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# INTEGRATION PARTNERSHIP PATTERN OF CATTLE AND FARMING BUSINESS IN KEDIRI DISTRICT

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## Abstract:

The purpose of this study was to analyze the contribution of beef cattle farming income to agriculture and the partnership pattern of beef cattle breeders that is integrated with food crop farming. The research was carried out in Kepung District because it had the largest beef cattle population in partnership and farming integration systems in Kediri Regency. Samples taken are farmers who have at least 2 (two) cattle and have been kept for at least 1 year, and at least the farmer has experience in raising livestock for 3 (three) years. Farmers must have food crop farming such as rice fields and food plantations. The method of data analysis was descriptive-quantitative. Quantitative to calculate the farmer income structure integrated partnership pattern farming, while descriptive describes the partnership pattern used in beef cattle business. The results of the study that the pattern I with the integration of rice land and livestock business income 4,315,000, - pattern II with the integration of maize plants and livestock business income 4,656,000, and pattern III with the integration of rice and soybean for livestock business income 4,141,500, -. The pattern of noise used in Kediri Regency is that all fattening costs are borne by the farmer, starting from the cost of the cage, providing forage, concentrate feed to medicine, the capital owner providing the cattle to be fattened, and marketing the fattening cattle, and the cattle rancher obtains a portion between 50% to 60% of the value added of cattle during fattening, and the remainder is part of the capital owner's share.

Keywords - integration, partnership, beef cattle, food crops,

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## I. INTRODUCTION

Provision of local meat needs in 2019 requires a population of 19.7 million cattle, while beef cattle must be available at 17.6 million higher than this year's beef cattle population of 16.8 million and the livestock subsector is expected to meet the demand for animal protein is increasing.

Development of beef cattle farms can be done through the integration of livestock and crops. Cattle business with integrated patterns can have positive socio-cultural and economic impacts. This integration system is very beneficial because livestock can utilize grass and forage that grows wild or agricultural waste as food in addition to livestock producing livestock manure as organic fertilizer to increase soil fertility. The integration system can also increase farmers' income from composting. The agriculture sector has a considerable influence on the economy of Kediri Regency. Food crop agriculture is a mainstay commodity. It can be seen from the area of land that is used as agricultural land, especially food crops and beef cattle breeding. This superior commodity can be seen from the existing cattle population.

Partnership with the beef cattle breeding pattern is carried out in several areas, such as the farming community as plasma and the Livestock Service Office as stakeholders engaging in a mutually beneficial relationship through a legal relationship based on the signing of the beef cattle (Bali cattle) stirring

contract. The contract period for the beef cattle breeding lasts (5) five years with one of the agreements, that is the stakeholders giving 2 (two) seed cows to farmers and plasma farmers returning 3 (three) offspring to the Animal Husbandry Department.

The objectives of farming integration are (1) increasing the level of farmer's income accompanied by high purchasing power in order to increase the dignity of farmers, (2) improving farmers' standard of living, (3) changing the face of farming from static to dynamic farming through capital formation, (4) preventing the process of eradication in dry land, (5) increasing the production of food crops and animal protein, (6) increasing the productivity of large united land (Gunardi and Saragih, 1993).

Strategic efforts that can be done are through institutional support through communication networks that hopefully can be made a strategy to overcome these problems in order to be able to change the conventional attitude of farmers in the global era to millennial farmers who have very extensive information through a model born of institutional strategies. Institution is a forum that is able to have a large impact on farmers as social creatures who will certainly interact with individuals who make farmers have a great opportunity to receive the flow of information in the environment. The institutional goal is that farmers must be independent in a variety of conditions rather than being bound by the environment as is the current problem where farmers are bound by partners so that most decision-making is based on the environment. The era of the industrial revolution 4.0 requires farmers to immediately improve themselves to face the expansion of information that is open for mutual search and obtain information. With the design of strategies to improve existing partnership patterns through institutional support from various stakeholders and deliver communication networks in the form of modeling systems, it is hoped that partnership broiler breeders can become independent and competitive breeders.

## **II. LITERATURE REVIEW**

Food crops that always get the highest choice by farmers are rice, corn, cassava and sugar cane. Rice is an agricultural commodity that functions as the backbone of subsistence farming in Indonesian society and is a buoy for the community as a whole. Because rice and yields are the main key to the achievement of national economic stability and have a role as capital in supporting the growth of the agricultural sector (Soetatwo, 1974; Soewardi, 1976).

