



# Competence of Agricultural Extension An Effort To Increase Agricultural Productivity In Sidoarjo

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## ABSTRACT

Sidoarjo Regency is one of the agricultural production areas, especially vegetables and is the largest supplier to Surabaya. The high productivity of agriculture cannot be separated from the role of agricultural extension workers who are spread in most sub-districts in Sidoarjo Regency. The purpose of this research is to measure the performance of agricultural extension workers in order to increase agricultural productivity, especially vegetables in Sidoarjo Regency. This research method uses descriptive, analytic and correlational approaches. A good extension policy strategy that can increase agricultural productivity is carried out by increasing programs related to institutions, quantity and quality of Agricultural Extension Officers and improving farmer group institutions. With this policy strategy, it can improve the quality of Agricultural Extension through education and training, as well as empowerment farmer groups by improving programs related to institutions, quantity and quality extension workers and institutional improvement of farmer groups. The results of the study show that the performance of Agricultural Extension Officers in the context of increasing agricultural productivity is in the very good category.

**Keywords:** Agricultural Extension, Performance, Empowerment, Agricultural Productivity,

## 1. INTRODUCTION

Sidoarjo Regency is one of the main buffer districts of Surabaya City and is included in the Gerbangkertosusila area. Sidoarjo Regency has a sector that is quite dominant in supporting its GRDP, namely the industrial sector, such as the home industry, large industry, and small industry. One of the important roles in increasing Gross Domestic Product is abundant agricultural production, especially in the field of vegetable and fruit products. Vegetable products are the main supplier on the city of Surabaya. According to the BPS 2021, there is an area of agricultural production in Sidoarjo of 17,541 hectares of which 63% is concentrated in vegetable cultivation such as spinach, water Spinach, mustard greens, chilies and others. Therefore, strengthening the agricultural sector through an improvement program production needs to be done as soon as possible so that the achievement of self-sufficiency can be realized immediately (Sari et al. 2020).

Regarding agricultural production in Sidoarjo Regency, one of them is related to the role of Agricultural Extension Officers. The term extension basically comes from the word "extension", which is widespread in many circles. In Indonesian, the term extension comes from the root word "Suluh", which means the giver of light in the midst of darkness. (Wicaksono, Sugiyanto, and



Purnomo 2016), (Yusneli and Tanjung 2021) being an Agricultural Extension Officer must have competence so that he is able to play a role in: education, information dissemination/innovation, facilitation, consultation, supervision, monitoring, and evaluation. This condition has not been achieved due to weak efforts to increase self-capacity, and a top-down policy pattern. The development of agricultural extension workers is still not committed to competence, but relies more on economic rationality. Capacity building should be carried out through identification and analysis of the current state of capacity, not based on the views of superiors. These conditions are analyzed by comparing the desired ideal capacity with the existing real capacity, so that the existing capacity discrepancies are found. In addition, according to (Muslihat et al. 2015), (Elka Roza 2019), that the higher the competence, the higher the level of competence in carrying out their duties.

The performance of the agricultural extension is largely determined by the characteristics, competence, motivation, and independence of the agricultural extension. Good management of the factors that affect performance can improve the performance of the Agricultural extension itself (Bahua et al. 2010). Agricultural Extension Activities in an effort to empower farmers, (Jafri et al. 2018) stated that the level of agricultural extension workers' performance that significantly affects the performance of agricultural extension workers are: social system characteristics (socio-cultural values, agribusiness facilitation of government institutions, farmers' access to agribusiness institutions), the competence of the instructor (communication competence, the instructor's competence to teach farmers, the extension's competence to socially interact).

Regarding efforts to create food availability, this study aims to increase the capacity/competence of Agricultural Extension Officers in an effort to increase agricultural productivity in Sidoarjo and measure the performance of Agricultural Extension Officers in expanding and increasing agricultural productivity as well as formulating appropriate extension policy strategies to increase agricultural productivity in Sidoarjo.

