Analysis of the Diversity of Learning Media for Cocoa Farmers in an Effort to Increase Economic Productivity in the COVID-19 Pandemic Era in South Sulawesi

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***Abstract*— Cocoa is the leading product in the Sulawesi Corridor. In the era of the COVID-19 pandemic, cocoa farmers are still trying to maintain and increase the productivity of their cocoa plants. Cocoa farmers maximize learning media to develop themselves and their groups. The focus of learning is how to plant, maintain, pests and diseases of cocoa plants, information on fluctuations in local, national and international cocoa prices. The research problem is the diversity of media and exposure to learning media for cocoa farmers, both individually and in groups. The goal is to increase the knowledge of cocoa farmers independently so that they can survive during the COVID-19 pandemic. The aim is to increase the knowledge and motivation of cocoa farmers through the use of learning media as an effort to sustain cocoa production. The research method uses descriptive quantitative research type. Quantitative analysis focuses on analyzing the diversity of instructional media and its impact on cocoa farmers. The research subjects were 55 respondents from members of the cocoa farmer groups who were selected based on saturated samples. Data were collected through questionnaires on farmer groups who were the target of exposure to the diversity of instructional media in cocoa farming centers.**

Keywords*— *Diversity of Learning Media, Impact of Media, Cocoa Farmers, Economic Productivity, South Sulawesi

I. INTRODUCTION

Indonesia is an agricultural country whose people are predominantly working in the agricultural sector. Agricultural products are the major source of income for the community, which has decreased because of the COVID-19 pandemic. Domestic agricultural production decreased from March to November 2020. The result has implications for a reduction in the number of workers in the agricultural pandemic by around 1% - 4.87%, while investment in the agricultural pandemic has decreased by 2% -3.7% (CIPS 2020) [1].

The decline in cocoa production also affected Indonesia as the third largest cocoa producing country after Ivory Coast and Ghana, especially in the Sulawesi center. The largest cocoa suppliers in South Sulawesi are in the districts of Luwu, East Luwu and North Luwu, which require attention to stabilize cocoa production. The decline in cocoa production began in 2009 around 163,001 tons, down 124,768 tons in 2018. Based on 2009 data, productivity was 0.77 tons per hectare, decreasing by 0.61 tons per hectare in 2018 [2] .

The factors causing the decline in cocoa production are due to relatively old crop management, attack by Cocoa Pod Borer (CPB), Vascular Streak Dieback (VSD), balance of soil conditions with "fatigue" (soil fatigue) and extreme climate predictions [3] . As a result, there has been a decline in cocoa production and productivity in South Sulawesi, so we need a strategy to increase the knowledge of cocoa farmers independently and sustainably. The factors of decreasing cocoa plant productivity require information through the intensive learning of cocoa for farmers through a variety of learning media. Cocoa farmers must be motivated sustainably through a process of empowerment and learning to increase cocoa productivity and quality. This strategy can be carried out through self-development of farmer groups through the use of various media and independent and group learning technologies. For example, planting methods, maintenance, pests and diseases of cocoa plants, information on local, national, and international fluctuations in cocoa prices.

Exposure to a variety of consistent learning media can increase knowledge, attitudes and behavior of cocoa farmers. The COVID-19 pandemic conditions have caused cocoa farmers to reduce their gathering activities on land. The goal is to reduce the spread of the COVID-19 virus in cocoa growing areas. For this reason, the need for information through cocoa farmer groups is urgently needed, either directly or indirectly through the media. For example, interpersonal communication media by utilizing government extension agents and Profit Institutions who provide direct and applicable counseling to cocoa farmers. The group communication media, for example, the scavenger warehouse, has become minimal because of the conditions of the COVID-19 Pandemic. Other media uses are smartphones, cellphones, Below the Line, such as posters, and mass media as sources of information for cocoa farmers.

In an agricultural society messages can experience a two-stage process of mass media and personal influence such as the classical model analysis developed by Katz and Lazarsfeld (1955) [4]. This model analyzes the effects of mass media reaching the audience through opinion leaders. The research analysis found that the effect of mass communication on audiences did not directly affect the target audience. The stage is through the opinion leader interpretation process which transfers knowledge to the audience receiving the message. The Two-Step Flow Hypothesis theory developed by Lazarsfeld (1955) focuses that information is not only transferred through the media, but personal factors from opinion leaders can amplify the impact on audiences [4]. The influence of opinion leaders and interpersonal communication networks on information communication and individual decisions is greater than the mass media (Zhang & Dong, 2008) [5].

The development of Melvin D Fleur's theory shows that the effects of mass media have three effects, namely cognitive effects which are the consequences of an individual being exposed to informative media messages. Second, the affective effect is oriented towards emotional aspects or feelings. Third, the behavioral effects or actions that have been applied in everyday life. Information on the development of cocoa productivity enables cocoa farmers to increase their knowledge as an effort to achieve positive cocoa production. This has the potential to increase the economic benefits of cocoa farmers and the country's foreign exchange. Cocoa farmers are central in empowering cocoa quality through personal and group development.