According to Atmadilaga (1979), in managing farming, coordination between crop farming and livestock business is a more profitable business. The advantage of raising livestock is that it is an opportunity to take advantage of time, spare family labor, take advantage of the by-products of farming with a more useful and comparative advantage. The profits from these livestock businesses in the structure of crop farming income can increase with increasing ownership of resources, especially for land resources (Knipscheer et al., 1987).

The existence of beef cattle in the farming system is a form of business diversification which is a mixed farming concept that can reduce the influence of crop production instability in dryland farming areas (Budhi, 2010).

According to Siswati and Nizar (2012) that integrated farming is a farm that organizes a variety of biological production activities, both plants with plants and plants with livestock on the basis of optimizing the available natural resources with the aim of increasing the number and frequency of farm family income and efficient utilization. more efficient farm family workforce.

### **III. METODE PENELITIAN**

The study was conducted in Kepung Subdistrict, Kediri Regency, East Java. Site selection is determined based on criteria that Kepung Subdistrict has the most locations for beef cattle populations. The pattern of raising beef cattle is rowdy and the pattern of rearing is integrated with food crops.

Samples taken are farmers who have at least 2 (two) head cattle or adult cattle and have been kept for at least 1 (one) year, and the breeder has a minimum experience in raising livestock for 3 (three) years. And besides raising cows, they also have farms both paddy fields and dry fields. This requirement is needed to make it easier to dig up the required data. Due to various limitations in sampling, the number of samples taken was 32 samples with the distribution of respondents.

The population in this study was selected by farmers who implemented a crop cultivation system in one year with several cropping patterns, namely: 1) Cropping pattern 1: Rice 1 - Cassava-2, 2) Cropping pattern 2: Rice 1 - Corn 2; 3) Cropping pattern 3: Rice 1 - Soybean and beef cattle business.

From the preliminary survey results at the research location it is known that the ownership of farmers' land is 0.5 - 2.5 ha, with a total population of 925 families, consisting of 419 farmers who grow rice and crops by raising beef cattle. Then as many as 506 farmers who only plant rice and crops without raising beef cattle. While the respondents used in this study were farmers who implemented a farming system with three cropping patterns and raising beef cattle.

Due to various limitations in sampling, the number of samples taken was 32. The number of samples has fulfilled the general sample size requirements recommended in the central limit theory of 30 samples (Gay and Diehl, 1992; Agung, 2006; Nurudin, M, M. Novitasari Mara and D. Kusnandar, 2014)

Data analysis of research data used quantitative descriptive, quantitative with calculation of cost and income analysis.

### **IV. RESULT AND DISCUSSION**

#### **Beef Cattle Characteristics**

The ownership of beef cattle from the respondent shows the amount of effort done by farmers which at the same time can be known the capital used for farming and small-scale beef cattle business. The amount of beef cattle ownership in the Ringinrejo district area varies, from that of having 1 Animal Unit to 3.50 Animal Unit.

The results showed that the most beef cattle ownership was 1.50 to 1.75 Livestock Units and 2.00 to 2.25 Livestock Units, which was 87.50 percent. While the average beef cattle ownership is 2.23 livestock units. The experience of raising beef cattle 10 to 14 years is 3 people or 9.38 percent, 15 to 19 years as many as 5 people or 15.63 percent, 20 to 24 years as many as 16 people or 50.00 percent, 25 to 29 years as many as 9 people or 24.99 percent. The data presented above is the most that has the experience of raising people's beef cattle ranging from 20 to 24 years. This shows the experience of raising beef cattle for a long time. According to Dewi et al (2018) that most of the behavior of farmers varies greatly, which depends on the experience gained during his life so that the experience in the business activities affects daily activities.

The structure of beef cattle ownership based on umurr and sex groups shows that the age group of adult cattle is 23 heads or 33.00 percent which consists of 13 male bulls or 41.00 percent and female cattle 26 heads or 26.00 percent. The data shows that farmers prefer to keep cows over bulls; the reason is that raising cows can get their offspring which can then be developed. While the male cow although its function is for labor, farmers cultivate dry land using female or male cows has no effect.

