EFFECTIVENESS MODEL OF AGRICULTURAL EXTENSION FOR SWEET CORN (*Zea Mays Saccharata Sturt*) FARMING IN SUBAK KUMPUL, BONA VILLAGE, BLAHBATUH DISTRICT, GIANYAR REGENCY

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ABSTRACT

Corn is a crucial agricultural commodity in Indonesia, playing a strategic role in the national economy. Increased and high-quality corn production can meet food and animal feed needs, as well as increase farmers' incomes. However, many corn farmers still face various challenges, such as low productivity, a lack of knowledge about production inputs and cultivation technology, and limited access to market information and supporting services such as extension services.

Agricultural extension is one way to improve farmers' skills and knowledge in managing agricultural businesses. However, the effectiveness of agricultural extension services still needs to be improved to achieve agricultural development goals.

This study aims to (1) analyze the effectiveness of the availability of sweet corn agricultural production facilities in Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency, (2) Analyze the effectiveness of the sweet corn farming subsystem in Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency, (3) Develop an effective extension model for sweet corn commodities in Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency. The population in this study was 42 people with a sample of 20 farmers. The data were analyzed descriptively, qualitatively and quantitatively.

The results of the study indicate that (1) the availability of agricultural production facilities such as corn seeds, fertilizers, pesticides, cultivators, and hand sprayers is generally considered ineffective in the Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency; (2) Corn farming subsystems such as land clearing, plowing, liming, furrowing, organic fertilizer application, planting, and maintenance are considered ineffective in the Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency; (3) An effective extension model is implemented through improving the provision of production facilities and farming by implementing direct extension methods in the form of field schools for the provision of production facilities, resulting in high productivity, quality, and income, and the ability to compete with other commodities.

Suggestions that can be made are: (1) fertilizers and pesticides should be prepared in advance when carrying out corn farming, (2) soil cultivation should be carried out before planting.

Keywords: Model, Extension Effectiveness,

1. INTRODUCTION

Indonesia has a large population. Most of its population requires food, vegetables, and other business needs, such as poultry farming. Corn is a leading commodity from the government. Corn is also highly sought after by the wider community. This commodity can also be planted as an intercrop after rice to maintain soil fertility. Areas with potential for corn cultivation are those with limited water availability. The high demand for animal feed and the agro-industry encourage stakeholders and farmers to achieve good productivity results based on agribusiness principles. Farming at the farmer level still faces many obstacles, ranging from the provision of agricultural production facilities and farming practices. The availability of production facilities such as seeds, fertilizers, pesticides, hand tractors, hand sprayers, and corn power threshers requires early preparation. The technology, from land preparation and tillage, planting, maintenance, and harvesting, requires skilled mastery by farmers to achieve maximum yields.

Research purposes

1. To analyze the effectiveness of the availability of sweet corn agricultural production facilities in the Subak Kumpul of Bona Village, Blahbatuh District, Gianyar Regency.
2. To analyze the effectiveness of the sweet corn farming sub-system in the Subak Kumpul of Bona Village, Blahbatuh District, Gianyar Regency.
3. To develop an effective extension model for sweet corn in the Subak Kumpul (collective sub-system) of Bona Village, Blahbatuh District, Gianyar Regency.

2. **RESEARCH METHODOLOGY**

The location of the research was conducted in Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency, Bali Province. The location was selected purposively considering that Subak Kumpul has the potential for developing corn horticulture and is the only one that consistently plants corn every year. The population in this study was 42 farmers. The sample taken by purposive sampling was 20 corn farmers from May to August 2025. The data sources used were primary and secondary data. Furthermore, the data were analyzed qualitatively and quantitatively, as well as descriptively. All indicators of the research variables were measured using an ordinal scale with a value range of 1 to 5 (very effective, effective, less effective, ineffective and very ineffective) using the interval class formula.

3. LITERATUR REVIEW

The effectiveness of agricultural extension refers to how well the extension can bring about positive changes in farmers, especially in improving knowledge, attitudes, skills, and agricultural yields that lead to increased income and welfare of farmers. The effectiveness of extension is often measured through several indicators such as the ability of the extension worker, the suitability of the media and extension

materials, good planning, and changes in farmer behavior from compensatory methods to more modern techniques (Eriantina, 2018). Effective extension workers can solve farmer problems, carry out good planning, and adapt programs to farmer conditions so that there are significant behavioral changes in knowledge, attitudes, and skills as well as environmental conditions such as climate change (Hatmojo, 2020). Effectiveness is also related to the role of extension workers as educators, motivators, and facilitators who can foster farmer groups to be more independent by changing the mindset of farmers positively. Key indicators of effectiveness include the ability of extension workers, the suitability of media, materials, time and place of extension, and the suitability of the extension objectives to be achieved. Thus, the effectiveness of agricultural extension is very important because it can directly support increased productivity and farmer welfare through the right approach and effective communication between extension workers and farmers (Resicha, 2016).

