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Communication Strategy for Counselor Agriculture During the COVID-19 Pandemic Ensuring Success and Safeguarding Efforts in the Agricultural Sector

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ABSTRACT

Agricultural extension endeavors in Bocek Village, Karangploso District persist in bolstering agricultural production despite pandemic restrictions. The study scrutinized the communication strategies employed by agricultural extension personnel in disseminating information to farmer groups during the COVID-19 period. The survey methodology, encompassing cell phone interviews and questionnaires, was administered to 30 farmers and extension workers via purposive sampling. Findings indicated that individual face-to-face and cellular telephone-mediated communications were utilized, as group gatherings were curtailed due to restrictions. Alternatives such as farm and home visits were pursued. Farmers continued to adopt recommended technologies and implement provided recommendations, with the performance of agricultural extension falling within a moderate category. Despite challenges, agricultural extension activities persevered amid the pandemic. The messaging conveyed by BPP Karangploso extension workers not only addresses the needs but also employs language that is comprehensible, enabling farmers to readily grasp and respond effectively to the conveyed message.

1. Introduction

Indonesia relies heavily on agriculture as a fundamental source of livelihood and a cornerstone for its developmental endeavors. Despite its pivotal role, agricultural productivity remains notably low, primarily attributable to factors such as limited human resources and the prevalent utilization of manual farming practices. Agricultural extension services, which are designed to provide education and facilitate communication channels between farmers and governmental bodies, emerge as pivotal instruments in enhancing productivity. However, their efficacy is hampered by a shortage of skilled personnel within Indonesia (Zulfikar, Amanah & Asngari, 2018).

Agricultural extension workers play a pivotal role in facilitating the transfer of technological advancements to farmers (Sunarto *et al*., 2023). Nonetheless, the dissemination

of such innovations encounters hurdles, including farmers' reluctance to adopt novel technologies, as noted by (Wirasyahputra, 2012). Consequently, the implementation of effective communication strategies becomes imperative to address these challenges (Bedford *et al*., 2020).

In light of these considerations, a comprehensive study conducted by Roni *et al*., (2023) delves into the communication strategies employed by agricultural extension workers during the unprecedented circumstances of the Covid-19 pandemic. This research specifically focuses on assessing the performance of agricultural extension workers within the Magelang Regency amidst the challenges posed by the pandemic.

2. Methodology

This study examines the communication strategy employed by extension workers in Bocek village through the application of a SWOT analysis. The sample comprises 30 farmers chosen via purposive sampling. Data collection primarily relies on questionnaires, supplemented by descriptive-qualitative data analysis. The study further investigates the involvement of extension workers in enhancing farmer groups and facilitating the rejuvenation of farmers in Bogor Regency, West Java (Wardani & Anwarudin, 2018). The selection of the study site was purposefully determined based on the sustained presence of agricultural extension services and a robust agribusiness framework. Data collection took place from January 11 to March 11, 2022, in Bocek Village, located within the Karangploso District of Malang Regency. Secondary data were acquired from pertinent institutions and literature sources. The perceptions of farmers regarding the efficacy of agricultural extension personnel were investigated in the villages of Sidomulyo and Muari, situated in the Oransbari District of South Manokwari. Pertinent literature informing this investigation includes "Socio Conceptia" by Krisnawati *et al*. (2013) and “Agricultural extension methods in improving farmers’ knowledge and skills: a case study in Maros Baru District, Maros Regency” (Imran *et al*., 2019).

This study employed three distinct data collection methodologies: interviews, questionnaires, and documentation review. The data analysis approach adopted was SWOT analysis, encompassing the identification of strengths, weaknesses, opportunities, and threats. Furthermore, the IFAS matrix was utilized to assess internal factors and establish internal strategic factors prior to constructing the matrix. The study scrutinized the performance of civil servant agricultural extension workers in fulfilling their primary duties and responsibilities within Bogor Regency. Additionally, it examined the impact of working conditions, work motivation, and work discipline on the performance of regional office employees within the Directorate General of State Assets in Riau, West Sumatra, and the Riau Islands (Hartanto *et al*., 2018) and (Suadnya *et al*., 2021).

External analysis is conducted to identify opportunities and capitalize on threats, notably through the utilization of the EFAS matrix (External Factor Analysis Summary) as outlined by Mulieng *et al*., (2018)

The procedure for constructing the EFAS matrix is delineated in the table presented below, focusing on the involvement of agricultural extension workers in bolstering food security amidst the Covid-19 pandemic. It underscores the significance of extension worker performance and the efficacy of extension program implementation within the context of maize intensification, as discussed by Nuryanti & Swastika, (2011), Basir *et al*., (2023), and Rahmawati *et al*. (2019).

