International Journal of Advanced Multidisciplinary Research
ISSN: 2393-8870
www.ijarm.com
DOI: 10.22192/ijamr Volume 5, Issue 6 -2018

Research Article

DOI: http://dx.doi.org/10.22192/ijamr.2018.05.06.006

Madura cattle agribusiness performance and feasibility in Galis region, Madura

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Abstract

The aim of this research to analyst agribusiness performance and feasibility of Madura cattle, especially in Galis region, Madura. The advantages of this research are to give information's of Madura cattle agribusiness performance which could use as added value of rural cattle agribusiness development.

This result done at Galis region, which selected area are Galis subdistrict, Larangan subdistrict and Pademawu subdistrict by purposive sampling method on that consideration Madura cattle population and similarities of Madura cattle management. This is survey research with observation and respondents interview in current time. This research used descriptive analysist based on working agribusiness system and Net Farm Income (NFI) analyzed for feasibility analysist.

The conclusion of this research are (1) Madura cattle agribusiness performance in Galis region was supported by the farmers, but still need optimized by sub-systems unit in order to develop farmer welfare; (2) Madura cattle agribusiness in Galis region non-feasible from economic feasibility because of it couldn't meet the necessities of farmers family needs, which respondent total lost Rp.3.095.778,- or Rp. 244.615,- /month, meanwhile based on farmers perseption, their total lost Rp. 321.888,- or Rp. 25.434,- /month with average business scale 2,71tails/respondent and observed for 4,67 months; and (3) Management feasibility of Madura cattle agribusiness feasibility performance in this region, classified in non-feasible management because of the traditional management of cattle agribusiness held by the farmers.

Keywords

Madura Cattle, Agribusiness Performance, Feasibility, Madura.

Introduction

Making agriculture more productive, more profitable, and more sustainable is gaining interest in Madura. Rapid change in the agribusiness sector, calls for appropriate development of farm management skills by farmers for their future viability. More and more farming families in Maduraare increasingly need to produce farm products that can be sold for cash. However, farm families need more than just food. They also need clothes, education for the children, household items and other goods, all of which require cash. Their main source of cash is usually the farm; therefore they have to make profits from their farms. At the same time, the significantly increased demand for dairy products in the large emerging economies, many of which cannot be supplied domestically, has increased the magnitude of the global dairy trade. The improvement of agricultural productivity is a consequence of a more efficient use of the production factors. Without being doubt, many dairy farmers have adopted new technologies to boost the dairy farm profitability and have changed the overall management of their dairy herds. Additionally, improved technical efficiency, production management and hard work are no longer enough for farm operators to survive in a highly competitive business environment. Indeed, training in technological farm management skills can enhance farmers' ability and willingness to make successful changes to their management practice.

Management knowledge of agribusiness might provide farm operators a basis for sound farming decision-making.It helps to make the right choice regarding decisions are needed about what to produce, on which part of a farm, by what methods, when and in what quantity in order to achieve the possible levels of incomes. Of course, agribusiness management need planning, organizing, actuating and controlling, reciprocally cattle agribusiness management. Overview of cattle agribusiness management as integrative system, which are include land area, breeding, management, processing industry and others supporting business. Soekardono (2009) stated that agribusiness is one of modern economic sector, which are include four sub systems : (1) upstream agribusiness sub system; (2) supporting agribusiness sub system; (3) downstream agribusiness sub system; and (4) marketing agribusiness sub system. This means that operators need to upgrade their farm business management skills by considering segments as mentioned by Soekardono (2009). It might help farmers to solve economic problems associated with maximization of returns or minimization of costs. It is because the benefits of improving the capability of decision-making, and judgments about the need and relevance of information will accumulate over the operators' business life.

One of local cattle which have potentials to developed is Madura Cattle. Madura cattle have camparative advantages are adaptable, have good fertility and resistance to diseases. Kutsiyah (2012) stated that Madura cattle resistance to diseases, adaptable with extreme condition and feed, have high carcass percentages (50,96% – 51,72%) with body weight around 250 kg.Although most Madurese have little knowledge of the scientific terms and taxonomies, they have profound knowledge oftheir surroundings and use it to make the daily livelihood choices required of them.Cow size in Madura has been equated to the desired steer market weight at slaughter.In Madurese village society, few commodities can compete with cows as a form of family savings and investment. Selling cows is a way of liquidating assets, usually old, unproductive cowsand new-born or young calves.As in other peasant agricultural systems,most of the agricultural production systems in Madura largely depend on rainfall which is characterized by a strong seasonality with most of the rains. In that context, livestock depend on rangelands which are a mix of grass,woody species and crop residues for about 4-6 months of the dry season.Other feed sources are planted woody fodder species, forage crops and marketed fodder, with the latter mainly utilized by urban producers.