4. RESULTS AND DISCUSSION

The effectiveness of the availability of production facilities consists of indicators of the availability of corn seeds, urea fertilizer, NPK fertilizer, pesticides, cultivators, and hand sprayers. The corn seed availability indicator received a score of 3.70 (74.00%) with an effective category. The availability of corn seeds during farming is always available and easy to find. Urea fertilizer is included in the effective category with a score of 3.60 (72.00%). When carrying out corn farming, farmers always have easy access to urea fertilizer. The availability of agricultural production facilities when needed and available in the field will strengthen the institution of farmer groups (Adnyana, 2021). The availability of NPK compound fertilizer received a score of 2.65 (53.00%) which is classified as less effective. The pesticide availability indicator is classified as effective with a score of 3.50 (70.00%). Meanwhile, the availability indicators for cultivators and hand sprayers are classified as less effective in the field with values of 2.60 (52.00%) and 2.65 (53.00%) respectively. The average availability indicator for corn agricultural production facilities is classified as less effective with a score of 3.11 (62.33%). The results of the availability of corn agricultural production facilities are presented in Table 1.

Table 1. Achievement of Results of Availability of Sweet Corn Agricultural Production Facilities (Zea Mays Saccharata Sturt)

No.	Availability of Agricultural Resources	Amount score	Score achievement		Category
			(Number)	(%)	
1	Corn seeds	74	3.70	74.00	effective
2	fertilizer urea	72	3.60	72.00	effective
3	NPK	53	2.65	53.00	less effective
4	Pesticida	70	3.50	70.00	effective
5	Cultivator	52	2.60	52.00	less effective
6	Hansprayer	53	2.65	53.00	less effective
	Everage	62,33	3,11	62,33	less effective

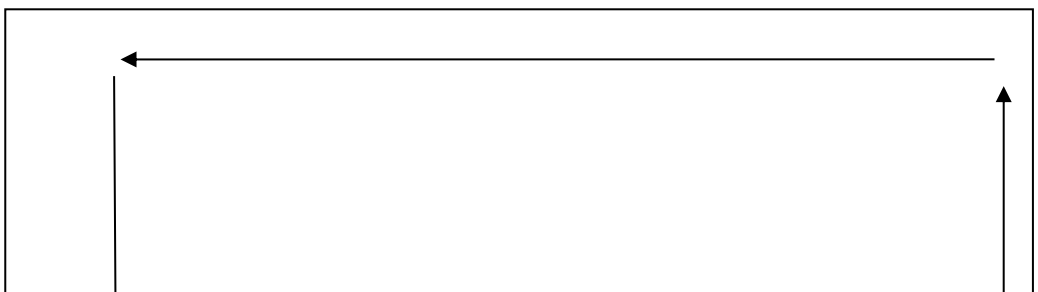
The effectiveness of sweet corn farming, based on the land clearing indicator, was classified as ineffective, with a score of 2.65 (53.00%). Plowing received a score of 2.10 (42.00%), making it ineffective. Farmers tend not to plow when cultivating corn. The indicators of lime application, organic fertilizer application before tillage, weeding twice, and fertilization three times at 2.5 and 8 weeks after planting were classified as very ineffective, with scores of 1.75 (35.00%), 1.75 (35.00%), 1.75 (35.00%), and 1.60 (32.00%), respectively. Organic fertilizer application is essential for farming because it can act as a soil ameliorant, improving the quality of the soil

used for agricultural purposes (Bot & Benites, 2005; Tonfack et al., 2009; Ameeta & Ronak, 2017). The application of organic fertilizer is perceived to increase vegetative and generative plant growth (Adnyana, 2022). The creation of furrows to regulate irrigation water flow received a score of 2.70 (54.00%), which is considered ineffective. Indicators considered effective include planting corn to a depth of 3 cm, planting 2-3 seeds per hole, and applying urea fertilizer at 150 kg/ha and NPK fertilizer at 200 kg/ha, with scores of 3.85 (77.00%), 3.85 (77.00%), and 4.15 (83.00%), respectively. The average sweet corn farming yield achieved a score of 2.64 (52.82%), which is categorized as ineffective. The results of sweet corn farming are presented in Table 2.