Strategic technique is the diversity of learning media to familiarize cocoa farmers with access to interactive learning media for cocoa plant information. For example, the method of planting, maintenance, diseases, pests, quality, and the competitive price of local, national and international cocoa. The diversity of instructional media must have frequency, attention, and duration, namely the time used by audiences to access media messages Elvinaro (2004) [6]. The consistency of learning about cocoa gives an advantage to cocoa farmers, because it adds insight and knowledge.

The diversity of learning media is interesting to study in depth, especially the identification of ownership and various media exposure. Independent learning is expected to help farmers to develop business and capital, especially cocoa farmers in the planting center of South Sulawesi. This study aims to analyze the diversity of media to increase cocoa productivity during the COVID-19 pandemic in South Sulawesi. Using research to motivate interest, action, and persuade farmer groups both individually and in groups increases the variety of knowledge and learning quality of cocoa.

II. METHOD

The research method refers to quantitative descriptive analysis of the diversity of learning media for cocoa farmers during the COVID-19 pandemic. Presentation of data as quantification of frequency, duration and consistency is done by cocoa farmers to learn independently. This research is in Luwu Regency, South Sulawesi Province as a cocoa plantation area based on the area and yield of cocoa production. Research objects are individuals or cocoa farmers and cocoa farmer groups based on the research location. The focus of the research subject is cocoa farmers who individually or in groups access and disseminate information through exposure to learning media.

Determination of saturated samples by taking the entire population to be sampled. The selection of the entire population as a sample was based on the criteria that cocoa farmers had planted cocoa for over 5 years, had been certified, and the head of the farmer group and understood the problems in this study. Previously, random area sampling was carried out to represent the area of the South Sulawesi planting center, namely the representation of the Luwu Regency area as the center of cocoa cultivation. The number of samples of cocoa farmers is 55 people. Quantitative data analysis is the presentation of a frequency table to represent and describe the diversity of learning media for cocoa in South Sulawesi.

III. RESULT AND DISCUSSION

Communication is a social process that is very basic in human life. Cocoa farmers need to communicate socially either directly or indirectly through media. Diversity of learning media, as a forum to fulfill information and knowledge needs of cocoa, such as planting methods, maintenance, pests and diseases of cocoa plants, information on local, national, and international cocoa price fluctuations.

The diversity of learning media for cocoa farmers is a message reception process that aims to change knowledge, attitudes, opinions and behavior. Communication media is an object or tool used as an intermediary to communicate. Learning communication media is a means for cocoa farmers to learn individually and in groups. Based on the results of the study, the learning media used by cocoa farmers in the COVID-19 pandemic were classified:

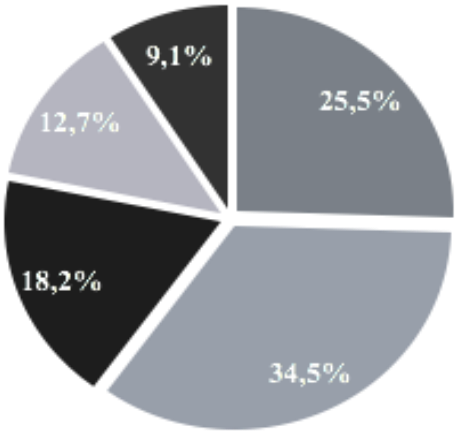

Fig. 1. Types of Learning Media, Source: Primary Data, 2021

Figure 1, depicting personal learning media includes: Government extension media (25.5%) and non-private extension (34.5%) dominant as the main learning media. Media communication media includes: Smartphones and Cellphones as much as (18.2%), Below the Line, posters as much as (12.7%) and mass media only as much as (9.1%). Using learning media for cocoa farmers is caused by factors first, the relevance or linkage of information with the needs of cocoa farmers. Second, the level of uncertainty in the message received causes an important source of information.

Learning media is a means in the independent learning process to find information based on their needs. The need for information to reduce uncertainty allows cocoa farmers to learn individually. This process maximizes the function of key farmers in transferring group knowledge in increasing farmers' understanding and trust in innovation. Based on the results of research to analyze the duration, frequency and consistency of cocoa farmers to various learning media, it can be seen in Table 1 below:

TABLE I. DURATION, FREQUENCY AND CONSISTENCY OF LEARNING MEDIA FOR COCOA FARMERS

Types of Learning Media	Duration	Frequency	Consistency
Government Extension Agents	7-9 Hours/Week	3 Times a Week	Consistency
Profit Extension	10-15 Hours/Week	5 Times a Week	Consistency
Smarthone/Hand Phone	7 Hours/Week	7 Times a Week	Consistency
Below The Line, Poster	5 Hours/Week	5 Times a Week	Lack of Consistency
Mass Media	4 Hours/Week	4 Times a Week	Lack of Consistency

The diversity of learning media serves to provide information on a variety of knowledge. Media messages aim to persuade and change knowledge, attitudes and behavior. Variable learning media can motivate cocoa farmers to consistently and sustainably learn about innovations in cocoa cultivation, for example planting methods, maintenance, pests and diseases of cocoa plants, information on fluctuations in local, national, and international cocoa prices.

