

Analysis On the Problems Faced by Farmers in Farming and The Role of Agricultural Extension During Covid-19 Pandemic (Case Study in The Work Area Of The Nanggalo And The Koto Tangah Extension Center Padang, West Sumatera)

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Abstract— Agricultural extension is a form of non-formal education that plays a role in improving the farmers' ability and capacity as human resources so that they become strong and have the ability to access to various resources needed, and agricultural information as well as have the ability to plan and decide what is best for them in farming. This study aims to describe and analyze the problems faced by farmers in farming during the covid 19 pandemic, and to describe the role of agricultural extension especially during the covid 19 pandemic. This research was conducted with a qualitative approach, with the research location in the working area of the Nanggalo and Koto Tangah Agricultural Extension Center (BPP) which are located in the city of Padang, West Sumatera. The respondents of the study consisted of farmers in the working area of BBP Nanggalo and BPP Koto Tangah as many as 90 people. and agricultural extension workers as key informants. The data consisted of primary data and secondary data, collected during the covid 19 pandemic. The data analysis was carried out qualitatively by describing the research results in the form of percentages. The results of the study indicate that farmers experience problems at every stage of farming, namely the procurement of facilities on production, cultivation, harvest and post-harvest, marketing and partnerships with farming support institutions. The role of agricultural extension services has significantly decreased during the COVID-19 pandemic, which is marked by a reduced intensity of extension and low frequency of visits to the farmer group due to during the implementation of micro scale the imposition of restrictions on community activities (PPKM) during which the visits was conducted through Text and WhatsApp application and individual visit. The expected roles of extension workers during the pandemic related to their functions as facilitator are facilitating farmers to have access to capital institutions, marketing institutions, and institutions providing production facilities.

Keywords: farming problems, the role of extension in the time of covid 19

I. INTRODUCTION

The COVID-19 pandemic affects people in all walks of life and all aspects of their life which lead to a new normal situation. The government's appeal to the public to perform work from home and maintain physical and social distancing as well as the policies of several local governments to implement partial regional quarantines and restrict activities in crowds have made changes to the new situation in almost all aspects of the chain of life (Harawan,2020). The work system or pattern in the food sector also seems to have changed significantly in this period, starting from the process of procuring production facilities, production processes, product processing, marketing, to the behaviour of the consumers of agricultural products. The inability of farmers to keep up with changes that occur can cause disruption of farming activities carried out by farmers.

Agricultural extension is a form of non-formal education that plays a role in improving the farmers' ability and capacity as human resources so that they become strong and have the ability to access to various resources needed, and agricultural information as well as have the ability to plan and decide what is best for them in farming.

Prior to the emergence of the COVID-19 outbreak, agricultural extension institutions had conducted joint learning activities with farmers with the ultimate goal of realizing empowered and independent farmers in their farming businesses. However, with the Covid 19 outbreak, the agricultural situation has dramatically changed and results problems in the activities of farmers as the main actors in agricultural development, consumer behavior and agricultural production policies, which must adapt to agricultural extension and policy conditions.

Community empowerment is a process that aims to provide power to the community or activities that make the community able to build their capacity themselves, can take advantage of opportunities, are able to work together, know various alternatives, are able to make decisions, dare to face risks, are able to seek and capture information and are able to act according to situations (Slamet, 2003).

Therefore, this study aims to describe the problems faced by farmers in running a farming business and to describe the role of agricultural extension workers during the COVID-19 pandemic.

II. RESEARCH METHODS

This research was designed with a qualitative approach, using a case study method and supported by quantitative data. The research was conducted in the Koto Tangah Agricultural Extension Center and the Nanggalo Agricultural Extension Center (BPP) located in the city of Padang, West Sumatera. The research respondents consisted of farmers in both working areas, as many as 90 people. In order to obtain data on extension activities during the Covid 19 pandemic, agricultural extension workers were assigned as key informants. The data collected consists of primary data and secondary data. Data analysis was carried out qualitatively by describing the results of the study in the form of tabulations and percentages. The topic data based on research objectives are presented in Table 1.

