

Conference Paper

Identification of Cattle Farms Chain Madura Ecosystem Based Blue Economy Concept

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Abstract

Madura Island is known as the island with agro climatic conditions are quite extreme. This condition affects the genius and plant populations that exist and the impact on animal life in these ecosystems. Ranch as one of the agricultural sector with a strategic position, as a provider of animal protein. Madura Island has an advantage in the field of cattle breeding typical Madura. The purpose of this study is assessing alternative commodity ecosystem chain efficiency improvements especially cattle cow Madura. The method used is descriptive method of analysis. The results showed a 7 supporting the plant ecosystem sustainability and development of cattle breeding Madura ie ecosystems rice, maize, soybeans, peanuts, green beans, cassava and sweet potatoes. Each ecosystem has the potential of different crops in each district to be integrated with the development of cattle breeding Madura.

Keywords: Blue economy, cows, Madura

INTRODUCTION

Madura is one of the islands that have distinct characteristics. Hot climatic conditions with temperatures ranging between $27 \degree C-34 \degree C$, rainfall ranges from 1600mm/year, ranging from 89% humidity and dry soil conditions affecting the state of the plant, the type of plants, plant production and quality of existing plants. The agro ecosystem is very influential on subsequent ecosystem chain is particularly cattle breeding farm ecosystem.

As for where we know, the farm is part of the agricultural sector with a strategic position in supporting the economy. Livestock development has a strategic role and function in addition to increasing the income and standard of living of farmers also aims to fulfillment and improvement of public nutrition, especially in meeting the needs of animal protein, a provider of employment and development potential of the region, so that the role of the livestock sector must be utilized optimally. Sudrajat stated that the mission of livestock development includes the provision of animal origin food, human resource development, the creation of economic opportunities, job creation and preservation and utilization of natural resources farm support.

Increasing population led to an increase in demand for food, especially the continuity of supply availability. There is an increasing public awareness of nutrition drive increased demand for food of animal proteins which include meat from ruminant animals, especially cattle. Data Ditjennak, shows that the availability of the national beef is still experiencing shortages, forcing overcome by imports, which reached 35% of total national beef demand. Under the conditions of the development of livestock in areas that are potentially very necessary

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(Kardasih, 2004). Including one on the island of Madura cattle is one potential endemic ecosystems developed. On the island of Madura in recent times cattle breeding conditions stagnated and tend to decline in production caused by various factors, one of which is the ecosystem is less support and at least the gains of cattle farms.

Suggest that the carrying capacity of the region for the development of livestock shown by the ability of the region to produce feed, especially forage that can accommodate and meet the needs of a population of livestock (Sumanto & Juarni, 2004) (Minister of agriculture, 2010). Environmental factors affect the growth of livestock such as temperature, solar radiation, and humidity (Minister of agriculture, 2010). Kadarsih (2004) adds that the differences in altitude affect the performance of livestock. These factors are factors that affect the production and productivity of livestock. If livestock is kept in an area that does not correspond to the physiological condition of livestock, production and productivity decreases Kadarsih (2004). Atmiyati that the placement of livestock in the region should consider the suitability of land, availability of forage, waste from agriculture, and human resources skilled and nimble as a strategic step in utilizing resources optimally and to consider the preservation of which is based on the understanding that fundamental about the nature and the natural characteristics of the land and cattle behavior in interaction with the ground. Physical factors (environment), social, and economics are interconnected system among one another.

Social and cultural factors influence the development of livestock such as the behavior of farmers in raising livestock. The response of farmers in raising livestock affected the business scale, the conditions of farmers, and the purpose of maintenance (Rusdin, 2009). An attempt is considered beneficial if the business is economically feasible, means giving short-term benefits and can be a long-term investment. Socio-cultural and economic factors also closely related to physical factors determining the success of the region in the farm.

One effort to improve profitability in the cattle business is how to take advantage of all the results are there to be used as something that gives a positive impact on the lives of Madura cattle ranchers. The concept is better known as the academic world where the blue economy concept is not only oriented towards zero waste but also how to waste it has added value. Thus the efficiency of extraction of a natural resource will increase its usefulness. This commodity is a commodity that is not widely utilized its waste, resulting in the development of a blue economy must be applied how waste strives to add value to the farmer community. Cow manure as waste is predominantly used for organic fertilizer, whereas if it is done before the process of becoming organic fertilizer can bring added value and reduce greenhouse gas emissions. If the farming community in applying the concept of a blue economy is expected to improve the welfare of society as well as reduce dependence on energy. This research aims to review alternatives commodity ecosystem chain efficiency improvements especially cattle cow Madura. Included in the study about chain supporting ecosystems Madura successful development of cattle breeding.

METHODS

This study used a descriptive method by conducting a survey to four regencies in Madura. Data used include primary data through field surveys and interviews with experts, then the secondary data obtained through the study of literature relevant to the research topic. The study was conducted on March to August 2017.

RESULT AND DISCUSSION

Chain supporting ecosystems ranch

Results of field survey showed that the chain ecosystem that enables integrated with cattle ranches No 7 ecosystems that includes an ecosystem of rice, corn, peanuts, green beans, sweet potatoes, and yams wood. Each ecosystem these plants have different advantages and different extents between districts in Madura.

1. Rice ecosystem

Rice as one of the strategic food commodity crop in Madura. This plant accounts for forage which is very important in the ecosystem of the farm, about 80% share of the rice plant can be used as cattle feed. Conditions on the ground shows the rice crop area in Madura illustrated in Figure 1.