Madura cattle agribusiness management mostly handle by local farmers which breeding orientation as household saving. Government reported that the bigest potential of Indonesian cattle agribusiness based on rural farm with small scale. Rural cattle farm is strategic commodities as economic development factor which combined regional resources to contribute household income. East Java province government reported that 21,02% of cattle population in their area are Madura cattle which live at Madura Island. It means that Madura cattle agribusiness is the most rural cattle farm based on breed in East Java province. This condition illustrated that Madura

cattle agribusiness contributed to cattle production development and farmers welfare. In order to develop Madura cattle agribusiness need agribusiness sub-sector added value and efficiency management. Therefore it need effective approach so that farmers could use agribusiness performance in order to give efforts to farmers welfare. The aim of this research to analyst agribusiness performance and feasibility of Madura cattle, especially in Galis region, Madura. The advantages of this research are to give informations of Madura cattle agribusiness performance which could use as added value of rural cattle agribusiness development.

Materials and Method

This result done at Galis region, which selected area are Galis subdistrict, Larangan subdistrict and Pademawu subdistrict by purpossive sampling method on that consideration Madura cattle population and similarities of Madura cattle management. This is survey research with observation and respondents interview in current time. This research used descriptive analysist based on working agribusiness system and Net Farm Income (NFI) analyzed for feasibility analysist.

Results and Discussion

Madura Cattle Population at Galis Region

Galis region consist of Galis subdistrict, Larangan subdistrict and Pademawu subdistrict in the east of Pamekasan, Madura island. Demography profile is ± 4000 people live in this region. The nearest distance of this region from district capital ± 10 km and the farthest ± 15 km. The elevation of this region are ± 6 – 36 meters asl. The temperature of this region 28 – 32 ^{0}C with 6 months rainy seasons and 6 months dry seasons. Madura cattle and farmers population in each village of this region showed at table 1 – table 3.

Tabel 1. Madura Cattle Population in Galis Subdistrict

No	Village	Amount of Cattle			Amount of Farmers		
		Bulls	**Cows**	**Total**	**Breeding**	**Fattening**	**Total**
1	Galis	493	317	810	162	648	210
2	Polagan	370	259	629	189	440	629
3	Bulay	371	198	569	142	427	569
4	Konang	364	116	480	168	312	480
5	Artodung	358	112	470	141	329	470
6	Ponteh	318	170	438	110	328	438
7	Pagending	354	68	422	84	338	422
8	Tobungan	392	94	486	121	365	486
9	Lembung	173	87	260	52	208	260
10	Pandan	100	78	178	36	142	178
Total		**3.793**	**1.449**	**4.742**	**1.205**	**3.537**	**4742**

Source : Data of Pamekasan District Government (2016)

Tabel 2. Madura Cattle Population in Larangan Subdistrict

No	Village	Amount of Cattle			Amount of Farmers		
		Bulls	Cows	Total	Breeding	Fattening	Total
1	Larangan Luar	1.134	243	1.377	551	826	1.377
2	Larangan Dalam	644	152	796	239	557	796
3	Duko Timur	681	257	938	375	563	938
4	Kaduara Barat	308	167	475	142	333	475
5	Lancar	408	291	699	280	419	699
6	Montok	311	286	597	179	418	597
7	Taraban	281	172	453	158	295	453
8	Panaguan	408	114	522	157	365	522
9	Grujugan	171	81	252	50	202	252
10	Tentenan Timur	79	35	114	68	46	114
11	Tentenan Barat	79	43	122	37	85	122
12	Trasak	220	49	269	81	188	269
13	Peltong	225	37	292	88	204	292
14	Blumbungan	1.147	262	1.409	634	775	1.409
Total		**6.096**	**2.190**	**8.315**	**3.039**	**5.276**	**8.315**

Source : Data of Pamekasan District Government (2016)