Table 1. Topics and research data sources

Research purposes	Topics Data	Data Sources
Describing the problems faced by farmers in farming during pandemic covid 19	1. Problems in the Production Facilities Procurement process	Farmers
	2. Problems in the Cultivation Process	
	3. Problems in Harvest and Post-Harvest process	
	4. Problems in processing results	
	5. Problems in Marketing process	
	6. Problems in the Partnership process	
Analyzing the role of extension during the Covid-19 Pandemic	1. Intensity of counseling	Agricultural Extension workers
	2. Frequency of visits to farmer groups	
	3. Quantity of Extension Material	
	4. Variety of Extension Methods	
	5. Obstacles to extension activities	

III. RESULT AND DISCUSSION

A. Characteristics of Farmer Respondents

Farmers who became respondents in the study were members of farmer groups distributed in the working areas of BPP Nanggalo and BPP Koto Tengah, totaling 90 farmers, with rice and vegetable commodities. Characteristics of farmer respondents are presented in Table 2

Table 2. Characteristics of Farmer Respondents

No	. Characteristics	Number (person)	Percentage (%)
Age (year)			
a.	29 - 45	21	23.33
b.	46 - 62	52	57.77
c.	> 62	17	18.90
Sex/Gender			
a.	Male	47	52.22
b.	Female	43	47.78
Formal Education			
a.	Elementary School	14	15.55
b.	Junior High School	16	17.78
c.	Senior High School	49	54.44
d.	College / university	11	12.23
Land Area (Ha)			
a.	0.25 – 0.5	60	66.7
b.	0.6 – 1.00	18	20
c.	> 1.00	12	13.3
Ownership Status			
a.	Private	45	50
b.	Communal	12	13.3
c.	Rent	32	35.6
d.	Fiduciary	1	1.1
Other works besides Farming:			
a.	No	54	60
b.	Trader/Seller	12	1.3
c.	Workmanship	2	2.2
d.	Driver/ Motorbike	4	4.5

driver	18	20
e. Others		
Dominant Commodities:		
a. Rice	71	78.9
b. Vegetables	17	18.9
c. Corn/ Maize	2	2.2

The research data shows that the respondents of farmers are in a fairly productive age, in the range of 46-62 years (57.77%) with a high school education level (54.44%), and most of the farmers in the research location own their land or have private land. The socio-economic conditions of these farmers are the farmers' strengths in doing farming. However, more than half of the farmers (66.7%) own land only with an area of 0.25-0.5 Ha, which is included in the narrow category. This is one of obstacles for farmers in developing their farms.

B. Problems faced by farmers in farming during the COVID-19 pandemic

The conditions and problems of the respondent's farmer businesses during the COVID-19 pandemic were observed from the aspects of providing production facilities, cultivation, harvest and postharvest, product processing, marketing and partnerships with farming support institutions aspects. Description of the conditions or problems faced by farmers in farming during the Covid period is presented in Table 3.

Table 3. Problems faced by farmers during the Covid 19 pandemic

No	Problems faced	Number (person)	Percentage (%)
Provision of production facilities			
a.	Difficulty in obtaining superior seed	46	51.11
b.	Untimely availability and expensive fertilizer	75	83.33
c.	Expensive pest control	15	16.67
d.	Insufficient availability of machinery	22	24.44
e.	Lack of capital to buy the means of production	30	33.33
Cultivation process			
a.	Unavailability of farm hands	5	5.55
b.	Insufficient availability of irrigation water	13	14.44
c.	OPT attack	56	62.22
d.	Uneven plant growth	4	4.44
Harvest/product processing process			
a.	Unavailability Harvesting tools	22	2.44

b. Unavailability and expensive harvesting farmhands	30	3.33
Marketing		
a. The selling price is determined by the trader	50	55.56
b. Limited/local marketing locations	90	100
c. Low demand	90	100
d. Poor product quality, low price	2	2.22
Partnership		
a. Low partnership with production facilities	90	100
b. Low partnership with financial institutions	90	100
c. Low partnership with marketing agencies	90	100
d. Low partnership with information institutions	90	100