## **2. RESEARCH METHODS**

The implementation time of this research starts in May 2021 until September 2021. This study uses a descriptive, analytical and correlation method approach (Uusitalo 2014) and (LPU 2012). The research was carried out using a purposive method with the area taken, namely Sidoarjo Regency. Respondents in the form of vegetable farmers from 18 sub-districts with each sub-district taken 4 active farmers so that the total number of respondents is 72 people. Data collection techniques using: a. Interview, b. Questionnaire, c. Observation d. Literature Studies (Sunartomo 2016).



### 3. RESULTS AND DISCUSSION

The Performance Assessment of Agricultural Extension Officers in Sidoarjo Regency refers to the Decree of the Minister of Agriculture No. 671 of 2006 and Ministry of Agriculture 91-2013 Performance Evaluation of Agricultural Instructors which contains 9 indicators of the success of Field Agricultural Extension and Guidelines for Evaluation of Agricultural Extension Performance.

#### **Agricultural Extension Program according to Farmers' Needs**

The preparation of a work program that is in accordance with the needs of farmers is a non-negotiable necessity. The agricultural extension work program is truly on target, effective and efficient. Respondents' assessment of the programs needed by farmers can be seen in table 1 below.

**Table 1.** Results of Respondents' Assessment of the Indicators of the Compilation of Agricultural Extension Programs

Category	Score	N	Percentage (%)
Suitable	3	72	100
Not suitable	2	0	0
Not available	1	0	0
Total	216	72	100

Table 1 shows that out of 72 respondents, they assessed that the preparation of agricultural extension programs carried out by agricultural extension workers in Sidoarjo Regency was in accordance with the needs of farmers. Thus, as many as 72 respondents gave a score of 3 so that the total score was 216. This means that the (Supriani 2014) and (Bahua 2017) indicator of the Compilation of Agricultural Extension Programs in accordance with Farmers' Needs is in the very good category. Thus, it shows that the performance of the extension worker in the preparation of the extension program is very good. It is proven that based on observations, the farmers stated that they were satisfied with the programs that were developed and run by the extension workers (Geumala et al. 2018).

Extension programs that can be accepted and applied by farmer groups are horticultural cultivation technology packages such as vegetables with an approach to using organic fertilizers and reducing the financing of urea fertilizer use. Besides, the agricultural extension program is said to be successful and good by reducing the use of pesticide financing. The use of inorganic pesticides has an impact on the applicator and environmental pollution. With the development of the use of organic pesticides, it can reduce the financing of inorganic pesticides and increase vegetable production in Sidoarjo Regency by 20% to 30%.

#### **Compilation of Agricultural Extension Work Plans in Each Working Area**

The work plan is an important pillar for extension workers in carrying out their duties, making them more effective and efficient. The results of the respondents' assessment of the indicators for the preparation of the work plan are summarized in table 2.



**Table 2.** Results of Respondents' Assessment of the Indicators of Compilation of Agricultural Extension Work Plans

Category	Score	N	Percentage (%)
Compiled and in progress	3	67	93,06
Compiled and not implemented	2	5	6,94
Unordered	1	0	0
Total	211	72	100

From table 2, respondents' assessment of the indicators for the preparation of the Agricultural Extension Work plan shows that 93.06% gave a score of 3 because the work plans that have been prepared and are being implemented have seen evidence of their performance during the 2021 period. Most farmers gave a score of 3 (three. ) because in the preparation of the work plan also involves farmers and farmers are satisfied with the work plan that is arranged. A total of 5 respondents gave a score of 2 with a percentage of 6.94%, 1 this is due to the fact that several plans have not been implemented. The total score of all respondents is 211, this value is in the very good category, meaning that the performance of the instructor in preparing the work plan is very good. This is because apart from being made from scratch involving superiors and farmers, work plans are also useful in identifying problems faced by farmers. Efforts made by extension workers to overcome problems faced by farmers are always coordinated with community leaders and related agencies. The results of the interview showed that most farmers stated that it was the duty of the Agricultural Extension Officer to make notes on the work plan and program realization as an effort to evaluate material for the following year.