Tabel 3. Madura Cattle Population in Pademawu Subdistrict

No	Village	Amount of Cattle			Amount of Farmers		
		Bulls	Cows	Total	Breeding	Fattening	Total
1	Bunder	89	152	241	72	169	241
2	Pademwu Timur	202	331	533	107	426	533
3	Pademwu Barat	208	79	287	72	215	287
4	Murtajih	395	133	528	106	422	528
5	Sumedangan	378	146	524	157	367	524
6	Durbuk	364	79	443	89	354	443
7	Lemper	113	69	182	73	109	182
8	Lawangan Daya	106	71	177	53	124	177
9	Buddagan	154	232	386	135	251	386
10	Dasok	229	22	251	38	213	251
11	Barurambat Timur	64	26	90	18	72	90
12	Tambung	168	25	193	48	145	193
13	Sentol	227	124	351	88	263	351
14	Sopa'ah	65	26	91	36	55	91
15	Buddih	164	35	199	70	129	199
16	Prekbun	162	47	209	63	146	209
17	Jarin	258	115	373	224	149	373
18	Tanjung	430	268	698	209	489	698
19	Padelegen	50	58	108	32	76	108
20	Majungan	366	292	658	263	395	658
21	Pagagan	108	137	245	73	172	205
22	Baddurih	120	360	480	168	312	480
Total		**4420**	**2827**	**7247**	**2.194**	**5.053**	**7.247**

Source : Data of Pamekasan District Government (2016)

In general experience shows that genetically superior animals in Madura rapidly deteriorate in yields and productivity if they do not get adequate balance feed and fodder. Thus, to sustain the improved breeds and to ensure the supply of nutritious fodder it is essential to promote fodder grass cultivation in the vicinity of house, barren and waste lands. The cultivation of improved varieties of fodder has resulted in quality fodder supply time to time and reduction of pressure on forests and fodder trees. Rangeland free grazing remains the main animal production system in Madura. However, this system is under threat due to increasing pressure on land for cultivation. Given the complex socio-ecological situation under which rural households operate, a systems approach must be used to jointly come up with baskets of options, so that farmers can choose the practices that are most suitable for them. Farmers are currently experiencing a decline in free grazing while hand feeding is becoming more important. All categories on this trajectory do not have the same needs and should be considered when generating innovations to allow farmers adapt to introduced practices suitable to their particular needs and circumstances.

Although livestock grazing on public rangeland is important to private ranchers and the economies of local communities, the government must manage public rangeland for a variety of multiple use interests. Because during wet sessions in Madura (and in certain wetland areas) occurs overgrazing which is also known as intensive grazing. Intensive grazing causes the plant residual matter to decline and further contributes to numerous negative consequences to both the animals and the land. For instance, without proper management of the animal's feeding habits, they tend to feed on young plants and seeds thereby reducing their growth and survival capacities. Besides, the lack of proper animal/wildlife grazing management destroys the soil's nutrient composition which further worsens the situation. The continued trampling of numerous animals in an average forage land will act to accelerate the death of plants and vegetation cover. This is because the animals will graze even on the slightest shoots of new growth. Without the plants or vegetation cover, the soil is left bare and exposed to harsh weather such as heavy downpour and high temperatures which disintegrates the rocks and carries the top soil away. Animals also prefer gathering at specific areas, like next to water sources, and such areas can get eroded. Consequently, overgrazing signifies a serious environmental challenge in maintaining the natural balance of livestock on grazing lands, which reduces the productivity, usefulness, and biodiversity of the land. This situation might also contribute negatively to cattle population in Madura. Research has indicated that the long term effects of overgrazing are food shortage which can make people and cattle die of starvation (see Hiernaux, 1998).

Madura Cattle Agribusiness Performance at Galis Region

Madura cattle agribusiness performance from upstream to downstream at Galis Region showed on Figure 1.

