, and motivator always relate to the extension targets that include farmers, breeders, and mature fishermen. In accordance to Van den Ban and Hawkins (1999), appropriate extension method or technique, which is chosen by the extension agents, depends on specific goal that is going to be achieved and the working situation. Diverse extension method does not mean that we have to choose the best one, but conformity of the method with the goal. Advantages and disadvantages of those three methods are given below:

Table 1 – Advantage and Disadvantage of Individual, Group, and Mass Method

Method	Advantage	Disadvantage
Individual	More efficient time Steady preparation	More formal and indistinct communication Relatively hard effect Relatively easier to be measured in organizing
Group	Relatively more efficient, clustered farming Distinct communicator	Organization problem Activity approach in establishing mutual group Difficulty in organizing discussion activity Requires building-up candidates for leader of the group who are skillful and dynamic
Mass	Less formal, massive farming Full of trust Immediately felt	Takes much time Higher costs Its effect is less efficient

Source: Aritonang, 2013.

Media is means to transfer messages from communicator to the public (Suprpto and Fahrianoor, 2004). In accordance to Isbandi (2005), media is tool or intermediary of distributor from one party to other parties.

Fluency of the extension agents in performing their jobs is affected by availability of the extension media. Such extension media has some benefits in the extension implementation. Benefits of such extension media include; (1) facilitating the extension agents in transferring information and facilitating the target to accept the information, as well as to avoid misunderstanding, (2) Extension media encourage curiosity of the targets to know more about the information, (3) Extension media perpetuates the information meaning gained by the targets, (4) Both extension agents and the targets tend to be pleased with the extension media because the material distribution is not boring (Effendi, 2005). Types of Agriculture extension media based on characteristics and examples are presented below:

Table 2 – Kinds of Agriculture extension Media Based on Characteristics and Examples

No	Type of Media	Example, Superiority, and Shortcoming
1	Printed Media	Picture, Sketch, Photograph, Poster, Leaflet, Folder, Blast map, Flash card, Diagram, Graphic, Chart, Map, Brochure, Magazine, Textbook Superiority: relatively longer duration, repeatedly readable, can be used in accordance with learning acceleration of each person, portable, etc. Shortcoming: Takes relatively longer time from delivering process to printing, it is difficult to present motion, requires sufficient literacy level, tends to be boring if it is solid and long text.
2	Audio Media	Cassette, CD, DVD, MP 3, MP 4 Audio Superiority: The packaged information is fixed, deep-rooted, and quietly similar if it is reproduced. Both production and reproduction are economic and easily distributed. Shortcoming: It may be boring if it takes longer time, reparation or revision must produce new master.
3	Visual and Audio-Visual Media	Slide film, Movie film, Film strip, Video (VCD,DVD) film, Television, Computer (Interactive, Presentation) Superiority: present more concrete images, both picture and motion, more attractive and communicative. Shortcoming: Production cost is relatively high; production takes longer time and requires expensive devices.
4	Physical Object or Real Object Media	Concrete object, Sample/Monster, Specimen, Model, Mock-up, Simulation Shows the real living things, has three-dimension shape, and props. Superiority: Provide learning environment, which is quietly similar to the real working environment, provide stimulation to many senses, it can be used as job training, practices using aids and/or simulation training. Shortcoming: Relative costly to provide real objects.

Source: Widodo, S and Nuraeni. I. 2006.

## METHODS OF RESEARCH

The research was conducted on the Farmer Group of Harapan Sejahtera at the East Tarakan Subdistrict in Tarakan, which was determined purposively by considering that the farmer group has not been certified yet. Samples were collected using purposive method that included 23 farmers who are active in attending the extension activity and 2 key informants, the extension agent and the leader of the farmer group. Data of the research comprised of primary and secondary data, in which data was collected through interview, observation, documentation, study of literature, and questionnaire.

Data analysis to respond objective the research used Likert's scale. According to Ridwan (2008), Likert's scale is applied to measure attitude, opinion, and perception of individual or crowd about social affair in the form of statement, which will be categorized in scores as follow:

- a) Very Good = Score 5;
- b) Good = Score 4;
- c) Good Enough = Score 3;
- d) Bad = Score 2;
- e) Very Bad = Score 1.

Extent of the Method and Media application depends on the total scores. Based on total 8 questions, it will be calculated using specific equation of class range as follow:

$$RS = \frac{SkT - SkR}{JKI}$$

Where:  $RS$  = Score Range;  $SkT$  = The Highest Score ( $4 \times 5 = 20$ );  $SkR$  = The Lowest Score ( $4 \times 1 = 4$ );  $JKI$  = Amount of classification used (5).

Table 3 – Category for the Extent of Extension Media and Method Application

No	Category	Grade Interval
1	Very low	4.00 – 6.00
2	Low	7.00 – 9.00
3	Medium	10.00 – 12.00
4	High	13.00 – 15.00
5	Very high	16.00 – 20.00

Notes: Data was processed by the researcher, 2018.