According to (Walangadi et al. 2021) (Hanafiah, Rasyid, and Purwoko 2013), the principle of agricultural extension is to work with the target (client) not work for the target. Extension targets are different community groups starting from what the target knows and has. In carrying out their work, extension workers must coordinate with community organizations and the government. Other extension principles, referring to the interests and needs of the community, low-level community organization, cultural diversity and change, community cooperation and participation, democracy in the application of knowledge, learning by doing, using appropriate methods, leadership development, trained specialization, caring for the family As a social unit and can realize community satisfaction, the extension worker tries to involve the participation of farmers in knowing their own area, so that during village deliberations, farmer representatives have an agreement to develop their own area. Table 3 shows that 91.67% of respondents gave a score of 3 (three), so the total score obtained was 210 (including the very good category range). This means that the task of the agricultural instructor in identifying the potential of the region is in the very good category. This is related to the efforts of agricultural extension workers to form a team for each farmer group that is involved in analyzing the potential of the village area and agro-ecosystem



to work together as material for the preparation of extension programs and explore the village's potential to seek commodity development opportunities.

The program's relationship with farmer satisfaction is seen from the high level of participation of farmer groups in using the applied technology package. The technology packages implemented by agricultural extension workers must be effective, easy to implement and efficient. This is the measure that farmers can and want to implement the technology packages introduced and applied to farmers. The measure of satisfaction also refers to the productivity of vegetables obtained so that they can increase farmers' income. From the interview results, production increased by 30% with an increase in income of 25%-35%.

**Table 3.** Respondents' Assessment Results on Indicators of Availability of Regional Map Data for Location-Specific Technology Development

Category	Score	N	Percentage (%)
Available	3	66	91,67
Available but not suitable	2	6	8,33
Not available	1	0	0
Total	210	72	100

#### **Dissemination of Agricultural Technology Information Equitable and According to Farmers' Needs**

Dissemination of agricultural technology information to farmers are indicators of the success rate of agricultural productivity in Sidoarjo Regency. Table 4 shows that 9.72% of farmers think that the technology package introduced and applied is still not in accordance with the needs of farmers. this happens because farmers do not master or do not understand the information provided by extension workers. Cultivation of plants by using new technology, production inputs such as the use of superior seeds and information regarding improvement of planting methods and the use of fertilizers/pesticides have been conveyed by extension workers, but not all farmers have adopted them.

**Table 4.** Results of Respondents' Assessment of the Indicators of Disseminating Agricultural Technology Information Equitable and in accordance with Farmers' Needs

Category	Score	N	Percentage (%)
Evenly And In Accordance With The Needs Of Farmers	3	65	90,28
Even and not according to the needs of farmers	2	7	9,72
Uneven Not According to Farmers' Needs	1	0	0
Total	209	72	100

However, 90.28% of respondents/farmers still agree that the dissemination of technology packages according to farmers' needs is really needed by farmers. The characteristics of these farmers are very adaptive to the development of information technology so that the farmers are very easy to find information in cyberspace, especially in increasing agricultural production.

Dissemination of Agricultural Technology Information that is Fair and According to Farmers' Needs is a must that must be prepared by agricultural extension workers. Dissemination



of technology which is usually an introduction from the Ministry of Agriculture must be adapted to the situation and conditions of the agro-ecosystem and be easily applied by fostered farmers. From the data above, it appears that Sidoarjo horticultural farmers are very adaptive to the dissemination of technology introduced and applied by local agricultural extension workers.