3. Results and Discussion

The BPP Karangploso is an extension institution situated in Malang, established in 2014 with the aim of augmenting the production of food and plantation crops. Bocek Village serves as the focal point of this investigation and is situated within the Karangploso District of Malang Regency, encompassing a total area of 1,478,741 hectares. The village allocates specific land for various purposes including public amenities, residential areas, agricultural and plantation endeavors, industrial facilities, and commercial activities. The study delves into the efficacy of communication in the reception of information among beef cattle breeders' groups in the Remhoken District, Minahasa Regency. Agricultural extension workers are entrusted with the responsibility of educating and instigating behavioral changes among farmers to enhance production outcomes. Geographically, the Karangploso District is demarcated by the following boundaries: to the North lies Mount Arjuno Hutan Forest, to the East is the Singosari District, to the South is the Dau District, and to the West is Batu City. The district encompasses nine villages, forty-six hamlets, one hundred and five neighborhood units (RW), and four hundred and seventy-three household units (RT). A map detailing the Karangploso Sub-district is provided in the Appendix. Additionally, demographic and population data for the Karangploso District in 2021, categorized by gender, as well as the advancement of agricultural extension in supporting agricultural progress in Indonesia, are also analyzed (Vintarno *et al*., 2019).

The gender distribution of individuals can significantly impact the energy requirements within any given business, owing to inherent differences in energy output between men and women. For instance, in the Karangploso District, demographic statistics from 2021 reveal the following gender-based population data.

Table 1. Population Data by Gender

No	Village	Man	Woman	Total
1	Tegalgondo	3389	3536	6925
2	Ampeldento	2706	2553	5259
3	Kepuharjo	3457	3386	6843
4	Enam	6128	6029	12157
5	Ngijo	7955	7865	15820
6	Girimoyo	3337	3194	6531
7	Bocek	4570	4324	8894
8	Donowarih	4455	4338	8793
9	Tawangargo	5002	4770	9772
	TOTAL	40999	39995	80994

Source: Karangploso District Health Center, processed data (2021)

Table 2. Population Data by Education Level in Karangploso District

NO	VILLAGE	LEVEL OF EDUCATION			
		Primary	Junior High	Senior High	Higher education
1	Tegalgondo	1283	889	1165	617
2	Ampeldento	1349	913	827	851
3	Kepuharjo	1646	1369	19155	541
4	Enam	3385	1350	327	279
5	Ngijo	2854	2881	2871	1297
6	Girimoyo	769	292	390	53
7	Bocek	247	441	194	70
8	Donowarih	868	806	921	209
9	Tawangargo	3257	1675	1613	77
	Amount	**15659**	**10617**	**27463**	**3995**

Source: Karangploso District Health Center, processed data (2021)

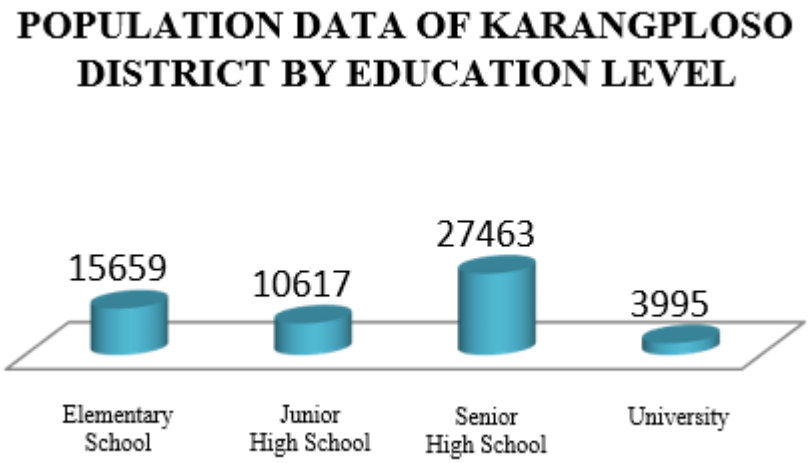

Figure 1. Population Data of Karangploso District by Education Level

Upon analysis of the provided data, it becomes evident that Ngijo Village stands out as a notable example with a significant population possessing a commendable level of education. This is particularly evident in its proficient adoption of agricultural technology innovations, which correlates positively with the household food security of its farmers. The prevalence of education, ranging from elementary to tertiary levels, underscores the village's proactive engagement with educational pursuits. Moreover, compared to other villages within the Karangoploso District, Ngijo Village exhibits the highest proportion of individuals educated at the tertiary level, further emphasizing its commitment to knowledge acquisition and application in agricultural practices for bolstering household food security.