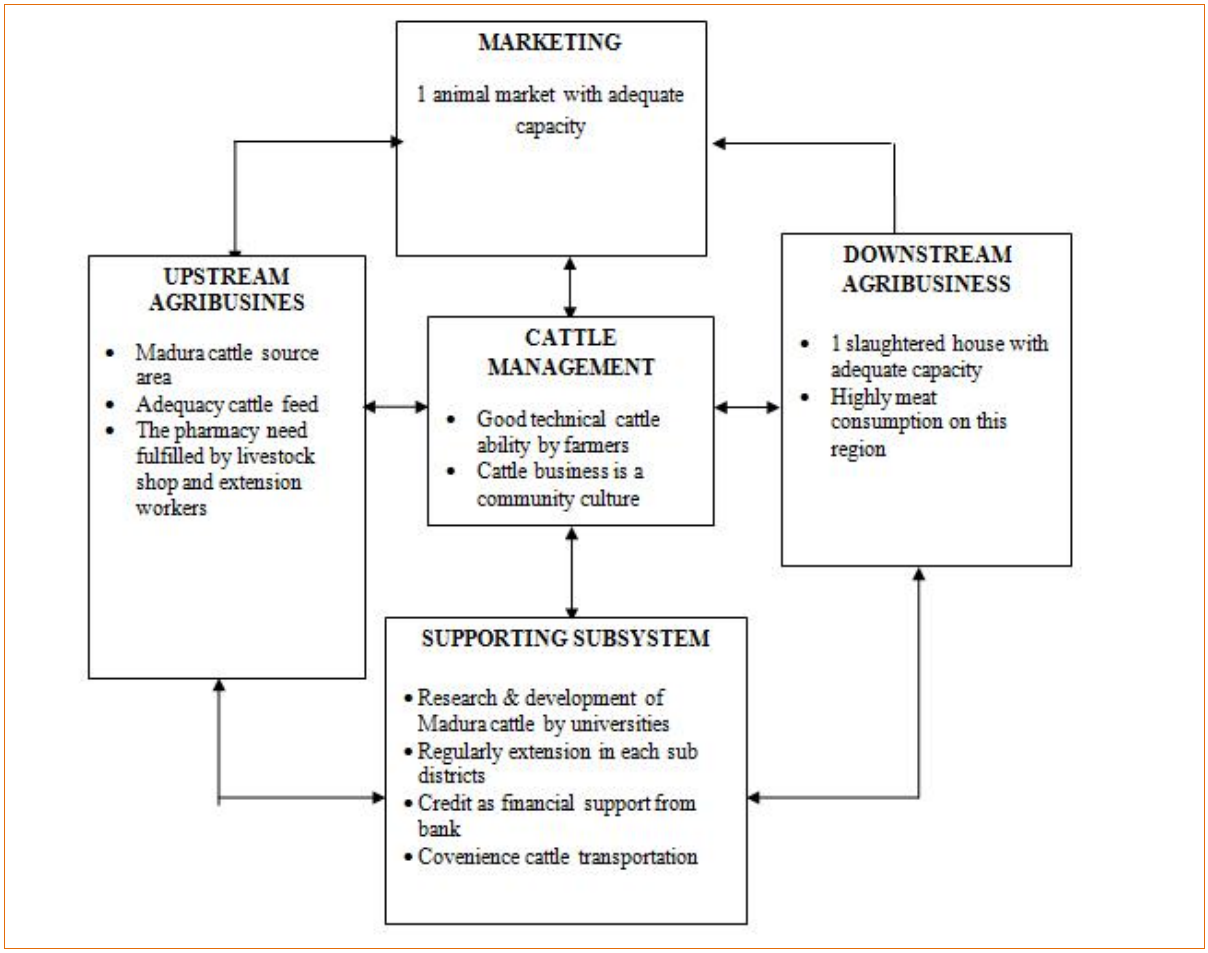

Figure 1. Madura Cattle Agribusiness Performance at Galis Region

Upstream Agribusines Performance of Madura Cattleat Galis Region

In this region, Madura cattle population reported 97.899 tails with carrying capacity 1.002 tails/ha, with female more than male of Madura cattle. Average population increased 1,3% /year, in the last 5 years. The average amount of slaughtering cattle more than 1.000 tails/year, which the mutation rate out more than 18.000 tails/year with destination around Surabaya and Jakarta. This condition means that Madura cattle is considered having high auction values. Indeed, price differentials among lots of cows reflect differences in the physical characteristics of the cows in various weight and grade categories. Several studies have investigated the price premiums and discounts attributable to the characteristics of feeder cattle (Marsh, 1985; Buccola and Jessee, 1997; Buccola, 1980) and to the physical traits of individual lots of feeder cattle (Sullivan and Linton, 1981; Faminow and Gum (1986); Schroeder et al., 1988). These studies indicate how feeder cattle physical characteristics impact feeder cattle prices. Accordingly, selling cows in desirable lot sizes can improve the price received. Thus, producers interested in maximizing the price they receive for their cows should primarily concentrate their efforts on marketing healthy cows in desirable lot sizes at higher dressing percentages.