The results of the study show that farmers experience problems at every stage in their farming activities. This problem actually happened also in the period before the Covid 19 pandemic, however it got worse with this covid outbreak. The inability of farmers to fulfill pre-production facilities, such as fertilizers, seeds and medicines is caused by the high price of fertilizers (83.33%) while the seeds available are not as desired not to mention the high prices of medicines. Moreover, farmers do not have enough capital to buy the means of production. Efforts made by farmers to fulfill production facilities include: borrowing capital from *toke* (rice farmers with capitals), using fertilizers that they can afford., providing manure and using biodegradable plants pesticides. The results of this study are in line with research by Dhinakaran (2020) which found that farmers experienced a shortage of capital, seeds and fertilizers during the pandemic. The results of this study are in line with research by Dhinakaran (2020) which found that farmers experienced a shortage of capital, seeds and fertilizers during the pandemic.

Furthermore, the price of products sold in the market is set by traders, which is a problem raised by most of the rice farmer repondents (55.56%). The rice yields obtained by farmers are mostly marketed to hullers or *toke* around the farmers' residences. The selling price of the products offered by farmers depends on the price set by the huller/*toke*. Whatever the price set by the huller/*toke* will inevitably be accepted by the farmer as the farmer is already in debt to the *toke*/huller.

Low partnerships with institutions that support farming activities such as institutions providing production facilities, capital institutions and marketing institutions are big problem faced by all farmers in the BPP Nanggalo and BPP Koto Tangah areas. The low partnership between farmers and capital institutions can be seen from the high frequency of borrowing money from farmers to *toke* for farming capital. The limited distribution or market of agricultural products also shows the low partnership between farmers and marketing institutions.

The condition of farmers who find it difficult to find markets to sell their products because they do not have enough information can make farmers feel helpless (Ginige, 2012). The inability of farmers to fulfill production facilities, product prices set by traders and low partnerships with institutions that support farming indicate low empowerment of farmers. This study in line with the results of Zulvera's research (2014)

C. The Role of Agricultural Extension during the Covid 19 Pandemic

In accordance with the Strategic Plan of the Ministry of Agriculture 2020-2024, agricultural extension is expected to be able to encourage and assist farmers in accessing market information, technology, capital, and other resources (Indraningsih, 2020). The role of agricultural extension workers is not only related to technical problems in the field, but also in supporting a just social life of the community and being able to meet their daily needs. The aims and objectives of agricultural extension are to empower farmers

to be able to access productive sources. Iskandar (2020) states that extension workers helping farmers to find solution for their farming problems and delivering information to farmers for the progress of their farming.

During the COVID-19 pandemic, outreach activities in the work areas of BPP Nanggalo and BPP Koto Tangah are faced with obstacles with the implementation of Restrictions on Micro-scale Community Activities. Extension visits to farmer groups are limited, extension methods and media used must comply with health protocols. An overview of extension activities during the COVID-19 pandemic is presented in Table 4.

Table 4. Extension activities during the Covid 19 pandemic

No	Extension Components	Implementation during Covid 19
1	Extention materials	The type of material provided depends on the results of discussions with farmers individually using cellphone media or individual visits. The amount of material given to the beneficiaries is limited due to limitation and restriction in carrying out extension activities.
2	Extention Methods	The extension method applied is the individual method with individual visits to the farmer's house. Group meetings do not involve all members, but only a few administrators moderate individuals by using communication media
3	Media used	Communication media often used in extension during a pandemic is cellphones by sending texts and messages via SMS or WA, or telephone.
4	Extension Frequency	The frequency of counseling during the pandemic is significantly lower than before the pandemic. Extension activities are carried out only if there is a program or urgent need from farmer.
5	Extension Time	Extension using digital communication media, and the absence of regular group meetings as before the pandemic caused extension activities to not be as frequent or often as before the pandemic.
6	Extension Location	The location of extension activities is often carried out at the group manager house, and is attended by only several members or administrators.