### **Empowerment and Independence of Farmers, Farmers Groups, Business Groups and Formal Enterprises**

The empowerment and independence of farmers are the benchmarks for the purpose of extension, but the results of observations and interviews show unsatisfactory results. The results of the respondents obtained 68.06% or as many as 49 farmers stated that they were independent and highly competitive, while 20 respondents (27.77%) stated that they were independent but not competitive and 3 respondents were still not independent and not competitive.

**Table 5.** Results of Respondents' Assessment of Indicators of Empowerment and Independence of Farmers, Farmers Groups, Business Groups and Formal Enterprises

Category	Score	N	Percentage (%)
Already Independent And Highly Competitive	3	49	68,06
Already Independent But Not Competitive	2	20	27,77
Not Independent And Not Competitive	1	3	4, 17
Total	190	72	100

This situation occurs because of an increase in the number of new farmer groups who still need to develop farming of agricultural products and also the occurrence of rural farming where many urban residents return to the village to become farmers due to the impact of the covid 19 pandemic. Other classic problems are becoming uncompetitive and not independent. because of limited capital so that farmers find it difficult to compete. In addition, farmers are more dependent on middlemen to obtain funds more quickly and at lower prices.

The role of farmers is needed in solving the problem of limited capital. Some farmers have tried and coordinated with relevant agencies to find a way out to overcome the problem of limited capital. Several extension workers have brought together Bank Jatim Sidoarjo with farmers throughout the Sidoarjo district.

Empowerment and Independence of Farmers, Farmers Groups, Business Groups and Formal Business Entities is a classic problem that is always faced by agricultural extension workers, many factors affect the slowness of empowerment and formal business entities such as the low skills of farmers, the existence of many aging farmers in Sidoarjo ( 60%) and capital problems.

In addition, several agricultural extension workers have succeeded in fostering Village-Owned Enterprises in collaboration with farmer groups in developing capital and production facilities. Although the percentage of this activity is still said to be small. There is a need for more intensive



guidance with the collaboration of various related agencies in developing the farming business of the farmers assisted by agricultural extension workers.

### **The Realization of Business Partnerships Between Farmers and Entrepreneurs That Are Mutually Beneficial**

The partnership between farmers and entrepreneurs is one of the alternatives to increase farmers' income. With a partnership, all agricultural products are absorbed by the market and farmers and entrepreneurs are not disadvantaged. From the results of the respondents' assessment, it is summarized in table 6.

**Table 6.** Results of Respondents' Assessment of Indicators for the Realization of Business Partnerships Between Farmers and Entrepreneurs

Category	Score	N	Percentage (%)
Have partners with entrepreneurs	3	0	0
Don't have partners with entrepreneurs yet	2	22	30,55
Do not have partners with entrepreneurs	1	50	69,45
Total	94	72	100

Table 6 above shows a score of 94 which is an unsatisfactory category. A total of 22 respondents said they did not have partners with entrepreneurs, and 50 respondents said they did not have partners with entrepreneurs. Most of the farmers considered that the efforts made by extension workers were less than optimal, this was proven that there were no farmers who had partners with entrepreneurs. This means that the performance of extension workers to realize business partnerships between farmers and entrepreneurs is still not good. There needs to be policy intervention from the local government of Sidoarjo in overcoming the problem of partnership between farmers and entrepreneurs.

### **Realization of Farmers' Access to Financial Institutions, Information on Agricultural Production Facilities and Marketing**

In the farming process from upstream to downstream, post-harvest and marketing sectors require funds. Therefore, farmers need access to government institutions, entrepreneurs and financial institutions. The results of the study show that the performance of agricultural extension workers in realizing farmers' access to financial institutions, information on agricultural production facilities and marketing is quite good with a total score of 134. This is based on the results of the respondents' assessments presented in table 7.