3.1 Characteristic of Respondents

The respondents' age distribution is categorized into two groups: the non-productive age group and the productive age group. The total ages of the respondents are tabulated based on these age groups as outlined below:

Table 3. Characteristics of Respondents by Age

No.	Age	Number of people	Percentage (%)
1	20 – 30	4	3.96
2	31 – 40	12	11.88
3	41 – 50	11	10.89
4	51 – 70	3	2.97
	Total	30	100%

The study reveals that the majority of farmers in Bocek Village fall within the age bracket of 31-50, with the highest concentration observed among those aged 31 – 40.. Elderly farmers exhibit greater enthusiasm and engagement in extension activities, attributed to their heightened resolve stemming from the increased cost of living. The communication strategy aims to fortify institutional capacity in peatland management by enhancing human resources within the agricultural sector of South Kalimantan, a concept referred to as metacommunication (Firmansyah *et al*., 2017). This age demographic aligns with findings by Mappiare, who noted that individuals aged over 35 tend to exhibit heightened determination in their endeavors (Elizar & Tanjung, 2018) and (Astuti, 2015).

Characteristics of Respondents According to Education Level: The study examines the impact of instructor characteristics, working conditions, and motivation on the performance of agricultural instructors, as well as their influence on the behavior of rice farmers in Rembang Regency (Arifianto *et al*., 2018). Respondents' education levels were classified into three categories: low education, defined as not completing elementary school or completing elementary school; moderate education, indicated by completion of junior high school; and high education, represented by completion of high school to bachelor's degree. The distribution of respondents based on education level is as follows:

Table 4. Characteristics of respondents by education level

No.	Level of education	Number of people	Percentage (%)
1	Primary	12	40.0
2	Junior High	16	53.3
3	Senior High	2	6.6
	Total	30	100%

The predominant educational attainment among the respondents is 53.3% for junior high school, followed by 40.0% for elementary school, and 6.6% for high school graduates. Higher education plays a significant role in instilling modern agricultural practices and facilitates the expedited implementation of advice provided by extension workers. Education profoundly influences the cognitive frameworks of farmers, with higher levels of education correlating with enhanced decision-making abilities, particularly evident during counseling activities within Bocek village, Karangploso district.

3.2 Number of Conidia of *Trichoderma* sp.

During the COVID-19 pandemic, the extension workers of BPP Karangploso were compelled to adjust their communication methodology when interacting with farmers. An instance of this adaptation is observed in the project titled "Capacity Development of Madurese Female Farmers in the Implementation of Integrated Crop Management in Corn." They adopted a non-face-to-face communication approach, incorporating online meetings and collaboration with individual or group leaders. This method proved efficacious, facilitating farmers' expression of their concerns. Effective collaboration between extension workers and farmers is pivotal in extension activities, with communication playing a vital role in bolstering counseling endeavors (Mappa *et al*., 2023). As delineated in the research findings, the communication strategies employed by BPP Karangploso are predicated on key elements requisite for effective counseling, as follows:

3.2.1 Communicator

Central to the communication process is the communicator, tasked with conveying messages. Within every BPP Karangploso extension activity, the communicator primarily comprises the extension worker responsible for dispensing counseling to farmers. Information originates from individuals or institutions serving as information sources. Research outcomes in Bocek Village concerning agricultural extension communicators reveal insights into the implementation of Conservation Farming and its impact on farmers' income.

3.2.2 Field Agricultural Extension (PPL)

In Bocek village, agricultural extension activities primarily rely on communicators, particularly Field Agricultural Extension personnel (PPL). Throughout the pandemic, extension workers engaged directly with individual farmers or their representatives. This aspect is explored in studies such as the Barrier Factor Analysis of Fish Consumption Behavior in the Special Region of Yogyakarta and Central Java.

3.2.3 Farmer

Besides PPL, farmers receive information from fellow farmers during agricultural extension activities or formal meetings. Farmers participating in group activities also assume roles as communicators in extension activities. Their interactions often influence other farmers' adoption of new innovations, rendering all farmers potential sources of information in extension activities.

