

Corn Business Development Opportunities Through an Agribusiness Approach

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ABSTRACT

The purpose of this study is to (1) examine the application of the corn farming agribusiness system, (2) examine the production and income generated by corn farming, (3) examine the feasibility of corn farming, and (4) examine the prospects for corn farming development. Tanah Towa Village is located in Kajang District, Bulukumba Regency, South Sulawesi. Simple random sampling was used to select up to 59 respondents. The descriptive statistical analysis, farm income analysis, farming feasibility analysis, and time series analysis were all used to analyze the data. The results indicated that (1) the application of the agribusiness farming system with the production facilities subsystem met the correct criteria in 68% of cases and was incorrect in 32% of cases. (2) the average farm production of corn in Tanah Towa Village, Kajang District, Bulukumba Regency in the form of dry shells is still low at 2,204.4 kg/ha, compared to the subdistrict level of 3,733 kg/ha, with farmer income of Rp. 5,942,319/ha. (3) The feasibility of corn farming has increased ($R/C = 3$), indicating that it is feasible to develop; (4) The prospect of developing corn production in Kajang District has increased, indicating that it has favorable development prospects significantly, to the point where it now has favorable development prospects.

ABSTRAK

Penelitian ini bertujuan untuk (1) Menganalisis penerapan sistem agribisnis usahatani jagung, (2) Menganalisis produksi dan pendapatan usahatani jagung, (3) Menganalisis tingkat kelayakan usahatani jagung dan (4) Menganalisis prospek pengembangan usahatani jagung. Lokasi penelitian dilakukan di Desa Tanah Towa, Kecamatan Kajang, Kabupaten Bulukumba, Sulawesi Selatan. Metode pengambilan sampel dilakukan secara acara sederhana (simple random sampling) sebanyak 59 responden. Analisis data yang digunakan adalah analisis statistik deskriptif, analisis pendapatan usahatani, analisis kelayakan usahatani dan analisis time series. Hasil penelitian menunjukkan bahwa (1) Penerapan sistem agribisnis usahatani dengan subsistem sarana produksi berada pada kriteria tepat dengan persentase 68 % dan tidak tepat 32% Untuk subsistem proses produksi berada pada kriteria Sangat Baik dengan persentase 38 %, (2) Rata-rata produksi usahatani jagung di Desa Tanah Towa, Kecamatan Kajang, Kabupaten Bulukumba dalam bentuk pipilan kering masih rendah 2.204,4 Kg/ha dibandingkan produksi ditingkat kecamatan 3.733 kg/ha, dengan pendapatan petani sebesar Rp. 5.942.319/ha, (3) Tingkat kelayakan usahatani jagung ($R/C = 3$), sehingga layak dikembangkan, (4) Prospek pengembangan produksi jagung di Kecamatan Kajang mengalami peningkatan sehingga mempunyai prospek yang baik untuk dikembangkan.

INTRODUCTION

Corn is one of the agribusiness commodities that have the potential to be developed in Indonesia. It is used not only as a food source but also as a raw material in the animal feed industry. Even in developed countries, corn is used as ethanol as a substitute for oil raw

materials for industry. South Sulawesi has even become one of the targets for maize development in Indonesia, as one of the potential areas for hybrid maize outside of Java and Sumatra. At the end of 2014, the potential land area for hybrid corn development in South Sulawesi was 450,000 hectares, with a total production of 650,832 tons (BPS South Sulawesi, 2015). Implementing an agribusiness system is one of the steps that can be taken to increase corn farming production.

Agribusiness is a profit-oriented farming or agricultural business that is commercially oriented. One effort that can be made to increase farm income is to develop an integrated agribusiness system in which agribusiness, which consists of a production facilities subsystem, farming subsystem, processing, and marketing subsystem, and supporting institutions subsystem, is developed in an integrated and harmonious manner (Saragaih, 2001). Agribusiness application is a unit or collection of subsystems that work together to achieve common goals and objectives. As a result, agribusiness must be used to advance corn farming to achieve the best results.

One of the factors that can increase farmers' income is the development of corn agribusiness and production facilities. According to Said et al. (2001), to achieve the efficiency of inputs for production facilities, there must be an organization in the application of this subsystem, namely the application of quantity, time, place, appropriate cost, and quality so that the use of production inputs is optimized. One application of the production facilities subsystem with category 6 Right includes: on time, in the right quantity, in the right type, in the right quality, in the right product, and the right price (Vadyanita et al., 2016).

The degree to which the production process subsystem is used, as determined by (Vadyanita et al., 2016) The location of the corn farm, the technology used, and the continuity of the production process are the three criteria. The main post-harvest handling of corn after harvest, according to Muhdiar (2016), is the process of shelling, drying, and storage.