**Table 7.** Results of Respondents' Assessment of Indicators of Realizing Farmers' Access to Financial Institutions, Information on Agricultural Production Facilities and Marketing

Category	Score	N	Percentage (%)
Have access	3	12	16,67
Lack of access	2	38	52,77
Don't have access	1	22	30,56
Total	134	72	100



As many as 16.67% of farmers already have access to financial institutions, this is a capital for extension workers to encourage farmers who still lack access to financial institutions. The high percentage of lack of access and lack of access is due to the fact that farmers find it difficult to deal with the many administrative requirements of financial institutions. The main problem is that farmers must make plans and develop the profitability of the business. The role of the extension worker is very important in guiding and teaching how to make an agricultural farming business plan.

### **Increased Productivity of Leading Commodity Agribusiness in Each Work Area**

The development of superior commodity agribusiness is a priority for each Agricultural Extension Work area. The role of extension workers is challenged to explore, develop, and produce superior agricultural products in their working areas. The results of the respondent's assessment in table 8 show that the productivity of the leading commodity agribusiness has not increased significantly. The extension programs provided have been able to be implemented by some farmers, but due to limited knowledge and attitudes of farmers who are satisfied with the traditional way, the increase in the productivity of agribusiness for superior commodities is quite slow.

**Table 8.** Results of Respondents' Assessment of Indicators of Increasing Agribusiness Productivity

Category	Score	N	Percentage (%)
Increase rapidly	3	10	13,88
Slowly increasing	2	40	55,56
Not increasing/fixd	1	22	30,56
Total	132	72	100

Table 8 above shows that 55.56% of the development of superior products in the work area is slowly increasing. There is still a need for encouragement from extension workers in increasing the role of farmers in developing superior regional products. 13.88% of farmers have succeeded in binding their regional superior products, such as Wonoayu sub-district, which is the center for kale, spinach and mustard greens. Farmers' assessment of superior productivity is still 30.56% saying that there is no superior agribusiness product. This condition shows that the performance of extension workers in increasing the productivity of agribusiness of superior commodities is still classified as low good. Further efforts, especially in providing farmers with knowledge and skills, still need to be further improved (quality of human resources) so that extension programs run effectively and efficiently.

### **Increased Income and Welfare of Farmers in Each Working Area**

The performance of extension workers in increasing farmers' income and welfare has been good. This matter strengthened by the results of the assessment in Table 9 which shows a total score of 147 which means it is in the good category. Extension programs that have been given and





run have given satisfactory results, this is evident from the farmers' income which has increased, although not significantly.

**Table 9.** Results of Respondents' Assessment of Indicators of Increasing Farmers' Income and Welfare

Category	Score	N	Percentage (%)
Increase rapidly	3	18	25
Slowly increasing	2	39	54,17
Not increasing/fixed	1	15	20,83
Total	147	72	100

#### Overall Assessment Results of Nine Agricultural Extension Performance Indicators

The summary of the results of the overall assessment of the performance indicators of agricultural extension workers in Sidoarjo Regency is as follows:

1. The indicator of the success of agricultural extension is the need of professional farmers in agricultural extension which can be realized if it is supported by the presence of competent extension workers.
2. The total score for all indicators is 1543, where this score is in the very good category. This means that the performance of the Agricultural Extension Officers in Sidoarjo Regency is very good
3. With comprehensive guidance by agricultural extension workers to farmer groups, it can increase agricultural productivity a maximum of 30% and the marketing of agricultural products such as vegetables has been accommodated by collectors to be marketed mostly to Surabaya markets.

#### 4. CONCLUSION

From the results of the study, the performance of agricultural extension workers has a very good category, the right extension policy strategy is to improve programs in terms of institutions, quantity and quality of extension workers, and improve farmer institutions. The ultimate goal of extension is to improve the quality of extension workers through training, education, and empowerment of farmer groups.

Recommendations from this research are: a. increase the capacity and competence of Agricultural Instructors with no tillage, technical guidance and communication techniques for extension workers. Improvement of the budget system, c. training on making accountability reports on the performance of Agricultural Instructors every working year.

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