3.2.4 Message

Extension workers of BPP Karangploso craft messages tailored to meet farmers' needs, employing simple language to accommodate diverse educational backgrounds and ages. These messages are structured to effectively address farmers' requirements.

3.2.5 Channel/Media

Communication media serves as channels for disseminating necessary information and constitutes an integral component of ongoing communication. Research outcomes highlight communication channels, including interpersonal mediums such as face-to-face interactions, telephone communications, group meetings, and digital platforms like WhatsApp, Zoom, and email, especially during the pandemic.

3.2.6 Group Meeting

Agricultural extension activities are conducted through group meetings, serving as platforms for providing guidance to farmer members and fostering interaction between PPLs and farmers. These meetings, convened weekly, facilitate feedback exchange and activation of farmer group members.

3.2.7 Receiver/Communicant

The communicant, synonymous with the message recipient or audience, is a pivotal component of the communication process. The success or failure of communication hinges significantly on the communicant. Hence, understanding the target audience is imperative before initiating the communication process. In the context of agricultural extension, the communicants encompass the Farmers Group in Bocek Village, including both the group leader and its members.

3.3 Barriers to Extension Communication at BPP Karangploso

The communication barriers between extension workers at BPP and farmers in Bocek Village are multifaceted. Firstly, age plays a significant role in impeding effective communication. Elderly farmers necessitate greater attention, as they may require more time to comprehend information and pose queries. Agricultural extension workers are thus expected to respond promptly and with practical solutions. Failure to meet these expectations may cause discomfort among farmer members, as responses not aligned with their expectations may arise.

Secondly, experience influences communication barriers within the extension workers at BPP Karangploso. Long-standing farming practices ingrained in older farmers may hinder their receptivity to novel information or innovations presented by extension workers. However, farmers exhibit keen interest when extension workers tailor messages or materials to suit their specific needs.

Furthermore, in Bocek Village, extension activities are systematically organized, employing various tools such as pamphlets and teaching aids. Agricultural extension workers utilize motorized vehicles to traverse distances of up to 10 km to reach farmers' households and fields. Proximity to the instructor's residence is not prioritized, emphasizing the importance of adequate facilities and infrastructure for the success of extension activities.

The factors Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) were derived through averaging variable values obtained from questionnaire interviews. Internal factors contribute to strengths and weaknesses, while external factors present opportunities and threats. The Internal Factors Analysis Strategic (IFAS) matrix is then employed to determine these factors.

Calculation of the IFAS matrix involves assigning weights, ratings, and scores, ensuring that weight values do not exceed a total of 1.00. Ratings are assigned on a scale from 1 (below average/ineffective) to 4 (very good). The resulting IFAS matrix enables the identification of strengths and weaknesses, depicting the disparity in weighted scores between the two. The IFAS matrix serves as a strategic tool for improving communication among extension workers, as illustrated in the table below.

Table 5. IFAS Table

Strengths	Weight	Rating	Score
Extension's education level at least undergraduate	0.05	3.9	0.23
The training process is carried out oncea week	0.06	4	0.26
The extension workers explain and give examples to farmers	0.16	4.9	0.82
Extension workers provide ideas to farmers according to farmers' needs	0.15	4.8	0.73
Active role and cooperation of farmer groups	0.14	4.5	0.68
Weaknesses			
Farmers' low confidence in the existence ofextension workers	0.08	1.8	0.16
Utilization of extension media at BPP may notbe sufficient to review farmers' problems	0.15	2.7	0.41
extension workers' communication to farmers sometimes less understood by farmers	0.16	2.8	0.46
Total	1.00		3.75

In the subsequent section, agricultural extension workers elucidate and furnish exemplars to farmers for the computation of weights, ratings, and strength scores. Weight is derived from the aggregate responses of 30 respondents divided by the total tally of the IFAS questionnaire. Ratings are calculated by dividing the total number of responses from 30 respondents by the total number of respondents. The score is determined by the product of weight and rating. The instructor's weight is designated as 1.0, indicating an efficacious strategy. The weighted score, delineating strengths and weaknesses, is computed at 3.75. The EFAS matrix is employed to ascertain an ordinate point within the position matrix, situated between opportunities and threats. The outcomes of the EFAS computation are tabulated, with ratings for strengths and weaknesses exhibiting contradictory values.