The role of agricultural extension has noticeably significantly decreased during the COVID-19 pandemic, which was marked by a reduced intensity of extension and a low frequency of visits by extension agents to partner farmer groups. During the implementation of the Micro-scale PPKM in the city of Padang, the extension method was carried out through cellphone media, by SMS and WhatsApp, and individual methods or individual visits. This is in line with the results of Indraningsih's research (2020) which states that during the Covid-19 pandemic, most of the extension activities were carried out online, using the WhatsApp group application, or telephone, short message service (SMS), as well as other social media. In addition, if face-to-face visits are carried out, it is carried out through individuals or representatives of farmer groups.

The problems experienced by farmers in doing farming as presented in Table 2 show that the role of extension in empowering farmers is still not in line with and far from expectations. This refers to the Strategic Plan of the Ministry of Agriculture 2020-2024, agricultural extension is expected to be able to encourage and help farmers access market information, technology, capital, and other resources (Indraningsih, 2020).

The expected role of extension workers during the pandemic is related to the role of facilitator, namely facilitating farmers to have access to capital institutions, marketing institutions, and production facilities providing institutions. The results of the study

show that most farmers expect that extension activities will continue to run by applying various extension methods that are adapted to government policies during the COVID-19 period.

IV. CONCLUSION

The results of the study show that Covid 19 pandemic has significant impacts on farmers as can be seen by the many problems faced by farmers in farming. The problems have occurred in almost all components of the farming subsystem, starting from the subsystem for the procurement of production facilities, cultivation, harvesting, marketing and collaboration with institutions and supporting partners.

The roles of agricultural extension during the covid pandemic in conveying information to farmers have decreased as well due to the low frequency and intensity of direct agricultural extension to the farmer groups. The role of the extension workers that are expected during the pandemic are related to the role of a facilitator, namely facilitating farmers to have access to capital institutions, marketing institutions, and production facilities providing institutions. The majority of the farmers hope that extension activities will continue to run by applying extension methods and media that are adapted to government policies during the COVID-19 pandemic.

REFERENCES

- [1] F. B. Hirawan , A. A Verselita, Kebijakan Pangan di Masa Pandemi COVID-19. CSIS Commentaries. 14 April 2020, 2020.
- [2] M. Slamet, Pemberdayaan Masyarakat: Dalam Membentuk Pola Perilaku Manusia Pembangunan. Editors: Ida Yustina and Adjat Sudrajat. Bogor. IPB Press, 2003.
- [3] Ginige, Tamara and Richards, Deborah, A model for enhancing empowerment in farmers using mobile based information system, in *ACIS 2012. Proceedings of the 23rd Australasian Conference on Information Systems 2012*, ACIS, [Geelong, Vic.], pp. 1-10. 2012, <http://hdl.handle.net/10536/DRO/DU:30049072>
- [4] Zulvera et al, “Keberdayaan Petani Sayuran di Kabupaten Agam dan Kabupaten TanahDatar Propinsi Sumatera Barat”, *Jurnal Mimbar*. 30 (2), 2014.
- [5] S. Dhinakaran, M. Neela, “A Study on Impact of Covid-19 on Farmers towards Agriculture Production Using Data Mining Techniques” *International Journal of Future Generation Communication and Networking*, Vol.13 no 4, 2020, <https://serse.org/journals/index.php/IJFGCN/article/view/32742/18087>
- [6] K. S. Indraningsih, K.S. Septanti, A. M. Ar-Rozi, “Penyuluhan Pertanian Dalam Upaya Pemberdayaan Petani Era Pandemi Covid-19: Dalam Dampak Pandemi Covid-19: Perspektif Adaptasi dan Resiliensi Sosial Ekonomi Pertanian”, IAARD Press, 2020.
- [7] E. Iskandar, S. Amanah, A. V. Hubeis, D. Sadono, “The Prominent Role of Agricultural Extension System on Cocoa Agribusiness Development in Aceh, Indonesia”, *Jurnal Penyuluhan*, 16(2), 199 – 212, 2020, <https://journal.ipb.ac.id/index.php/jupe/article/view/29298>