Cattle in Madura have a relatively long tradition and an important place among breeders' activities and cattle breeding business mostly implemented by rural farmers which saving orientation. Mostly (70%) of rural farmers respondents are elementary school graduated. They use artificial insemination for their breeding business with pay Rp. 25.000 – Rp. 30.000/service. They manage Madura cattle bulls for 1 – 2 years, then on sale. But, the time of sale of Madura cattle cows were randomized. The pharmacy need fulfilled by livestock shop and extension workers.

Even though cattle raisers are from uneducated persons, they are still aware that breeding and feeding are important factors in the health and welfare of farm animals in organic systems, and focus on producing animals from a predominantly forage-based system, with an emphasis on maintaining animal health through improved welfare and high energy concentrated feeds to meet their potential.As a consequence of these veterinary treatments, good breeding stock and particularly good cows were in high demand in Indonesia.

Accordingly, while Hagedoorn would become a well-known expert in animal breeding and genetics, he claimed that while breeding must focus on what the market wants (whether it be mass or niche market), other factors also have to be taken into account. The choice of breeds and breeding strategies used in the organic livestock sector needs to ensure farm profitability, safeguard animal health and welfare, focus on conserving genetic diversity and promote human health. In certain areas, across the districts in Galis, to a considerable extent, the beauty of a breeder's animals indicated his high standards of farming and breeding. Thus, beauty was an indication of the extra quality of constitution that was needed for breeding stock. From the buyers' perspective, this was also the attraction of buying and owning such animals: if beautiful cows were good cows, beautiful animals contributed to the status of their owners as good farmers. Such animals thus had the extra benefit of lending prestige. This is not to deny that the aesthetic element, as it became an important market asset.

Cattle Management Performance of Madura Cattleat Galis Region

In this region, farmers mostly have 1 – 2 Madura cattle for fattening with randomized of age. This is commerce business, which Priyono (2010) stated that cattle fattening business have the biggest cattle business potentials with short time capital turnover and highly meat market price. In this region, farmers usually sale their cattle after fattening program to collecting merchants in their area with cash transaction. Farmer income contribution from fattening program about 10 – 15%, lower than before policy of meat and cattle import is implemented, that Farmer income contribution from fattening program about 30%. By referring to this condition, farmer in Madura should retake into account reproductive performance of dairy cattle. The reproductive performance of high-producing dairy cows on modern commercial farms is influenced by atraining and supervision of employees which were also considered as challenging on many farms in Madura. Physical accommodations for dairy cattle in Madura generally provide a relatively dry area for the animals to lie down in and be comfortable and be conducive to cows lying for as many hours of the day as they desire. Criteria for a satisfactory environment for dairy cattle include thermal comfort (effective environmental temperature), physical comfort (injury-free space and contact surfaces), disease control (good ventilation and clean surroundings), and freedom from fear. Cattle can thrive in almost any region of the world if they are given ample shelter from excessive wind, solar radiation, and precipitation (Webster, 1983).

In this section, caring for a newborn calf and her mother are also absolutely critical to the success and survival of both the mother and the calf. And this cattle treatment also a part of cattle management in Madura which is influencing cattle business in Madura. Once the calf is born, a few steps need to be taken in order to give the newborn the best start possible. Madurese cattle raisers usually, if for some reason the cow is unable to get up, dry the calf with a towel or other suitable material. But normally the cow will usually be up and will begin to dry the calf. It is important to note that appropriate caring treatment in the early stage is inextricably link to improving animal health, welfare and production, or even animals' immune systems. It is evidenced by findings from behavioural studies and behavioural economics that they could also play an important role on the links between current actions and the long-term goal. In relation to this, therefore, the educational role of improving the managerial skills of the farmers is an important task for the public extension services to keep agriculture viable and competitive. It is essential that these skills be improved continuously through participation in management training activities for the practical applications of profitable farm operations. Education and training make impact on farm management behavior, and hence on outcomes of the farm (Kilpatrick, 2000).