The delivery of commodities from producers to consumers involves marketing agencies in sales activities such as marketing channels, transportation such as transportation provision, and storage such as the time of sale (Vadyanita et al., 2016). The subsystem of Support The provision of services is referred to as performance. Subsystems are related to supporting institutions and play an important role in the overall development of the agribusiness system. Counseling, information, education and training, and credit are all included. According to the plan, supporting institutions should be able to guarantee the creation of agribusiness integration to achieve the goals of agribusiness development (Said and Intan, 2004).

Based on the phenomena described in the background, it is necessary to research the prospects of developing corn farming using an agribusiness approach, with the following goals in mind: (1) analyze the application of the corn farming agribusiness system, (2) analyze corn farming production and revenue, and (3) analyze farm income. corn, (4) determining the level of feasibility of corn farming, and (5) determining the prospects for developing corn farming production.

RESEARCH METHOD

The study took place in Tanah Towa Village, Kajang District, Bulukumba Regency. The location was chosen with the knowledge that the majority of the corn development area was in Kajang District, which became the primary source of income for the majority of the population. The sampling method used in this study was a simple random method, and the number of

respondents was determined using the Slovin formula, which was 59. Descriptive analysis, income analysis, and time series analysis are all used in the analysis.

RESULTS AND DISCUSSION

According to data collected through direct observations and interviews with respondent farmers, the agribusiness system is applied to corn farming in Tanah Towa Village, Kajang District, Bulukumba Regency. This includes the production facilities subsystem, the production process subsystem, the post-harvest subsystem, the marketing subsystem, and subsystem supporting facilities.

Subsystem Production Facility

Facilities are critical in plant cultivation because they are directly related to plant growth in the field, which is quantified in four ways: at the right time, in the right quantity, in the right type, and at the right price. The production facilities subsystem is evident in the use of seeds, fertilizers, pesticides, and labor.

Table 1 The percentage of households that utilize the maize farming production facilities subsystem in Tanah Towa Village, Kajang District, Bulukumba Regency.

No	Criteria	Percentage of use of rights Subsystem (%)	Means of Production correctless (%)
1	Use of Seeds	46	54
2	Use of Fertilizer	84	16
3	Use of pesticides	60	40
4	Use of Labor	82	18
	Sum	272	128
	Average (%)	68	32

According to Table 1, the percentage of seeds used appropriately in corn farming is 46 percent (based on the criteria of time, quantity, type, and price), whereas the percentage of seeds used inappropriately is 54 percent (based on the criteria of time, quantity, type, and price). 84 percent of crops are irrigated appropriately, while 16 percent are irrigated inappropriately. Pesticides are used by 60% of those in the appropriate category, but only 40% of those in the incorrect category. Labor is used in 82 percent of the appropriate categories, but only 18 percent of the incorrect categories. The percentage of respondents who use production facilities at the farmer level, which includes seeds, fertilizers, pesticides, and labor, is 68 percent for the appropriate category, and 32 percent for the inappropriate category. This demonstrates that the production facilities subsystem's implementation is deemed to be acceptable.

Subsystem of Production Process

The application of the production process subsystem entails the location of corn farming, the use of technology, and the process's continuity. The production process subsystem's application is evaluated using five criteria: very good, good, moderate, not good, and not good.

Table 2 Percentage of Application of Maize Production Process Subsystem in Tanah Towa Village, Kajang District, Bulukumba Regency

Criteria	Percentage Useful Subsystem Means of Production				
	Very Good(%)	Good (%)	Netral (%)	Less good (%)	Bad (%)
1 Farm Location	100	0	0	0	0
2 Application of Technology	7	53	40	0	0
3 Continuity	7	51	42	0	0
Sum	114	104	82	0	0
Average (%)	38	34	28	0	0

As shown in Table 2, the application of the production process subsystem at the respondent farmer level for farming locations is 100% in very good criteria, indicating that the locations of corn farming managed by respondent farmers are not dispersed. The application of technology is quantified using five indicators: seed selection, spacing, fertilization, pest eradication, and timing of production sales. The highest percentage (53 percent) falls under the good criteria, indicating that respondent farmers primarily use four technology indicators. The continuity of the production process is determined by four indicators: seed availability, fertilizer availability, labor availability, and drug availability. The highest percentage of respondents meets the good criteria (51%), indicating that respondent farmers primarily use three indicators of the production process's sustainability.

The application of the production process at the respondent farmer level, which includes the location of corn farming, the use of technology, and the continuity of the production process for the very good (38 percent), good (34 percent), and moderate criteria (28 percent). This demonstrates that the application of the manufacturing process is deemed acceptable.

Post-Harvest Subsystem

Post-Harvest Subsystem consists of sorting, shelling, drying, and storing if the farmer performs the four post-harvest subsystems; if the farmer does not perform sorting, shelling, drying, and storing, it is included in the Good and Poor categories.