### Food Crop Integration Cultivation Pattern

The types of output produced for each cropping pattern are as follows: (1) cropping pattern 1 (one) output produced by paddy fields is rice 1 - Cassava 2 with beef cattle (2) cropping pattern 2 (two) outputs produced from rice and corn 2 with beef cattle, (3) cropping patterns 3 (three) output produced from rice 1 with soybean 2 and beef cattle.

The types of costs incurred for each cropping pattern are as follows: (1) planting pattern 1 (one) cost incurred is to buy rice seeds, pay for labor outside the family to buy inorganic fertilizer, buy organic fertilizer to buy pesticides, buy cattle seeds people's slaughtering, shrinkage of cages and equipment, buying forage and booster feed, medical expenses and artificial insemination (2) cropping patterns 2 (two) costs incurred are buying rice seedlings 1 and corn seeds, paying workers outside the family, buy fertilizer buy organic fertilizer buy pesticides, buy beef cattle seeds, shrinkage cages and tools, buy forage slaughter and reinforcement feed, medicine costs and artificial insemination, (3) cropping patterns 3 (three) costs incurred are buying rice seeds and soybeans, paying outside family labor, buying inorganic fertilizers, buying organic fertilizer, buying pesticides, buying beef cattle seeds, shrinking pens and tools, buying forage products for livestock and booster feed, medical costs and artificial insemination.

### Analysis of Beef Cattle Revenue Integration for Food Crops

The cost component of food crop farming is the type of cost component used for food crop farming activities such as seedling costs, fertilizer costs, pesticide costs, labor costs and others. While the beef cattle business cost components are various cost components used for beef cattle business activities such as costs to buy mpi seedlings, costs for repairing cages or called cage depreciation, costs for animal feed both for forage and fodder feed, reinforcement costs for medicines and others

No	Description	CROPPING PATTERN KIND		
		I	II	III
<b>A</b>	<b>FARMER BUSINESS FEES</b>			
	<b>1. Fixed Cost</b>			
	a) Land Tax	125.140,-	128.950,-	124.900,-
	b) Irrigation	577.400,-	562.000,-	574.000,-
	c) Land Lease	5.173.000,-	4.965.000,-	5.150.000,-
	d) Depreciation of Tools	770.000,-	670.000,-	771.000,-
	<b>Sub-Total</b>	<b>6.645.540,-</b>	<b>6.325.950,-</b>	<b>6.619.900,-</b>
	<b>1) Variable Cost</b>			
	a) Seed			
	b) Pesticides	1.140.000,-	1.250.000,-	1.191.000,-
	c) Fertilizers	4.060.000,-	3.955.000,-	4.075.000,-
	d) Labor	4.540.000,-	4.506.000,-	4.485.000,-
	e) Rent a Tractor	5.950.000,-	5.900.000,-	6.040.000,-
		2.400.000,-	2.478.000,-	2.340.000,-
	<b>Sub-Total</b>	<b>19.000.000,-</b>	<b>18.089.000,-</b>	<b>18.131.000,-</b>
<b>B.</b>	<b>Total Farming Costs</b>	<b>25.645.540,-</b>	<b>24.414.950,-</b>	<b>24.750.000,-</b>
	<b>COST OF CATTLE BUSINESS</b>			
	<b>1. Fixed Cost</b>			
	a) Depreciation of Livestock	285.000,-	267.000,-	285.000,-
	b) Depreciation Enclosure	65.000,-	67.000,-	66.500,-
	c) Depreciation of Equipment	50.000,-	53.000,-	55.000,-
	<b>Sub-Total</b>	<b>400.000,-</b>	<b>387.000,-</b>	<b>406.500,-</b>
	<b>2. Variable Cost</b>			
	a) Feeding Cows	7.200.000,-	7.011.000,-	7.220.000,-
	b) Forage forage	1.600.000,-	1.145.000,-	1.117.000,-
	c) Concentrate	1.100.000,-	1.600.000,-	1.600.000,-
	d) Medicines	200.000,-	216.000,-	230.000,-
	<b>Sub-Total</b>	<b>10.100.000,-</b>	<b>9.972.000,-</b>	<b>10.167.000,-</b>
<b>C.</b>	<b>Total Beef Cattle Business Costs</b>	<b>10.500.000,-</b>	<b>10.359.000,-</b>	<b>10.573.500,-</b>