In order to find out interval values of the extension method and media for each parameter, analysis of the research used index analysis, in which perception of each member of the farmer group is as follows

$$\text{Index Value} = \frac{(F1 \times 5) + (F2 \times 4) + (F3 \times 3) + (F4 \times 2) + (F5 \times 1)}{5}$$

$F1$  = Reply frequency of the respondent who answers 5;

$F2$  = Reply frequency of the respondent who answers 4;

$F3$  = Reply frequency of the respondent who answers 3;

$F4$  = Reply frequency of the respondent who answers 2;

$F5$  = Reply frequency of the respondent who answers 1.

External and internal strategic factors are establishment of SWOT matrix (David 2006). SWOT matrix is an important checking tool to assist government on stakeholders in developing 4 types of strategy, such as (1) strategy S-O, in which the strategy uses internal strength to utilize external opportunity, (2) strategy W-O, in which the strategy is intended to fix the internal weakness by utilizing the external opportunity, (3) strategy S-T, in which the strategy uses internal strength to avoid any external threat and influence, as well as (4) strategy W-T, in which the strategy is directed to reduce internal weakness and avoid any threat of external environment.

## RESULTS OF STUDY

*Extent of Agriculture extension Method and Media Application on the Farmer Group of Harapan Sejahtera.* Message or material of the Agriculture extension is acceptable and understandable, as well as applicable, so that it will improve ability if the selected way to deliver the extension is appropriate with condition of the farmers.

Table 4 – Extent of the Extension Method Application on the Farmer Group of Harapan Sejahtera

No	Parameter	Score					Total	Mean	Criteria
		5	4	3	2	1			
1	Ability of the extension agent	5	5	7	3	3	75	15	High
2	Method conformity	3	4	7	3	6	64	12	Medium
3	Conformity of the extension location	2	1	3	6	11	46	9.2	Low
4	Conformity of the given material	3	2	7	5	6	60	12	Medium
Mean							61.25	12	Medium

Data Source: Processed by the Researcher, 2018.

Selection of the ways or method and media of the extension will determine the success in implementing such Agriculture extension program as a part of agricultural development. Extent of the extension method application on the Farmer Group of Harapan Sejahtera is presented in Table 4.

Parameter of Agriculture extension method application on the Farmer Group of Harapan Sejahtera is generally in medium category, 12 on average. It is due to special meeting means for such extension activity has not been available, so that extension can only be conducted through individual visit (*anjangsana*). According to Hamundu (1997), there are two levels of opinion in determining the extension method; (1) It should concern with expertise and extension technique, which are combined in each method, (2) It should select the best method or combination of some methods to reach the goal and strategy of the extension.

Table 5 – Extent of the Extension Media Application on the Farmer Group of Harapan Sejahtera

No	Parameter	Score					Total	Mean	Criteria
		5	4	3	2	1			
1	Conformity of Media	2	2	6	6	9	57	11	Medium
2	Simplicity	1	3	7	5	7	55	11	Medium
3	Attractive	3	2	5	6	7	57	11	Medium
4	Language	3	2	7	5	6	60	12	Medium
Mean							57.25	11	Medium

Data Source: Processed by the Researcher, 2018.

Based Table 5 above, parameter of the extension media application on the Farmer Group of Harapan Sejahtera is generally in medium category, 11 on average. It is due to the applied media for such extension activity has not been optimal yet, so that it may not attract the targets. According to Hamzah (2010), today it may be not appropriate anymore if teaching and extension delivering are still given verbally because communication technology has grown rapidly. However, we have to endeavor to use all devices in order to establish effective extension.

*Strategy of the Agriculture extension Method and Media Application on the Farmer Group of Harapan Sejahtera.* Each individual has different ability to learn something, as well as his/her mental development stage, environmental circumstances and opportunities, so that appropriate, effective and efficient Agriculture extension method and media should be defined. Therefore, it requires strategy of Agriculture extension method and media implementation in order to achieve the extension goal. Formulating the strategy of extension method and media application was initiated by identification of internal and external factors.

Table 6 – Internal and External Factors; Application of the Extension Method and Media on the Farmer Group of Harapan Sejahtera

INTERNAL FACTOR		
No	Strengths	Weaknesses
1	High cooperation among farmers	Low education level of the farmers
2	Farmers produce farming products	Lack of Audio Visual Media application during extension
3	Existence of Farmer Group Institution	Lack of farmers' participation in Extension activity
4	Productive age of the farmers	
EXTERNAL FACTOR		
No	Opportunities	Threats
1	Support from the government	Lack of Extension agent
2	Availability of communication access as extension media	No specific place for meeting
3	Competent extension agent in using the extension media	Limited budget for extension

Source: Primary Data is Processed, 2018.