Table 3 Post-Harvest Corn Farming Applied in Rural Land Towa, District Kajang, Bulukumba

No	Criteria	Number of Respondents and Criterion Value				Total Value
		Good (Respondents)	Value	Less Good (Respondents)	Value	
1	Sorting	59	118	0 (0)	0 (0)	118
2	Medeling	59	118	0 (0)	0 (0)	118
3	Dry	59	118	0 (0)	0 (0)	118
4	Storage	59	118	0 (0)	0 (0)	118
	Sum		472		0	472
	Average (%)		100		0	100

According to Table 3, the use of post-harvest subsystems in corn farming for sorting, shelling, drying, and storage activities all meets acceptable criteria (100 percent). This demonstrates that all respondent farmers engage in sorting, shelling, drying, and storage activities as part of their post-harvest subsystem implementation.

Marketing Process

Implementation The marketing subsystem is responsible for sales, transportation, and storage. The marketing subsystem's application is evaluated using five criteria: very good, good, moderate, not good, and not good.

Table 4 Corn Farming Marketing Subsystem as a Percentage in Tanah Towa Village, Kajang District, Bulukumba Regency

No	Criteria	Percentage of Use of Marketing Subsystems				
		Very Good (%)	Good (%)	Netral (%)	Less Good (%)	Bad (%)
1	Pola Penjualan	100	0	0	0	0
2	Pengangkutan	10	20	70	0	0
3	Penyimpanan	27	16	57	0	0
	Jumlah	137	36	127	0	0
	Rata-rata (%)	45	12	43	0	0

Table 4 demonstrates that when the marketing subsystem of corn production is applied to the sales pattern, all respondent farmers in Tanah Towa Village meet the criteria of Very Good (100 percent). This is because farmers' products are marketed by a single marketing agency, namely wholesalers at the district level. Transportation of production results at the respondent farmer level is generally within the moderate range (70 percent), indicating that production results are transported by renting a vehicle in conjunction with other farmers (maximum 2 people). Harvest storage at the farmer level is typically moderate (57 percent), as farmers typically store their harvests and sell them as needed. Implementation of the marketing subsystem at the respondent's farmer level, including marketing, transportation, and storage patterns for very good (45%), good (12%), and moderate products (43 percent). This demonstrates that the marketing process's application is deemed sufficient.

Supporting Facilities of Subsystem

Includes extension worker mentoring, farm credit, and market information. If the farmer is accompanied by an extension worker, utilizes farm credit, and obtains market information, the farmer meets the criteria for Good. If, on the other hand, the farmer is not accompanied by an extension worker, does not use farming credit, and does not obtain market information, the farmer meets the criteria for Unfavorable.

Table 5 Corn Farming in Rural Land Towa, District Kajang, Bulukumba Using Subsystem Support Facilities

No	Criteria	Number of Respondents and Criterion Value				Total Value
		Good (Respondent)	Value	Less Good (Respondent)	Value	
1	Extension Assistance	29	58	30	30	85
2	Farm Business Credit	3	6	56	56	62
3	Market Information	50	100	9	9	109
	Sum		164		95	256
	Percentage (%)		63		37	100

According to Table 5, the subsystem of supporting facilities for corn farming has been implemented. The most favorable criterion is obtaining market information for up to 50 farmers; the most unfavorable criterion is failing to use farm credit for up to 56 farmers. The

percentage of supporting facilities with good criteria is 63%, while 37% have less-than-good criteria.

Production and Revenue

Corn Farming Farming Production is the result of the application of various inputs. The higher the yield, the more money the farmer earns. Revenue from farming is calculated as the product of production and selling price.

Table 6 Production and Revenue of Corn Farming in Tanah Towa Village, Kajang District, Bulukumba Regency

No	Desc.	Average per 0,5 Ha	Per Ha
1	Production (Kg)	1.102,20	2.204,4
2	Price (Rp)	4000,00	4000,00
3	Income (Rp)	4.408.813	8.817.626

Based on Table 6, it shows that the average corn farming production is 1,102.20 Kg at a price of Rp. 4000/Kg, the average total revenue is Rp. 4,408,813. The average per hectare of corn production is 2,204.4 kg with an average revenue per hectare of Rp 8,817,626.

Cost Production

Consist of both fixed and variable costs. The following table illustrates the production costs incurred by farmers.