Table 2. Results of Sweet Corn Farming (Zea mays saccharata Sturt)

No.	farming	Amour scor	Number	Score achievement %	Category
1	Land Clering	53	2.65	53.00	Less effective
2	Piracy	42	2.10	42.00	ineffective
3	Giving lime	35	1.75	35.00	very inefective
4	array creation	54	2.70	54.00	Less effective
5	giving organic	35	1.75	35.00	Very inefective
6	planting 3 cm deep	77	3.85	77.00	Effective
7	Plant 2-3 seeds per hole	77	3.85	77.00	Effective
8	Weeding 2 times	35	1.75	35.00	very inefective
9	Pembubunan	58	2.90	58.00	ineffective
10	fertilization 3 times age 2,5,8 MST	32	1.60	32.00	Very ineffective
11	Dosis Urea 150 kg, NPK 200	83	4.15	83.00	Effective
	Rata-rata	52.81	2.64	52.82	Less effective

Sweet corn farming has good prospects for development based on the land potential in Bona Village. Corn farming has never encountered problems, starting with the provision of production facilities and corn cultivation. Problems in the provision of production facilities include the availability of ineffective NPK fertilizer, the availability of cultivators, and ineffective hand sprayers for farmers. In terms of cultivation or farming, there are also ineffective aspects, such as soil cultivation. Meanwhile, very ineffective methods include the application of agricultural dolomite lime, organic fertilizer, weeding twice, and inappropriate timing and dosage of fertilizer. To address these problems, an agribusiness system extension method is needed, which can be carried out by agricultural extension workers, both government-owned agricultural extension workers and independent extension workers or academics. Effective extension methods can be through direct extension methods in the form of field schools providing corn production facilities, starting with the initial preparation procedures before starting farming, as well as agricultural field schools that teach farmer groups on how to implement corn technology, from proper soil preparation, maintenance, harvesting, and post-harvest management. The output of this direct extension method will result in increased productivity, improved corn quality, increased farmer income, and increased competitiveness with other commodities. Therefore, this model can serve as a reference for developing sweet corn farming and strengthening farmer group institutions (Adnyana et al. 2020). The effectiveness model for corn extension is presented in Figure 1.



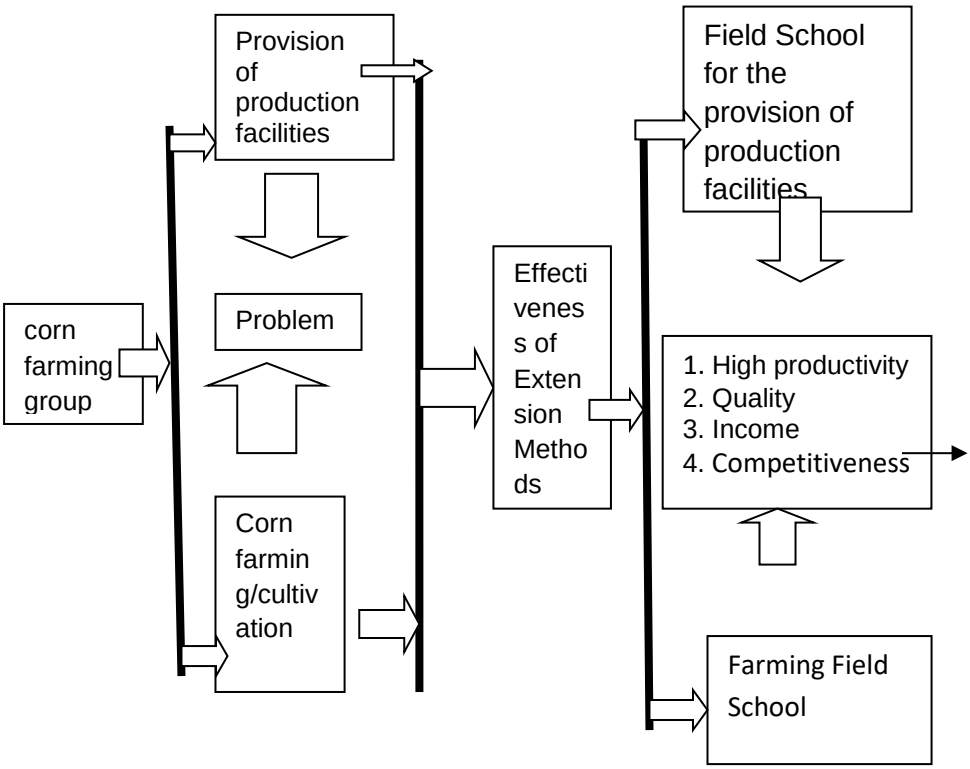


Figure 1. Model of Effectiveness of Corn Agricultural Extension

5. CONCLUSION

Conclusion based on the research results, it can be concluded as follows.

(1) the availability of agricultural production facilities such as corn seeds, fertilizers, pesticides, cultivators, and hand sprayers is generally considered ineffective in the Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency; (2) Corn farming subsystems such as land clearing, plowing, liming, furrowing, organic fertilizer application, planting, and maintenance are considered ineffective in the Subak Kumpul, Bona Village, Blahbatuh District, Gianyar Regency; (3) An effective extension model is implemented through improving the provision of production facilities and farming by implementing direct extension methods in the form of field schools for the provision of production facilities, resulting in high productivity, quality, and income, and the ability to compete with other commodities.

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