The weight, rating, and opportunity score have been computed utilizing feedback gathered from 30 farmers. The findings indicate the efficacy of the extension's communication strategy in capitalizing on available opportunities. Mobile communication emerges as a viable channel for reaching farmers possessing rudimentary literacy skills. Adequate facilitation of farming processes, post-harvest management, and product assimilation into the market is deemed indicative of satisfactory performance by extension workers. The SWOT matrix presents itself as a valuable tool for assessing strategies aimed at bolstering communication efforts among extension workers.

Table 6. IFAS Table

Opportunities	Weight	Rating	Score
Farmer Motivation Level is effective because somefarmers are able to implement every idea conveyedby the extension worker	0.13	4	0.54
Maximum participation of extension workers withfarmers	0.15	4.6	0.68
Harmonious relationship between farmers and extension workers	0.14	4.5	0.64
Support coaching and supervision	0.15	4.9	0.75
Treaths			
The increasing availability of facilities and infrastructure in outreach activities	0.16	2.8	0.42
Environmental conditions can affect extension activities	0.13	2.5	0.31
Lack of access to information technology used byextension workers	0.14	2.7	0.39
Total	1.00		3.73

3.4 The communication strategy of extension workers at BPP Karangploso

3.4.1 Strategy for Stakeholder Outreach (SO Strategy)

A strategy aimed at enhancing communication between extension workers and farmers in Bocek Village, Karangploso District involves disseminating information, ideas, and innovations through the education and motivation of extension workers, fostering active farmer participation, intensifying and improving the functionality of extension activities through training and support, and enhancing the role of extension workers through active farmer participation and supervision.

3.4.2 Workforce Optimization (WO Strategy)

To optimize the workforce, it is imperative to develop a cadre of extension workers proficient in coaching, supervision, and integrating new farmers. Utilizing easily understandable language for farmers, providing extension media facilities, and augmenting media usage in extension activities based on active farmer participation are crucial components of this strategy.

3.4.3 Strengthening Technology (ST Strategy)

Efforts to enhance agricultural plans in Bocek Village entail improving extension communication by assessing strengths and threats. This involves upgrading facilities and infrastructure at both the Agricultural Extension Center (BPP) and among extension staff, ensuring adequate road access to BPP, furnishing office equipment such as computers and laptops, while considering the high motivation of extension workers juxtaposed with limited infrastructure. Moreover, this strategy advocates for engaging farmer groups through motivational visits, leveraging online-based information technology due to the relatively high level of education, and conducting effective trainings to modernize information technology acquisition.

3.4.4 Operational Enhancement (WO Strategy)

Strategies aimed at elevating the operational effectiveness of agricultural extension workers and communication in Bocek Village involve addressing identified weaknesses and threats. This includes involving farmers in the utilization of extension media to ensure they are abreast of evolving technologies and face no challenges in farming practices, scheduling the time and workload of extension workers with consideration to the substantial number of farmer members, and providing solutions to challenges encountered by farmers during extension activities, mindful of the availability of facilities and infrastructure.

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4. Conclusion

Based on the findings of my research regarding the communication strategy employed by extension workers during the Covid-19 period in Bocek Village, Karangploso District, Malang Regency, several conclusions have been drawn. The messages conveyed by the extension workers from BPP Karangploso during the pandemic were tailored to meet the specific needs of farmers. These messages were not only attuned to the farmers' requirements but were also communicated in a language that facilitated easy comprehension, thereby enabling farmers to readily understand and effectively respond to the information imparted. The significance of employing easily understandable language cannot be overstated, as it aligns with the diverse educational backgrounds and ages of the farmers. Additionally, the messaging was structured in a manner conducive to addressing the farmers' needs comprehensively. The determination of Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) factors was derived from the average values of each variable obtained through questionnaire interviews. Internal factors contributed to the identification of strengths and weaknesses, whereas external factors unveiled opportunities and threats. To delineate these factors, an Internal Factors Analysis Strategic (IFAS) matrix was formulated. Subsequently, the IFAS Matrix was utilized to plot an ordinate point on the position matrix, discerning the disparity in weighted scores between strengths and weaknesses. The synchronization of agricultural services with agricultural extension activities during the Covid-19 pandemic necessitates concerted efforts. This entails bolstering support in terms of facilities and infrastructure, such as smartphones, computers, and internet connectivity. Enhancing farmers' proficiency in information and communication technology is imperative and can be achieved through an in-depth analysis of their specific requirements based on geographical location. The insights gleaned from the analysis of the extension's communication strategy, as elucidated in this study, serve as a viable alternative for enhancing the performance of instructors at BPP Karangploso.

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