Table 1, describes that learning media through direct extension from the government and non-private extension have proven to be more effective in changing the knowledge, attitudes and behavior of cocoa farmers. Media learning media include: smartphones and cellphones, below the line, posters and mass media also have a role in cocoa farmer independent learning. The affective function of visual media through reading, seeing pictorial text, visual symbols can arouse emotions and attitudes of the target audience.

The effectiveness of extension learning media from both government and non-profit extension agents has a direct message interaction so that feedback can occur immediately. Personal outreach to cocoa farmers was clear from the duration, frequency and consistency in receiving the messages that were posted. The function of extension workers as facilitators is to transfer agricultural messages and practice, monitor activities and problems experienced by cocoa farmers. Lazarsfeld's (1955) Two-Step Flow Hypothesis is still relevant to the conditions of cocoa farmers. This can be seen from the information received is still very much determined by personal factors from opinion leaders to strengthen the content of the message. The influence of opinion leaders and interpersonal communication networks on information communication and individual decisions is greater than the mass media (Zhang & Dong, 2008) [5]. Rogers & Cartano's research (1962) focuses on decision making, finding that before individuals decide, strengthening information and opinions is determined by opinion leaders. Opinion is more at the level of individuals who can influence attitudes or behavior. Opinion leaders are people who influence opinions, attitudes, beliefs, motivations and other behaviors (Valente & Pumpuang, 2007) [7].

This illustrates that a communication process using learning media related to receiving communication messages depends not only on one element, but each element plays a role in each other to create an effective message, besides the ability of the audience selectivity to the message, for example, the message receiver will receive messages according to their needs, attitudes, beliefs and values, goals, capabilities, experiences, and habits and experiences. Thus the use and acceptance of media message content applies to conscious and planned efforts to use learning media which have a direct impact on changes in knowledge, attitudes and behavior. Littlejohn (1996) analyzes that message creation and reception is a psychological problem, focusing on individual traits, circumstances, and processes [8].

The results of the research findings showed that face-to-face learning media through direct counseling from the government and non-private counseling were still very much needed by the agricultural community, especially in cocoa planting centers in South Sulawesi. The challenge for the extension agents is to maximize meetings with media intermediaries, such as smartphones and cellphones, to communicate directly with cocoa farmers. Continuous face-to-face meetings held by extension agents during the pandemic continue to follow standard health protocols to prevent the spread of COVID-19 in agricultural community areas. Alternative media become an intermediary in carrying out the independent learning process of cocoa farmers as a strengthening of face-to-face communication.

The era of the COVID-19 pandemic is still a challenge for agricultural extension agents to maximize alternative learning media, such as smartphones, cellphones, below the Line (posters), and mass media. Although the barriers to the application of instructional media are still lacking in effectiveness because of several factors, including economic factors, education level, and internet accessibility, which is still minimal in cocoa planting centers. The process of transformation and dissemination of information can optimize a key farmer as an opinion leader. The role of a key farmer is to help cocoa farmers develop independence during the COVID-19 pandemic. Cocoa extension workers and farmers who act as key farmers can maximize communication media in solving cocoa problems, for example planting methods, maintenance, pests and diseases of cocoa plants, information on local, national and international cocoa price fluctuations.

IV. CONCLUSION

The diversity of learning media to increase cocoa productivity in the Covid-19 Pandemic Era includes personal learning media carried out by Government and non-private extension workers. Indirect learning media, such as smartphones, cellphones, posters and mass media. The results showed that direct learning media was still very effective in increasing the knowledge, attitudes and behavior of cocoa farmers to independently learn cocoa. The effectiveness of the impact can be seen from the duration, frequency, and consistency of cocoa farmers, which are more dominant to government and non-private extension workers. The role of key farmers who act as opinion leaders is the

major source of information for cocoa farmers in receiving innovations in cocoa farming.

The role of opinion leaders as a source has the competence and credibility of information, such as, for example, planting methods, maintenance, pests and diseases of cocoa plants, information on local, national, and international cocoa price fluctuations. The development and utilization of learning media based on local wisdom is an effort the government and profit companies must maximize that to maximize learning media.

The result of positive recommendations for the government and non-provincial institutions is to continue to carry out direct continuous education using health protocols in the era of the COVID-19 pandemic. Maximizing the function and role of a key farmer as an opinion leader as a source of information for cocoa farmers. The consideration is that key farmers as a source of messages have competence and educational credibility, persuading their communities to learn independently.

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