D.	Farm Acceptance	38.590.000,-	38.590.000,-	38.669.000,-
E.	Beef Cattle Acceptance	14.815.000,-	15.015.000,-	14.715.000,-
F.	Total Revenue	53.405.000,-	53.605.000,-	53.384.000,-
G.	Farm income	12.944.460,-	14.175.050,-	13.919.000,-
H.	Beef Cattle Revenue	4.315.000,-	4.656.000,-	4.141.500,-
I.	Total income	17.259.460,-	18.831.050,-	18.060.500,-
J.	R / C Farming	1,7	1,6	1,6
K.	R / C Beef Cattle Business	1,4	1,4	1,4
L.	R / C Total Business	1,6	1,5	1,5

The cost component of rice farming 1 - Cassava 2 (cropping pattern 1) with beef cattle breeding per hectare per head is Rp. 25,645,540, - for farming and Rp. 10,100,000, - for beef cattle business, so that the total cost of crop farming and beef cattle business as much as Rp. 25,745,950, -. Components of the cost of farming rice 1 - corn 2 (cropping pattern 2) with the business of beef cattle breeding per hectare per head is Rp. 24,414,950, - for farming and Rp. 10,359,000, - for beef cattle business so that the total cost of crop farming and beef cattle business is Rp 34,773,950,000. The cost component of rice farming 1 - Soybean 2 (cropping pattern 3) with the effort of beef cattle per hectare per head is Rp. 24,750,000, - for farming and Rp. 10,575,500, - for beef cattle business, so that the total cost of crop farming and business beef cattle as much as Rp. 35.325500. From the results of the study showed that in cropping pattern 3, namely rice plant 1 - soybean 2 with beef cattle business the highest cost compared to other cropping patterns, this is because in rice farming requires high costs because the production costs require large funds such as land management, rent of land and organic fertilizer (Wisudawati et al, 2019).

### Potential of Agricultural Waste for Animal Feed

Potential beef cattle feed is all food that can be utilized by livestock as a source of meeting food needs, both from plants (fresh forage), preserves, agricultural waste and agricultural industrial waste in Kediri Regency. According to Chuzaemi (2002) in Hardianto (2000) factors that must be known by farmers in developing economical feed formulas by utilizing local resources available in the environment are: nutrient requirements, types of feed ingredients and nutrient content, type of feed, consumption feed and feed raw material prices.

The "classic" problem often faced by beef cattle breeders in Kediri Regency every dry season is the difficulty in finding fresh grass or forage for animal feed. Farmers must go outside the village to look for hay in the rice fields that are being harvested. Due to the difficulty of finding forage, the amount and quality of feed given to livestock is reduced so that livestock growth cannot be optimal. Efforts to overcome the problem of food shortages in the dry season have not been done by many farmers in Kediri.

Animal feed ingredients commonly used by beef cattle farmers in Kediri Regency are based on the observations of respondents, as in table 5.15:

Table 5.15 Types of Feed Ingredients and Nutritional Content

No.	Source of Material	Given Feed ingredients	Kandungan Nutrisi*)
1	Agricultural Waste	Rice Straw Rice Bran Soybean Straw Soybean skin Corn stalks and clams Peanut Straw	Fiber Energy Fiber Fiber Fiber Fiber
2	Plantation waste	Cane Buds Coffee Skin	Fiber Protein

3	Agro-industrial Waste	Polard Corned Rice Sugar cane drops Tofu	Energy Energy Protein Protein
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(Source : Primer Data, 2018).

Animal feed ingredients derived from agricultural waste and industrial agriculture, food crops and plantations can be arranged into complete beef cattle feed or often called complete feed. This is in accordance with Hardianto (2005) that animal feed can be made from materials from agricultural waste that contain a lot of fiber, agro-industrial waste as an energy source. As well as added sources of protein and mineral sources.

## V. CONCLUSION

1. Contribution of farming income in cropping pattern 1 and beef cattle breeding business to the total amount of farming is 32.00 percent, for farming in cropping pattern 2 and beef cattle breeding in 33.00 percent, cropping pattern 3 and beef cattle breeding business in the amount of 30.00 percent.
2. The pattern of noise used in Kediri Regency is that all fattening costs are borne by the farmer, starting from the cost of the cage, providing forage, concentrate feed up to medicine, the capital owner providing the cattle to be fattened, and marketing the fattening cattle, and the breeder obtaining a share between 50% to 60% of the value added of cattle during fattening, and the remainder is the share received by the capital owner.

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