Figure 1. Rice area in Madura

Data show that the area of rice crops in the region of 140,260 ha Madura so that if it is assumed that in 1 ha is able to produce 400 kg of green feed they can determine the amount of forage year amounted to 56 thousand tons a year (BPS/ Central Bureau of Statistics Sampang, Bangkalan and Sumenep, 2017).

2. Maize ecosystem

Cornknownas one favorite forage for cattle in Madura. The corn crop is pretty much cultivated. In 2016 showed that the corn planted area covering an area of 286,760 ha with a distribution plant shown in the following Figure 2.



Figure 2. A broad distribution of maize plants

Corn, like rice, green plant utilization derived from the stems and leaves of the plant with the proportion of nearly 90%, so that the corn plants into one ecosystem supporting the success of farms in the region of Madura (BPS/Central Bureau of Statistics Sampang, Bangkalan, Pamekasan and Sumenep, 2017).

3. Ecosystem soy

Soybean plants are included in the plants can also be used as forage for cattle farm in Madura. Distribution plants in Madura soy The district canoe with as many as 25,781 ha [5]–[8]. Soybean plants for forage proportion are not as much as the previous crop, this plant ranges from 40 to 50% can be used as forage for cattle ranching Madura. Figure 3 present the distribution of soybean hectarage in Madura.



Figure 3. Soybean hectarage in Madura

4. Ecosystem Peanuts

Bangkalan Regency is a regency with peanut planting area of the largest in Madura. With an area of 29 thousand hectares occupy About a 51% proportion of land area in Madura. So the potential for development of cattle breeding Madura with peanut ecosystem chain integration is a top priority. Commodities peanut forage from the supply side is higher when compared to soy and own habits are also used as cattle feed in Bangkalan Madura. Here acreage peanut plants in Madura (BPS/Central Bureau of Statistics Sampang, Bangkalan, Pamekasan and Sumenep, 2017). It Showed in Figure 4.



Figure 4. Peanut acreage in Madura

5. Ecosystem Green Beans

Green beans are less of a priority in the supply of forage, besides forage produced little, area planted in Madura is not too much. Following the distribution area of green beans is shown in the Figure 5.



Figure 5. Area spacious green pea plants in Madura

Overall land area in Madura by 23,000 ha of cultivation in the district's largest canoe and Sumenep (BPS/Central Bureau of Statistics Sampang, Bangkalan, Pamekasan and Sumenep, 2017. So by looking at the condition of the ecosystem integrate field green beans with beef cattle can be done in both areas.

6. Ecosystem Cassava

Impacts cassava in supporting Madura cattle farms, are less of a priority, by reason of forage produced from cassava plant is not too much and also competed with the forage needs of man as vegetable cassava leaves. Cassava ecosystems found in many districts lacquer with large area of 11,391 ha, followed by Sumenep regency. The total land area of cassava in Madura as much as 22,275 ha (BPS/Central Bureau of Statistics Sampang, Bangkalan, Pamekasan and Sumenep, 2017). Distribution ecosystem cassava plant shown in Figure 6.



Figure 6. Distribution of cassava planting areas

7. Ecosystems sweet Potato

Yamsas a source of forage for cattle Madura quite promising, with the proportion of plants to contribute almost all parts of the plant to make sweet potato ecosystem one of the priorities to be seeded. However, there are obstacles that little planting areas in all districts in Madura, Bangkalan regency in 2016 BPS data showed that the planting area 55 ha, then according to the BPS 2016 planting area is the largest sweet potato in the district as much as 1,440 ha lacquer (BPS/Central Bureau of Statistics Sampang, Bangkalan, Pamekasan and Sumenep, 2017). The great potential of sweet potato ecosystem integrated with Madura cattle farms to be developed in the coming years. Spread sweet potato acreage saw in the Figure 7.



Figure 7. Sweet potato acreage in Madura

Ecosystem Condition Cattle In Madura

General ecosystem overview cattle farms in Madura Madura indicates that cows are bred to have a dual function, as helpers in land management, as well as pets that are used as savings for sale. BPS data in 2016 showed that the number of cows raised as much as 936.503 tails with a distribution shown in the following Figure 8.



Figure 8. The distribution of cattle in Madura

Sumenep district as the largest district in the population the number of cattle in Madura. Including the number of cows in many households maintained by cattle farmers in Madura. On the outside of Sumenep district average domestic cattle ranchers maintain 1- 2 cows while in Sumenep ranges from 3 heads in each household Madura cattle ranchers. District Sumenep is known as the granary of Madura cattle with a total population of 357,038 Tail (BPS/Central Bureau of Statistics Sampang, Bangkalan, Pamekasan and Sumenep, 2017).

CONCLUSION

With the strengthening of grassroots organizations for women fishermen, the social and professional ties between them can be improved and further strengthened. Grassroots organizations will be a connecting medium between one to another fishermen. Grassroots organizations will also serve as the social platform of the home industry they will develop. Of course, strengthened grassroots organizations will also have an impact on improving their economic welfare through internal trade, information dissemination, and political consolidation among them. Education will be another crucial thing. If grassroots organizations are a medium for enhancement of empowerment, then education will be the soul of improvement and empowerment. The education here also includes honing skills that are not only skills related to fisheries, but also skills in product innovation. Therefore, it is very important for the aspect of education here, because education here is intended to make innovation, both products and services. The home industry will be the final deciding factor. With the existence of grassroots organizations and improvement of education and skills, what is needed is the development of economic activities originating from within the environment of the women's fishermen themselves. This will be a local element that can pump the economic activities of women fishermen in Sidoarjo regency, especially in Tambak Oso, Kalanganyar, Segoro Tambak, Sawahan, Gebang, Balong Dowo, Balong Gabus, Kebonsari, Kupang, Kedung Pandan and Bluru Kidul villages.

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