Table 7 Average Cost of Corn Farming Per hectare in Tanah Towa Village, Kajang District, Bulukumba Regency

Type of Cost	Total	Price	Value
A. Variable Cost			
1. Seed	21,21	11.779,66	317.966,10
2. Fertilizer			
- Urea (Kg)	175	90.000	303.797,00
- ZA (Kg)	170	100.000	349.473,68
- SPK 36	88	100.000	171.206,90
3. Pesticides			
- Gramaxone (btl)	3,12	80.000	237.966,00
- Supremo (btl)	2,67	85.000	116.338,98
- DMA (btl)	2,67	68.000	11.525,42
- Rambo (btl)	3,6	75.000	72.372,88
4. Wages of Labor			
- Plant			167.796,61
- Harvest			337.894,73
B. Fixed Costs			
1. Depreciation/season			15.118,64
1. Tax/season			28.597,46
C. Total Variable Cost			2.831.590,7
D. Total Fixed Cost			43.716,11,00
E. Total Cost			2.875.306,81

Based on Table 7, it shows that the Total Cost of Corn Farming per Ha is Rp. 2,831,590.7 which consists of the cost of seeds, urea fertilizer, ZA fertilizer, SPK 36 fertilizer, gramaxone pesticide, supremo, DMA, and signs and wages for planting and harvesting labor. The total

fixed costs of Rp. 43,716.11 which consists of depreciation expense and taxes. So the total cost (BV+BT) is Rp. 2,875,306.81.

Income

Income is the result of revenue minus the total cost used by corn farming. The following average corn farming income can be seen in the following table.

Table 8 Results of Income Analysis of Corn Farming Per hectare in Tanah Towa Village, Kajang District, Bulukumba Regency

No.	Desc.	Value (Rp)
1.	acceptance	8.817.626,00
2.	Total Cost	2.875.306,81
3	Income	5.942.319,19

Based on Table 8, it shows that the average income of farmers per hectare is RP. 5,942,319,19. Revenue is obtained from the average revenue minus the average total cost.

Feasibility

Feasibility of farming is the result of revenue divided by total production costs. The following is an analysis of the feasibility of corn farming managed by respondents in Tanah Towa Village, Kajang District, Bulukumba Regency.

Table 9 Results of Feasibility Analysis of Corn Farming in Tanah Towa Village, Kajang District, Bulukumba Regency

No.	Description	Value (Rp)
1.	Acceptance	8.817.626,00
2.	Total Cost	2.875.306,81
5.	R/C ratio	3,0

Based on Table 9, it shows that the R/C ratio of the respondents' corn farming is 3.0 so that it is feasible to be developed. This means that each expenditure of Rp. 1 then the amount of revenue received is Rp. 3.0.

Prospects for Development

Prospects are a comparison of current data to previous period production data. Because an event develops predictably, it is possible to forecast future events based on the pattern of development.

Table 10 Development of Corn Commodity Production in Kajang District, Bulukumba Regency, 2014 - 2018

No	Years	Production (Y)	X	x.y	x ²
1.	2014	30.123	-2	-60.246	4
2.	2015	30.266	-1	-30.266	1
3.	2016	31.896	0	0	0
4.	2017	31.986	1	31.986	1
5.	2018	33.832	2	67.664	4
	Total	158.103	0	9.138	10

Based on the Table above, it can be seen that the results of the projected development of corn production in Kajang District, Bulukumba Regency for the next five years show an increase in corn production every year until 2023.

Table 11 Results of Projected Development of Corn Commodity Production Five Years

No	Years	Production (Ton)
1.	2019	34.359
2.	2020	35.275
3.	2021	36.189
4.	2022	37.102
5.	2023	38.016

CONCLUSIONS

The following conclusions can be drawn from the findings of the research: 1. The application of the corn farming agribusiness system in Tanah Towa Village, Kajang District, Bulukumba Regency meets the correct criteria with a percentage of 68 percent and the incorrect criteria with a percentage of 32 percent. For the processing subsystem, production meets the criteria for Very Good (38%), Good (34%), and Moderate (34%). (28 percent). For the post-harvest subsystem, all criteria are met (100 percent). For the marketing subsystem, the criteria are very good (45%), good (12%), and moderate (12%). (43 percent). The criteria for the supporting facilities subsystem are Good with a percentage of 63 percent and Not good with a percentage of 37 percent; (2) Average corn farming production in the form of dry shells by respondent farmers in Tanah Towa Village, Kajang District, Bulukumba Regency remains low at 2,204.4 kg/ha, compared to 3,733 kg/ha at the sub-district level; (3) Corn farming earns Rp. 5,942,319.19 per hectare in Tanah Towa Village, Kajang District, Bulukumba Regency; (4) Corn farming has a level of feasibility of three in Tanah Towa Village, Kajang District, Bulukumba Regency, indicating that it is feasible to develop; (5) The prospect of developing corn farming in Bulukumba Regency's Kajang District has improved.

The author makes the following recommendations: (1) The agribusiness system's application to corn farming in Tanah Towa Village, Kajang District, Bulukumba Regency still requires improvement in the production facilities subsystem, the production process subsystem, the post-harvest subsystem, the marketing subsystem, and the supporting facilities subsystem, to increase corn farming productivity; (2) It is recommended that future researchers expand on this research by including more diverse variables that were not included in this study.

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