Downstream Agribusines Performance of Madura Cattleat Galis Region

Slaughtered cattle held on slaughtering places that owned by meat merchants and slaughtering house managed by local government. In this region, there is 1 slaughtered house with adequate capacity. This region is one of highly meat production in Madura island. Meat production from this region is about more tahn 2.000 tons/month. Canny, et.al. (2017) reported that the need for meat is sufficient from own this region with average meat consumption more than 13 kg/capita/year. This condition is higher than National Food Pattern are 10,1 kg/capita/year.It is still rationale to say that supply and demand of cows in Madura is favourable to farm management extension (likely to be business oriented). Of course, per capita consumption is expected to increase as cattle inventories expected to grow and prices are expected to decline. The amount of the decline will depend upon demand. Factors that impact domestic demand include the price of beef compared to competing meats, consumer income, and consumer preference. Besides restructuring of the economy,in the ranch system, to meet public demand farm business management and farm income policyshould prudently be regulated by local authorities. For example, farms with an inadequate resource base, by definition, do not have the potential to achieve what would be regarded as an adequate family income solely from the farm business - they must rely on off-farm income to supplement the income from the farm.

Marketing Agribusines Performance of Madura Cattleat Galis Region

The cattle merchant consist of : (1) inter-regional merchants; (2) collecting merchant; and (3) cattle broker which called “blantik”. Procurement for inter-regional merchants from farmers and animal markets. Procurement for collecting merchant from local farmers. Blantik only as broker for transaction between other cattle merchant and farmers.

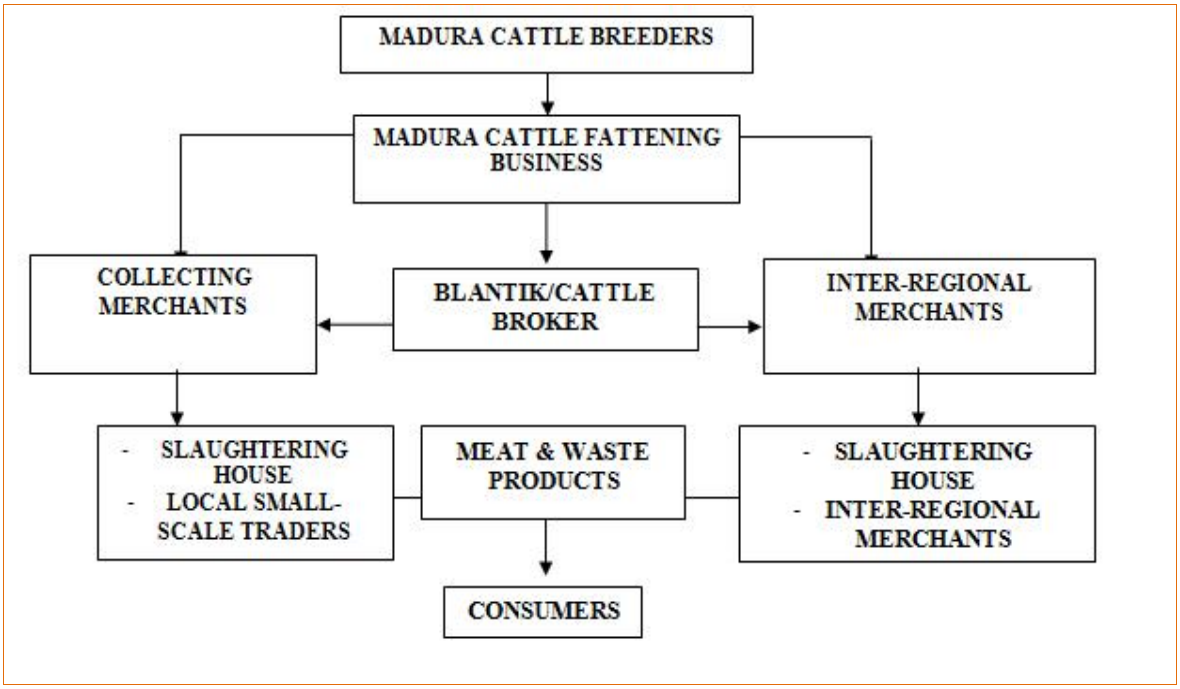

Figure 2. madura Cattle’s Trading Chart

Figure 2 show that famers depend on cattle merchants to trade their cattle. This condition weaken the farmer bargaining position. They couldn’t directly access to the market because of the market information owned by the merchants, which consist of cattle availability and market prices. If, the cattle breeders could directly access to farmers user or the farmers could directly access to meat consumer, so that they could manage the market price and control their profit.