Table 7 – Scores for Rating and Weight on Internal and External Factors

No	Factor	Rating	Weight	Score
INTERNAL FACTOR				
STRENGTHS				
1	High cooperation among farmers	4	0.16	0.64
2	Farmers produce farming products	3	0.13	0.39
3	Existence of Farmer Group Institution	4	0.17	0.68
4	Productive age of the farmers	3	0.13	0.39
TOTAL				2.1

Table 7 Continue				
WEAKNESSES				
1	Low education level of the farmers	4	0.16	0.64
2	Lack of Audio Visual Media application during extension	3	0.12	0.36
3	Lack of farmers' participation in Extension activity	3	0.12	0.36
TOTAL				1.36
EXTERNAL FACTOR				
OPPORTUNITY				
1	Support from the government	3	0.16	0.48
2	Availability of communication access as extension media	4	0.18	0.72
3	Competent extension agent in using the extension media	3	0.16	0.48
TOTAL				1.68
THREATS				
1	Lack of Extension agent	3	0.16	0.48
2	No specific place for meeting	4	0.18	0.72
3	Limited budget for extension	3	0.13	0.39
TOTAL				1.59

Source: Primary Data is Processed, 2018.

Based on table above that concerning with internal and external factors, X (abscissa) and Y (coordinate) can be defined:

$$X = S + (-W) = 0.74$$

$$Y = O + (-T) = 0.09$$

Based on the mapping, it defines that position of the extension method and media application is on strategy I, Aggressive Strategy. It shows that strength of the extension agents should be able to take the opportunities optimally and improve the identified weaknesses, simultaneously. Therefore, during determination of strategy and key factor of success, it should be more directed to the aggressive strategy. The next step of SWOT analysis is defining strategy of the extension method and media application into 4 (four) categories by keep watching the dominant position on Aggressive Strategy in accordance with the position determination. Those strategies are as follow:

Table 8 – Strategy of the Extension Method and Media Application on the Farmer Group of Harapan Sejahtera

IFAS FACTOR	Strengths (S)	Weaknesses (W)
EFAS FACTOR	High cooperation among farmers (S <sub>1</sub> ) Farmers produce farming products (S <sub>2</sub> ) Existence of Farmer Group Institution (S <sub>3</sub> ) Productive age of the farmers (S <sub>4</sub> )	Low education level of the farmers (W <sub>1</sub> ) Lack of Audio Visual Media application during extension (W <sub>2</sub> ) Lack of farmers' participation in Extension activity (W <sub>3</sub> )
Opportunities (O) Support from the government (O <sub>1</sub> ) Availability of communication access as extension media (O <sub>2</sub> ) Competent extension agent in using the extension media (O <sub>3</sub> )	Strategy S-O Implementing group method during extension activity (S <sub>2,3</sub> ,O <sub>1,3</sub> ). Building a Meeting Hall as means for the extension activity (S <sub>2,3</sub> ,O <sub>1</sub> ) Utilization of cyber extension in performing extension (S <sub>2,4</sub> ,O <sub>2,3</sub> )	Strategy W-O Performing introduction and training by using online media for extension (W <sub>1,2</sub> ,O <sub>1,2</sub> ). Applying direct method in delivering extension (W <sub>2,3</sub> ,O <sub>1,2</sub> )
Threats (T) Lack of Extension agent (T <sub>1</sub> ) No specific place for meeting (T <sub>2</sub> ) Limited budget for extension (T <sub>3</sub> )	Strategy S-T Adding more extension agents (S <sub>3</sub> ,T <sub>1</sub> ) Increasing frequency of meeting with members of the farmer group (S <sub>2,3</sub> ,T <sub>1</sub> ) Optimizing the application of available media for extension activity (S <sub>1,2,3</sub> ,T <sub>3</sub> )	Strategy W-T Raising budget for extension (W <sub>2</sub> ,T <sub>3</sub> ) Complementing means and infrastructures that support the extension implementation (W <sub>1,3</sub> ,T <sub>2</sub> ) Increasing competence of the extension agents through training (W <sub>1,2</sub> ,T <sub>1</sub> )

Source: Processed-Primary Data, 2018.

## CONCLUSION AND SUGGESTIONS

Based on result of the research toward the extent of extension method and media application on the Farmer Group of Harapan Sejahtera at the East Tarakan Subdistrict, it belongs to medium criteria by score 11 for the extent of method application and score 12 for the extension media application.

Based on the analysis result of SWOT, it showed that strategy in applying method and media on the Farmer Group of Harapan Sejahtera is set on quadrant I (one), aggressive strategy. The applied strategies are as follow: implementing group method during extension activity; building a Meeting Hall as means for the extension activity; utilizing online media (cyber extension) in performing extension.

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