Supporting Agribusines Subsystem Performance of Madura Cattleat Galis Region

Supporting agribusiness subsystem of Madura cattle at Galis region have potentialities with local government and academic roles that gave continous support by the policies and continuous research and development of Madura cattle. The government policies manage all technical and financial aspects include extension worker role to give continuous technical support for farmers at all areas (villages and sub districts) and also bank role in order to gave credit programs to the farmers through the groups of farmer. The academic support with continuous research and development of Madura cattle in order to develop the productivity and keep the indigenous advantages. By considering these two supports, the development of farm management extension activities are expected to occur in Galis region. To ensure better farm management decisions, farmers must have control of the resources needed to produce livestock product. If they are farming for the market, they will also need to have a good understanding of that market.

Household Scale Agribusines Feasibility Performance of Madura Cattleat Galis Region

Economic Feasibility

Agribusiness feasibility performance of Madura cattle could analysist from economic feasibility, management feasibility and institutional feasibility. Economic feasibility could analysist from Farm Income. Farm income analysist in this region show at table 4.

Table. 4. Agribusiness Feasibility of Madura Cattle at Galis Region

Items	Value (Rp)
I. Gross Farm Income (GFI)	
a. Sale of Cattle	77.855.556
b. Sale of Compost*	478.333
Total	**78.333.890**
II. Total Fixed Cost (TFC)	
- Fixed Cost	
a. Cage	255.345
b. Equipment	53.222
c. Market Cost	24.670
Sub Total	**308,592**
- Variable Cost	
a. Cattle Cost	
b. Feed Cost	1.562,600
c. Labour Cost	1,232,000
d. Drugs Cost	192,000
Sub Total	**77.344.444**
Total Fixed Cost	**81,429,668**
III. Net Farm Income (NFI)	
a. Net Profit	-3,095,778
b. Cash Profit	-321,888

Information :
1) Length of Observation Period4,67 months with business scale 2,71tails/respondent
2) Net Profit = Total Revenue – Total Cost
3) Cash Profit =Value of Sale – Cash Cost (Cattle Cost, Feed Cost, Drugs Cost)

Table 4 shows that Farm Income in this region observed for 4,67 months with average business scale 2,71tails/respondent. Table 4 also shows that respondent total lost Rp.3.095.778,- or Rp. 244.615,- /month, meanwhile based on farmers perseption, their total lost Rp.321.888,- or Rp. 25.434,- /month. From farmers perseption analysist, this household scale couldn't meet the necessities of their family needs. During this research, market prices decline that cause farmers have lost for their cattle agribusiness which shown at table 7.

Management Feasibility

Management feasibility of Madura cattle agribusiness feasibility performance could analysist from external institution, such as extension institution, research and development institution, as supporting institution. Availability of these supporting institution could support Madura cattle farmer in order to technological response and adaptation. Availability of extension workers as technical supervisor with competences and local university as research and development institution. However, management feasibility of Madura cattle agribusiness feasibility performance in this region, classified in non-feasible management because of the traditional management of cattle agribusiness held by the farmers, which there are no plan, organizational management, and other management principals.

Institutional Feasibility

Institutional feasibility of Madura cattle agribusiness feasibility performance could analysist from potentialities of stakeholder institutional. Competence institutional of local government which 4 development fields are : administration, technical unit, animal health unit, and animal laboratory C-.type. However, implementation of these local government units on vilages supported by farmer groups and technological innovation sub units (PPL and BPP). In this region, there are 132 farmer groups. Every month they held regular meeting called “arisan”. In these meeting also held technical supervision from extension workers in order to delivered technological information. This is a government effort in order to develop Madura cattle agribusiness institution system based on villages.

Conclusion

Conclusions of this research are :

1. Madura cattle agribusiness performance in Galis region was supported by the farmers, but still need optimized by sub-systems unit in order to develop farmer welfare
2. Madura cattle agribusiness in Galis region non-feasible from economic feasibility because of it couldn’t meet the necessities of farmers family needs, which respondent total lost Rp.3.095.778,- or Rp. 244.615,- /month, meanwhile based on farmers perception, their total lost Rp. 321.888,- or Rp. 25.434,- /monthwith average business scale 2,71tails/respondent and observed for 4,67 months.
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Subject: Agribusiness

Quick Response Code

DOI:10.22192/ijamr.2018.05.06.006

How to cite this article:
Moh.Zali, A. Yudi Heryadi, Selvia Nurlaila, Zaenal Fanani. (2018). Madura cattle agribusiness performance and feasibility in Galis region, Madura. Int. J. Adv. Multidiscip. Res. 5(6): 45-55.
DOI: http://dx.doi.org/10.22192/ijamr.2018.05.06.006